

## **THE ECONOMICS OF INSURANCE INTERMEDIARIES**

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## EXECUTIVE SUMMARY

This report analyzes the economic functions of insurance intermediaries, focusing on the commercial property-casualty insurance market. Our focus is primarily on independent intermediaries, i.e., brokers and independent agents. We look at the functions performed by brokers and agents, the competitiveness of the marketplace, the compensation arrangements for brokers and agents, and the process by which policies are placed with insurers.

While brokers are traditionally described as agents of the policyholder and insurance agents as agents of insurers, this separation is more a matter of emphasis than a watertight division. Both agents and brokers often perform services such as record keeping and modeling for insurers, provide advice to clients on selecting insurers, and assist with claims settlement. Agents and brokers also play a key role in providing underwriting information to insurers. All producers, agents and brokers, are essentially matchmakers who match the insurance needs of policyholders with insurers who have the capability of meeting those needs.

The matchmaking or “market making” role through which buyers are matched with insurers is a complex, multidimensional process. The role of the intermediary is to scan the market, match buyers with insurers who have the skill, capacity, risk appetite, and financial strength to underwrite the risk, and then help their client select from competing offers. Price is important but is only one of several criteria that buyers consider in deciding upon the insurer or insurers that provide their coverage. Also important are the breadth of coverage offered by competing insurers, the risk management services provided, the insurer’s reputation for claims settlement and financial strength, and other factors. It is common for the coverage not to be placed with the low bidder. In the case of very large risks, coverage is likely to be syndicated over many insurers, requiring considerable skill on the part of the intermediary.

The integrity of the placement process recently has been questioned as a result of allegations of bid rigging in which one or more mega-brokers and a few insurers appear to have conspired to feign competition by submitting non-competitive bids. Clearly the integrity of the bidding process is vitally important to the health of the market. However, it is important to distinguish the natural variation in bidding practice that emerges in a normal market from illegal activities.

For their part, insurers are invited to provide quotations on complex risks. Given the variation among insurers in their available capacity, their market niches, the distribution of risk in their portfolios, the information they have about the risk, and their relationship with the intermediary who is placing the business, quotations will vary with some insurers possibly declining to quote. This natural variation will include quotations with varying degrees of competitiveness from which the intermediary and client will select. This variation is a natural consequence of a competitive market in which intermediaries seek to span the available insurance market in search of the best placements for their clients.

In addition to placement of insurance, insurance intermediaries also help their clients understand and measure their risk, advise them on how insurance can alleviate the costs of risk, help design insurance coverage programs, and assist with claims settlement. Intermediaries often provide other functions such as risk modeling, risk management consulting, management of captive insurance companies, asset management, etc. These latter services are more likely to be provided by the larger brokerage firms.

Based on national figures, the insurance brokerage industry is highly concentrated at the top of the marketplace with a handful of brokers accounting for most of the market share. But while the concentration is high, the absolute number of brokers and independent agents is very large. For small and mid-sized risks, there is considerable competition amongst the small and medium-sized intermediaries, who can and do effectively compete with the global brokers for such accounts. Even for large risks, specialty or regional mid-sized brokers can sometimes compete with the mega-brokers. However, there are some risks (such as large, complex international exposures) which have become the exclusive domain of the largest brokers.

Broker and agent compensation comprises premium-based commissions, expressed as a percentage of the premium paid for each policy, and contingent commissions, also usually expressed as a percentage of premiums, based on factors such as the profitability, persistency, and/or volume of the business placed with the insurer. Larger intermediaries also receive fees for particular services such as risk management, captive management, risk modeling, and claims settlement services. Sometimes brokers will negotiate fees in lieu of ordinary commissions. Premium-based commissions account typically for about 10-11% of premiums, compared with an average of 1-2% of premiums for contingent commissions. Premium-based commissions constitute the vast majority of intermediary revenues, and contingent commissions account for about 4-5% of brokers' revenues. Intermediaries also receive some non-cash compensation from insurers such as travel and vacation awards in recognition of superior performance.

Our research provides empirical evidence that most of the contingent commissions are passed on to policyholders in the premium. However, whether this harms or benefits policyholders is a matter of debate. Despite recent allegations that contingent commissions are a "kickback" from the insurer that compromises the intermediary's obligations to its clients, such commissions actually can be beneficial to clients.

Insurers depend on accurate information to underwrite and price policies. However, the underwriting information available to insurers is inevitably somewhat incomplete and imprecise. Such informational imperfections lead to a serious problem in insurance markets known as "adverse selection," which occurs when buyers have more information about their risk characteristics than insurers. Because insurers are not fully informed about individual risk characteristics, some buyers are charged prices that are too low relative to their risk characteristics, while other buyers are charged prices that are too high. Adverse selection occurs when those paying subsidized rates demand more insurance than those paying subsidies, leading to market instability. The costs of adverse selection are borne by individuals and firms who either end up paying premiums that are too high given their risk or being squeezed out of the insurance market altogether.

Brokers and agents help alleviate the adverse selection problem. Intermediaries are usually better informed about the risks of their clients than insurers, and insurers can use this information if a relationship of trust exists with the intermediary. We use the insightful and widely-accepted economic analysis of Rothschild and Stiglitz (1976) to show how profit-based contingent commissions can align the interests of the intermediary and the insurer in the correct pricing of policies and so alleviate adverse selection. With the information transmitted by intermediaries, insurers can compete more vigorously for business and can price more competitively and fairly. In this way, intermediaries assist the flow of information in the insurance market and enhance the efficiency of the market to the benefit of all players.

Finally, we look at role of intermediaries in the placement of policies with insurers. This process has come under recent scrutiny resulting in allegations of bid rigging against a handful of brokers and insurers. We look at the placement process and bidding by insurers. Intermediaries play a vital role in soliciting quotations for complex risks and in helping clients make comparisons on the basis of price, coverage, service and the financial strength of the insurer. For their part, insurers often quote prices on the basis of information from its own risk analysis or provided by intermediaries. These quotations are often competitive if the insurer believes it has good information about the level of risk. However, insurers will often offer non-competitive bids, or decline to quote, if information is incomplete (the “winner’s curse”). This means that price quotations may vary considerably in their competitiveness.

The role of the intermediary is to increase price and quality competitiveness, by providing the insured access to a wider range of possible insurers. However, contingent commissions, particularly those based on profit, may further stimulate competitive bidding. By aligning its interest with that of the intermediary, the insurer will have more confidence in the selection of risks and in the information provided by the intermediary. This will help break the “winner’s curse” and encourage insurers to bid more aggressively.

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## THE ECONOMICS OF INSURANCE INTERMEDIARIES

Insurance is a complex product representing a promise to compensate the insured or a third party according to specified terms and conditions should some well-defined contingent event occur. Simply to describe this obligation requires complex language. However, the buyer's decision is made even more difficult because the value of the insurer's promise depends both on the reputation of the insurance company for paying losses quickly and without fuss and on the financial capability of the insurer to meet these obligations. Thus, the buyer of insurance faces the daunting task of first deciding what sort of insurance protection is needed given the risks faced, and then comparing policies offering alternative coverage at different prices from several insurers with different levels of credit risk and varying reputations for claims settlement and policyholder services.

In most insurance transactions, there is an intermediary, usually an insurance agent or broker, between the buyer and the insurer. In commercial property-casualty insurance markets, the intermediary plays the role of "market maker," helping buyers to identify their coverage and risk management needs and matching buyers with appropriate insurers. The process through which buyers are matched with insurers is complex and multidimensional. The role of the intermediary is to scan the market, match buyers with insurers who have the skill, capacity, risk appetite, and financial strength to underwrite the risk, and then help their client select from competing offers. Price is important but is only one of several criteria that buyers consider in deciding upon the insurer or insurers that provide their coverage. Also important are the breadth of coverage offered by competing insurers, the risk management services provided, the insurer's reputation for claims settlement and financial strength, and other factors. It is common for the coverage not to be placed with the low bidder.

Within the past few months, controversy has arisen about the role of intermediaries in insurance transactions. In particular, it has been alleged that the compensation of agents and brokers through contingent commissions, often related to the underwriting quality or volume of business placed with an insurer, constitutes an anti-competitive practice that is detrimental to buyers (Spitzer 2004, Hunter 2005).

The goal of the present paper is to provide information that will be useful to policymakers and market participants in evaluating the role of intermediaries by objectively discussing the role of the intermediary and providing an economic analysis of alternative compensation structures. Our emphasis is on the market for commercial property and casualty insurance. By way of preview, our analysis shows that intermediaries have a valuable role to play in helping insurance markets to function efficiently, which is beneficial both to buyers and insurers. Although contingent commissions, like most business practices, can be misused by the unscrupulous, in general this type of incentive compensation plays an important role in aligning incentives between buyers and insurers and thus facilitates the efficient operation of insurance markets.

Insurance is distributed through a variety of marketing channels. Although there are insurers that market insurance directly to buyers, by mail, telemarketing, or sales representatives who are company employees, the vast majority of commercial property-casualty insurance sales involve an intermediary. For purposes of discussion, we define an intermediary as an individual or business firm, with some degree of independence from the insurer, which stands between the

buyer and seller of insurance.<sup>1</sup> The degree of independence of insurance intermediaries varies considerably depending upon the design of the distribution channel. Probably the lowest level of intermediary independence occurs when insurers use exclusive agents, who often are independent contractors rather than employees but represent only one company.<sup>2</sup> Next on the scale of independence are independent agents and brokers, who regularly deal with several insurers. The focus of this report is on the latter intermediaries, referred to in this report as *independent intermediaries*.

The distinction between independent agents and brokers is a subtle one, because both types of distributors perform many of the same functions. The usual “textbook” distinction is that insurance agents are “agents” (in the legal sense) of the insurers. They act as a distribution channel for the insurers they represent. Brokers are traditionally thought of as “agents” of the policyholder, who advise clients on appropriate insurance protection and search for and place coverage for the clients. However, these descriptions are too simplistic to provide an adequate description of the insurance marketplace. In fact, independent agents and brokers perform many of the same functions and provide services that are beneficial to both parties to the insurance transaction. For example, both independent agents and brokers act in varying degrees as advocates for the policyholder, providing related services such as coverage design, loss control, and claims management. In addition, although independent agents do represent several insurers under “agency appointment” contracts, many firms generally known as brokers also place a significant proportion of their business under essentially identical contracts with insurers. Many brokers also place significant amounts of business under other types of contractual arrangements.

The primary distinctions between independent agents and brokers seem to relate primarily to size and the range and depth of services provided. Although there are clearly exceptions, independent agents in general tend to be smaller than brokers and provide services to relatively small businesses and consumers in localized markets, whereas brokers tend to service larger and more complicated business insurance needs. The largest regional, national, and international brokers provide a wide range of sophisticated services, including creation and management of captive insurance companies, various types of loss control services, risk modeling, and risk management consulting. Hence, independent distributors of property-casualty insurance products are arrayed across a continuum in terms of size, sophistication, and the range of services offered. Thus, while the labels “agent” and “broker” have a disarming legal simplicity to them, the economic reality is more complex. Independent agents and brokers, are best thought of as intermediaries who bring the parties together and match particular needs of policyholders with the products of insurers. In short, they are market makers or matchmakers, who also provide a range of pre- and post-sale risk management and insurance services.

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<sup>1</sup> The focus of this report is primarily on independent agents and *retail brokers*, i.e., brokers who deal directly with personal and/or commercial insurance buyers. There are also *wholesale brokers*, who serve as intermediaries between retail insurance brokers and certain specialized markets. E.g., wholesalers play an important role in placing business in the surplus lines market, which is a mostly unregulated market for commercial property-casualty insurance, and also play a key role in placing business in the London market, with Lloyds and other London market insurers. In addition, *reinsurance brokers* play an important intermediation role between primary (retail) insurers, who sell insurance to individual and business customers, and reinsurers.

<sup>2</sup> The degree of “exclusivity” of exclusive agents varies somewhat. Some exclusive agents are literally exclusive, selling all of their business through a single company. However, others are primarily “exclusive” with one company but place some policies, such as specialty policies, with other insurers.

Consider the different ends of the continuum of intermediaries. Independent agents, most of whom focus on local or regional commercial and personal lines clients, represent several insurers. They compete with each other and with exclusive agents, direct writers (whose employees serve as the sales force), and smaller brokers in the local marketplace. In this competitive environment, independent agents compete by advising clients on their insurance needs and then searching for appropriate coverage. These are services provided to policyholders. On the other hand, independent agents often provide important underwriting information to insurers. This makes sense since they interface with the clients and will have more information about the level of risk of smaller clients than will typically be available to the insurer. This informational function is provided for the insurer and is usually recognized in the agent's compensation. Nevertheless, it also benefits the policyholder to the extent that policyholders matched with appropriate insurers are more likely to be satisfied with post-sale services and less likely to incur costs of switching insurers in the near future.

At the other extreme, large commercial insurance buyers employ brokers to design and place insurance on their behalf. The risks for the largest policyholders tend to be complex and often difficult to place. The broker plays a pivotal role in providing information to prospective insurers to help them in evaluating the risk. In cases where risks are too large or complex to be insured by a single company, the broker often plays a "syndication" role, locating insurers who are willing to take on various "slices" of the coverage being placed. This often involves a complex negotiation process that determines the coverage design, pricing, and ultimate placement of the business. Such complex risks can only be insured efficiently if all parties work together to provide accurate risk assessment and effective loss mitigation, and the broker plays a key role in the transmission of relevant information between the buyer and the insurers.

A significant degree of mutual trust is required in the placement of commercial insurance contracts by independent intermediaries, and such contracts are governed by the principle of "utmost good faith." Thus, the policyholder relies on the relationship between the intermediary and insurer when placing risks. An intermediary without strong working relationships with insurers will find it difficult to place business, at least on advantageous terms. In the remainder of this paper, we utilize the term "intermediary" or "independent intermediary" to refer to both brokers and independent agents, except in instances where we specifically intend to distinguish between these two types of commercial insurance distributors.

## **COMPETITION**

It has been argued by some that insurance products are inherently complex and that this restrains competition among insurers (Hunter 2005). Indeed such complexity does make it difficult both for individuals and firms to understand fully what coverage they need, what they are actually buying, and whether they are buying from an insurer who has the reputation and financial wherewithal to pay their claims. The role of insurance intermediaries is to help personal and business insurance buyers to understand and purchase insurance. Intermediaries help buyers search intelligently across insurers. In this way intermediaries stimulate competition in the insurance marketplace. We will now look at competition among intermediaries.

### ***Concentration***

Insurance intermediaries are very large in number; currently there are approximately 39,000

independent agencies and brokers in the United States.<sup>3</sup> In 2003, the independent intermediaries (independent agents and brokers) controlled 67% of commercial lines property-casualty business and about 33% of personal lines business (see Table 4).<sup>4</sup> The dominance of independent distributors in commercial lines reflects the fact that coverages, loss control, claims settlement, and other services in these lines tend to be relatively complex, such that independent distributors have an important role in placing coverages and providing services to buyers. In personal lines, where coverages and services tend to be simpler and more homogeneous, the exclusive agency and direct writing insurers have a dominant market share due to lower distribution costs and other factors.

The allocation of premium volume by distribution system in the principal property-casualty lines is further explored in Figure 1, which shows data for 2003. Distribution systems are identified by the A.M. Best Company.<sup>5</sup> In order to provide an indication of the percentage of premiums written by each distribution system, companies were classified by their principal distribution system, and premiums were totaled across firms using each of the major distribution systems. The results in Figure 1 indicate the insurers primarily using the independent agency system account for at least 50% of premium volume in all commercial lines except fire and allied, medical malpractice, and reinsurance. The highest market shares for companies that primarily use brokers are in other liability, products liability, and reinsurance. These figures somewhat understate the importance of brokers because many companies that primarily distribute through independent agents also place some of their business through brokers. However, even if all premiums for companies that utilize brokers as either the primary or secondary distribution system are assigned to the brokerage category, the total market share of brokers in all lines is only about 11 percent. The conclusions to be drawn from Figure 1 are that independent agents control a high percentage of business in commercial lines, that brokers are important in the more complex and risky lines (liability and reinsurance), and that personal lines are dominated by direct writers and exclusive agency firms, with independent agents accounting for around 27% of the personal automobile insurance market and 38% of the homeowners market.

The percentage of both commercial and personal lines business intermediated through independent distributors in the United States has been in a very shallow decline over the past two decades.<sup>6</sup> Accompanying the small decline in market share of the independents has been a consistent reduction in the number of independent intermediaries averaging about 1.3% per year since 1992 (Independent Insurance Agents & Brokers of America, 2004). Though this may have a little to do with loss of market share, it is more a reflection of consolidation, and this gradual

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<sup>3</sup> Independent Insurance Agents & Brokers of America (2004). In 2000 there were about 42,000 agencies and in 1992 there were 46,000.

<sup>4</sup> These figures are based on industry-wide data reported by in A.M. Best Company (2004). The independent agent trade association estimates that independent agents and brokers hold 79.8% of the commercial lines market and 36.6% of the personal lines market. See Independent Insurance Agents & Brokers of America (2003).

<sup>5</sup> There is some ambiguity about the percentage of business breakdown by distribution system, because many insurers use more than one distribution system. For purposes of this report we based the tabulations on the primary distribution system assigned to each insurer as reported in the A.M. Best Company, *Best's Key Rating Guide: Property-Casualty Edition* (Oldwick, NJ: annual). A.M. Best bases its marketing type definitions on questionnaires filed with Best's annually by each insurer and reflects how each company categorizes itself. The questionnaires provide information used by Best's along with other data and analysis in assigning financial ratings to insurers. Thus, the percentage breakdowns should be viewed as approximations, but we believe they provide an accurate overview of the relative premium volume of the principal distribution systems.

