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Insurance agents in the twenty-first century: The problem of biased advice

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<ct>Insurance agents in the twenty-first century: The problem of biased advice

<au>Daniel Schwarcz and Peter Siegelman

Insurance intermediaries who focus their efforts on individuals and small businesses face an ever-shifting landscape. As with the travel agents of the 1990s, their value in facilitating insurance transactions is increasingly being challenged by technological advances (McKinsey & Co. 2013). Websites and mobile 'apps' already offer consumers the opportunity to bypass traditional insurance intermediaries by providing automated underwriting and policy-selection guidance. And the continuing implementation of health insurance exchanges may well accelerate these technological shifts as consumers become increasingly comfortable with making their insurance purchases online.

This chapter suggests that these technological innovations in insurance distribution systems hold significant promise not only to decrease insurance costs, but also to improve consumer matching with appropriate and affordable coverage. This conclusion arises out of the chapter's assessment that insurance consumers currently face a meaningful risk that traditional insurance agents will subvert their clients' interests to maximize commissions. At root, this risk stems from various market failures, including massive information asymmetries between consumers and insurance intermediaries, the credence–good nature of insurance and the magnitude of consumers' behavioral biases in making insurance decisions. But it also emerges out of important legal and regulatory failures that leave consumers with few, and generally ineffective, safeguards against misconduct by insurance agents.

Technological developments in insurance distribution can limit these risks by providing consumers with tailored information and advice and by providing regulators with an accurate and accessible record of the insurance sales process. However, technological development creates risks as well; for instance, it may increase the ability of self-interested parties to locate and take advantage of particularly vulnerable consumers. For these reasons, insurance regulation should proactively adapt to technological developments in insurance distribution. Such adaptation should include making consumer-relevant information more broadly available and proactively monitoring online insurance distribution systems to ensure that they provide consumers with accurate and unbiased information.

This chapter begins by examining the economic value that insurance agents can provide to individuals and small businesses. It then explores how intermediaries' interests diverge from those of consumers in ways that can undermine the quality and objectivity of the advice they provide. It reviews the surprisingly small theoretical and empirical literature on these questions, concluding that there is good reason to believe that insurance agents can – and, for a meaningful subset, probably often do – fail to effectively serve consumers' interests. The chapter then argues that existing legal and regulatory responses to these problems are limited and crucially depend on their level of enforcement by state regulatory authorities, which available information suggests is highly variable. The chapter concludes by suggesting that the continuing evolution of online insurance markets and related technological advances may improve insurance advice for consumers by supplanting the role of traditional agents, and that regulatory adaptation can help maximize the potential of this transformation while limiting its risks to insurance consumers.

<a>PART I: THE POTENTIAL VALUE-CREATING ROLE OF INSURANCE AGENTS

Insurance intermediaries – who are typically labeled 'agents' in markets catering to individuals and small businesses – are a small subset of a much larger class of individuals

and institutions that facilitate trade between buyers and sellers. These market intermediaries constitute an essential structure through which a great deal of trade takes place. Indeed, one estimate suggests that the market value of all intermediation is approximately 25 percent of US gross national product (GNP) (Spulber 1996).

As with many market intermediaries, insurance agents' primary role is to inform and advise consumers about available product options, either from a single insurer (in the case of captive agents) or from multiple carriers (in the case of 'independent' agents). Such guidance can be helpful because insurance products are extremely complicated and, at least in certain product lines, quite variable (Schwarcz 2011). Yet consumers generally do not read their insurance contracts and would not understand them even if they did (Boardman 2010). As a result, comparison shopping can be quite difficult in non-commoditized insurance lines, such as homeowners or cash value life insurance. Just as important, consumers' wealth, attitudes towards risk and riskiness are extremely heterogeneous, which means that optimal policy features – such as limits, deductibles and endorsements – are correspondingly variable. Collectively, these facts create opportunities for intermediaries to play a useful role in matching consumers with appropriate insurance products and carriers (Cummins and Doherty 2006; Karaca-Mandic et al. 2013).

Insurance agents can also play an important role in de-biasing consumers. Individuals are subject to various well-established heuristics and biases when it comes to making insurance decisions (Johnson et al. 1993; Baker and Siegelman 2014; Kunreuther and Pauly, Chapter 1 in this volume). Framing effects, loss-aversion, availability bias, affective clouding and a large and growing catalog of other behavioral frailties have been demonstrated in both simulated and real-world insurance purchases. For instance, consumers routinely buy insurance they should rationally avoid, such as bicycle theft coverage (Browne et al. 2012), homeowner policies with low deductibles (Sydnor 2010) and extended warranties on relatively inexpensive consumer durables (Baker and Siegelman 2013). Simultaneously, consumers avoid or under-consume insurance they should rationally want, such as flood or life insurance (Kunreuther et al.

2013; Browne et al. 2012; Cutler and Zeckhauser 2004; Logue 2001). Insurance agents could help reverse these tendencies, particularly when consumer biases would otherwise lead to insufficient insurance demand, as in the case of disaster insurance and term life insurance.

Insurance agents may also provide various additional services to consumers. For instance, they can assist consumers by delivering proof of insurance, changing or updating coverage or answering specific questions about coverage. In some cases, agents can also help prepare a claim and perhaps even advocate for its prompt payment. Finally, insurance agents can provide policyholders with various risk management and mitigation tips, such as suggesting cost-efficient precautions like alarm systems or fire extinguishers.

Insurance agents may also theoretically play a role in promoting the interests of insurers, rather than purchasers, by contributing to their underwriting and rating of policyholders, though this is becoming increasingly uncommon. In contrast to most products, the profitability of insurance depends on purchaser characteristics, about which policyholders may know more than insurers.[1] Insurers attempt to limit, and often times reverse,[2] this information asymmetry through various tools, such as statistical modeling and coverage applications. To the extent that agents have access to additional information about policyholder characteristics relevant to risk, they can contribute to these insurer efforts to underwrite and rate coverage. There is some indirect evidence suggesting that insurance intermediaries have played this role in some commercial

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[1] Insurance is not the only type of financial product with this characteristic: The profitability of credit also depends on the characteristics of purchasers.

[2] Even though the standard assumption in economic theory is that consumers know more about their own riskiness than insurers do (Akerlof 1970; Rothschild and Stiglitz 1976), in many consumer markets the reverse may well be true; insurers often have better information than consumers about their risk levels, as they have access not only to information about policyholders' credit score, magazine subscriptions, and internet browsing habits, but also to the function that turns all this information into an optimal prediction of policyholder riskiness. Moreover, as Cohen and Siegelman (2010: 63–7) point out, even when policyholders know something about themselves that insurers do not (e.g. driving style), insurers may nevertheless be able to make relevant predictions about risk (probability of an accident) better than policyholders can.

markets.[3] However, in recent years, it has become increasingly uncommon for agents serving consumers and small businesses to play a meaningful role in front-line rating and underwriting. Improvements in insurers' risk-assessment tools and their accelerating access to 'big data' have limited the capacity of market intermediaries to provide helpful information to insurers in most consumer-oriented markets (Schwarcz 2010; McKinsey & Co. 2013). 'As a sign of how much has changed, many carriers now actively restrict the ability of even their own field staff to deviate from modeled prices' (McKinsey & Co. 2013).

