

# Understanding the Advice of Commissions-Motivated Agents: Evidence from the Indian Life Insurance Market

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## Abstract

We conduct a series of field experiments to evaluate the quality of advice provided by life insurance agents in India. Agents overwhelmingly recommend unsuitable, strictly dominated products, which provide high commissions to the agent. Agents cater to the beliefs of uninformed consumers, even when those beliefs are wrong. We test whether regulation or the market can improve advice. A natural experiment requiring disclosure of commissions for a specific product results in agents recommending alternative products with high commissions but no disclosure requirement. Market discipline does generate de-biasing, with agents perceiving greater competition more likely to recommend a suitable product.

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# 1 Introduction

The recent financial crisis has spurred many countries to pursue new consumer financial regulations that could drastically change the way household financial products are distributed. Both Australia and the U.K. Financial Services Authority have announced bans, to take effect in 2012, on the payment of commissions to independent financial advisors.<sup>1</sup> And as of August 2009, the Indian mutual funds regulator banned mutual funds from collecting entry loads, which had previously primarily been used to pay commissions to mutual fund brokers.<sup>2</sup> Yet, to date there is almost no empirical evidence evaluating the quality of financial advice provided by commissions-motivated agents.

Proponents of the bans argue that sales agents give poor advice, misleading consumers. Opponents argue that market discipline and reputational concerns will motivate agents to provide financial advice and customer education. Understanding this market requires answering questions for which almost no evidence is available. First, do agents who earn commissions recommend products that are unsuitable? Does agent advice respond to client needs or cater to pre-existing biases? Second, can strong disclosure requirements, the threat of competition, and greater customer awareness improve the quality of advice?

These questions have been difficult to answer for several reasons: data on product advice are not systematically available, and even if they were, they would be unlikely to be in a setting where the suitability of a product were observable. This paper studies financial product recommendations in a setting, the Indian life insurance market, in which it is possible to identify poor advice using audit studies, which allow us to directly observe the suitability of advice provided by agents. We find strong evidence that commissions-motivated agents provide unsuitable advice. Depending on our treatment, agents recommend strictly dominated, expensive products, 60-90% of the time.

This project consists of three closely related field experiments in which we hired and trained individuals to visit life insurance agents, express interest in life insurance policies, and seek product

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<sup>1</sup>Independent Financial Advisors received commissions to sell mutual funds and life insurance products. See Reuters (2009), Vincent (2009) and Dunkley (2009) for more information on the U.K. ban on commissions. See “Australia Proposes Ban on Commission” in the Financial Times, September 4, 2011.

<sup>2</sup>For newspaper accounts of the importance of entry loads as the primary source of commissions see (1) “MFs Look For Life Beyond Entry Load Ban,” Times of India, July 19, 2010 (2) “Mutual Fund Industry Struggling to Woo Retail Investors,” Business Today, February 2011 Edition.

recommendations.<sup>3</sup> Our first set of audits was to test whether, and under what circumstances, agents recommend products suitable for consumers. In particular, we focused on two common life insurance products: whole life and term life. We chose these two products because, in the Indian context, consumers are much better off purchasing a term life insurance product than an endowment or whole life policy. In section II, we detail how large this violation of the law of one price can be. The combination of a savings account and a term insurance policy can provide over six times as much value as a whole life insurance policy.

Financial product decision-making is particularly difficult because individuals with low levels of financial literacy may not be in a good position to determine which products are appropriate for them (Lusardi and Mitchell, 2007). An important role of agents may be to identify suitable products. At the time of our experiment, agents in India were tied to single retailers, for whom the agents purvey a variety of insurance and investment products, predominantly (but not exclusively) term, whole, and ULIP products.<sup>4</sup> We begin by conducting sixty pilot audits in which our employees approach insurance agents, describe a set of needs for which term life insurance would be suitable, and solicit a recommendation. We find agents give correct advice in only 9% of the audits; in the other 91% they recommend investment-linked products that are dramatically more expensive. We then conduct a series of experiments to understand what forces influence the advice that agents give.

In our first experiment, we test whether agent advice is responsive to customer need, as well as whether it responds to customers' (potentially erroneous) beliefs about products. We randomly assign whether term or whole life insurance is most suitable for consumers, as well as whether they express an initial preference for term or whole life. We therefore have cases in which the customer has an initial preference for term insurance, though whole insurance is the more suitable product, and vice versa (whole insurance could be a suitable product for an individual who has difficulty committing to saving). If an agent's role is to match clients to suitable products, only suitability information should affect agent recommendations. In fact, we find that agents are just as responsive

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<sup>3</sup>Audit studies have been used extensively in the literature on discrimination (Gneezy et. al. (2012), Banerjee et. al. (2009), Bertrand and Mullainathan (2004)).

<sup>4</sup>See Table III for quantitative policy recommendation breakdowns by experiment. At the end of 2011, however, IRDA began to consider the possibility of allowing agents to sell policies of multiple retailers, drawing on foreign policies at play in England and Hong Kong. See Shilpy Sinha, "Irda may allow agents to sell products of more than one insurance company", The Economic Times of India, Oct. 26, 2011, for more details.

to consumers' self-reported (and incorrect) beliefs as they are to consumers' needs.

Interestingly, this is true even when the commission on the more suitable product is higher, and hence the agent has a strong incentive to de-bias the customer.<sup>5</sup> We view this result as important because it suggests that agents 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 for products that may be unsuitable for them.

Our second, third, and fourth experiments test predictions on how competition, disclosure, and increased sophistication of consumers affect the quality of advice provided by agents.