<sup>6</sup> Swiss Re (2004).

mergers and acquisitions trend has shown little sign of abating.

The vast majority of independent intermediaries are independent agents. In fact, the brokerage segment of the industry is highly concentrated.<sup>7</sup> Table 1 shows the brokerage revenues of the world's top ten brokers and the breakdown of their revenues by line of business, while Table 2 shows the 100 largest brokers based on brokerage revenues generated by U.S.-based clients. Table 1 shows that the world's top two brokers, Marsh and Aon, have 69.9% of the revenues represented by the top ten global brokers. Table 2 shows that Marsh and Aon account for 39.5% of revenues among the top 100 brokers in the United States. The top five brokers account for 57.2% of U.S. revenues, and the top 10 for 71.5%.<sup>8</sup>

On average, for the world's top 10 brokers, commercial lines retail brokerage accounts for 56.7% of total revenues, services account for 11.5%, wholesale brokerage for 10.3%, and reinsurance brokerage for 6.8%. Personal lines are generally not a significant source of revenue for the top brokers and are less important than commercial lines for many independent agents as well.<sup>9</sup> Thus, the bulk of commercial property-casualty lines for the large buyer segment of the market is placed by a small number of large brokers for each of whom it is their biggest source of revenue. These brokers tend to be dominant in providing insurance services to large national and international commercial buyers. However, smaller brokers and independent agents retain a significant market share among local and regional business buyers, and some of the smaller brokers are also quite competitive with the global brokers in various niche markets such as pharmaceuticals and health care management.

### ***Mergers and Acquisitions***

The current structure of the independent intermediary industry reflects a long and intensive period of merger and acquisition (M&A) activity. Many of the current leaders in the industry owe their positions to M&A activity rather than simply to organic growth. For example, in 1997 Marsh made major acquisitions of Johnson and Higgins and Sedgwick, which almost doubled its size. In 1996-1997, Aon more than doubled in size with acquisitions of Bain Hogg, Alexander and Alexander, Minet, and Jauch & Hubner. Other players also have achieved their top ten positions through aggressive M&A activity – often acquiring many small firms. For example, between 1997 and 2003, Arthur J. Gallagher completed 59 deals in North America; Accordia, 13; Brown and Brown a staggering 82; and Hill, Rogal & Hamilton 28.<sup>10</sup> Apart from the top tier of the brokerage segment of the industry, the M&A activity has been somewhat more gradual but does not seem to be abating.

The merger activity falls into several patterns. Many were broker-broker deals whereas others were bank acquisitions. Indeed banks now own 10% of the broker market, with the two big players being BB&T and Wells Fargo. Many of the acquisitions seem to have been driven by the desire for economies of scale and scope. For example, BB&T's acquisition of MSW in 2003 was

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<sup>7</sup> The following figures are from *Business Insurance*, July 19, 2004 and relate to 2003 revenues.

<sup>8</sup> Table 2 is based on concentration among insurance brokers. Comparable figures for independent agents are not readily available.

<sup>9</sup> Many small independent agencies continue to earn a majority of their revenues in the personal lines, while commercial lines tend to dominate for relatively large agencies. *Independent Insurance Agents & Brokers of America* (2004), p. 6.

<sup>10</sup> Swiss Re (2004), p. 25.

driven in large part by the desire for a “distribution network to compete with the global public brokers which will increase competition among the leading brokers.”<sup>11</sup> Other acquisitions were driven by the desire to expand into new product lines or regions. For example, by acquiring Tri-City, BISYS diversified from wholesale life insurance broking into the property-casualty market.

Although some brokers have been quite successful in expanding through organic growth, given that the property-casualty insurance is a mature industry, it will be difficult for many brokers to recognize significant growth through new business production alone. Given the need to compete with the global brokers, it would not be surprising to see significant M&A activity among regional and niche brokerages in the years to come. Likewise, mergers among independent agents and acquisitions of independent agents by larger agencies and brokerages are expected to continue, driven by the quest for scale economies and the need to compete more effectively with larger intermediaries in commercial lines and with exclusive agents in personal lines.

### *Competitive Structure*

**Barriers to entry.** There are thousands of independent agencies and brokerage firms operating in the United States, many of them comprising a handful of people. And while the number of firms has been declining with consolidation, the vast numbers of independent agencies testifies to low barriers to entry. However, the ease of entry into the market is inversely related to size. For example, it seems relatively easy through consolidation to create regional brokers by purchasing smaller regional and local intermediaries. However, entry becomes progressively more difficult further up the size continuum, and entry into the top tier of brokers would be rather difficult to achieve. The largest brokers are global in scope and have developed a level of sophistication and range of service capabilities that would be difficult to duplicate. In addition, the mega-brokers have unparalleled capability to syndicate large and complex risks that would take years to develop for de novo rivals. There have been attempts to match the global capabilities of the mega-brokers through affiliations of medium-size brokerages in various countries and regions. The degree to which such organizations can compete effectively with the more fully integrated mega-brokers is not clear (Conning & Company 2005).

**Niche and regional players.** Many of the small to medium-size intermediaries are niche or regional players. Some of these firms specialize in a line of insurance or particular products or in servicing clients from a particular industry. They play an important role in the market and effectively increase competition. For example, one brokerage firm specializes in independent oil companies, another in hospitals. While these firms are small relative to firms such as Marsh, Aon, and Willis, they can compete effectively with the leading national and global brokers for clients within their market. Indeed, in terms of expertise, data, and services specialized to a given industry, they may often have superior capability, despite their apparent size disadvantage. Given that specialized intermediaries are present in many industry sectors, the mega-brokers are effectively competing across much of their range with much smaller firms.

Further specialization intensifies competition even more. For example, many brokers are regional and can compete effectively with the globals for local clients. Even if the regionals lack the full service capability, they can collaborate with specialist providers to deliver breadth of service comparable to the global brokers. These alliances can be with firms specializing in risk

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<sup>11</sup> WFG Capital Advisors (2004).

and financial modeling, risk assessment, claims handling, and information management and technology support.

**Retail and wholesale brokers.** Global brokers, such as Marsh, Aon, and Willis, have a full service capability, including retail, placement, risk assessment, loss mitigation and control, and risk management. Such firms also have wholesale capabilities either internally or through subsidiaries. Many smaller intermediaries focus on the retail functions and lack the sophisticated risk management capabilities of the global brokers. The smaller intermediaries have the ability to place most local and regional business that comes their way but tend to use wholesalers to access specialized markets such as the surplus lines market or the London market. In this way, smaller retail intermediaries can often compete effectively with global brokers for particular accounts.

**Competition among big global brokers.** The concentration of the bulk of commercial lines business in a small number of firms describes an “oligopoly” market structure. While the medium-sized risks are often fiercely contested between the global brokers and their smaller rivals, the very largest risks tend to be placed with the top three or four global brokers. Indeed, sophisticated global programs for international clients often go through one of these players, although sometimes a smaller rival can get a piece of the action. It is difficult to generalize about the force of competition at this high level. On the one hand, the fact that there is only a handful of players who are able to compete grants each of them considerable market power from which they can negotiate advantageous terms from both their clients and the insurers with whom they do business. On the other hand, competition between a few large firms can be fierce. Indeed, this market structure is usually described as a “prisoner’s dilemma” in which cooperation between suppliers is inherently unstable and, as a result, competition usually prevails.<sup>12</sup> Similar structures where a small number of firms has been intensely competitive are airlines, automobile manufacturers, and telephone service providers. Much depends on the individual circumstances. While the top brokers may go head to head on one account, on another account, the size and core skills demanded might only be possessed by one broker who will have an effective monopoly.

The degree of competition among the mega-brokers depends upon the phase of the “underwriting cycle,” particularly for risky lines such as commercial liability insurance. The underwriting cycle refers to the tendency of commercial property-casualty insurance markets to go through alternating phases of “hard” and “soft” markets. In a hard market, the supply of coverage is restricted and prices rise; whereas in a soft market, coverage supply is plentiful and prices are more moderate.<sup>13</sup> During a hard market phase, when buyers are competing for a limited supply of coverage, the dominant brokers play a pivotal role in allocating the available supply among

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<sup>12</sup> The term “prisoner’s dilemma” comes from the practice of plea bargaining. If two suspects are caught, then a conspiracy of silence between them might prevent a successful indictment. However, an offer to one or the other, to snitch on the other in exchange for leniency, will often break the stalemate. So too with oligopolists. Collaboration by holding prices high yields high joint profits. However, each player has an incentive to undercut the cartel price. If one can gain by breaking ranks, so can others and thus the cartel is likely to fall apart and competition thrives.

<sup>13</sup> The consensus in the economics literature is that hard and soft markets are driven by capital market and insurance market imperfections such that capital does not flow freely into and out of the industry. Informational asymmetries between capital providers and insurer management about exposure levels and reserve adequacy results in high costs of capital during hard markets, such that capital shortages can develop. Insurers are reluctant to pay out retained earnings during soft markets because of the difficulty of raising capital again when the market enters the next hard market phase, leading to excess capacity and downward pressure on prices. For further discussion, see Cummins and Doherty (2002), Cummins and Danzon (1997), and Winter (1994).

competing buyers. This effect is exacerbated in the large-buyer (e.g., Fortune 500) market segment, because large accounts place more risk on insurers and hence use up significantly more capacity than small accounts, which are easier to diversify. Because the mega-brokers have a dominant position in the placement of coverage for the largest buyers, their market power is likely to increase with the intensity of the hard market. This effect is even stronger when a hard market coincides with an increase in demand for coverage in response to higher loss costs.

An important distinction between insurance intermediation and many other markets is that the nature of competition is based more on quality than on the price charged by the intermediary. The bulk of compensation for both independent agents and brokers comes from commissions paid by insurers; and, while these can be offset against negotiated fees with clients, they are not seen as a competitive tool. Rather, intermediaries compete in the quality of their risk assessments, their insurance and risk management strategies for their clients, the quality and price of insurance placements, their assistance in claim settlements, and overall service to their clients. In these dimensions, it is generally agreed that competition between the major brokers is intense. In addition, constantly nipping at the heels of the biggest players are the niche and regional players who, while they cannot compete across the board, can provide effective competition on some types of accounts.

**Effective competition.** Figure 2 summarizes the market features just described. The chart portrays the choices available to the risk manager of a firm seeking insurance. In some instances, the risk manager may be able to access the market directly, although this tends to require significant in-house risk management expertise and sophistication. Most commercial lines insurance is placed through some type of intermediary, even for the largest commercial insurance buyers. Small commercial buyers, with relatively simple coverage needs, tend to utilize local independent agents or brokers. For larger risks, the tendency is to place coverage through a regional/niche broker or through one of the global brokers. Regional and niche brokers have the capability to place most of the business they handle, but often utilize wholesale brokers to access specialty markets and/or to place risk globally through markets such as London or Bermuda. Many regional players do not maintain in-house capabilities for functions such as risk modeling but tend to outsource these functions. The largest global brokers tend to internalize all of the major brokerage functions, providing full service capabilities including risk modeling and wholesale brokerage. Hence, it is quite possible for a regional/niche player to put together coverage programs that are competitive with the global brokers, although this becomes increasingly difficult as the size and complexity of risk increases.

It is sometimes thought that the high degree of concentration of the brokerage market in a few hands indicates a lack of competitiveness. Figure 2 suggests that this argument is oversimplified. Not only do the global brokers compete with each other, but they have effective competition on smaller accounts from regional brokers and to a lesser extent from direct placement. And the ability of these regional/niche players to compete with the globals is enhanced by their specialized or local capability, and by their ability to partner with the specialist service providers and with wholesale brokers. Clearly, the mid-size firms play an important role in the market for the mid-size risk but “there continue to be opportunities for astute middle market brokers to penetrate national accounts in certain lines of business” (Conning & Company 1999).

The view that the brokerage market is competitive can be challenged by the fact that the bulk of the business in the large-buyer segment of the market is being placed by a handful of brokers.

Moreover, this concentration has been increasing over time. The bulk of risk managers of large national and global firms place much of their risk though the “top five” and have shown an increasing proclivity to do so over the years. As mentioned, much of the concentration at the top of the brokerage market is attributable to intense M&A activity over the past decade. Although M&As often have objectives other than revenue volume per se, it is clear that M&As are the primary reason for the high degree of concentration currently existing in the mega-broker segment of the industry.

The structure of the market is also depicted in Figure 3, showing the relationship between the size of the risk and competition. For the small and medium-sized risks, there are many small and regional intermediaries competing for business. However, as we go up the size scale, the ability of many of the small and medium firms to compete effectively is diminished, and the largest risks become largely the domain of a handful of mega-brokers.

In any one industry or region, smaller specialist intermediaries may well have a large market share. The greater participation of smaller intermediaries in local markets can be illustrated by comparing the leading players in various local markets with those in the national market. The data, collected by *BizJournals.com*, are self-reported so there may be some omissions and thus comparisons are illustrative rather than definitive. Table 3 illustrates a large metropolitan area, Baltimore. There are some conspicuous omissions due to non-reporting (notably Marsh & McLennan). However, it is significant that a firm that is 75<sup>th</sup> in the national ranking beats out Willis (4<sup>th</sup> nationally) and Hilb, Rogal and Hamilton (7<sup>th</sup> nationally) and is close on the heels of Aon (2<sup>nd</sup> nationally). Moreover, most of the firms in the top 19 in Baltimore do not appear in the top 100 nationally.

A recent episode illustrates what can go wrong in the commercial lines brokerage market. On October 14, 2004, New York Attorney General Eliot Spitzer filed suit against Marsh & McLennan, alleging that Marsh engaged in bid rigging and received widespread kickbacks from insurance companies. The suit alleged that insurers paid Marsh more than \$1 billion in volume-based contingent commissions through so-called “market services agreements” to steer them business and shield them from competition.<sup>14</sup> The bid rigging was alleged to have involved the solicitation of inflated price quotations from insurers which were presented to buyers as legitimate offers. On January 31, 2005, Marsh agreed to pay \$850 million in restitution to buyers as part of an agreement to settle the suit. Although the illegal market practices involved only a few employees at Marsh and a handful of insurers, the episode illustrates that the normally competitive process can go awry. However, competitive abuses are possible in any industry; and the normally competitive market for property-casualty insurance should be carefully distinguished from illegal activities that occasionally occur, not only in the insurance industry but also in a wide range of other sectors.

**Profitability of public brokers and insurers.** The returns on equity (ROE) of the brokers that were listed on public stock exchanges in the United States at the end of 2003 are

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<sup>14</sup> It is also alleged that Marsh and perhaps other brokers engaged in other questionable practices. These include “tying,” which involves requiring primary insurers to place their reinsurance through the intermediary’s reinsurance brokerage subsidiary in order to obtain primary market placements, and “related-party” transactions, where business is placed with insurers that are partially owned or controlled by the broker. These issues are beyond the scope of this report. For further discussion, see Conning & Company (2005).

plotted in Figure 4. These are book returns on equity based on generally accepted accounting principles (GAAP). The return on equity is shown for the ten year period 1994-2003. Except for Aon and Hub, the returns tend to be above 20% in most years. Marsh & McLennan's returns increased sharply in 2002 and increased again in 2003.

Figure 5 compares the average GAAP returns of the public brokers with the average GAAP returns for traded property-casualty insurers as reported in Standard & Poor's Compustat database.<sup>15</sup> Also shown is the average book ROE of all U.S. industries. It is clear that the public brokers earned significantly higher rates of return than both property-casualty insurers and the economy-wide average for all types of firms. Property-casualty insurers generally tend to earn somewhat less than the economy-wide average.<sup>16</sup> Whether the high returns of the brokers represent "excess" returns due to market power or legitimately reflect economic value added cannot be determined without further analysis. However, returns tend to be positively correlated with risk, and it would be difficult to argue that property-casualty insurers face lower risk than brokers, in view of the fact that the latter typically bear little underwriting risk. It is also not clear that the high returns of the public brokers are typical of smaller brokers and agents.

## COMPENSATION

### *The Structure of Intermediary Compensation*

Most compensation for insurance intermediaries consists of a percentage of the premiums paid on each policy. For purposes of discussion in this paper, we refer to these percentage commissions as "premium-based commissions." Industry-wide for U.S. property-casualty business, total commission and brokerage expenses represent 11.2% of premiums for commercial lines and 9.4% of premiums for personal lines (see Table 4). As Table 4 shows, the percentage varies significantly by line of business, ranging from 22.1% for fidelity and surety to 4.5% for medical malpractice. Although it is difficult to generalize, lines that are more difficult to underwrite, i.e., are more information-intensive and more complex in terms of coverages and services required, tend to have higher commission percentages.

In addition to premium-based commissions, insurance intermediaries may be eligible to receive contingent commissions, which are based on various performance criteria such as the profitability of the business placed with an insurer, persistency (i.e., the extent to which policies are renewed with the incumbent insurer), and/or the volume of business placed. Industry-wide, contingent commissions averaged about 1.1% of premiums from 1993-2002. However, this understates the importance of contingent commissions in commercial lines because some direct writers do not pay contingent commissions and because this form of compensation is somewhat

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<sup>15</sup> The Compustat database consists of GAAP accounting data, primarily on publicly traded firms. Hence, the insurers in Compustat do not represent the universe of commercial property-casualty companies. Our GAAP return data on insurers are generally consistent with insurer return data provided to the authors by the Insurance Information Institute (III). The III data consist of a larger universe of insurers and differ from Figure 5 primarily in showing lower returns in 1994 and 1995. We chose to use the Compustat data because it is obtained from GAAP accounting statements.