<a>PART II: INSURANCE AGENTS AND THE RISK OF CONSUMER MANIPULATION

Traditionally, the central question for the economics of insurance intermediaries has been the relative advantages of different distribution and compensation systems for insurers (Kim et al. 1996; Venezian et al. 1999; Regan and Tennyson 2000). For example, researchers have often investigated how firms should design a distribution system to acquire necessary information and provide proper incentives for marketing staff (Ma et al. 2014). Even research examining whether independent agents provide better customer service than exclusive agents focuses on understanding the competitive or regulatory forces that promote one type of distribution system over another (Barrese et al. 1995; Kang 2011). By contrast, the degree to which insurance distribution systems harm or ultimately benefit consumers has received notably less attention. For instance, an excellent survey of the literature on insurance distribution systems (Regan and Tennyson 2000) devoted only four pages (of 55) to this question.

But whether or not insurance agents provide competent and trustworthy advice to consumers is a central question for insurance law and regulation. Assuring a minimum bar of competence and trustworthiness among agents is the primary

[3] For example, Regan and Tennyson (1996) find that markets with heterogeneous populations are more likely to be served by independent intermediaries. This is consistent with intermediaries playing a front line underwriting role because independent intermediaries' compensation is more heavily weighted towards commissions, which provide better incentives for agents to screen customers.

motivation for a host of regulatory requirements and liability rules, including licensing requirements, suitability laws and doctrines such as waiver, estoppel and the duty to procure coverage. In recent years, regulatory action in the US (Fitzpatrick 2006; New York State Insurance Department 2011) and abroad (Kochenburger et al. 2010) have placed renewed emphasis on these concerns in light of the fact that insurance intermediaries are typically compensated exclusively by insurers on the basis of commissions which can be calculated either as a percentage of policyholders' premiums ('ordinary premiums') or on the volume, persistence, and/or profitability of their book of business ('contingent commissions').[4] These compensation arrangements can create potential conflicts of interest for insurance intermediaries, as illustrated by various scandals involving insurance distribution, including 'bid-rigging' by the largest commercial insurance broker, Marsh & McClennan, and the widespread sale of 'vanishing premiums' policies whose premiums failed to vanish as promised by the agents who sold them (Fischel and Stillman 1997).

This Part begins by considering the somewhat broader context of financial advice-giving by potentially conflicted market intermediaries.[5] It then reviews insurance-specific theory on the prevalence of biased advice by insurance intermediaries, concluding (unsurprisingly) that much depends on initial assumptions about market conditions. Finally, it examines existing empirical evidence on biased advice by insurance intermediaries and similarly-situated financial advisers. Although insurance-specific evidence is ultimately quite limited, we conclude that the extant empirical literature, considered as a whole, suggests that the problem of biased advice by insurance agents is likely to be significant.

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[4] In retail trade, intermediaries not only receive payment from customers, but are sometimes also paid by sellers for shelf space (Anderson 1979). This dual compensation occurs on occasion in the commercial sphere, where brokers may receive both fees from their customers and commissions from insurers.

[5] We focus on the advice-giving or matching role of insurance intermediaries, and ignore the possibility that the front-line underwriting functions of agents may undermine consumer interests by driving a wedge between buyers and sellers. As described above, the underwriting role of agents in markets serving individuals and small businesses seems to be largely evaporating due to technological change.

<b>1. A Simple Model of Potential Bias by Advice-giving Intermediaries

A recent survey article (Inderst and Ottaviani 2012b: 497) presents a useful model that illustrates how financial advice in general can 'be instrumental for overcoming consumers' informational deficiencies or [can] … be leveraged to exploit these deficiencies'.[6] In the model, consumers can choose one of two alternatives, indexed by $i \in \{A, B\}$. These could represent two different financial products, or one might be thought of as not buying the financial product at all. Consumers are heterogeneous, so that choice A is better for some consumers and choice B is better for others. Each consumer is ignorant about which is the better product for him or her, and we assume for simplicity that the consumer assigns a probability ½ that either of {A, B} is the better choice.

Consumers' ignorance about which option is better motivates the need for advice. The intermediary reaches a determination (subject to some residual uncertainty) about which is the more desirable financial product after gathering information about the consumer and the available choices. This determination can be summarized as the adviser's subjective probability, q, that choice A is better for the consumer than B. Of course, this implies a complimentary probability ($1-q$) that B is superior to A. An ideal adviser would recommend the choice that has the largest probability of being correct, based on the evidence she has accumulated. Intuitively, then, the intermediary makes a biased recommendation if she recommends B (or A) even though q is actually larger (or smaller) than ½. In this extremely spare model, the consumer simply accepts whatever choice the adviser recommends.

The adviser is compensated solely by a commission f_i that the seller pays when the adviser recommends choice *i.* Apart from the commission she receives, the adviser also has some additional interest in recommending that the consumer purchase the superior product. This interest might be based on the adviser's conscience or altruistic motives, on fear of legal or regulatory repercussions or on a desire to build a reputation for high-quality service. All of these motives can be conveniently summarized by a

[6] The authors complicate the model along a variety of dimensions that are not necessary for our purposes.

'disutility' parameter ρ that represents the adviser's cost of making the wrong recommendation.

The adviser's recommendation is determined by the commissions she receives and her disutility from making an incorrect recommendation. Consider recommending product A. This yields a commission of f_A. If the recommendation is ill-advised, however – and this occurs with probability (1-q) – the adviser incurs a cost of ρ. Thus, the adviser's expected net gain from recommending product A is:

<equation> $EV(A) = f_A - (1-q)\rho$. (2.1) </equation>

Symmetrically, the expected net gain from recommending product B is:

<equation> $EV(B) = f_B - q\rho$, (2.2)</equation>

since B is the incorrect choice with probability q. We can solve for the threshold value of q – call it q^* – such that the adviser has the same expected payoff whether she recommends A or B, and hence is indifferent about which to recommend. That value is:

<equation> $q^* = \frac{1}{2} - \frac{f_A - f_B}{2\rho}$.[7] (2.3)</equation>

It follows that for values of q greater than q^*, the adviser will recommend product A, while for values below q^*, B will be recommended.

Several conclusions follow from this extremely simple setup. First, only when the commissions for A and B are equal, so that q^* = ½, will the adviser always makes an unbiased recommendation for every consumer. Any difference in the commissions will cause q^* to diverge from ½, and will therefore lead to biased recommendations in favor of one or the other choice for some consumers. Second, when A's commission (f_A) is larger than B's (f_B), q^* will be smaller than ½ and the adviser's recommendation will be biased towards A, implying that A will sometimes be recommended even when the adviser believes that B is more likely to be the preferable choice. (Of course, the reverse is true when $f_A < f_B$.) Third, larger values of the mismatch disutility parameter (ρ) reduce the extent of bias. When ρ is very large, the difference in commissions (f_A–f_B) does not

[7] Inderst and Ottaviani (2012b: 499) have q* = ½ - (f_A – f_B)/ρ, but this appears to be an algebraic mistake. Regardless, since q is a probability, it must lie between 0 and 1, which in turn means that f_A - f_B must not be too large in absolute value, nor ρ too small.

matter much, because the penalty for being wrong dominates any potential monetary gain from recommending the wrong policy. Thus, large values of ρ promote unbiased recommendations. Finally, if option B is understood as buying no financial product at all, a pure commission-based compensation system offers the adviser no reward for recommending this option (since f_B must be zero when B is the no-purchase option). Thus, unless ρ is also 0 (in which case the expression is undefined), an adviser compensated purely by commission will always be biased towards recommending purchase over non-purchase.