<sup>16</sup> The GAAP returns of the insurers may be somewhat misleading because they do not fully reflect capital gains. The average market return on equity for the traded property-casualty firms over the period shown in Figure 5 was 16.4%.

less important in personal lines.<sup>17</sup> Although insurers do not report contingent commissions by line, most observers agree that they represent 1.5% to 2% of premiums in commercial lines. Table 2 also shows contingent commissions as a percentage of broker revenues for the top 100 brokers. The unweighted average is 5.7% of revenues. For the top 100 brokers, contingent commissions tend, on average, to become larger as the brokerage gets smaller. Thus, a more accurate figure is the weighted average, which equals 4.4% of revenues. A survey of brokers showed that contingent commissions accounted for 5% of revenues in 1994 and 4.6% in 1999 (Conning & Company 1999).<sup>18</sup>

Table 5 shows the ranking of the top 50 property-casualty insurers together with the premium-based commissions and contingent commissions paid to brokers and agents, and Table 6 shows the same data series with insurers ranked by the total amount of contingent commissions paid.<sup>19</sup> From Table 5, it is apparent that some large insurers do not pay contingent commissions at all. Two of the largest insurers with zero contingent commissions are primarily personal lines writers using exclusive agents or direct marketing. Table 6 shows that the largest payer of contingent commissions is Allstate, which is primarily a personal lines insurer. However, in general, the leading companies in terms of the use of contingent commissions tend to be large commercial lines writers such as St. Paul Travelers, Chubb, CNA, Hartford, and AIG. For the top 50 companies shown in Table 6, there is a high correlation between the contingent commission rate (contingent commissions as a percent of premiums) and the proportion of business in commercial long-tail lines (correlation coefficient of 72.7%). The correlations between the contingent commission rate and the other three categories of business shown in the table are small and negative. This pattern is consistent with the premise that contingent commissions are used to align incentives between the intermediary, the insurer, and the policyholder in lines with complex coverage, underwriting, and loss settlement characteristics, such as long-tail commercial liability insurance. However, contingent commissions also are used by some personal lines insurers to encourage agents to place high quality business with the insurer.

In addition to premium-based and contingent commissions, many brokers also receive fee income from clients. Fee income is most common in instances where a significant part of the risk management and risk transfer arranged by the broker is not through traditional insurance but rather through alternative risk transfer techniques such as self-insurance and captive insurance companies. Intermediaries also often provide services such as risk modeling, risk management consulting, loss mitigation, and claims management, which do not lend themselves readily to commission-based compensation. In such cases, the broker and client will negotiate a fee to compensate the broker for services provided. If the transaction does contain a significant insurance component, the fees are sometimes partially offset by commissions. The use of fees as a significant source of revenues tends to be most common among large brokers. Most medium to small brokers and independent agents receive their compensation primarily through premium-based commissions. These transaction-based intermediary fees are typical of many activities

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<sup>17</sup> Morgan Stanley (2004).

<sup>18</sup> The explanation for the larger brokers to have a lower percentage of revenues from contingent commissions may not be because their fees are smaller; rather that they get a higher portion of their revenues from ancillary services. Moreover, there is plenty of variation with some brokers receiving up to 12% of their revenues from contingent commissions and others receiving 1% or less.

<sup>19</sup> Premium-based commissions are labeled as “direct commissions” in the table, following the name of the item corresponding to premium-based commissions in the National Association of Insurance Commissioners annual statement, which is the source of the data in Tables 5 and 6.

from real estate to automobile sales.

Intermediaries also receive non-cash compensation from insurers. Usually, this takes the form of travel and vacation awards given to intermediaries in recognition of superior performance. This reflects the fact that for many insurers a remarkably high proportion of their premium volume is generated by a small percentage of the intermediaries with whom the insurer has sales agreements. The non-cash awards are an important device to maintain the loyalty of such high-volume intermediaries. In addition, the vacation trips often involve informal meetings with insurer executives, further strengthening the bond between the intermediaries and the insurer.

### ***Contingent Commissions***

As mentioned above, contingent commissions are payments made by an insurer to an agent or broker based, not on individual transactions, but on some aggregate index of the activity placed by that intermediary. Typically, these contingent commissions are based on the profitability of the intermediary's book of business with the insurer and/or on the volume of business. Volume or growth-based contingent commissions, particularly in the mega-broker market segment, are often called placement services agreements (PSAs) or market services agreements (MSAs).<sup>20</sup> Another factor that is sometimes used in contingent commission agreements is the retention rate, i.e., the percentage of policies written by the agent that renew with the same company. Contingent commission arrangements vary widely. However, the great majority of the arrangements covering the smaller intermediaries are based on the profitability of the business written or on profitability and volume.

No systematic data are available on the prevalence of profit-based and volume-based contingent commissions. However, it is clear from Table 4 that the payment of contingent commissions varies significantly across the insurance industry, even for firms writing commercial property-casualty insurance. Based on interviews conducted by the authors with insurance industry executives and intermediaries, the most reasonable conclusions seem to be that most contingent-commission agreements are profit-based rather than volume-based and that volume-based commissions tend to be used in specific market segments and tend to be more common among large brokers than for smaller intermediaries.

Some insurers may have different compensation arrangements with different intermediaries, and there may be different contingent commissions for different lines of business. Usually, these arrangements span a number of lines of insurance and may be offered separately at each branch of a brokerage firm, depending upon the broker's organizational structure. Thus, a regional broker in the Northeast may have separate agreements in its Boston office and in its Hartford office with the same insurer. Occasionally, a national broker will have a unified agreement with an insurer that spans multiple branches.

Contingent commission structures are usually progressive in the sense that the marginal rate of the commission increases with the level of activity. For example, a minimum volume of business and profitability is required to be eligible for the incentive commissions; a low rate is paid on

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<sup>20</sup> Placement services agreements (PSAs) or market services Agreements (MSAs) are agreements through which insurers pay contingent commissions to brokers based primarily on premium volume or growth. After the Marsh scandal became public, most of the mega-brokers have renounced contingent commissions.

profit or volume above the minimum; and the rate increases as higher profit or volume triggers are attained.

The contingent commission arrangements between an insurer and the intermediary often reflect converging incentives. For example, an insurer wishing to promote a certain class of business might design a commission structure that rewards such business. Then the insurer will offer this structure to intermediaries that have a particular expertise in that class. From the intermediary's perspective, these arrangements enhance access to the insurers that are best able to compete for its clients' business and have the risk appetite for it. We discuss the incentive effects of contingent commissions below. In the meantime, we offer some quantitative information on these structures.

Contingent commissions based on profitability of the business placed tend to be most important where the intermediary performs some underwriting functions or has information that the insurer cannot access directly in a cost-effective manner, especially more subjective information about the quality of the risk. For example, managing general agents (MGAs), which account for a relatively small share of the market, often perform both placement and underwriting functions for the insurer. Where underwriting is delegated in this way, it is important that the MGAs be given an incentive to underwrite the risk carefully, leading to an important role for profit-based contingent commissions.

Likewise, for some small business accounts and even in personal lines, where the prior loss experience is not sufficient to be credible or where it is not cost effective for the insurer to conduct a thorough analysis of the risk, insurers often rely on the superior knowledge of intermediaries. In these cases as well, profit-based contingent commissions provide an incentive for the intermediary to provide a quality control screen on the business placed with the insurer. However, in the market for the largest risks, especially in lines of insurance that tend to be commoditized, the loss data tend to be credible; and all insurers giving quotes on an account tend to have access to the same information, often provided in an offering document that is sent to insurers from whom quotations are being solicited by the broker. In this market, profit-based contingent commissions are less important, and contingent commissions tend to be volume-based. There is some question about the economic rationale for the existence of volume-based contingent commissions in this market segment, and most of the largest brokers have abandoned volume-based commissions in the wake of the Spitzer and other investigations.

The economic rationale for volume-based commissions is that they enable insurers to achieve economies of scale and a desirable spread of risk in their underwriting portfolios. There tend to be fixed costs of dealing with any given intermediary, and having a larger volume enables the insurer to reduce its unit costs of administering any given intermediary relationship. In addition, to some degree, the insurer can obtain more diversification of risk if it obtains larger volume from its intermediaries, although diversification also can be achieved by receiving smaller volumes of business from a larger number of intermediaries. Volume-based commissions also can be used as a competitive device to provide incentives for intermediaries to place business with a particular insurer. To the extent that volume-based commissions are not disclosed to buyers, however, it is possible that undisclosed "steering" may take place and buyers may end up paying higher prices than if volume-based commissions were not used.

To the extent that volume-based commissions represent compensation for services performed by

intermediaries, there is likely to be some degree of “elasticity” or trade-off between PSAs and MSAs and premium-based commissions and fees. Hence, the reduction in the use of volume-based commissions may lead to an increase, although probably not dollar for dollar, in other types of compensation.

## AN ECONOMIC ANALYSIS OF INTERMEDIARY COMPENSATION

### *Do Commissions Affect Premiums?*

As mentioned, the bulk of the compensation for agents and brokers comes in the form of premium-based commissions; usually a flat percentage of premiums which varies across lines of business and insurers. In addition to premium-based commissions, agents and brokers often receive contingent commissions from insurers based on some combination of profit and other metrics of the book of business placed with the insurer, such as volume or persistency. In this section, we consider whether premium-based and contingent commissions increase the price paid by policyholders, or whether they are absorbed by the insurer. We first examine the economic theories which speak to this issue; then we estimate what happens in practice. Two related sets of theoretical results are considered: (1) the micro-economic literature on the incidence of taxes; and (2) the literature on the financial pricing of insurance contracts.

**Micro-economic tax incidence theory.** Are contingent commission passed through to policyholders in price increases or are they absorbed by insurers in reduced profit? This question resembles a similar issue addressed in public finance: Are taxes imposed on firms, passed on in price increases or absorbed by the firms? This tax question is labeled the “incidence of tax” in economic theory, and the answers are somewhat counterintuitive.<sup>21</sup>

Consider a firm making and selling a product on which a tax is imposed on the quantity of the product sold (e.g. \$2 per pack of cigarettes, 50 cents per gallon of gasoline, etc.). For such volume-based taxes, the incidence of tax literature generally shows that the proportion of the tax passed on as a price increase depends on the elasticity of demand; the less elastic the demand, the greater the proportion of the tax passed through to prices. However, applying this result to predict the effect of volume-based contingent commissions is a little precarious. Obviously, the genesis of the payment is different. In the case of a tax, the form and amount of the tax are determined through the political process and the revenues are used to pay for various public services, whereas the form and amount of commissions arise through the operation of competitive insurance markets. Second, volume-based commissions are based not on the quantity of insurance policies sold, but on the revenue from such sales; i.e., premiums.<sup>22</sup> A third problem is that, while the quantity tax is a deadweight cost to be shared between the consumer and producer, premium-based contingent commissions often are accompanied by real changes in costs and possibly gross revenues. Such fees are partly designed to compensate insurers for services provided by the intermediary. Thus, the net cost of the commissions to the insurer is reduced by such cost savings. In addition, such commissions can promote growth of revenues.

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<sup>21</sup> A good textbook coverage is given in Fullerton and Metcalf (2002). See also Entin (2004).

<sup>22</sup> Insurers, like other firms, can maximize profit by choosing an output level at which marginal revenue (net of fees) equals marginal cost. The revenue fee reduces marginal revenue for any given price. Thus, the price at which (after fees) marginal revenue must equate to marginal cost is higher. Since the marginal revenue in turn depends on demand elasticity, then the increase in price resulting from the fee depends on the demand elasticity.

The second form of contingent commissions, based on profitability, resembles profits taxes. The incidence of tax literature suggests that profits taxes should not affect prices since they do not affect marginal costs or revenues. However, transferring this result to profit-based contingent commissions is also hazardous. The profit metric used usually is not residual profit available to shareholders, but measures such as “underwriting profit.” Second, revenues and costs may well be impacted by the profit-based commissions. We believe that these commissions can favorably influence the risk selection and pricing for the book of business that the intermediary conducts with its insurer. Thus, for both profit-based and volume-based contingent commissions, the incidence of tax literature is of limited value for analyzing how insurance prices are affected.

**Financial pricing theory.** A possibly more appropriate theoretical construct to analyze the issue of whether commissions are passed through to buyers is insurance financial pricing theory (e.g., Myers and Cohn 1987). Financial theory posits that insurers operating in competitive insurance and financial markets will collect premiums sufficient to cover the expected losses and expenses from issuing insurance policies as well as a profit loading sufficient to cover the cost of capital (i.e., the economic cost of bearing risk). Expenses that are passed along in this model include all commissions, administrative expenses, and taxes, including corporate income taxes. Thus, under financial pricing theory, the pass-through rate for all types of commissions would be 100%, and insurers on average would earn a fair competitive rate of return equal to the cost of capital. The financial pricing result hinges on the hypothesis that insurance markets are competitive, such that insurers do not on average earn profits in excess of the cost of capital. Most economists who have evaluated insurance markets have concluded that property-casualty insurance markets are competitively structured. Thus, the prediction of this theory is that 100% of the commissions would be passed through to buyers.

The amount of the commission that actually is passed along to buyers depends upon whether conditions in the insurance market more closely resemble those assumed in the micro-economic tax incidence literature, where commissions represent deadweight costs and there are some monopoly profits earned by insurers, or those assumed in the financial pricing literature, where commissions are expenses for services rendered and insurance markets are competitive. We provide some empirical evidence on this issue below.

**Empirical Evidence.** Here we examine whether commissions and contingent commissions actually affect premiums. This study is possible because insurers vary considerably in the commissions and contingent commissions they offer. We investigate whether the insurers which offer higher levels of commissions and fees also have higher prices. Insurance premiums are set to cover expected losses but also include a markup for expenses, profits and, possibly (this is our question here) commissions paid to brokers and agents.

Consider that the premium,  $P$ , is set to cover expected losses,  $L$ , expenses,  $X$ , and that some portion  $a$  of premium-based commissions,  $C$ , will be passed through to the premium as well as some portion  $b$  of the contingent commissions,  $F$ . If insurers were setting premiums like this, they would utilize the formula

$$P = L + X + aC + bF$$

Thus, for any additional dollar of contingent commissions, a percentage  $b$  would be added to the price, and for an additional dollar of premium-based commission, a percentage,  $a$ , would be

added to the price. We scale the equation as follows:

$$\frac{P-L}{L} = \frac{X}{L} + a \frac{C}{L} + b \frac{F}{L}$$

The left hand side is now the price markup or the *premium loading*. Since we know that commissions and contingent commissions vary across insurers, we can now ask whether the premium loading varies across insurers in response.

Before estimating the values of  $a$  and  $b$ , we must account for other factors that can influence insurance premium rates for each insurer. These will include the size of the insurance firm, its degree of financial leverage, the mix of business by line, and its diversification across lines of business. We will also look at reinsurance commissions. A primary insurer would naturally factor the cost of reinsurance into the price charged for the primary policy.<sup>23</sup>

Regressions using these control variables are shown in Table 7. The results from this table relate to all lines of business.<sup>24</sup> The regressions indicate a statistically significant positive relationship between premium loadings and both premium-based commissions and contingent commissions. The coefficients in bold show that about 88 cents of each dollar of contingent commissions and about 75 cents of each dollar of premium-based commissions are added to premiums.<sup>25</sup> To see how much premiums are affected, consider that, on average, commissions are about 10% of premiums and contingent commissions about 1-2% of premiums. Thus, on average, ordinary commission would add about 7.5% to premiums and contingent commissions would appear to add somewhat less than 2%.

This analysis provides empirical evidence that insurance companies pass on most of the premium-based and contingent commissions in the premiums they charge to buyers. However, this does not necessarily mean that policyholders are harmed by contingent commissions. By analogy, consider the payment of a 6% commission to a real estate agent by the seller of a house. Is this a deadweight cost to the seller? The answer clearly must take account of services provided by the agent. Moreover, if the agent helps to negotiate a higher sale price than the seller could have obtained, the net proceeds from the sale can even be higher, despite the payment of the commission. Similarly, when examining contingent commissions, we must also account for the economic benefits they convey. For example, to the extent that contingent commissions motivate intermediaries to place specific risks with insurers who are interested in bearing such risks or

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<sup>23</sup> Reinsurance is insurance among insurers. For example, an insurer with high exposure to homeowners insurance in Florida may seek to reduce its exposure by purchasing reinsurance from a professional reinsurer or from another primary insurer with a better spread of risk. Use of reinsurance enables insurers to achieve higher levels of diversification and thus reduce the risk of financial distress.

<sup>24</sup> The data for the regressions are from insurer annual financial statements filed with the National Association of Insurance Commissioners (NAIC). The regressions use a pooled cross-section, time series sample consisting of the maximum number of property-liability insurers with usable data for the period 1993-2002. Insurers report overall premium-based and contingent commissions to the NAIC but do not break out premium-based and contingent commissions by line of insurance. Thus, it is not possible to conduct the analysis by line of insurance.

<sup>25</sup> These are ballpark estimates. Both commissions and contingent commissions have been divided by losses (as opposed to expected losses anticipated when setting premiums). Because losses have some randomness inherent in them, it creates an econometric problem known as “errors in variables,” which has the effect of biasing coefficients towards zero. So our estimates of these coefficients are likely to be biased downward. However, it is clear that a substantial amount of premium-based and contingent commissions are passed along through the price of insurance.

have particular capabilities in providing services to certain types of risks and to the extent they provide incentives for enhanced front-line underwriting, the quality of the insurance transaction is improved and the buyer is less likely to switch insurers in future periods, thus reducing expected search costs.

### ***Principal-Agent Theory***<sup>26</sup>

We argued in the introduction that insurance intermediaries perform functions on behalf of both policyholders and insurers. This complicates the question of whether the intermediary is an agent of the policyholder or of the insurer. Let us put aside this larger question for the moment and consider an intermediary who is engaged by a client to act on the latter's behalf. In this respect, and for the functions agreed, it may be said that the intermediary is the agent of the policyholder.

Economists have analyzed many issues similar to those involved in the insurance placement process under the general topic heading of *principal-agent problems*. The principal is someone who hires another party (the agent) to act on his or her behalf. Thus plaintiffs (principals) hire lawyers (agents) to act on their behalf; patients hire doctors; etc. A particularly important example is that directors of a firm (representing shareholders) hire managers to run the business. As with all principal-agent relationships, do the managers (agents) really act in the best interest of the shareholders (principals)?

The reason principals employ agents is that the principal does not have the expertise to act on his/her own behalf, nor does he/she have the time or skills to monitor what the agent is doing. This inability to monitor constantly what the agent is doing leaves some freedom for the agent to act on his/her own behalf. Thus, the firm's management might be tempted to do things that enhance their prestige, extend their personal tenure, or simply redirect money and resources to themselves, rather than creating value for the shareholders. This promotion of the agent's self-interest is known as the *principal-agent problem* and is a type of *moral hazard*. A moral hazard problem is said to exist if the agent's actions are biased towards pursuing his/her own interests rather than those of the principal. The usual antidote is to design a compensation structure for the agent that aligns the interests of the principal and agent. Such compensation structures are said to be *incentive compatible*.

### ***Insurance Intermediary Compensation in the Principal-Agent Framework***

We now look at the compensation of the insurance intermediary (broker or independent agent) to see whether it is incentive compatible. From theory, we would expect that compensation would be sufficient to cover the intermediary's costs and to reflect the value created for the clients. We start with the assumption that the intermediary is acting on behalf of the policyholder.

If the intermediary is offering its traditional product, designing coverages and placing insurance, the compensation is usually a commission. Does this commission provide a good measure of the cost of the intermediary and/or the value created for the policyholder? Transaction-based commissions are common (real estate agents, travel agents, fund managers, etc.) and these fees

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<sup>26</sup> In this section, we utilize the term "agent" in the sense that it is used in the economics literature, where the agent is defined as a party who carries out a specific task or tasks on behalf of another party, the "principal." The analysis is meant to apply to both types of independent insurance intermediaries – brokers and independent agents.

are probably roughly scaled to costs (the agent's costs are usually larger for larger denomination transactions).

With respect to the relationship between the premium-based commission and the value created for the client, the issue is a little more complex. Clients probably gain more peace of mind and more financial stability for transferring their large and most expensive risks. In this sense the scaling of commissions to premiums is roughly consistent with value added. The premium-based commission provides the intermediary with more compensation:

- The more financially sound the insurer.<sup>27</sup> This encourages brokers to seek out sound insurers, which is clearly in the client's interest.
- The more extensive the insurance coverage. More coverage may or may not be in the client's interest depending on its exposure and its alternative risk management strategies.
- The higher the premiums charged for given coverage. This acts against the client's interest, at least in the short run.

Thus, at face value, the impact of a premium-based commission on intermediary incentives is mixed; much depends on the particular case. However, there are other features of the commercial insurance market which align the interests of intermediaries with those of their clients:

- When intermediaries disclose their compensation arrangements to their clients, the clients can take the compensation into account when deciding whether to engage the intermediary. It is generally recognized in economics that markets work best when complete information is available to all market participants. As shown below (see Box 2), intermediaries play an important role in mitigating information asymmetries and reducing adverse selection in insurance markets. Box 2 shows that they can play this role more effectively if compensation is transparent to buyers. Hence, disclosure of intermediary compensation arrangements is in the best interests of insurance buyers and ultimately will lead to more efficient insurance markets.<sup>28</sup>
- We argued that the insurance intermediary market is generally competitive. However, competition is based more on quality than price. Thus, intermediaries do compete in the variety and quality of services they offer and in the success of the insurance programs they implement for their clients. In such an environment, intermediaries are competing with each other to design programs that add value. In order to retain clients, intermediaries face a burden of proof that they have delivered value to their clients.
- Brokers in particular sometimes negotiate a fee with their client in lieu of commission. When the placement involves a significant amount of insurance, the commission may be

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<sup>27</sup> Insurers with higher credit ratings do typically charge higher premiums. This reflects the higher demand from policyholders for highly rated companies, and the fact that such insurers must charge for the costs of holding additional capital to secure such high ratings. See Cummins and Danzon (1997).

<sup>28</sup> However, policy makers should use caution in imposing additional regulations relating to disclosure. For example, requiring intermediaries to make detailed allocations of contingent commissions to specific buyers would be of questionable value and might raise the price of insurance by unnecessarily adding to administrative costs.

netted against the negotiated fee. Such fees are used most often for high-end commercial clients where the risk management program includes significant elements that do not involve the placement of insurance with a third-party insurer, such as self-insurance and captive insurance companies. In such cases, the terms of the negotiated fees, rather than the percentage commissions, will control broker incentives.

### ***Contingent Commissions in the Principal-Agent Framework***

Now let us look at what principal-agent theory has to say about insurer contingent commissions. One view, outlined in the introduction, is that independent agents and brokers are intermediaries who cannot be exclusively cast as either agents of the client or agent of the insurer. Insurance intermediaries perform functions for both parties. Given the principal-agent model, we might expect a complex compensation structure with elements designed to support the functions the intermediary provides for the insurer. One such element could be contingent commissions. This principal-agent model has been explored by Wilder (2002) in what, to our knowledge, is the only empirical study of the effects of contingent commissions on broker and agent behavior.

The decision to place insurance with a particular insurer must balance a number of factors. The intermediary must search out the insurers that are willing to quote on such risks and then compare price, coverage, claims paying reputation, financial condition, and other factors. The intermediary and client compare quotations from several insurers and make a selection. Is the selection also influenced by the contingent commissions offered by the competing insurers? Wilder examined the placement and renewal activity of a privately-held regional agency. In this agency, the placement of new business and the retention of existing business were indeed influenced by a number of factors, one of which was the contingent commission from insurers.

Wilder's results pose two questions. First, can they be generalized? On this question, without further research, we can say little. The results were generated in a small regional agency, and it would not be appropriate to generalize the result across the full spectrum of insurance intermediaries.

The second question posed by Wilder's results is this: If there is indeed a marginal shift in the placing and renewal of business based on contingent commissions, does it harm or benefit the policyholders? Wilder's study is mute on this issue. One possible interpretation of these results would be disturbing. In this interpretation, the intermediary is not concerned with the best placement for the client; only with the contingent commission. Arguing against this interpretation are the following: contingent commissions account for only about 5% of revenue, whereas the majority of revenue is generated from premium-based commissions. If, as we argue, most of the intermediary market is competitive, then any intermediary who makes an inferior placement in pursuit of higher contingent commissions is balancing a small gain against the possibility of a much larger loss, i.e., the loss of the premium-based commission if the client becomes dissatisfied and switches to a competing intermediary. Such inferior placements are hardly likely to escape the scrutiny of a sophisticated client. Moreover, even with unsophisticated clients, a pattern of inferior placements is unlikely to escape the attention of rivals. Either way, the offending intermediary is likely to jeopardize the much larger premium-based commissions and overall relationship with the client in pursuit of small differences in contingent commissions. Of course, it is possible that intermediaries might advise clients to select between otherwise equally attractive insurers on the basis of contingent commissions, but

that would not necessarily harm the policyholder.

The importance to the intermediary of the ongoing relationship with clients and the predominance of premium-based commissions as a source of compensation underscore the incentives the intermediary possesses not to exploit contingent commissions to the detriment of the buyer. There is a market for brokerages and independent agencies – brokers or agents who retire often sell their business to another intermediary and, as mentioned, there is an active mergers and acquisitions market in insurance intermediaries. The value of the intermediary in a sales transaction is the present value of its future net cash flows. Because the primary source of cash flows consists of premium-based commissions, intermediaries have a strong incentive not to take actions that might threaten such commissions. In addition, an important determinant of the present value of future cash flows is the intermediary's retention rate, i.e., the percentage of its clients that renew their business with the agency each year. Taking actions that are detrimental to buyers to earn contingent commissions has the potential to reduce the retention rate and thus threaten the value of the intermediary. Hence, the overall economics of insurance intermediaries argues against the prevalence of scenarios where contingent commissions are misused.

### ***Contingent Commissions and Insurer Barriers to Entry***

The role of contingent commissions in aligning incentives between intermediaries and insurers may have beneficial spillover effects in insurance markets. An important determinant of the degree of competition in any market is the ease with which new firms can enter the market. If entry is relatively unrestricted, the existence of supra-competitive profits will attract new firms into the industry, driving prices down to competitive levels. The history of the property-casualty insurance industry over the past 10-15 years suggests that entry into the industry is relatively unrestricted. New companies were formed and significant amounts of new capital flowed into the industry following such pivotal loss events as Hurricane Andrew in 1992 and the September 11 World Trade Center terrorist attacks in 2001. Contingent commissions can help new insurers to enter the industry because their beneficial incentive effects help to overcome the reluctance of intermediaries to deal with new insurers where no established working relationship exists. Absent contingent commissions, new entrants might find it difficult to obtain high quality placements from intermediaries, who might naturally prefer dealing with established insurers with whom they have developed relationships over long periods of time. By linking the intermediary's compensation to the underwriting quality of the business provided the insurer, the new entrant can ensure a flow of business that meets its underwriting standards and hence can compete more effectively with established rivals. The increased competition resulting from new entry into the industry ultimately is beneficial to insurance buyers.

### ***Insurance Agents and Brokers as Information Intermediaries***

We will use a widely accepted economic model to show that contingent commissions can be beneficial to policyholders.<sup>29</sup> To set the stage, note that almost all contingent commission structures are designed by insurers and that, apart from the volume-based commissions for the

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<sup>29</sup> The model we use analyzes market equilibrium under conditions of *asymmetric information*, i.e., the situation where one party to the transaction (buyer or seller) has more information than the other. The two primary papers we rely on are Akerlof (1970) and Rothschild and Stiglitz (1976). Both Akerlof and Stiglitz received Nobel prizes in economics in recognition of their work on asymmetrical information.

largest brokers, most are based significantly on profitability. Why would insurers adopt this strategy? The key lies in the fact that the intermediary has valuable information about its clients, and the insurer is interested in extracting this information in order to attract good risks and to price policies accurately. If this can be done, then much of the frictional costs of insurance can be removed; and this will benefit all parties, especially policyholders who would otherwise bear such costs in the form of higher premiums.

To underwrite insurance and set premiums, insurers require information about risk. From an aggregate viewpoint, the insurer can only stand behind its promises if it is financially sound. This implies that the insurer must be able to measure the risk in its portfolio, spread risk in its portfolio, carry sufficient capital to absorb unexpected claims, and charge premiums that cover the risk that each policy brings to the portfolio. This requires information about each risk, and here the intermediary plays a very important role.

For the insurer to make a price quotation for a risk, it needs information about level of risk; i.e., the probability and potential size of claims. The insurer can carry out a risk survey and this can be expensive; the more the insurer is willing to invest in the survey, the more information it can yield. But even the most comprehensive risk survey will not fully reveal the level of risk. Moreover, certain aspects of a risk (e.g., behavioral traits of the policyholder) simply cannot be directly observed. This means that insurers are never fully informed when they quote for insurance; either because of inherent difficulties in measuring risk or because they simply cannot afford a very expensive survey given their prospects of winning the business.

The difficulties in completing insurance transactions with limited information are exacerbated if the parties are not equally informed. Endemic to insurance is the problem of “adverse selection,” which arises when the policyholder knows more about the risk than the insurer. This occurs in all forms of insurance. The motorist knows more about his/her driving habits and skills than the insurer, the life insurance policyholder knows more about his/her health than the life insurer, and industrial firms know more about their operations and the risks they generate than the insurer.

Asymmetric information can be used strategically. Insofar as the insurer is unable to differentiate risks, it may try to charge uniform premiums to good (low) risks and bad (high) risks alike. Thus, the good risks will end up subsidizing the bad. This implies that bad risk policyholders will find insurance very attractive and will demand considerable insurance, but the demand for insurance by good risks will be light and might disappear altogether. Thus, asymmetric information “crowds out” the good risks, and insurance is only fairly priced for the bad risks. The insurance market ends up with an adverse selection problem, with the insured population representing primarily the higher risk clients. The costs of adverse selection fall on policyholders, particularly the good risks, who may have to pay excessive rates or accept diminished coverage. Insurers recognize the problems caused by lack of information, and this is reflected in the prices and coverage they offer. But, if adverse selection can be avoided, policyholders will be better off.

Although adverse selection had long been a well-known problem in insurance and other markets, the first important analysis based on economic theory was provided by George Akerlof (1970), who analyzed the problem in the context of the market for used cars. Michael Rothschild and Joseph Stiglitz (1976) then showed how adverse selection might be resolved in the context of a

market for insurance.<sup>30</sup>

In Box 1 we show Rothschild and Stiglitz's elegant solution. The insurer offers a menu of policies to all comers. But these policies are designed such that some policies will be appealing to people who know they are of low risk, while other policies are appealing to people who know themselves to be high risk. For example, consider a choice between *policy A*, a high priced policy for auto insurance which provides full coverage at a price that is self-supporting if the policy is purchased by high risks, and *policy B*, a policy offering partial coverage at a price that is self-supporting if it is purchased by low risks. Those who know they are high risks (and know they are likely to crash their car) will tend to choose *policy A* (full coverage), while the low risks will favor *policy B* (partial coverage at a lower unit price). There are other ways the menu can be designed, but the common theme is that low risk policyholders still bear the costs of adverse selection by having to choose between full coverage at unfairly high prices or reduced coverage at fair prices. Because the high risks are offered full coverage at a price which is actuarially fair for their risk characteristics, they choose to buy these policies, and the market stabilizes. Although this may not seem to be a particularly attractive solution for the low risks, it is in fact a considerable improvement over the alternative – Rothschild and Stiglitz show that without the self-selection equilibrium in place, the market can fail in the presence of asymmetrical information, i.e., coverage will not be available.<sup>31</sup>

Now enter the intermediaries. In many cases, particularly for small and medium-size commercial buyers, intermediaries have more information about buyer risk characteristics than the insurers who are asked to provide price quotes. Intermediaries will often do their own risk analysis before structuring an insurance or risk management strategy. Moreover, the intermediary often has a relationship with a policyholder over a number of years and has much more information about the risk than a new insurer who might bid on that risk. Intermediaries can therefore play a very valuable role in transmitting information about the risk to the insurer.<sup>32</sup>

If the intermediary had an adversarial relationship with its insurers, then clearly insurers would be unwilling to accept at face value information about the risk from the intermediary. Insurers would naturally be suspicious that the intermediary would under-represent the risk to obtain better terms for its clients. Thus, informational asymmetries between buyers and insurers would continue to exist, and the adverse selection model depicted in Box 1 would apply. Policyholders bear the costs of this unmitigated adverse selection.

Now suppose that the intermediary and insurer can align their interests through an arrangement where the intermediary's premium-based commission is supplemented by a commission based on the overall profitability of the portfolio of business transacted. In other words, the intermediary receives a profit-based contingent commission. This provides an incentive for the intermediary to transmit credible information about its clients' risks to the insurer. Insurers will

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<sup>30</sup> The problem is not confined to insurance. As these and other authors have shown, it can apply in many markets, from used cars to credit cards.

<sup>31</sup> Although the market failure scenario may seem extreme, there is evidence that it characterizes substantial segments of the market for individual health insurance. The research on informational asymmetries has been extended by numerous authors. Dionne, et al. (2000), give a summary of the various models. Chiappori, et al. (2005) provides a summary of the empirical evidence supporting the models.

<sup>32</sup> For further economic analysis of the informational role played by independent agents and brokers, see Regan and Tennyson (1996).

be more willing to provide quotations and more willing to price competitively. The benefits for the policyholders are shown formally in Box 2. With this trust relationship, information flows freely, adequate coverage is available at competitive prices, and the adverse selection problem is significantly reduced.

In practice, the role of agents and brokers in resolving the adverse selection problem by acting as information intermediaries is likely to be most important for small to middle-market accounts. Here it is normal for the intermediary to provide risk information in the submission, and insurers often rely on this information to develop their price quotations. For large accounts where the premium volume is sufficiently high, insurers will almost certainly undertake or have access to their own thorough risk analysis before quoting for the business. On smaller risks, the agent or broker's role as an information intermediary becomes more important and the benefits to the policyholder from reducing adverse selection (as described in Boxes 1 and 2) will be secured.

### ***Contingent Commissions and the Settlement of Claims***

An important function of intermediaries is to assist their clients in the settlement of claims. If the intermediary is paid a profit-based contingent commission then, all else held constant, a larger claim settlement will reduce insurer profit and thereby reduce the intermediary's contingent commission. In theory, the profit-based contingent commission may create a short-term disincentive for the intermediary to represent the best interests of its clients when it comes to claims.

Would intermediaries be tempted to act against the interests of their clients in this way? While we cannot dismiss the possibility of such perverse behavior, we think it is unlikely for the following reasons.