This model can also be expanded to consider how bias might influence the effort of intermediaries. Suppose that the intermediaries' subjective probability that A is the correct policy is $\tilde{q}$, and is a function of effort, e. That is, by expending effort, agents can learn more about the individual and/or the menu of options {A, B} from which the consumer will choose. Under reasonable assumptions, biased agents will sometimes expend less effort than unbiased agents and will never expend more to determine a consumers' preferred product. The basic intuition for this result is that effort is always worth at least as much to an unbiased (and risk-neutral) agent as a biased one, because an unbiased agent always gains from any cost-effective effort that improves on q* = ½ (maximal uncertainty), whereas a biased agent does not.[8] Biased agents thus will always make at least as many wrong recommendations as unbiased agents, and sometimes more.

While the model described above is a useful way to fix ideas about how differential rewards could lead to biased recommendations, it has many obvious

[8] Suppose that the agent who makes no effort will estimate q = ½. A biased agent does not gain from effort that pushes against the direction of bias, and also gains nothing from effort that moves the subjective probability $\tilde{q}$ without exceeding the threshold for a changed decision, q^*. For example, suppose an agent's initial subjective evaluation of $\tilde{q}$ (given no effort) is ½. Let that agent's threshold value for q^* be 0.75, and suppose that as a result of his effort, the agent is led to revise his estimate of $\tilde{q}$ to 0.6. This increment in q is useless, because the agent will recommend policy B for both the initial and final values of $\tilde{q}$. The same logic applies *a fortiori* to effort that ends up lowering $\tilde{q}$, say to 0.4. Since the agent will recommend policy B for both $\tilde{q}$ = 0.5 and $\tilde{q}$ = 0.4 (both values are lower than the threshold), the effort has no payoff. The case in which bias does *not* influence effort occurs when the optimal amount of effort without bias is sufficient to move the agent's estimate of q beyond the threshold created by the presence of bias.

shortcomings. The most important is that it does not offer an equilibrium account in which agents have to consider the behavior of consumers or rival recommenders, instead simply folding this into the disutility parameter. The actual dimensions of the disutility parameter depend on various considerations that are specific to insurance markets. We discuss these below.

<b>2. The Effects of Insurance Intermediary Compensation: Theory

In recent years, some scholars have begun to explore how the themes described in the general model above play out in the specific context of insurance. In some cases they have developed their own formal models, and in others they have explored how key factors related to the disutility parameter are likely to play out in insurance markets. Unfortunately, the bottom line is that few robust conclusions emerge, with much depending on the initial model assumptions or the particulars of the insurance markets examined.

Gravelle (1994) was the first to examine the relationship between compensation and the quality of advice in a rigorous model. Focusing on life insurance, he finds that intermediaries who are compensated by insurer-paid commissions reduce consumer costs but that intermediaries who are compensated by fees paid by policyholders provide better advice. This result is driven by a crucial assumption in the model: that the *only* way a consumer can gain information about life insurance is via an agent. Thus, while agents compete with each other for customers, they as a group have a monopoly on the relevant information. As a result, when consumers pay separately for advice, the equilibrium fee will be at the monopoly level, since there is no longer competition between agents for customers. Given a downward-sloping demand curve, fewer consumers enter the market.

Hoffmann and Nell (2011) reach a different conclusion, suggesting that a fee-for-advice (consumer pays) system *is* socially optimal, even though commission-based compensation (insurer pays) may be better for insurers (in part because it facilitates collusion between insurers and brokers). Unlike Gravelle's model (1994), consumers in

Hoffmann and Nell's model can either access heterogeneous insurance policies directly or can utilize the services of an agent to access coverage. In their model, agent-assisted search increases product differentiation (which is endogenous – insurers choose their location in product space in a monopolistic competition framework), and hence paradoxically *reduces* competition among insurers.

Focht et al. (2013) come to yet a different conclusion, suggesting that in some situations commission-based compensation may ironically *prevent* biased advice by insurance intermediaries. In their model, pay-for-advice and commission systems are identical; in both, competition insures that non-strategic intermediaries will offer consumers unbiased advice. However, when brokers are paid by consumers, they can strategically threaten to divert customers to another insurer so as to extract a side-payment not to do so. This does not occur with a commission structure, but it can occur in a fee based system if carriers are allowed to make side payments to intermediaries.

Perhaps the most complete and careful theoretical modeling of insurance intermediation is Eckardt's (2007), which uses search-theoretic models that allow for heterogeneity in insurance policies, consumer search costs, consumer valuations of insurance and intermediaries' costs. Although the implications of her model are numerous,[9] the most relevant here is that in a competitive market place, the presence of consumer search costs allows low-quality intermediaries to survive in equilibrium; competition does not lead to uniformly higher quality. And when consumers know more about their riskiness than insurers do:

[9] She also finds that a monopolistic intermediary is beneficial for consumers with medium willingness to pay. The main reason is economies of scale. The intermediary is assumed to have a fixed cost of acquiring knowledge about the various insurance products available, but a very low marginal cost to communicate it to consumers. If each individual searches independently, however, then each has to pay the costs of acquiring the relevant information, and total costs are higher (Eckardt 2007: 94–6). Eckardt's model also suggests that consumers with very low value of information are priced out of intermediation in equilibrium – they do no search at all. Those with very high value of information find that the quality of information provided by the intermediary is too low, given the equilibrium fee charged, and so choose to search themselves (Eckardt 2007: 94–6).

<quotation>[I]nsurance intermediaries have incentives to provide incorrect, false or misleading information about insurance products to consumers because they can earn information rents. Due to the experience and credence goods characteristics of information services, [there are no good ways to] signal[ ] … high quality services. Because insurance companies have an interest in strong sales efforts by insurance intermediaries, they set incentives [that] … induce intermediaries to provide low information quality … All in all, market forces set only weak incentives for insurance intermediaries to provide high quality services. (Eckardt 2007: 151–3)</quotation>

Several papers also present arguments that are not formally modeled about the likelihood that intermediaries will compromise the interests of policyholders in order to increase their compensation. Focusing on insurance brokers operating in commercial property/casualty markets, Cummins and Doherty (2006) argue that competition among brokers tends to limit the risk that brokers will steer policyholders to inappropriate coverage in order to maximize their short-term commission payments. They attribute the prevalence of contingent commissions, in particular, to their capacity to incentivize agents to perform useful front-line underwriting. They argue that these commissions can benefit both insurer and insured by limiting the risk of adverse selection.[10] Subsequent research by Regan and Kleffner (2010) and Ju and Tu (2011) finds that the payment of contingent commissions does lead to better and more consistent underwriting in commercial markets.