- We have argued that the insurance intermediary market is generally competitive. Moreover, the clients will be acutely aware of the cooperation they receive from their intermediaries in the negotiation of claims with the insurer. In such a setting, the intermediary failing to act properly is unlikely to retain its clients and hence would jeopardize the (much larger) premium-based commission and reduce the market value of the intermediary's operation. Moreover, any individual claim is unlikely to have much impact on the profitability of the intermediary's book with the insurer and therefore on the intermediary's contingent commission. For the intermediary to significantly increase its contingent commission, it would have to undertake a sustained campaign of dampening claims. Such a campaign is unlikely to escape attention, and the intermediary's reputation would be damaged, possibly fatally. Such a scenario also may assume that the intermediary has more influence over claims settlement than it actually has in most instances. Intermediaries often act as effective advocates for policyholders in claims settlement disputes with insurers, but attempts to intervene in a high proportion of the claims settlements affecting their clients would likely be resisted by both the clients and the insurers.
- Insurers that develop a reputation for fair treatment of claims will enhance the demand for their products and this can increase long-term profitability. In the longer term, the intermediary that places business with such insurers, and represents its clients' interests

with integrity, will share in the value creation and enhanced profitability. Thus, the short-term incentive created by profit-based commissions for the intermediary to suppress claims may well be trumped by a longer term incentive to collaborate with both its clients and insurers to see that policies are competitively priced and claims are fairly resolved.

- Intermediaries who are perceived as dealing unfairly with clients with respect to claims or other aspects of the relationship expose themselves to liability lawsuits for errors and omissions. This provides another powerful motivation for intermediaries to represent their clients' best interests in the settlement of claims.

## **PLACEMENT OF POLICIES BY INTERMEDIARIES**

### ***Insurance is a Multi-Dimensional Product***

Insurance is a complex, multi-dimensional product where intermediaries play a critical role as “market makers.” Prior to seeking insurers to underwrite the risk, the intermediary works with the client to identify coverage needs and assist in designing a risk management program. The intermediary then surveys the market to match the buyer with insurers who have the skill, capacity, risk appetite, and financial strength to underwrite the risk, and then help their client select from competing offers. Price is important but is only one of several criteria that buyers consider in deciding upon the insurer or insurers that provide their coverage. Also important are the breadth of coverage offered by competing insurers, the risk management services provided, the insurer's reputation for claims settlement and financial strength, and other factors.

The relative importance of the various functions carried out by the intermediary varies by market segment. For the smallest risks, which do not have risk management departments, the role of the intermediary in recommending the appropriate insurance policies is critically important. The intermediary then places the coverage with an insurer that has the appropriate combination of price, financial strength, and reputation for paying claims fairly. For larger risks with in-house risk management departments, the basics of coverage design usually are carried out by the buyer. The role of the intermediary is shifted away from basic risk management and more toward making recommendations in complex or sophisticated areas of risk management where the buyer may not have expertise. The intermediary's knowledge of the insurance market, including the ability to find appropriate insurers to provide price quotations remains critically important. In the case of very large risks, coverage is likely to be syndicated over many insurers, requiring considerable skill on the part of the intermediary. These activities are undertaken when the intermediary acquires a new client, when a new risk emerges for an existing client, or when an existing client explores new alternatives.

Intermediaries and their clients usually resubmit their business to the market periodically. This can reflect dissatisfaction with the incumbent insurer or simply the desire to periodically check the market to determine whether rival insurers can offer better prices, coverages, or service. Intermediaries usually work with their clients to determine the circumstances and schedule by which existing business will be resubmitted to the market. In this section, we will discuss the price quotation process and the difficulties facing the intermediary and client in selecting from competing offers.

The frequency with which accounts are put out for price quotations varies by the size of the account, the importance of services versus price, and the line of business under consideration. Commercial insurance policies can be broadly classified as *service-intensive* and *commoditized*. In service-intensive lines, such as workers' compensation insurance for relatively large risks, the services provided by the insurer are critically important, as they involve loss control and mitigation programs as well as benefits administration and even rehabilitative services. With such accounts, the workers' compensation insurance program is often integrated with the firm's personnel management system. Because the costs of switching insurers in such cases is relatively high, service-intensive accounts are put out to market less frequently than accounts which are less service-intensive. For example, such lines may be shopped systematically only every three to five years. In other lines of insurance, such as commercial property coverages, services tend to be less important and the lines tend to become "commoditized." This implies that buyers care primarily about price, contingent on insurers' meeting a minimum threshold with regard to financial rating and reputation for claims settlement. Commoditized lines of business typically are put out to market every year, and switching of insurers occurs frequently. In addition, large accounts tend to be shopped more frequently than smaller accounts such as, say, commercial multiple peril policies bought by small businesses from independent agencies.

The process of searching for insurers and seeking price quotations also varies according to the nature of the risk, the depth and breadth of the market, and the nature of the relationships established between the intermediary and the insurers. For example, to place the liability risks of a biotech company, the intermediary may seek out quotations from insurers that focus on this type of risk, as well as from other insurers with which the intermediary has a successful relationship and therefore can be relied on for competitive price quotations. Depending on the size of the risk and the breadth of the market, the intermediary may obtain three or four quotes, as many as a dozen, or even more.

The process of seeking quotations and selecting a winner has some similarities to an auction. However, the process through which the intermediary places business is significantly different from most auctions. The product the intermediary is placing is inherently multi-dimensional; and the process cannot be compared to simple auctions such as those for oil, telecom bandwidth, or with auctions for a valuable painting where the only thing the seller cares about is the price. Insurance is a complex product, for which price is only one of the attributes that are important to the buyer. This complexity shapes the quotation and selection process.

The intermediary generally makes an attempt to "standardize" the terms offered by competing insurers. (E.g., the intermediary specifies the coverage sought; i.e., the deductibles, policy limits and the perils covered.) Indeed the intermediary might seek specific policy wording. However, the offers made by competing insurers are often "counteroffers," which deviate in significant dimensions from the terms originally specified. Thus, one insurer might be willing to offer coverage with lower policy limits; another may offer the requested limits but with different policy wording; another may exclude certain properties from coverage; etc. This variation in the coverage offered is compounded by heterogeneity in the financial condition and reputation of the responding insurers. Offers are likely to be obtained from insurers with different credit ratings and with differing reputations for claim settlement. And, of course, the quotations will vary by price. Thus, the intermediary and clients are presented with a portfolio of competing offers which cannot be compared along only one dimension, i.e., price. The selection of the winning offer cannot be reduced to a simple formula. The best offer is likely to represent a combination of

price, coverage, credit quality, and insurer services and reputation. Drawing this balance requires judgments to be made and must reflect the risk tolerance of the client.

The efficiency and fairness of this process cannot be verified by a simple rule such as “did the lowest price win?” Rather, it rests on the integrity of the process itself. Was there an appropriate selection of insurers? Was information properly transmitted? Were bids fully communicated to the client? Were the intermediary’s actions and compensation structures transparent? Were all other relevant factors considered? Of course, occasions may arise where the integrity of the process is compromised. Recent attention has been given to bid rigging in which uncompetitive highball bids were solicited from insurers. However, it is important not to confuse outcomes with process. While malfeasance can occur in insurance markets, as it can elsewhere in the economy, it is also both possible and normal for uncompetitive bids to arise from the natural frictions and imperfections of the bidding process. We will now look at the insurer’s price quotation process.

### ***Insurer Price Quotation and the “Winner’s Curse”***

In order to make confident price quotations, insurers need information about the level of risk. This they can obtain from a risk analysis. On all but the simplest of risks, the risk analysis might be expensive, often requiring expertise in engineering, actuarial science, law, and finance. If an insurer is invited to quote on an account, then it faces the dual decisions of whether to undertake the risk analysis (and, if so, how rigorously) and whether to make a quotation. Risk analyses are almost always conducted on large commercial accounts. For smaller accounts, however, the insurer relies more heavily on the knowledge of the agent or broker. Risk analyses may or may not be conducted by the insurer itself. In some instances, the risk analysis is outsourced to a firm that specializes in this type of work; and, in other cases, the analysis may be conducted by the intermediary. At least for the largest accounts, the risk analysis becomes part of the information reviewed by all insurers quoting on the account. Hence, informational asymmetries tend to be minimal for the largest accounts and increase as the size of account declines.

Even though risk surveys convey a significant amount of information, especially for larger accounts, the insurer is never perfectly informed about any given risk. Moreover, the amount of information and ability to interpret information can vary across insurers. Incumbent insurers are likely to have more information about the buyer’s risk characteristics than competing insurers because information is gained in the process of servicing an account over a period of time.

When policies are out for quotation, those with good information and superior underwriting, modeling and actuarial capacity to measure the risk, will be able to quote a premium with confidence. Similarly, underwriters familiar with risk of this type can extrapolate the risk with more confidence. Those insurers who feel that their information is less complete or who lack the skills or experience with risks of a similar type will be less confident about the premium quotation. In the extreme case, an underwriter will make no bid on something that is not adequately understood. But, in practice, there are shades of grey. The lower the quality of the risk information and the lower the level of understanding about the risk, the less confident the underwriter will be in quoting a premium. This will manifest itself in either insurers’ declining to quote, or quoting at a conservatively high price.

This heterogeneity in insurers and their information means that an intermediary may get a range of quotations on a given risk, ranging from the competitive to the conservative. However, this

normal variation will often include highball bids. Such conservative bidding echoes a well known phenomenon in auctions known as the “winner’s curse.” If people are bidding to buy something, and the value of the item is uncertain, then the winning bid is likely to be above the true value. Indeed the winning bidder is usually the person who overvalues the item by the biggest margin. This means that the winner will often rue his success (thus the winner’s curse) and cautions us against bidding on things we do not quite understand. The lesson is either not to bid, or to submit a conservative bid, when you are not sure of the value.

### ***Insurance Price Quotation, Placement, and Contingent Commissions***

There are other reasons insurers might be reluctant to submit competitive price quotations. Insurers increasingly have paid attention to the spread of risk in their portfolio. The more sophisticated will build a computer model of their book of business to examine how vulnerable it is to certain types of loss. In this way, insurance underwriters can spread their portfolio so there is no unacceptable accumulation of risk in a particular line of business or in a particular geographic location. At any given time, the underwriter might have approached a limit in, say, storm risk in Florida, but have more capacity for earthquake risk in southern California. This underwriter will then either flatly decline more Florida storm risk or perhaps agree to quote a high price which compensates for the additional capital the insurer will have to hold to underwrite that risk.<sup>33</sup> The alert intermediary will keep track of which insurers have capacity for different types of risks.

The winner’s curse has important implications for the commercial property-casualty market. It stresses that the refusal of insurers to quote, or the tendency to sometimes submit conservatively high price quotations, is not unusual and is quite rational. Indeed, the wider the intermediary casts the net in soliciting offers, the more likely it is to encounter conservative quotations. There are several ways that intermediaries can deal with this issue. The first is to concentrate their efforts on a small number of insurers that are likely to make serious price offers. These can include specialized insurers and those with whom the intermediary has a relationship of trust. With such a relationship, insurers believe their quotations will be “in the running.” Contingent commissions support this trust relationship since they encourage brokers to focus their efforts on insurers with matching specialties, with good claims reputations and strong financial standing. With such relationships, insurers are more likely to incur the costs necessary to make a competitive offer.

As we argued earlier, the agent or broker is often well-informed about the level of risk, relative to non-incumbent insurers who are invited to bid on the risk. If the intermediary has a long-standing relationship with an insurer and the intermediary shares in the profitability of the book, then the insurer is more likely to provide a competitive quotation on the basis of the intermediary’s representation of the degree of risk.

## **CONCLUSION**

This report analyzes the economic functions of insurance intermediaries, focusing on the commercial property-casualty insurance market. Our focus is primarily on independent

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<sup>33</sup> A theoretical model of the pricing of intermediated risks where prices depend upon the existing portfolios and risk preferences of the intermediary is developed by Froot and Stein (1998).

intermediaries, i.e., brokers and independent agents. We look at the functions performed by brokers and agents, the competitiveness of the marketplace, the compensation arrangements for brokers and agents, and the process by which policies are placed with insurers.

In commercial property-casualty insurance markets, the intermediary plays the role of “market maker,” helping buyers to identify their coverage and risk management needs and matching buyers with appropriate insurers. The process through which buyers are matched with insurers is complex and multidimensional. The role of the intermediary is to scan the market, match buyers with insurers who have the skill, capacity, risk appetite, and financial strength to underwrite the risk, and then help their client select from competing offers. Price is important but is only one of several criteria that buyers consider in deciding upon the insurer or insurers that provide their coverage. Also important are the breadth of coverage offered by competing insurers, the risk management services provided, the insurer’s reputation for claims settlement and financial strength, and other factors.

The insurance brokerage industry is highly concentrated at the top of the marketplace with a handful of brokers accounting for most of the market share. But while the concentration is high, the absolute number of brokers and independent agents is very large. For small and mid-sized risks, there is considerable competition among the small and medium-sized intermediaries who can and do effectively compete with the global brokers for such accounts. Even for large risks, specialty or regional mid-sized brokers can sometimes compete with the mega-brokers. However, there are some risks (such as large, complex international exposures) which have become the exclusive domain of the largest brokers.

Insurance intermediary compensation comprises premium-based commissions, expressed as a percentage of the premium paid for each policy, and contingent commissions that are based on factors such as the revenue or profitability of the book of business placed with the insurer. Larger intermediaries also receive fees for particular services such as risk management, captive management, and risk modeling. Sometimes brokers will negotiate fees in lieu of premium-based commissions. Premium-based commissions account typically for about 10-11% of premiums, compared with an average of 1-2% of premiums for contingent commissions. Premium-based commissions constitute the vast majority of intermediary revenues, and contingent commissions account for about 4-5% of brokers’ revenues.

Our research provides empirical evidence that most of the contingent commissions are passed on to policyholders in the premium. However, whether this harms or benefits policyholders is a matter of debate. Despite recent allegations that contingent commissions are a “kickback” from the insurer that compromises the intermediary’s obligations to its clients, we show that these commissions can be beneficial to clients.

Insurers depend on accurate information to underwrite and price policies. However, the underwriting information available to insurers is inevitably somewhat incomplete and imprecise. Such informational imperfections lead to a serious problem in insurance markets known as “adverse selection,” which occurs when buyers have more information about their risk characteristics than insurers. Because insurers are not fully informed about individual risk characteristics, some buyers are charged prices that are too low relative to their risk characteristics, while other buyers are charged prices that are too high. Adverse selection occurs when those paying subsidized rates demand more insurance than those paying subsidies, leading

to market instability. The costs of adverse selection are borne by individuals and firms who either end up paying premiums that are too high given their risk or being squeezed out of the insurance market altogether.

Insurance intermediaries help alleviate the adverse selection problem. Intermediaries are usually better informed about the risks of their clients than insurers, and insurers can use this information if a relationship of trust exists with the intermediary. We use the influential and widely-accepted economic analysis of Rothschild and Stiglitz (1976) to show how profit-based contingent commissions can align the interests of the intermediary and the insurer in the correct pricing of policies and so alleviate adverse selection. With the information transmitted by intermediaries, insurers can compete more vigorously for business and can price more competitively and fairly. Contingent commissions also play a role in facilitating the entry of new insurers in the commercial property-casualty insurance market. Profit-based contingent commissions can be used to align incentives between intermediaries and new insurers, ensuring that new firms receive a flow of business with favorable underwriting characteristics. Thus, intermediaries have an important role to play in enhancing the efficiency of the insurance market to the benefit of all market participants.

We also analyzed the placement process and price quotations by insurers. The role of the intermediary is to increase competitiveness, by providing the buyer access to a wider range of possible insurers and by helping the buyer to compare these bids on the basis of price, coverage, service and the financial strength of the insurer. However, contingent commissions, particularly those based on profit, may further stimulate competitive bidding. By aligning its interest with that of the intermediary, the insurer will have more confidence in the selection of risks and in the information provided by the intermediary. This will help break the “winner’s curse” and encourage insurers to bid more aggressively.

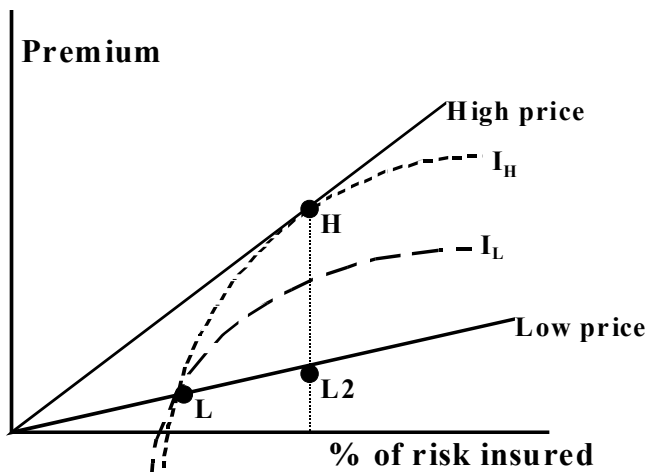
**Box 1: The Costs of Adverse Selection to Policyholders – Rothschild and Stiglitz (1976).**

The idea that contingent commissions can actually benefit the policyholder follows quite simply from the model developed by Rothschild and Stiglitz (1976). Rothschild and Stiglitz showed that, when policyholders know their own level of risk, but the insurer does not, market failure will occur if the insurer tries to offer insurance at the average price to both high and low risks. At the average price, high risks are subsidized and low risks pay premiums that are actuarially unfair. As a result, low risks buy less insurance than high risks or drop out of the market, and market failure occurs – premiums will fail to cover claims and the insurer will withdraw from the market. Rothschild and Stiglitz show that the insurer may be able to finesse the informational problem and create a viable market by offering a menu of policies, some of which appeal to low risks and others to high risks. Buyers are thus induced to “self select” into a set of policies which enable the insurer to cover its costs.

In the diagram, the horizontal axis shows how much of the policyholder’s risk is insured and the vertical shows the premium rate for coverage. The high price line shows a premium rate for different levels of coverage for high risks which just allow the insurer to break even. Similarly, the low price line shows the break even price for good risks. The line labeled “ $I_H$ ” is the high risk indifference curve. This shows combinations of price and coverage that deliver the same level of satisfaction to a person who knows he is high risk. Clearly, if the high risk person could get a combination of premium and coverage below this line (more coverage at a lower premium) he would be better off. Equivalently, any combination above the curve (less coverage at a higher premium) makes the high risk worse off. The line “ $I_L$ ” is the indifference curve for a low risk person with a similar interpretation. The fact that this is less steep reflects that he/she knows he/she has a lower probability of loss than the high risk, and he/she is willing to sacrifice more coverage to get a better premium.

Now if insurers could identify high and low risks, they could offer policies H and L2 respectively to each type. These policies offer full coverage to each person at a price that is fair given that person’s risk. However, if the insurer cannot identify applicants by risk class, it cannot offer these policies (it simply does not know which person to offer the low priced policy).

Although the insurer does not know which applicant is low risk and which is high risk, with some clever thinking, the insurer can induce the types to reveal themselves. Suppose the insurer offers the choice between policies “H” and “L” to everyone. Notice they both lie on the high risk indifference curve, so high risk types would not really care which they bought. Indeed, if “L” is drawn a little above this indifference curve, the high risks will choose H. Now the low risk indifference curve is not as steep because these types know they have a lower chance of a loss. Thus, the low risks would prefer “L” to “H”. Each has chosen a policy that is priced correctly given the risk level. The snag is that the low risk does not obtain full insurance. This solution requires that low risks “signal” their risk status by being willing to accept lower coverage.



While Rothschild Stiglitz’s solution mitigates the adverse selection problem, it does not remove it. Policyholders still pay a price for the lack of full information. In particular, the costs fall on the lower risk policyholders who simply cannot purchase adequate coverage at a price that reflects their low risk status. This can be seen in the diagram; the low risks would be clearly better off if there was no information problem and they could get policy “L2,” which is preferred to “L”. There is ample empirical evidence to confirm that insurers do use this type of mechanism to sort out policyholders, and the costs of adverse selection have been widely documented.

## Box 2: Contingent Commissions Resolve Adverse Selection and Benefit Policyholders

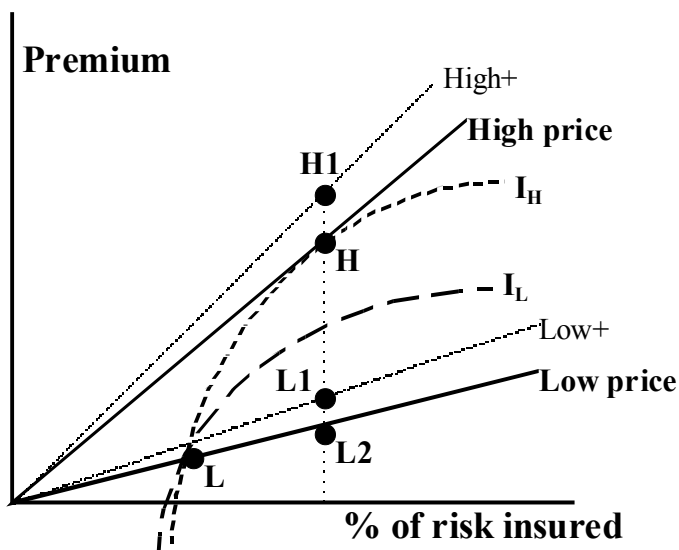
Now let us get back to contingent commissions. Since the intermediary participates in the profit of the business it places, the intermediary has an incentive to represent information about the policyholder accurately to the insurer. Thus, the insurer can offer policies “H” and “L2” respectively, to those who are revealed as high and low risks by the intermediary’s information. These are the same “full information” policies shown in Box 1 which would be purchased with no adverse selection. Thus, high risks are in the same situation as with adverse selection and low risks are clearly better. Low risks do not have to sacrifice coverage to signal their low risk status.

Even if contingent commissions are passed on in price increases, the lot of policyholders is still improved because the market is less likely to fail and at least one group of policyholders is made better off without making the other group worse off. The higher prices are shown by the lines “high+” and “low+”. The insurer can now

- offer those who the intermediary accurately describes as low risk, the policy L1
- offer those who the intermediary accurately describes as high risk, the policy H1

But now let us step back a moment. People do not have to go to an intermediary and not all insurers pay contingent commissions. Thus, the high risks might well choose not to go to an intermediary, or ask their intermediary to place their risk with an insurer without a contingent commission. This way, the high risks could keep their policy “H.” On the other hand, low risks clearly are better off with the contingent commission and policy “L1” as compared with policy “L,” although still not as well off as if they could buy the optimal policy, “L2.”

In the final analysis, high risks are exactly where they would have been without the contingent commission and low risks are better off. Thus, the model shows a scenario where contingent commissions can benefit policyholders.



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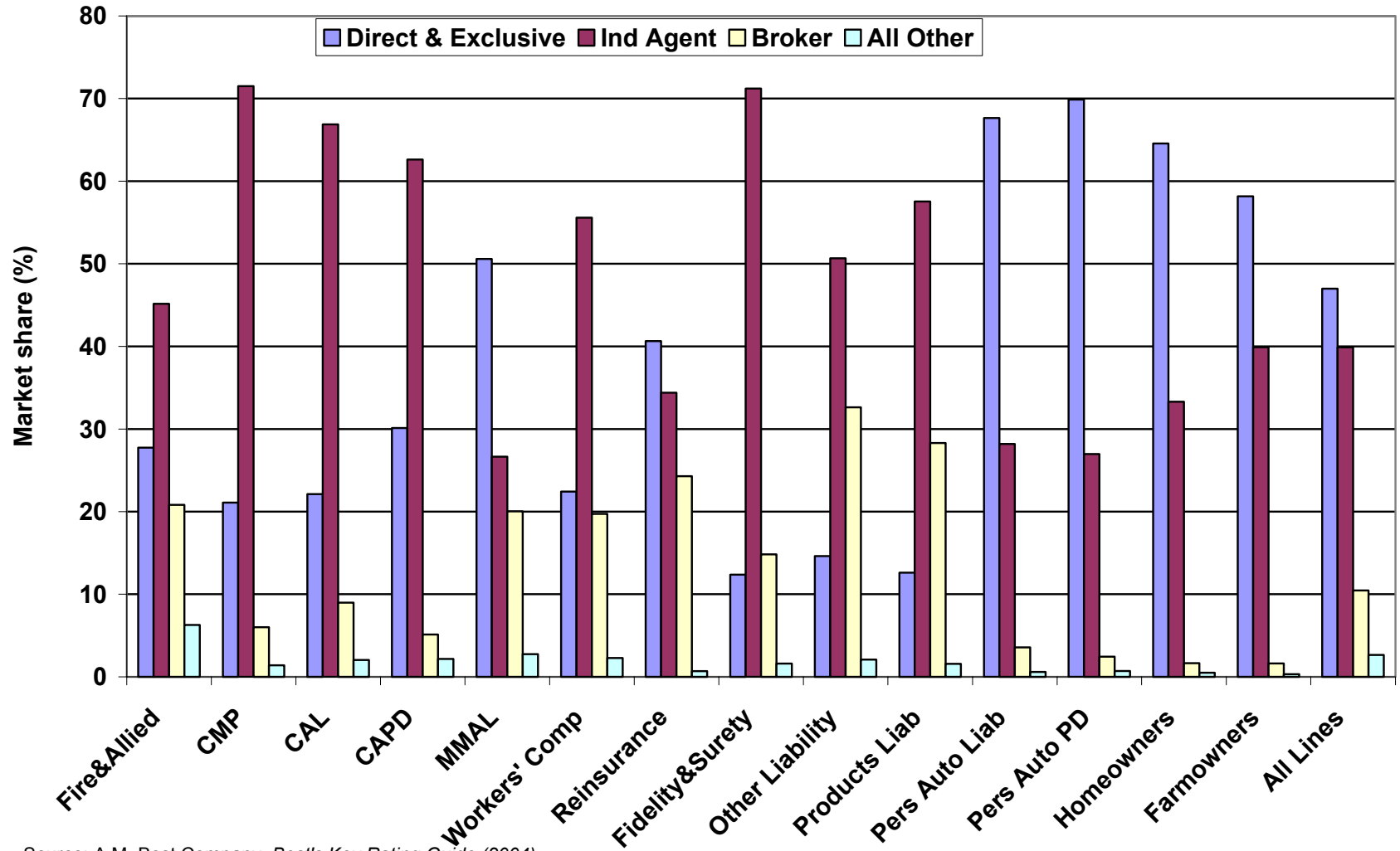
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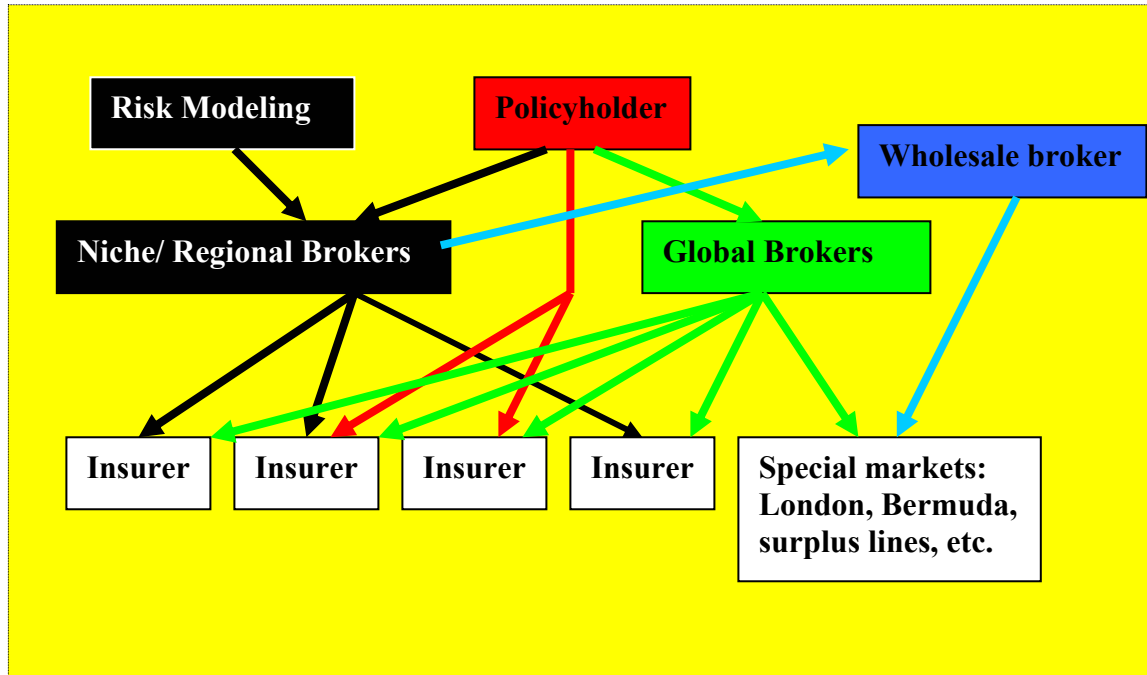
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Figure 1: Market Share By Distribution System: 2003



Source: A.M. Best Company, *Best's Key Rating Guide* (2004).