Schwarcz (2007; 2008) argues that these principles have limited application in consumer-driven insurance markets, where commissions are more likely to cause agents

[10] Similarly, Maas (2010) focuses on intermediaries who serve commercial (rather than consumer) purchasers. Based on interviews with risk managers at firms who purchase insurance, he concludes that brokers do 'create value' for the customers through the provision of ancillary services. However, most of these services would not be relevant for ordinary consumers.

to offer biased advice.[11] Insurance in general, and insurance intermediation in particular, are classic credence goods, whose true value is difficult for consumers to ascertain even after purchase (Darby and Karni 1973).[12] This is for several reasons: many policyholders never submit large claims or only do so many years after purchase; the complexity of insurance products means that consumers are generally ill-equipped to assess how their coverage would have differed if they made an alternative purchase; and the biases and heuristics that pervasively impact consumers' insurance decisions limit their capacity to assess what kinds of intermediation services are in their best interest. For these reasons, agents are unlikely to be penalized by reputational sanctions or loss of repeat business when they offer self-serving advice. Schwarcz takes particular aim at contingent commissions, which can entrench large commission differentials (f_A–f_B in the model above) even when carriers compete on the basis of commission rates. Additionally, he notes that in life insurance markets, agents' receipt of a single commission at the time of purchase creates an incentive for intermediaries to encourage excessive switching ("churn") of policies.

In sum, the theoretical literature on insurance intermediaries offers various competing arguments and hypothesis. Much depends on specific features of the markets being evaluated. Unsurprisingly, commentators seem more optimistic that biased advice can be limited in commercial insurance markets with relatively savvy policyholders than in markets serving individuals and small businesses. But equilibrium is also highly sensitive to various institutional and behavioral details, such as whether purchasers can search on their own, whether the content of policies is endogenous, whether intermediaries can negotiate commissions with insurers and the nature and extent of consumers' deviations from rationality. In many plausible models, competition between intermediaries does not guarantee optimal (or even appropriate) behavior

[11] Schwarcz (2007) also argues that contingent commissions may have ambiguous effects in commercial markets because they may undermine the capacity of high-risk policyholders to be truthful with their brokers, since they fear doing so will cause them to be steered to higher-cost carriers or coverage.

[12] Carlin (2009) points out that complexity in retail financial markets may in part be driven by strategic considerations. In his model, firms benefit from consumer confusion caused when firms add complexity to their pricing structures.

towards consumers.[13] At a minimum, most models suggest that there is scope for insurance intermediaries to expropriate rents at the expense of insurance purchasers.

<b>3. Empirical Evidence on Insurance Agents in Consumer Markets

Given the many countervailing influences on agents' behavior, the extent to which agents actually provide welfare gains to consumers is ultimately an empirical question. Although relevant evidence is scant – especially for the US – the data that are available suggest that insurance intermediaries operating in consumer-driven market places may not be serving consumer interests in an effective manner. We consider both empirical evidence on financial advice generally and on the performance of insurance agents in particular. Of necessity, we draw on studies undertaken in other countries, acknowledging that these data are not necessarily applicable to the US market, where competitive and regulatory structures may be quite different.

<c>**(a) Evidence from other kinds of consumer-oriented financial intermediaries**

Recent years have seen the emergence of an empirical literature assessing the performance of financial intermediaries in contexts *outside* of insurance, such as mutual fund advisers. While not exactly on point, this literature is comparatively well developed and involves many of the same basic considerations as are at play in insurance markets.

Collectively, this literature suggests that financial intermediaries serving ordinary consumers often offer poor advice, presumably because doing so increases their own compensation. The underlying studies – many of which are not yet published – are summarized in Table 2.1. To be sure, most of the studies suffer from several problems. For example, as many of the studies note, comparing outcomes between advised and unadvised consumers using observational data confounds possible selection effects with adviser effects: those who choose to consult an adviser may be systematically different from those who do not, in ways that influence their financial performance apart from

[13] Gabaix and Laibson's (2006) shrouded pricing model, to give just one example, demonstrates how relatively modest behavioral flaws may forestall competition between sellers, allowing them to earn significant rents in equilibrium, at the expense of consumers.

any effects attributable to their adviser (Mullainathan et al. 2012; Hsieh et al. 2013). Additionally, many of the studies use European data and look at relationships (e.g. between consumers and their bank, which may also provide investment advice) for which there are no direct parallels in US insurance markets. On the other hand, some of the studies are able to clearly identify sub-optimal advice because the advice given is so conspicuously at odds with basic finance theory. For example, it is easy to show that some portfolios of assets are dominated by (have both lower returns and more risk than) others; an adviser who recommends a dominated portfolio has unequivocally failed to serve the interests of his client. By contrast, it is often more difficult to assess whether an intermediary has recommended an unsuitable insurance policy to a client.

<insert Table 2.1 here>

As Table 2.1 suggests, only two (Kramer 2012; Bluethgen et al. 2008) of the nine studies find that consumers are arguably well served by their financial advisers. To varying degrees, the others conclude that advisers steer at least some clients towards assets or portfolios with poor risk-return tradeoffs and larger brokerage commissions. The most compelling (and relevant) is Mullainathan et al. (2012), who used a field experiment technique that sent trained auditors (with a variety of experimenter-assigned portfolios) to ask for advice from financial advisers in the Boston area. The authors conclude that 'advisers fail to de-bias their clients and often reinforce biases that are in their [advisers'] interests. Advisers encourage returns-chasing behavior and push for actively managed funds that have higher fees, even if the client starts with a well-diversified, low-fee portfolio.' Other convincing studies echo these results in different contexts. For instance, Chalmers and Reuter (2012) find that the portfolios of participants in the Oregon state pension plan who choose a more expensive and 'sophisticated' adviser perform worse than those chosen under the advice of an adviser who provided only minimal services. Similarly, Levitt and Syverson (2008) demonstrate that real estate agents tend to advance their interests at the expense of clients by

encouraging them to sell too quickly. This is true even though realtors' commissions are paid directly by their clients, rather than their client's counter-party as in the insurance context.

The bottom line conclusion from the studies in Table 2.1 is that intermediaries in a variety of financial settings often fall short of providing consumers with optimal or even appropriate advice. To be sure, the regulatory and competitive environments faced by these intermediaries are not the same as those confronting insurance intermediaries, so it is possible that these problems are much less prevalent in insurance markets in the US. But we do not think this is likely, given that neither regulation nor competition is stronger for insurance agents than other types of financial intermediaries.

<c>**(b) Direct evidence on the performance of insurance intermediaries**

Table 2.2 summarizes four empirical approaches to studying how insurance intermediaries influence consumer welfare.