**Figure 2: Diagram of The Commercial Insurance Market**



**Figure 3: Effective Competition By Size of Risk**

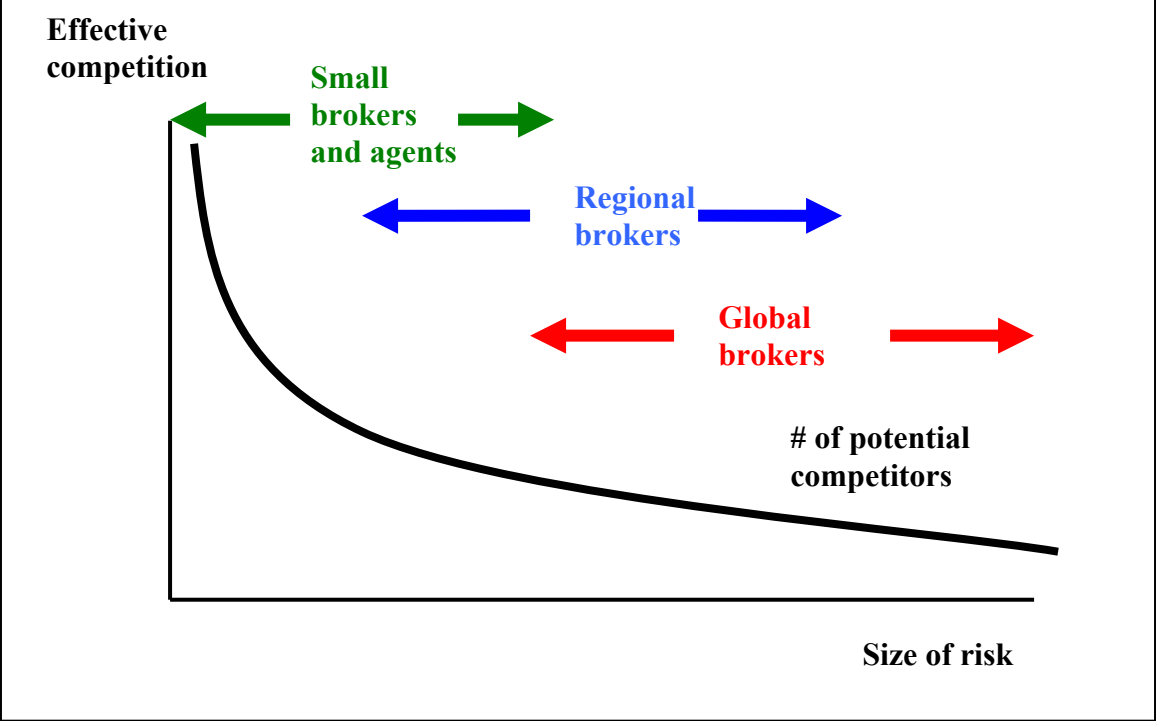


Figure 4: Public Brokers Return on Equity

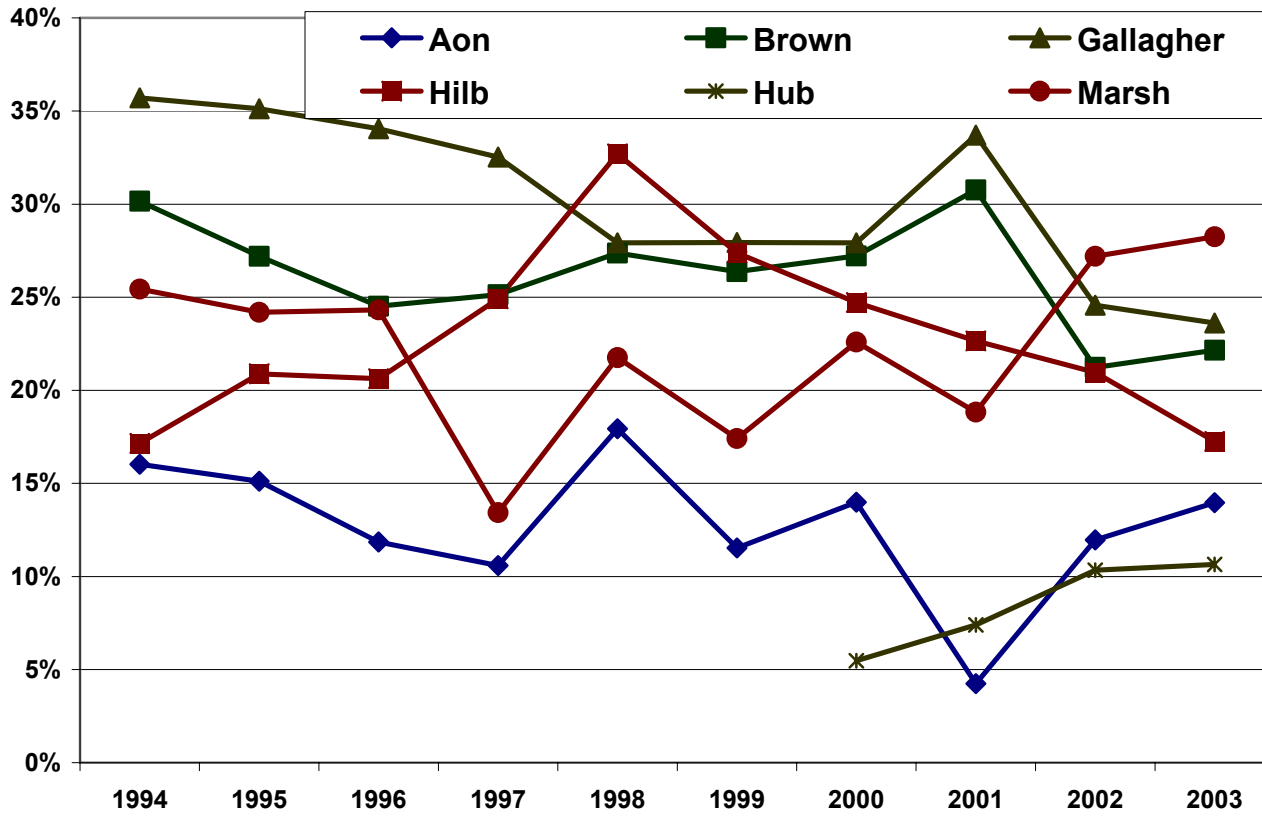
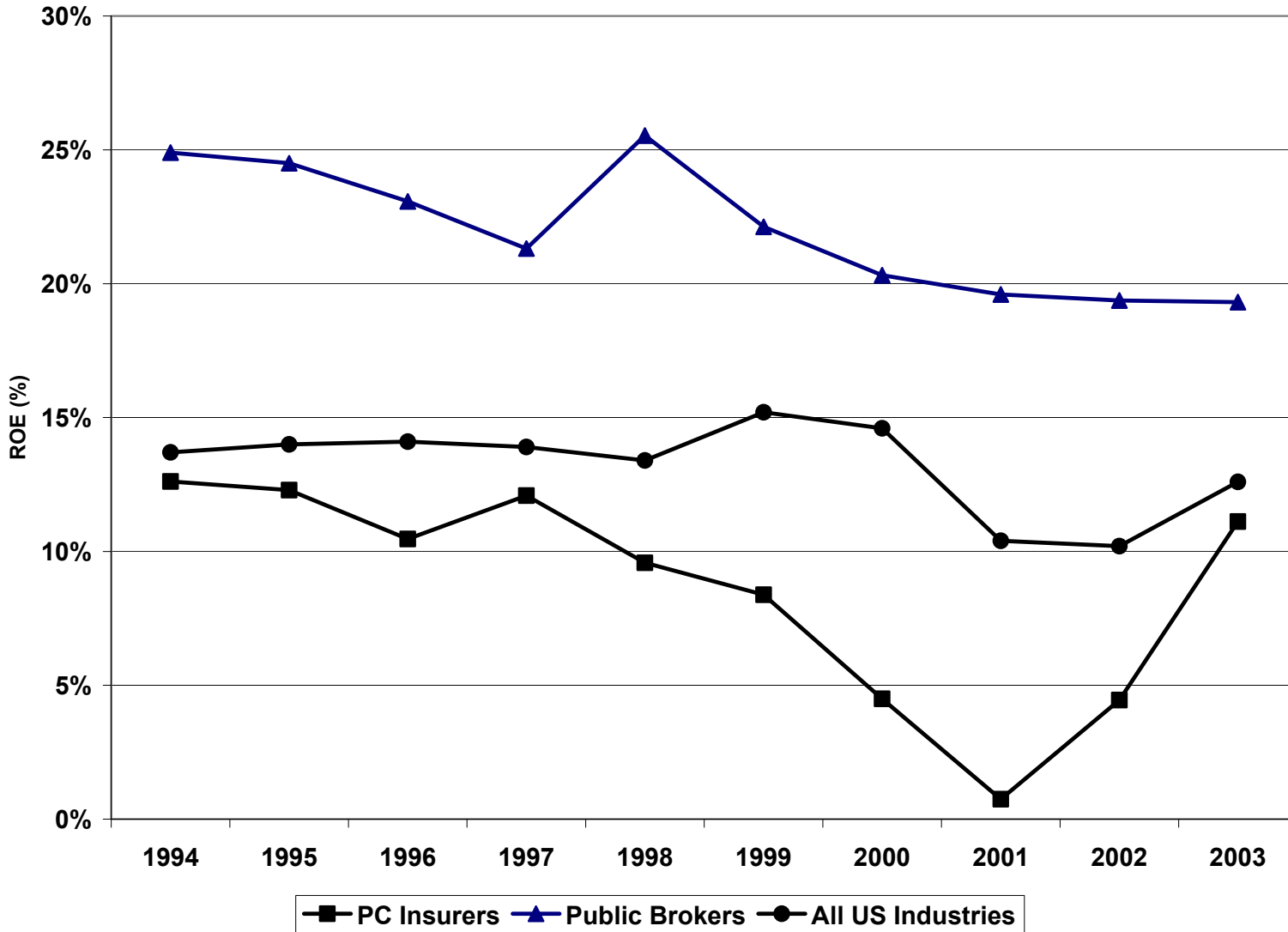


Figure 5: Public Brokers and P&C Insurers Returns on Equity



**TABLE 1. BROKERAGE REVENUES OF TOP 10 BROKERS**

Broker	Brokerage Revenues \$ Millions	Commercial Retail	Wholesale	Reinsurance	Personal Lines	Services	Investments	Other	% Contingent Commissions
Marsh & McLennan	\$9,376.0	48.0%	2.0%	7.0%	0.0%	25.0%	1.0%	17.0%	7.3%
Aon	\$6,734.4	39.0%	4.0%	9.0%	1.0%	16.0%	3.0%	28.0%	2.0%
Willis Group Holdings	\$2,004.0	65.0%	10.0%	22.0%	1.0%	2.0%	0.0%	0.0%	4.0%
Arthur J. Gallagher	\$1,202.4	54.0%	7.0%	6.0%	1.0%	25.0%	7.0%	0.0%	3.0%
Wells Fargo	\$800.5	68.8%	4.2%	0.1%	9.0%	6.7%	1.0%	10.2%	3.4%
Jardine Lloyd Thompson	\$701.0	33.0%	17.0%	22.0%	1.0%	23.0%	4.0%	0.0%	NA
BB&T Insurance Services	\$604.7	60.5%	23.2%	0.0%	12.9%	0.0%	1.0%	2.4%	NA
Hilb Rogal & Hobbs	\$555.7	83.5%	2.8%	0.3%	8.3%	3.7%	0.6%	0.8%	NA
Brown & Brown	\$545.3	62.0%	22.0%	0.0%	10.0%	5.0%	1.0%	0.0%	6.0%
Alexander Forbes	\$537.2	53.0%	11.0%	2.0%	10.0%	9.0%	2.0%	13.0%	NA

**Table 2: Top 100 Brokers and Contingent Commissions As Percent of Revenues**

Rank	Broker	Revenues \$Millions	% Cont Comm	Mkt Shr %	Cumul %	Rank	Broker	Revenues \$Millions	% Cont Comm	Mkt Shr %	Cumul %
1	Marsh & McLennan	11,612.000	7.3%	35.8%	35.8%	51	Van Gilder Insurance	41.309	12.0%	0.1%	100.0%
2	Aon	9,752.000	2.0%	30.0%	65.8%	52	Insurance Office of America	41.170	7.0%	0.1%	100.0%
3	Willis Group	2,075.000	4.0%	6.4%	72.2%	53	BancorpSouth Insurance	40.195	6.0%	0.1%	100.0%
4	Arthur J. Gallagher	1,304.500	3.0%	4.0%	76.2%	54	Marshall & Sterling	40.155	8.0%	0.1%	100.0%
5	Wells Fargo	902.225	3.4%	2.8%	79.0%	55	Woodruff-Sawyer & Co	39.250	7.0%	0.1%	100.0%
6	Jardine Lloyd Thompson	728.809	NA	2.2%	81.2%	56	Van Buerden Insurance	39.205	1.0%	0.1%	100.0%
7	BB&T Insurance Services	626.023	NA	1.9%	83.1%	57	The Rutherford Cos	38.515	NA	0.1%	100.0%
8	Hilb Rogal & Hobbs	563.647	NA	1.7%	84.9%	58	SullivanCurtisMonroe	38.253	5.0%	0.1%	100.0%
9	Brown & Brown	551.041	6.0%	1.7%	86.6%	59	The Graham Co	38.063	2.4%	0.1%	100.0%
10	Heath Lambert	532.390	NA	1.6%	88.2%	60	Bowen, Miclette & Britt	36.446	6.5%	0.1%	100.0%
11	USI Holdings	354.802	5.0%	1.1%	89.3%	61	The Treiber Group	36.040	6.0%	0.1%	100.0%
12	Lockton Companies	301.000	4.0%	0.9%	90.2%	62	Jenkins Athens Insurance	35.590	3.6%	0.1%	100.0%
13	Hub International	286.359	6.0%	0.9%	91.1%	63	Barney & Barney	35.350	NA	0.1%	100.0%
14	Wachovia Insurance	191.657	7.2%	0.6%	91.7%	64	William Gallagher	34.772	10.0%	0.1%	100.0%
15	CBIZ Benefits & Insurance	168.061	4.0%	0.5%	92.2%	65	Horton Insurance Agency	34.633	4.0%	0.1%	100.0%
16	Alliant Resources Group	158.461	5.7%	0.5%	92.7%	66	The Mahoney Group	34.263	5.1%	0.1%	100.0%
17	Palmer & Cay	151.447	6.2%	0.5%	93.2%	67	The James B. Oswald Co	34.179	5.8%	0.1%	100.0%
18	ABD Insurance	120.662	3.0%	0.4%	93.5%	68	Cottingham & Butler	34.115	2.5%	0.1%	100.0%
19	Talbot Financial	99.100	8.4%	0.3%	93.8%	69	Hibernia Insurance	34.032	1.0%	0.1%	100.0%
20	Keenan & Associates	93.213	NA	0.3%	94.1%	70	Andreini & Co	32.000	4.2%	0.1%	100.0%
21	Frank Crystal & Co	92.978	NA	0.3%	94.4%	71	McQueary Henry . . .	31.500	7.0%	0.1%	100.0%
22	Meadowbrook Group	87.400	1.0%	0.3%	94.7%	72	Trion	30.500	NA	0.1%	100.0%
23	John L. Wortham & Son	83.174	3.0%	0.3%	94.9%	73	Capacity Group	30.079	NA	0.1%	100.0%
24	Commerical Insurance Srvc	82.377	NA	0.3%	95.2%	74	BWD Group	29.748	NA	0.1%	100.0%
25	Citizens Financial Group	80.725	4.1%	0.2%	95.4%	75	Frank F Haack & Assoc	29.700	7.0%	0.1%	100.0%
26	The Leavitt Group	77.650	4.7%	0.2%	95.7%	76	The Loomis Co	28.940	1.0%	0.1%	100.0%
27	Hylant Group	77.015	6.5%	0.2%	95.9%	77	Riggs, Counselman, . . .	28.700	8.0%	0.1%	100.0%
28	The NIA Group	73.560	6.0%	0.2%	96.2%	78	Bratrud Middleton	27.900	11.0%	0.1%	100.0%
29	Fleet Insurance Services	71.200	4.0%	0.2%	96.4%	79	Eastern Insurance Group	27.729	10.0%	0.1%	100.0%
30	Bollinger	70.970	7.5%	0.2%	96.6%	80	Lawley Services	27.421	8.3%	0.1%	100.0%
31	Summit Global Partners	70.135	8.1%	0.2%	96.8%	81	Roger Bouchard	27.344	3.5%	0.1%	100.0%
32	Brokerage Concepts	68.100	0.0%	0.2%	97.0%	82	R.C. Knox & Co	27.147	NA	0.1%	100.0%
33	Brooke Franchise Corp	65.967	3.1%	0.2%	97.2%	83	The Daniel & Henry Co	25.182	6.1%	0.1%	100.0%
34	J. Smith Lanier & Co	63.658	7.0%	0.2%	97.4%	84	Payne Financial Group	25.090	9.0%	0.1%	100.0%
35	UBOC Insurance	63.250	7.0%	0.2%	97.6%	85	Haylor, Freyer, & Coon	25.000	8.4%	0.1%	100.0%
36	Holmes Murphy & Assoc	62.648	4.0%	0.2%	97.8%	86	Higginbotham & Assoc	24.561	5.4%	0.1%	100.0%
37	Synaxis Group	59.359	3.6%	0.2%	98.0%	87	Fringe Benefits Mgt	24.261	NA	0.1%	100.0%
38	Rebsamen Insurance	57.931	2.0%	0.2%	98.2%	88	Seitlin	24.200	6.0%	0.1%	100.0%
39	Allied North America	56.900	NA	0.2%	98.3%	89	Dawson Insurance	24.082	5.5%	0.1%	100.0%
40	Mesirow Insurance	54.236	10.0%	0.2%	98.5%	90	Charles L. Crane Agency	23.938	NA	0.1%	100.0%
41	Compass Insurance	53.200	4.9%	0.2%	98.7%	91	Barlocker Insurance	23.896	11.0%	0.1%	100.0%
42	Guaranty Insurance	53.177	5.0%	0.2%	98.8%	92	Associated Financial Grp	23.892	6.1%	0.1%	100.0%
43	The IMA Financial Group	52.975	6.4%	0.2%	99.0%	93	JMB Insurance Agency	23.300	4.5%	0.1%	100.0%
44	Tanenbaum-Harber	50.874	4.6%	0.2%	99.2%	94	Lovitt & Touche	23.079	NA	0.1%	100.0%
45	Frenkel & Co	50.797	9.0%	0.2%	99.3%	95	Sterling & Sterling	23.000	NA	0.1%	100.0%
46	The Hays Group	48.800	NA	0.2%	99.5%	96	North American Insurance	21.681	5.1%	0.1%	100.0%
47	Banknorth Insurance	47.256	11.0%	0.1%	99.6%	97	Parker, Smith & Feek	21.371	6.3%	0.1%	100.0%
48	Heffernan Group	44.408	6.0%	0.1%	99.7%	98	Scott Insurance	21.350	4.8%	0.1%	100.0%
49	InterWest Insurance	42.558	8.0%	0.1%	99.9%	99	T.J. Adams Group	21.200	10.0%	0.1%	100.0%
50	Neace Lukens	41.474	5.0%	0.1%	100.0%	100	Fred A. Moreton & Co.	21.110	4.7%	0.1%	100.0%

Source: Business Insurance, October 25, 2004.

**Table 3: RANKING OF BROKERS IN BALTIMORE AREA BY PREMIUMS**

	Premiums / Revenues	National Ranking
1. Aon Risk Services	650/32	2
2. RCM&D	318 /24.8	75
3. Hilb Rogal & Hamilton	225/21	7
4. Willis	126/12	4
5. HMS Insurance Assoc	125/na	*
6. Diversified Ins Industries	77.7/9.9	*
7. Inner Harbour	56/na	*
8. PSA Financial Center	46.3/10.1	*
9. Insurance Inc	45/na	*
10. The Jacobs Co	41.3/na	*
11. HTG Insurance	28/4.1	*
12. Katz Ins Agency	22.3/1.9	*
13. The Graham Group	9.66/1.71	55
14. Hankoff Ins Group	9.2/1.2	*
15. Worthington, Wilkinson & York	9.1/na	*
16. McCabe Ins Associates	8.5/na	*
17. Mason & Carter	7/0.89	*
18. Independent Center for Ins	2.4/2.4	*
19. Milwicz Ins Group	1.75/na	*

\* indicates that this firm does not appear in the “top 100” national ranking.  
Source: BizJournals (2004).

**Table 4: Commisison and Brokerage Expense By Line: 2003**

<b>Line</b>	<b>Total Industry Net Premiums Written (\$ Millions)</b>	<b>Independent Distributor Share</b>	<b>Total Comm/ NPW</b>
Fidelity & Surety	4,583	80.0%	22.1%
Reinsurance	16,119	37.3%	18.7%
Ocean Marine	2,485	82.3%	16.6%
Commercial Multiple Peril	27,360	71.5%	16.2%
Commercial Auto Physical Damage	7,023	69.5%	13.7%
Inland Marine	7,684	65.9%	13.0%
Homeowners Multiple Peril	45,689	30.8%	12.9%
Commercial Auto Liability	18,406	74.1%	11.7%
Other & Products Liability	38,749	75.6%	10.7%
Fire, Allied Lines, and Earthquake	17,567	64.1%	10.5%
Private Passenger Auto Liability	89,051	34.6%	8.4%
Private Passenger Auto Physical Damage	61,923	33.1%	8.4%
Workers' Compensation	41,412	76.5%	6.5%
Medical Malpractice	8,279	46.7%	4.5%
All Commercial Lines	206,359	67.0%	11.2%
All Personal Lines	196,664	33.2%	9.4%
All Lines	414,863	49.9%	10.3%

Source: A.M. Best Company, Best's Aggregates and Averages 2004 (Oldwick, NJ).