<insert Table 2.2 here>

<d>*(i) Audit studies or field experiments*

Potentially the most powerful evidence of how insurance consumers fare comes from so-called 'field experiments' (Levitt and List 2007) that use trained auditors who pose as actual consumers and are sent to randomly selected intermediaries to observe their behavior in a natural setting. While imperfect (Heckman and Siegelman 1993), experimental data are nevertheless a powerful lens through which to evaluate how well insurance intermediaries promote consumer welfare. Most importantly, audit studies can track specific measure(s) of consumer welfare with great precision. Auditors' fictionalized biographies can be designed so that there is a clear 'right' choice for someone in their situation, and researchers can then observe whether intermediaries recommend that choice. And since researchers have complete control of background

variables such as the ‘consumer’s’ apparent wealth, sophistication and behavioral biases, audits allow for precise measurement of how intermediaries respond to such variables. Finally, because auditors can be randomly assigned to intermediaries, concern for selection effects, which are always a problem in observational data, is minimized.

Although there are apparently no field experiments involving insurance intermediaries in the US, international experiments suggest that agents may not substantially advance consumer welfare. German researchers conducted a few small audits in the early 2000s: as summarized by Eckardt (2007: 152), these investigations yielded ‘consistent … results. Most intermediaries fall short of attaining the benchmark; information quality [presented to test consumers] is usually quite low.’ These results are consistent with a recent high-quality field experiment studying the performance of intermediaries in the Indian life insurance market. Anagol et al. (2012) conclude that intermediaries do not provide much useful information, or direct consumers to suitable products. Instead, intermediaries ‘recommend and sell products that maximize … [their own] well-being, with little or no regard for the customer’ (Anagol et al. 2012: 1). In particular, the authors find that:

> <quotation>[D]espite the fact that term [insurance] is an objectively better policy, between 60 and 80 percent of … visits [by auditors] end with a recommendation that the customer purchase whole life insurance. … [E]ven when customers [expressly] signal that they are most interested in term insurance and need risk coverage, more than 60 percent of audits result in whole insurance being recommended. (Anagol et al. 2012: 17)</quotation>

The amounts at stake are not trivial, since the appropriate policy yields benefits that are as much as seven times greater than the inappropriate one (Anagol et al. 2012: 8). Moreover, even when the more-suitable policy has a higher commission (and is thus more profitable for the agent, conditional on its being sold):

<quotation>[A]gents have a strong incentive to cater to the initial preferences of customers in order to close the sale; contradicting the initial preference of customers, even when they are wrong, may not be a good sales strategy. Thus, salesmen are unlikely to de-bias customers if they have strong initial preferences to products that may be unsuitable for them. (Anagol et al. 2012: 4)</quotation>

We do not know whether agents in the US behave similarly, but there appear to be ample opportunities to engage in such behavior.

<d>*(ii) Complaints*

Another approach to studying the relationship between intermediaries and consumer welfare focuses on consumer complaints to regulatory authorities. These data can illuminate the extent of practices that consumers find objectionable enough to complain about, but they do not reveal anything about the prevalence of problems consumers do not notice or deem to be serious. Moreover, complaint data are difficult to interpret because they embody the behavior of both intermediaries (who choose how to treat the consumer) and consumers (who choose whether to complain about their treatment). Econometric identification – isolating the behavior of the intermediary from that of the consumer – poses a significant challenge, and especially so if consumers are understood as less-than-perfectly rational actors.

Table 2.3 provides the volume of complaints to the Texas Department of Insurance ('TDI') by Texas consumers against agents and insurance agencies from the first quarter of 2009 though the second quarter of 2013. Texas is the only state that publicly reports consumer complaints against agents and agencies. Since there are roughly 150,000 insurance agents in Texas, the probability of a complaint is obviously very low – on the order of 1 percent per year. This result is equally compatible with a low incidence of violations or a high incidence coupled with a low detection rate, so the

data do not reveal anything about how often insurance agents misbehave.[14] Most complaints allege misfeasance in 'Agent Handling' (a broad term that covers any improper practice), Conversion (misappropriation of premiums paid) or Misrepresentation. Home and Life together account for almost two-thirds of the complaints received.

<insert Table 2.3 here>

Several studies use this type of data to compare the prevalence of complaints against captive agents who work exclusively for a single insurer and independent agents who represent multiple insurers. Focusing on data from 5,406 complaints about life insurance agents filed with TDI, Brown and Minor (2012: 2) find that consumers are more likely to complain about captive agents than independent agents. In an initial draft, they attribute this result to the fact that '[better] salespeople cannot set their own prices to extract surplus from the larger expected consumer benefits [they provide]; instead, they extract surplus through greater misconduct' (Brown and Minor 2012: 2). But this interpretation seems questionable, for reasons related to the larger problem with complaint data described above; in particular, it is hard to eliminate the possibility that the result is driven more by variations in the different intermediaries' customer bases than in actual behavior of intermediaries themselves.[15] Barrese et al. (1995) also find a relationship between distribution mechanisms and complaints: Automobile policies sold by independent agents generate fewer complaints than those sold by captive agents, other things equal. Importantly, complaints in this study cover the entire relationship between the insurer and the insured, and are not limited to

[14] There is a substantial body of empirical scholarship in socio-legal studies on the 'Dispute Pyramid,' which tends to suggest that both detection of wrongdoing and formal complaints (conditional on detection) are rare (Pandya and Siegelman 2013; Kolodinsky 1995; Venezian 2002).

[15] For instance, it may be that policyholders who purchase from captive agents rightly associate their agents with their insurer, and so are more likely to blame their agent when they are upset with their carrier.

those about the selling agent. Based on this result, the authors conclude that independent agents provide better customer service than captive agents.

Other studies focusing on complaint data are not specific to insurance intermediaries, but nonetheless may have implications for understanding the quality of advice offered by agents. For instance, Chan (1999) uses the volume of complaints against a company (per dollar of insurance written, by zip code) as a measure of insurance quality. He finds that zip codes with a higher proportion of racial or ethnic minorities experience higher complaints per dollar of insurance written. To the extent that biased or incompetent advice from intermediaries drives any part of Chan's findings, the results are broadly consistent with the theoretical work of Fong (2005), who suggests that expert sellers will disproportionately take advantage of less-informed buyers, which would likely include racial/ethnic minorities.

<d>*(iii) Statistical comparisons*

Finally, there are a diverse group of statistical studies that examine questions such as whether there is a relationship between customer satisfaction and the type of distribution system (direct vs. independent agents) or the method of compensating intermediaries (contingent vs. straight commissions). Such studies can shed light on which distribution system is best for the insurer, but since they do not contain a measure of consumer welfare or suitability, they shed less light on how consumers fare.

Browne et al. (2012) use statistical analysis of a single company's sales patterns to conclude that insurance agents can play an important role in de-biasing consumers. They focus on a German insurer that sells both directly to consumers and via agents. Overall, the company's customers are almost twice as likely to purchase bicycle theft insurance as they are to purchase flood insurance. (Browne et al. 2012: Table 3). This pattern probably reflects irrational behavior; insurance against low-value/high frequency losses such as bicycle theft is generally not rational, whereas insurance against high-value/low frequency losses (such as flooding) typically is. But Browne et al. (2012) find that consumers who purchase their insurance through an agent, rather than

directly, were less likely to adopt a seemingly irrational insurance purchasing strategy; such consumers were more likely to buy flood insurance than those who bought directly, although they were no less likely to purchase bicycle theft insurance. While plausible, the authors' conclusion that agents play an important role in de-biasing consumers might be overstated. In particular, the causal attribution might be faulted for failing to control for selection effects. Consumers buying their insurance through an agent might be more risk-averse or otherwise inclined to buy flood insurance, even if there were no agent available. If such selection (on variables unobservable to the researchers) is important,[16] the attribution of a causal role to insurance agents would be misplaced. Even granting the authors' causal interpretation of the role of agents, moreover, such de-biasing is not uniform across products. Agents seemed to de-bias consumers when doing so produced more commissions (buying more flood insurance) but not when it produced fewer commissions (buying less bicycle insurance). These results are consistent with commission-maximization by agents.

Eckardt (2007) conducted a survey of independent German insurance intermediaries in 2001. (Eckardt and Räthke-Döppner (2010) use the same data and reach essentially the same conclusions.) Her dependent variable, allegedly a measure of the quality of information provided by each intermediary, was the 'information index' (168). This was constructed as the unweighted sum of responses to 27 Likert-scaled questions about the importance of various aspects of customer needs. The information index was then regressed on numerous explanatory variables to assess how 'information quality' responded to measures of the level of local market competition, an intermediary's educational background, and so on. Intermediaries operating in more-competitive markets did not have higher 'information indexes'; this led Eckardt (2007: 216) to conclude that 'competition works poorly in inducing intermediaries to provide

[16] Browne et al. (2012: 16) do point out that there does not appear to be selection based on any policyholder characteristics that that they can observe. But Hsieh et al. (2013: 1) provide empirical evidence from Taiwan that 'high-risk policyholders prefer to purchase insurance from an independent agent, whereas those with lower risks tend to buy insurance from direct writer channels'. And it is always appropriate to worry about selection on variables that are not directly observable.

high quality information services when consumers have only incomplete and asymmetric information'. While it is more theoretically grounded than the ethics studies mentioned earlier, Eckardt (2007)'s analysis suffers from many of the same problems. The response rate was low (only 20 percent of those approached completed a survey). And more significantly, it is not at all clear that the survey responses measured 'information quality' in any meaningful way, since the questions merely asked respondents to evaluate the importance (on a 1-5 point Likert scale) they believed a particular factor had for consumers.

Using data from a large broker, Wilder (2004) concludes that contingent commissions do influence agents' decisions about where to place insurance. Agents who have an equity stake in the brokerage benefit directly from contingent commissions, which are paid to the firm as a whole, not individual agents. These equity-owners are more likely to write policies with insurers offering contingent fees than are agents without any equity stake. Although Wilder (2004) does not provide a welfare analysis of the distortions caused by contingent commissions, he notes that 'agents with an interest in maximizing the agency's profits consider contingency fees as they place insurance'.

<a>PART III: LEGAL AND REGULATORY CONSTRAINTS ON BIASED ADVICE

One important goal of insurance law and regulation is to ensure the competence and trustworthiness of insurance agents and to punish misconduct by specific agents. To the extent that these mechanisms work well, they may limit the risks associated with biased advice by increasing the magnitude of the disutility parameter (ρ) for intermediaries. And if current law or regulations do not do a good job, there may be alternatives that could more effectively reduce the risk of misbehavior by insurance agents. For these reasons, this Part reviews some of the most important tools of insurance law and regulation that may constrain the behavior of agents. Although empirical evidence on the point is limited, it concludes that many of these tools, as they are currently

constructed and enforced, do little to limit the risk of self-serving behavior by agents. It also suggests that, while certain legal and regulatory reforms could better police agent misconduct, the potential effectiveness and efficiency of such reforms are hard to quantify.

<b>1. Insurance Agents' Duties to Policyholders

Although aggrieved policyholders can sue insurance agents for breaching their duty of care as professionals, most states narrowly limit the scope of this duty so that liability generally has little deterrent effect. Under the law of most states, agents only have legal duties to procure the coverage that a policyholder has requested and to notify policyholders if this proves impossible. Agents generally do not have a legal obligation to affirmatively explain coverage, advise policyholders about coverage options or provide disinterested advice (Jerry and Richmond 2007: 680). In most states, these principles are subject to one or more exceptions. Perhaps the most common such exception is that an insurance intermediary who has a 'special relationship' with a policyholder may also have heightened obligations to that policyholder, such as a duty to advise about the appropriateness of available coverage options (Richmond 2012; Jerry and Richmond 2007; Swift 1998; Sakall 2000). The definition of a 'special relationship' varies substantially by state, but it is usually limited to situations where intermediaries take on a broad advisory role on behalf of policyholders, such as when insurance is provided as part of a broader package of financial advice provided by the agent. It is also often linked, explicitly or implicitly, to whether the intermediary is principally acting as the legal agent for the insurer (i.e. an insurance agent) or the policyholder (i.e. an insurance broker). This distinction itself can turn on several factors, such as the intermediary's authority to act for the carrier and its own description of itself to clients.

These liability rules likely do little to constrain most forms of self-serving behavior by insurance agents. In large part, this is because the exceptions to the normally limited duties of agents are quite narrow, particularly for intermediaries operating in consumer-driven markets, who by convention are usually denominated

'agents' rather than 'brokers'. Additionally, these exceptions are notoriously blurry and overlapping, meaning that litigation seeking to enforce duties against agents is 'fact-driven and unpredictable' (Beh and Willis 2009). This uncertainty limits the capacity of risk-averse policyholders to pursue their grievances in court. A further limitation of these rules in constraining biased advice from insurance agents is that policyholders generally only sue when they have been denied coverage. In these cases, however, any agent wrongdoing that contributed to the lack of coverage is likely to be attributable to incompetence or ignorance rather than active consumer manipulation, as self-interested agents will generally have an incentive to sell more, rather than less, insurance.

To be sure, enhancing agents' duty to advise policyholders might well improve matters. Moreover, there are reasonably good arguments for such reforms. First, even assuming that individuals know more about their personal assets and risk preferences than agents – a claim which is hardly obvious (Cohen and Siegelman 2010) – agents are much better situated than consumers to appreciate the insurance implications of these facts. Such insurance know-how cannot be easily transmitted to consumers; it requires training and experience. Insurance agents, on the other hand, can easily solicit information from policyholders about their assets, property, risks and risk tolerances in the course of recommending coverage options. Because agents are better able than individuals to avoid the risk of inappropriate selection of insurance coverage, placing this risk on them would help to reduce it more effectively than leaving it with individual consumers, as most jurisdictions do. Second, while increasing the legal obligations of agents would likely increase the costs of coverage, it would also provide policyholders with a form of insurance against the risk that they purchased inappropriate coverage. Given that purchasers of insurance are generally risk-averse, it seems likely that many would be willing to pay for this legally mandated protection, particularly because they cannot otherwise insure against this risk (Baker 2008).[17] By contrast, intermediaries can

[17] One company attempted to market a product that would fund coverage dispute litigation. But this product faces problems – most notably adverse selection and moral hazard – that seem to have limited its popularity.

and do purchase E&O (errors and omissions) insurance, which spreads the risks they are legally obligated to bear. Thus, enhancing the ability of policyholders to sue agents for improper or inadequate advice would shift this risk on to agents, facilitating spreading of this risk via E&O insurance.