**Table 5: The Top 50 Property-Liability Insurers in Net Premiums Written 2003**

Group/Company Name	Net Premiums Written	Assets	Contingent Commissions	Direct Commissions	Contingent Comm/Prem	Direct Comm/Prem	Pers Short%	Pers Long%	Comm Short%	Comm Long%
STATE FARM IL	46,581,240,000	104,587,885,511	0	4,928,421,108	0.00%	10.58%	26.99%	61.24%	6.47%	5.3%
AMERICAN INTRNL GRP	27,972,153,000	80,330,364,989	125,867,549	2,577,243,376	0.45%	9.21%	6.29%	13.31%	61.92%	18.5%
ALLSTATE INS GRP	24,636,888,000	46,424,905,300	412,926,543	2,305,678,358	1.68%	9.36%	28.93%	63.97%	4.26%	2.8%
St Paul Travelers Grp	19,940,095,000	74,686,675,139	387,089,768	2,824,499,841	1.94%	14.16%	5.88%	19.06%	57.61%	17.4%
ZURICH INS GRP	17,050,184,000	42,471,846,717	149,509,712	3,036,294,400	0.88%	17.81%	7.98%	39.84%	39.81%	12.4%
BERKSHIRE HATHAWAY	15,762,331,000	100,667,459,540	28,987,070	398,474,673	0.18%	2.53%	19.82%	32.46%	44.46%	3.3%
NATIONWIDE CORP	13,741,884,000	33,860,032,440	193,004,977	1,694,934,708	1.40%	12.33%	21.23%	51.00%	20.75%	7.0%
LIBERTY MUT GRP	12,343,985,000	40,814,411,559	121,804,993	845,568,732	0.99%	6.85%	12.88%	32.87%	48.03%	6.2%
PROGRESSIVE GRP	11,917,506,000	16,883,296,443	31,936,286	864,723,815	0.27%	7.26%	33.60%	53.37%	9.15%	3.9%
CHUBB & SON INC	9,536,875,000	28,414,135,453	228,970,380	1,137,569,338	2.40%	11.93%	3.03%	16.96%	67.82%	12.2%
HARTFORD FIRE & CAS GRP	8,876,811,000	36,944,730,915	144,541,745	1,026,032,230	1.63%	11.56%	10.65%	25.39%	53.88%	10.1%
UNITED SERVICES AUTOMOBIL	7,691,735,000	17,609,541,051	0	38,098,070	0.00%	0.50%	33.33%	62.52%	1.26%	2.9%
CNA INS GRP	7,365,080,000	41,293,529,253	172,270,501	1,806,055,454	2.34%	24.52%	0.18%	0.41%	78.42%	21.0%
AMERICAN FAMILY INS GRP	5,541,868,000	8,801,352,838	25,424,265	573,173,481	0.46%	10.34%	29.08%	56.08%	9.57%	5.3%
GE GLOBAL GRP	5,203,812,000	26,529,806,982	4,009,001	326,807,199	0.08%	6.28%	1.72%	0.78%	70.68%	26.8%
SAFECO INS GRP	5,114,312,000	10,379,983,816	94,845,206	708,492,787	1.85%	13.85%	19.04%	43.22%	25.25%	12.5%
ANTHEM INS CO GRP	4,909,082,000	5,058,327,255	0	134,241,488	0.00%	2.73%	0.00%	0.00%	0.00%	100.0%
ALLIANZ INS GRP	4,112,715,000	19,368,741,302	69,301,528	696,672,810	1.69%	16.94%	3.19%	16.88%	53.78%	26.2%
AUTO OWNERS GRP	3,966,549,000	9,277,716,264	57,114,746	594,440,196	1.44%	14.99%	15.25%	33.56%	37.52%	13.7%
ERIE INS GRP	3,767,711,000	8,728,165,882	0	476,743,515	0.00%	12.65%	21.17%	44.89%	30.26%	3.7%
ACE LTD	3,689,081,000	14,011,839,169	25,990,413	544,552,931	0.70%	14.76%	0.06%	1.94%	64.42%	33.6%
WR Berkley Corp	3,540,218,000	9,227,274,078	59,092,314	605,720,631	1.67%	17.11%	0.03%	0.39%	88.41%	11.2%
EVEREST REIN HOL INC	3,123,834,000	8,256,629,079	188,153	173,213,900	0.01%	5.54%	2.72%	7.31%	70.82%	19.2%
WHITE MOUNTAINS GRP	3,061,620,000	12,744,451,074	12,495,071	382,054,979	0.41%	12.48%	8.60%	30.10%	49.02%	12.3%
FAIRFAX FINANCIAL	2,997,923,000	12,195,793,750	16,315,587	220,637,695	0.54%	7.36%	1.04%	7.05%	72.38%	19.5%
METROPOLITAN GRP	2,961,327,000	6,047,287,278	19,214,334	243,455,942	0.65%	8.22%	31.14%	65.48%	0.96%	2.4%
GMAC INS HOLDING	2,911,811,000	8,278,398,472	479,999	140,790,708	0.02%	4.84%	22.35%	26.72%	14.25%	36.7%
CINCINNATI FNCL CP	2,817,384,000	8,015,700,575	57,153,926	444,327,423	2.03%	15.77%	7.65%	17.26%	64.17%	10.9%
FM GLOBAL GRP	2,678,202,000	7,112,300,504	0	54,653,610	0.00%	2.04%	0.00%	0.03%	16.56%	83.4%
MERCURY GEN GRP	2,256,693,000	3,578,268,847	19,304,461	373,767,515	0.86%	16.56%	34.56%	59.09%	3.98%	2.4%
ALLMERICA FINANCIAL CORP	2,235,235,000	5,036,736,713	58,281,369	296,499,599	2.61%	13.26%	23.21%	42.80%	28.26%	5.7%
SWISS RE GRP	2,027,543,000	11,695,102,543	9,136,662	108,322,378	0.45%	5.34%	0.14%	3.17%	88.55%	8.1%
CALIFORNIA ST AUTO GRP	2,025,038,000	4,481,787,924	24,551,714	214,395,921	1.21%	10.59%	38.69%	60.38%	0.29%	0.6%
INTERINS EXCH OF THE AUTOM	1,975,182,000	4,070,579,059	0	46,908,933	0.00%	2.37%	40.47%	58.84%	0.24%	0.4%
UNITRIN GRP	1,965,718,000	3,695,459,291	12,781,205	207,227,293	0.65%	10.54%	25.36%	51.41%	12.64%	10.6%
American Financial Grp	1,810,016,000	7,113,793,689	33,404,488	525,063,718	1.85%	29.01%	1.06%	0.44%	69.71%	28.8%
OLD REPUBLIC GRP	1,765,794,000	6,428,027,306	10,387,117	220,595,161	0.59%	12.49%	0.01%	0.05%	53.94%	46.0%
SENTRY INS GRP	1,692,967,000	6,338,937,629	10,339,101	106,732,960	0.61%	6.30%	11.19%	29.46%	43.85%	15.5%
MUNICH GRP	1,583,531,000	16,449,828,389	-428,325	94,346,717	-0.03%	5.96%	-0.03%	1.32%	91.94%	6.8%
COMMERCE GRP INC	1,555,499,000	2,734,526,351	20,083,916	224,205,403	1.29%	14.41%	33.99%	58.48%	5.57%	2.0%
COUNTRY CO	1,496,946,000	3,078,101,131	25,573,472	167,803,123	1.71%	11.21%	24.88%	56.42%	13.88%	4.8%
AUTOMOBILE CLUB MI	1,479,154,000	3,308,044,369	248,233	313,199	0.02%	0.02%	48.93%	50.43%	0.13%	0.5%
MARKEL CORP GRP	1,467,240,000	3,646,845,719	29,655,599	303,371,468	2.02%	20.68%	1.03%	1.83%	80.04%	17.1%
CREDIT SUISSE GRP	1,452,454,000	3,216,630,445	37,192,914	205,939,653	2.56%	14.18%	12.21%	27.22%	49.38%	11.2%
OHIO CAS GRP	1,442,645,000	4,693,239,511	35,054,632	219,833,559	2.43%	15.24%	9.15%	21.86%	58.18%	10.8%
SOUTHERN FARM BUREAU CAS	1,403,874,000	2,852,484,155	7,863,195	59,345,692	0.56%	4.23%	39.55%	51.22%	7.18%	2.0%
MGIC GRP	1,379,013,000	7,560,778,885	0	4,267	0.00%	0.00%	0.00%	0.00%	0.00%	100.0%
WESTFIELD Grp	1,363,524,000	3,420,593,600	30,159,863	208,147,311	2.21%	15.27%	11.67%	31.96%	43.49%	12.9%
AMICA MUT GRP	1,292,612,000	3,177,452,979	0	5,926,677	0.00%	0.46%	29.07%	66.21%	2.56%	2.2%
STATE AUTO MUT GRP	1,290,935,000	3,510,361,355	20,185,823	201,539,090	1.56%	15.61%	18.97%	42.45%	24.70%	13.9%

Source: National Association of Insurance Commissioners Annual Statement CD-ROM for 2003.

**Table 6: The Top 50 Property-Liability Insurers in Contingent Commissions Paid (By Amount) 2003**

Group/Company Name	Net Premiums Written	Assets	Contingent Commissions	Direct Commissions	Contingent Comm/Prem	Direct Comm/Prem	Pers Short%	Pers Long%	Comm Short%	Comm Long%
ALLSTATE INS GRP	24,636,888,000	46,424,905,300	412,926,543	2,305,678,358	1.68%	9.36%	28.93%	63.97%	4.26%	2.8%
St Paul Travelers Grp	19,940,095,000	74,686,675,139	387,089,768	2,824,499,841	1.94%	14.16%	5.88%	19.06%	57.61%	17.4%
CHUBB & SON INC	9,536,875,000	28,414,135,453	228,970,380	1,137,569,338	2.40%	11.93%	3.03%	16.96%	67.82%	12.2%
NATIONWIDE CORP	13,741,884,000	33,860,032,440	193,004,977	1,694,934,708	1.40%	12.33%	21.23%	51.00%	20.75%	7.0%
CNA INS GRP	7,365,080,000	41,293,529,253	172,270,501	1,806,055,454	2.34%	24.52%	0.18%	0.41%	78.42%	21.0%
ZURICH INS GRP	17,050,184,000	42,471,846,717	149,509,712	3,036,294,400	0.88%	17.81%	7.98%	39.84%	39.81%	12.4%
HARTFORD FIRE & CAS GRP	8,876,811,000	36,944,730,915	144,541,745	1,026,032,230	1.63%	11.56%	10.65%	25.39%	53.88%	10.1%
AMERICAN INTRNL GRP	27,972,153,000	80,330,364,989	125,867,549	2,577,243,376	0.45%	9.21%	6.29%	13.31%	61.92%	18.5%
LIBERTY MUT GRP	12,343,985,000	40,814,411,559	121,804,993	845,568,732	0.99%	6.85%	12.88%	32.87%	48.03%	6.2%
Assurant Inc Grp	647,597,000	2,363,873,953	115,705,115	516,759,226	17.87%	79.80%	6.33%	14.25%	2.95%	76.5%
SAFECO INS GRP	5,114,312,000	10,379,983,816	94,845,206	708,492,787	1.85%	13.85%	19.04%	43.22%	25.25%	12.5%
ALLIANZ INS GRP	4,112,715,000	19,368,741,302	69,301,528	696,672,810	1.69%	16.94%	3.19%	16.88%	53.78%	26.2%
WR Berkley Corp	3,540,218,000	9,227,274,078	59,092,314	605,720,631	1.67%	17.11%	0.03%	0.39%	88.41%	11.2%
ALLMERICA FINANCIAL CORP	2,235,235,000	5,036,736,713	58,281,369	296,499,599	2.61%	13.26%	23.21%	42.80%	28.26%	5.7%
CINCINNATI FNCL CP	2,817,384,000	8,015,700,575	57,153,926	444,327,423	2.03%	15.77%	7.65%	17.26%	64.17%	10.9%
AUTO OWNERS GRP	3,966,549,000	9,277,716,264	57,114,746	594,440,196	1.44%	14.99%	15.25%	33.56%	37.52%	13.7%
CREDIT SUISSE GRP	1,452,454,000	3,216,630,445	37,192,914	205,939,653	2.56%	14.18%	12.21%	27.22%	49.38%	11.2%
OHIO CAS GRP	1,442,645,000	4,693,239,511	35,054,632	219,833,559	2.43%	15.24%	9.15%	21.86%	58.18%	10.8%
American Financial Grp	1,810,016,000	7,113,793,689	33,404,488	525,063,718	1.85%	29.01%	1.06%	0.44%	69.71%	28.8%
PROGRESSIVE GRP	11,917,506,000	16,883,296,443	31,936,286	864,723,815	0.27%	7.26%	33.60%	53.37%	9.15%	3.9%
WESTFIELD Grp	1,363,524,000	3,420,593,600	30,159,863	208,147,311	2.21%	15.27%	11.67%	31.96%	43.49%	12.9%
MARKEL CORP GRP	1,467,240,000	3,646,845,719	29,655,599	303,371,468	2.02%	20.68%	1.03%	1.83%	80.04%	17.1%
BERKSHIRE HATHAWAY	15,762,331,000	100,667,459,540	28,987,070	398,474,673	0.18%	2.53%	19.82%	32.46%	44.46%	3.3%
EMC INS CO	1,152,805,000	2,625,221,306	27,380,415	157,214,613	2.38%	13.64%	5.36%	12.88%	58.47%	23.3%
SELECTIVE INS	1,235,708,000	3,406,543,123	26,719,613	194,095,100	2.16%	15.71%	6.23%	11.10%	64.98%	17.7%
ACE LTD	3,689,081,000	14,011,839,169	25,990,413	544,552,931	0.70%	14.76%	0.06%	1.94%	64.42%	33.6%
COUNTRY CO	1,496,946,000	3,078,101,131	25,573,472	167,803,123	1.71%	11.21%	24.88%	56.42%	13.88%	4.8%
AMERICAN FAMILY INS GRP	5,541,868,000	8,801,352,838	25,424,265	573,173,481	0.46%	10.34%	29.08%	56.08%	9.57%	5.3%
HANNOVER GRP	833,414,000	3,629,961,166	25,038,462	498,205,387	3.00%	59.78%	12.24%	31.12%	35.94%	20.7%
CALIFORNIA ST AUTO GRP	2,025,038,000	4,481,787,924	24,551,714	214,395,921	1.21%	10.59%	38.69%	60.38%	0.29%	0.6%
UNITED FIRE & CAS GRP	450,482,000	1,122,631,338	20,881,810	72,714,792	4.64%	16.14%	3.59%	7.88%	54.99%	33.5%
ATLANTIC CO	723,046,000	1,904,412,479	20,418,978	143,320,018	2.82%	19.82%	6.05%	15.92%	67.00%	11.0%
STATE AUTO MUT GRP	1,290,935,000	3,510,361,355	20,185,823	201,539,090	1.56%	15.61%	18.97%	42.45%	24.70%	13.9%
COMMERCE GRP INC	1,555,499,000	2,734,526,351	20,083,916	224,205,403	1.29%	14.41%	33.99%	58.48%	5.57%	2.0%
SHELTER INS COS	1,020,043,000	1,920,759,898	19,604,858	103,749,165	1.92%	10.17%	24.88%	58.86%	6.25%	10.0%
MERCURY GEN GRP	2,256,693,000	3,578,268,847	19,304,461	373,767,515	0.86%	16.56%	34.56%	59.09%	3.98%	2.4%
METROPOLITAN GRP	2,961,327,000	6,047,287,278	19,214,334	243,455,942	0.65%	8.22%	31.14%	65.48%	0.96%	2.4%
Acuity Mut Grp	586,880,000	1,055,721,597	19,187,685	77,374,275	3.27%	13.18%	7.65%	15.37%	61.20%	15.8%
Republic Companies Grp	275,040,000	456,708,421	19,070,075	83,641,006	6.93%	30.41%	18.24%	43.50%	28.79%	9.5%
HARLEYSVILLE GRP	1,217,772,000	3,745,489,887	18,786,566	186,886,580	1.54%	15.35%	5.45%	16.36%	67.70%	10.5%
WEST BEND MUT GRP	588,345,000	1,088,341,461	16,342,979	82,986,338	2.78%	14.11%	9.92%	19.09%	57.11%	13.9%
FAIRFAX FINANCIAL	2,997,923,000	12,195,793,750	16,315,587	220,637,695	0.54%	7.36%	1.04%	7.05%	72.38%	19.5%
NATL GRANGE MUT INS GRP	712,609,000	1,327,362,454	15,029,741	111,695,980	2.11%	15.67%	14.38%	34.70%	43.51%	7.4%
KINGSWAY GRP	417,293,000	873,091,291	14,913,021	238,990,285	3.57%	57.27%	13.73%	32.45%	41.82%	12.0%
UTICA NATL INS GRP	656,173,000	2,193,156,593	13,907,997	96,185,269	2.12%	14.66%	5.08%	13.90%	73.58%	7.4%
KENTUCKY FARM BUREAU GRF	582,701,000	1,264,535,401	13,553,907	60,774,236	2.33%	10.43%	25.55%	66.52%	6.93%	1.0%
PROTECTIVE INS GRP	152,766,000	622,936,921	13,429,546	21,820,272	8.79%	14.28%	10.47%	16.65%	50.40%	22.2%
Texas Mut Ins Co	665,257,000	2,182,173,548	13,135,707	53,177,666	1.97%	7.99%	0.00%	0.00%	100.00%	0.0%
UNITRIN GRP	1,965,718,000	3,695,459,291	12,781,205	207,227,293	0.65%	10.54%	25.36%	51.41%	12.64%	10.6%
GRANGE MUT CAS	980,050,000	1,410,211,362	12,513,805	162,058,309	1.28%	16.54%	24.32%	52.80%	15.26%	7.6%

Source: National Association of Insurance Commissioners Annual Statement CD-ROM for 2003.

## TABLE 7. Regression Results:

Dependent variable =  $\frac{PREMIUMS - PV(LOSSES)}{PV(LOSSES)}$

	Coefficient	t-Statistic
Constant	0.2231	7.82
Ln(Assets)	0.0068	4.97
Liabilities/Surplus	-0.0235	-10.33
Direct Contingent Commissions/Losses	<b>0.8823</b>	16.67
Direct Ordinary Commissions/Losses	<b>0.7433</b>	45.21
Net Reinsurance Cont Comm/Losses	1.0535	11.84
Net Reinsurance Ordinary Comm/Losses	0.7283	42.95
Pct Assets in Stocks	-0.0794	-4.56
Personal Short Tail Percent	-0.0162	-0.88
Personal Long Tail Percent	-0.1667	-15.67
Commercial Short Tail Percent	0.2852	30.33
Line of Business Herfindahl Index	0.1562	15.18
Mean of Dependent Variable	0.5609	
Adjusted R <sup>2</sup>	0.5717	