However, expanding the legal duties of agents is hardly a panacea. Most importantly, it is likely that courts will have difficulty reliably identifying improper or biased advice from agents. The quality of different insurance options is often subjective, depending on numerous factors such as price, claims service, coverage scope, financial security and risk-mitigation services. Moreover, the factual record concerning the communications between agents and customers at the time of sale may frequently be unclear. Courts that were over-eager to find violations of agents' obligations to policyholders could well undermine efficient coverage exclusions and inefficiently raise the cost of coverage. Meanwhile, under-enforcement would do little to advance the policy goals discussed above, while increasing the costs and uncertainty of coverage litigation.

<b>2. Disclosure of Conflicts of Interest to Policyholders

Most states do not require agents to affirmatively disclose to policyholders any conflicts of interest they may have stemming from differential commission rates. This is true in all states other than New York, although some states do require insurance *brokers* (defined as intermediaries who represent the policyholder in the placement of coverage or receive direct payment from them) to disclose potential conflicts of interest to policyholders (Fitzpatrick 2006). These rules mean that consumers often have little appreciation of how agents are compensated and the ways in which this compensation might generate conflicts of interest. Even when disclosures inform policyholders about the potential conflicts of interest facing insurance intermediaries, it is not clear that this limits the risk of biased advice. Disclosure-oriented approaches to similar regulatory problems have routinely failed in the past, for reasons that are linked to the nature of the underlying market failure; informing consumers that intermediaries may have a

conflict of interest does little to empower consumers to respond to this risk (Schwarcz 2007). Moreover, empirical research suggests that disclosures of conflict of interests can backfire, enhancing consumer trust of market intermediaries and increasing the willingness of intermediaries to act on their conflicts of interest (Lacko and Papalardo 2004; Ben-Shahar and Schneider 2011; Cain et al. 2005).[18]

<b>3. Suitability Requirements

For a variety of insurance products, regulatory rules require insurers and agents to have 'reasonable grounds' to believe that a product is 'suitable' for a consumer after having made a reasonable inquiry into the consumer's particular needs and circumstances. In the case of insurance products that are also regulated as securities – including variable annuities and variable life – these suitability rules are a matter of federal law, subject to newly revised Financial Industry Regulatory Authority (FINRA) rules.[19] States also frequently impose suitability requirements for these hybrid products. In recent years, some states have extended suitability rules to a number of non-security insurance products, including fixed annuities and long-term care insurance (NAIC 2010; NAIC 2008).

If enforced well, suitability rules can help to meaningfully mitigate the risk of incompetent and self-interested advice. Indeed, more than any other regulatory or legal rule, suitability rules are targeted at the risk that agents will undermine their clients' interests in order to generate commissions. They operate, moreover, not only on the level of individual agents – who face personal risks of fines and license suspension or revocation for selling unsuitable products – but also at the firm level. Insurers who sell products subject to suitability rules have developed extensive systems to review sales and ensure that they are suitable.

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[18] Inderst and Ottaviani (2012a: 782) suggest that disclosure of commissions may undermine efficiency because it could have a disparate impact on 'more [the] cost-efficient firm and, thus, result[ ] in a reduction in this firm's market share'. At the same time, some recent research suggests that disclosures of conflicts of interest may be more effective when they clearly state that they are legally required (Taha and Petrocelli 2013).

[19] FINRA Rule 211.

Despite their capacity to limit the risk of biased advice, suitability rules have three important limitations. First, and most obviously, they currently apply only to a narrow range of insurance products: no property/casualty insurance products are subject to suitability rules, nor are many life and annuity insurance products (unless they are simultaneously treated as securities). This limitation, of course, could easily be addressed by regulatory reform that expanded suitability rules to a broader set of insurance products. A second, and more intractable, limitation of suitability rules is that they only target the most egregious forms of misconduct. There is obviously a big gap between a product being 'suitable' and optimal. As such, suitability rules do nothing to ensure that agents will not steer policyholders to less desirable, albeit 'suitable' products, when doing so results in higher commission payments. Third, it is not clear that suitability rules are well enforced. State laws requiring insurance sales to be suitable cannot be enforced through a private cause of action in most states.[20] As a result, state regulators are the only enforcers of suitability regulations governing non-securities insurance policies. Whether such enforcement is effective is an unanswered question.

<b>4. Estoppel

Another potential legal constraint on agent misbehavior is the doctrine of estoppel. Estoppel applies when an agent makes a misrepresentation on which a policyholder relies to his or her detriment. In limited circumstances, courts will enforce the agent's coverage representation against the insurer. However, this rule is likely to do little to deter biased advice by agents. First, many states significantly limit the scope of estoppel by holding that it can only be used to negate coverage defenses (such as a claim that the policyholder intentionally caused the loss) or the failure of a condition (such as the condition that the policyholder report coverage promptly). The doctrine, on this view,

[20] While suitability violations can support a private cause of action under federal securities rules, these are generally resolved through arbitration by FINRA. Although Section 921 of Dodd–Frank allows the Securities Exchange Commission (SEC) to prohibit these mandatory arbitration provisions, the SEC has not yet acted on this authority.

cannot create additional coverage beyond that which is provided in the policy (Jerry and Richmond 2007). This restriction on the doctrine obviously limits the extent to which it targets agent misrepresentations of coverage. Second, even in states that allow for estoppel claims to increase the scope of coverage, the doctrine is subject to important limitations. Most importantly, it does not apply to material *omissions*, which are often much more important in mis-selling cases than misrepresentations. Finally, evidentiary problems are substantial in estoppel cases, which often turn on conflicting accounts of oral statements that were made many years before any dispute arose.

<b>5. Licensing Requirements and Unfair Trade Practices

Every state requires individuals who sell insurance to acquire a license, though the types of licenses available as well as the requirements for obtaining a license vary by state (GAO 2009).[21] In general, individuals must pass an exam and background check to acquire a license.[22] The background check assesses whether the aspiring agent has, among other things, violated any insurance laws or regulations, intentionally misrepresented the content of an insurance policy or application, committed an insurance unfair trade practice or engaged in fraudulent, coercive or dishonest practices.[23] Agents can be fined or have their licenses suspended or revoked if they are found to have engaged in any of these practices.

Recent evidence provides reason to be skeptical that licensing standards are an effective means for ensuring agent quality. Lex et al. (2014) examine whether new licensing rules for German insurance agents improved the matching of consumers with insurance policies. To measure the quality of agent advice, they focus on how likely an individual who purchased coverage through the agent is to cancel coverage, on the assumption that individuals who are poorly matched with coverage will be more likely

[21] For the last decade, the NAIC has attempted to streamline and harmonize different states' producer licensing rules. At present, these rules continue to vary, but most states grant reciprocity to agents that have received a license under another state's process.

[22] Some states also require pre-licensing education, but this is not true of all states (NAIC 2008).

[23] Producer Licensing Model Act, adopted by substantial majority of states.

to switch to a different policy in the next policy year. They find that, while the new rules substantially reduced the number of agents by causing part-time agents to drop out of the market, there was no meaningful difference in rates of policy cancellation between the customers of agents who dropped out of the market and those who did not.

Of course, agent licensing in Germany and the European Union operates differently than it does in the US, and it is certainly possible that it limits poor agent advice in the US more effectively than it does in Germany. But whether this is so depends crucially on how well these licensing rules are enforced, particularly with respect to the rules linked to unfair sales and trade practices. Available evidence suggests that state policing of insurance agents is highly variable by state. Several Government Accountability Office (GAO) reports have found that only some states conduct nationwide criminal background checks, and states vary significantly in their capacity to determine whether an applicant has been the subject of a regulatory action or complaint in another state (GAO 2009). Data regarding the frequency of actions against producers[24] similarly suggests substantial variability in state oversight of insurance agents.[25] On average, each year states take regulatory action against one out of approximately every 200 resident producers licensed in their state, with the majority of these actions being fines, followed by license revocations and denials. But as illustrated in Figure 2.1, these rates vary dramatically across states, with some states taking action against one out of every 100 or so agents each year, and others only taking action against one out of every 1,000 agents each year.

<insert Figure 2.1 here>

[24] This includes suspensions, revocations, cease and desist orders, denial orders, fines, and restitutions.
[25] The figure is calculated from data in the 2011 NAIC Resources Report, which reports both the number of licensed resident producers per state and the number of actions against producers per state.

<a>PART IV: TOWARDS THE FUTURE: FACILITATING THE TECHNOLOGICAL REVOLUTION

Although legal and regulatory reforms designed to hold insurance agents more accountable might help limit the real – if hard to quantify – risk of biased advice, both the effectiveness and the efficiency of any such reforms are unclear. Meanwhile, insurance distribution platforms are rapidly evolving to embrace technology in ways that may increasingly threaten the viability of traditional insurance agents. Consider, for instance, that millions of individuals are now purchasing their health insurance online through state and federal health insurance exchanges. In the property/casualty insurance domain, insurance decision engines already provide policyholders with personalized advice about coverage limits and policy options based on consumers' answers to simple questions.[26] And in the life insurance sphere, search engines designed to facilitate comparison shopping of term life insurance have already revolutionized the market (Brown and Goolsbee 2002).

Indications are that these forces will only continue to limit the role of traditional insurance agents in distributing insurance products. As described above, carriers are increasingly finding that insurance agents can no longer provide useful front-line underwriting services, given the increasing data and technology that are at carriers' disposal. Meanwhile, fast online access via computers and smartphones is becoming more and more pervasive. As a recent McKinsey report explained: 'there has been a gradual shift in the value that carriers and customers (both retail and small business) place on many activities traditionally performed by local agents, which is increasingly calling into question what role they will play in the future' (McKinsey & Co. 2013).

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[26] See, for example, www.esurance.com/coverage-counselor, which promises to 'find the car insurance that's right for you' after the user 'just answer[s] a few simple questions'. For another example, see Picwell (http://picwell.net/), an application that optimally matches a consumer's prescription drug requirements with coverage provided by Medicare Part D insurers, saving an average of $365 per year.

These technological advances hold substantial promise to improve the insurance advice that individuals receive. Artificial intelligence can leverage data about consumer preferences to offer personalized advice to individuals that is more objective and consistent than the advice offered by individual agents. (Surprisingly, even simple algorithms often do better than 'experts' at making predictions across a wide variety of fields (Grove and Meehl 1996).) It can also be designed to facilitate consumer choice by setting intelligent defaults, limiting consideration sets, and providing calculation aids (Johnson et al. 2013). The continuing evolution of state and federal health insurance exchanges should provide a variety of real-world settings that will yield new insights into how best to present insurance information to consumers and facilitate consumer decision-making.

Additionally, the developers of technology-driven insurance intermediation may have relatively good incentives to design these systems to provide consumers with objective advice. The advice provided by technology-driven intermediation is much more transparent than the advice provided by individual insurance agents; it can be accessed by anyone, anywhere, at any time. This should improve the capacity of regulators to identify problematic advice and enforce existing laws when necessary. It may also allow analysts, consumers and watchdog groups to identify and publicize problems with specific intermediation systems and push consumers to competitors with superior intermediation services. Another significant difference between human and computer intermediation lies in the cost structure of each. Human intermediation entails some up-front costs in the form of investment in human capital (such as knowledge of various insurance products) by agents. But the majority of the costs are the time and effort incurred in serving each consumer. By contrast, a computerized intermediary has high sunk costs, but virtually no marginal costs of providing service; once the software is written, it can be made available at essentially no cost[27] to as many customers as want it (Shapiro and Varian 1999). This creates significant economies of

[27] The software would, of course, need to be updated as new products become available or new laws and regulations are passed.

scale – cost per user falls with the number of users – which in turn places a huge premium on the reputation and reliability of the intermediary.

Of course, technological innovation in insurance intermediation also creates new risks as well. For instance, technology may increase the ability of firms or individuals to target particularly vulnerable segments of the population for the sale of low-value or inappropriate insurance coverage. Moreover, new insurance distribution platforms can exploit individuals' personal data in ways that are difficult or impossible for conventional insurance intermediaries. For instance, many websites that purport to provide consumers with multiple premium quotations in fact operate as 'lead generators' for agents, who then use user's contact information to repeatedly attempt to sell them coverage.

Due both to its promise and its potential pitfalls, we believe that law and regulation can and should actively encourage the evolution of technology-driven insurance intermediation. First, insurance lawmakers and regulators should embrace 'smart disclosure' by making publicly available and accessible machine-readable data sets on insurance market information (Schwarcz 2014). This might include not only information about different carriers' products and prices, but also information relevant to assessing product quality – such as claims payment rates, rates of policy cancellation and non-renewal, and lapse rates. These types of data are the fuel that feeds technological innovation in market intermediation, allowing small start-ups with limited capital to develop tools for individuals to assess competing products and carriers based on more fine-tuned analysis of their insurance needs and preferences (Thaler and Tucker 2013; Forman and Gron 2011).

Second, insurance regulators should proactively monitor technology-driven insurance intermediation to ensure the accuracy of information provided to consumers and the appropriate use of consumer information. Traditionally, insurance regulators have been largely reactive in identifying misconduct in the sale of insurance products, relying principally on consumer complaints to identify problems with particular agents. But technological innovation creates a variety of new opportunities for regulators to

identify inaccurate or misleading sales tactics, including simple Google searches, experimentation with insurance apps and websites, and direct requests to the operators of these platforms to explain the algorithms and data that undergird these systems. Insurance regulators might even be able to monitor technology-driven insurance intermediation tools using social media.

Finally, law and regulation could facilitate the development of more effective technology-driven market intermediation by developing better information about the risks associated with the status quo. As described above, the available evidence about the extent of insurance agent misbehavior is remarkably under-developed, with the best evidence coming from analogous financial contexts and/or studies in other countries. Insurance regulators could develop much better information on this front by funding, or conducting on their own, the types of audit experiments that we described earlier. Regulators of health and safety routinely inspect restaurants for health and safety violations. It is not at all clear why such proactive regulatory scrutiny is not similarly appropriate in the insurance domain.

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