In our second experiment, we study whether competition amongst agents can lead to higher quality advice. We experimentally vary the amount of competition an agent faces by having our auditor explicitly state that they have already spoken to another agent in one set of treatments. We find that agents who face this “threat” of competition provide better advice. This evidence is consistent with standard economic models which suggest that, at least under perfect competition, agents will have an incentive to provide good advice.

In our third experiment we test how disclosure regulation affects the quality of advice provided by life insurance agents. Mandating that agents disclose commissions has been a popular policy response to perceived mis-selling.<sup>6</sup> In theory, once consumers understand the incentives faced by agents, they will be able to filter the advice and recommendations, improving the chance that they choose the product best suited for them, rather than the product that maximizes the agent's commissions. We take advantage of a natural experiment: as of July 1, 2010, the Indian insurance regulator mandated that insurance agents disclose the commissions they earned on equity-linked life insurance products. Focusing on audits that took place either just before or just after the implementation of the regulation, we find agents are much less likely to propose the unit-linked insurance policy to clients and will instead recommend whole life policies which have higher, but opaque, commissions.<sup>7</sup>

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<sup>5</sup>While prices are set by the retailers, agents may engage in “kickbacks” i.e. splitting commissions with clients and reducing the effective product prices. We do see evidence of this occurring throughout the experiments, and kickbacks occur in both monetary and commodity (such as gold) forms.

<sup>6</sup>For example, New York state passed Regulation 194 in 2010, which requires life insurance agents to disclose commissions to prospective life insurance buyers.

<sup>7</sup>The Indian life insurance industry is marked by high first year commissions (as a percentage of premium), significantly lower second year commissions, and monotonically decreasing commissions in subsequent years; as early

In our last experiment, we test whether the quality of advice received varies by the level of sophistication the clients demonstrate. We find that less sophisticated clients are more likely to receive a recommendation for the wrong product, suggesting that agents discriminate in the types of advice they provide. This result suggests that the selling of unsuitable products is likely to have the largest welfare impacts on those who are least knowledgeable about financial products in the first place.

While many of the effects we find are both economically and statistically significant, the evidence is clear: the vast majority of recommendations include unsuitable products. Of course, agents may provide other important benefits to clients, such as motivating agents to purchase welfare-enhancing insurance in the first place. In describing the development of the life insurance industry in the United States, Burton Hendrick noted in a 1906 article in McClure's magazine: "Men do not insure of their own free will. They must be clubbed into it. The company that employs no agents does no business."<sup>8</sup> Our experiments are not designed to measure these benefits.

We focus on the market for life insurance in India for the following reasons. First, given the complexity of life insurance, consumers are likely to require help in making purchasing decisions. Second, popular press accounts suggest that the market may not function well: life insurance agents in India engage in unethical business practices, promising unrealistic returns or suggesting only high commission products.<sup>9</sup> Third, the industry is large, with approximately 44 billion dollars of premiums collected in the 2007-2008 financial year, 2.7 million insurance sales agents who collected approximately 3.73 billion dollars in commissions in 2007-2008, and a total of 105 million insurance

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as the landmark Insurance Act of 1938, commissions in the life insurance business were capped at forty percent in the first year and seven and a half percent in the second year. While precise commissions/incentives are opaque and often a product of a number of factors beyond provider and policy (including agent characteristics), interviews with life insurance agents confirm the higher commissions awarded for whole life products as compared to term products.

In its tie-in with MetLife, for example, Punjab National Indian Bank has ceilings of 35 percent on first year commissions and 7.5 percent for second year commissions for "Investment and Protection" (whole) plans. The respective ceilings for "Pure Protection" (term) plans are only 25 and 5 percent. Moreover, since whole plans have a much higher premium than term for a given level of risk coverage, agents earn many times more commission selling whole policies than term policies. While LIC (Life Insurance Corporation of India, the state owned giant which retains the highest market share) agents have noted that their commissions tend to be more directly tied to policy tenure and therefore slightly lower than their private counterparts, the general structure of large first year commissions exists throughout the industry.

In 2012, after the completion of our study the IRDA capped commissions on limited tenure policies, limiting the use of high first year premiums. For further information, see "IRDA caps commission on limited tenure policies," *Business Standard*, May 26, 2012.

<sup>8</sup>For an interesting discussion of the importance of agents in the development of life insurance in the United States see Chapter 7 in Zelizer (1979).

<sup>9</sup>See for example, "LIC agents promise 200% return on '0-investment' plan," *Economic Times*, 22 February 2008.

customers.<sup>10</sup> Approximately 20 percent of household savings in India is invested in whole life insurance plans (IRDA, 2010). Fourth, agent behavior is extremely important in this market, as approximately 90 percent of insurance purchasers buy through agents.

Recent theoretical research has made advances in understanding how incentives may affect the quality of financial advice. The literature is based on the premise that buyers of financial products need advice and guidance both to determine which product or products are suitable for them, and to select the best-valued product from among the set of suitable products.<sup>11</sup>

Bolton et al. (2007) develops a model in which two intermediaries compete, each offering two products, one suitable for one type of clients, the other for the other type of clients. While intermediaries have an incentive to provide unsuitable advice, competition may eliminate misbehavior. Inderst and Ottaviani (2010) show that the existence of commissions alone does not necessarily imply mis-selling; producers of financial products will pay financial advisors commissions as a way to incentivize them to learn what products are actually suitable for their heterogeneous customers. Along these lines, Del Guercio and Reuter (2010) argue that sellers of mutual fund products in the US that charge high fees may provide intangible financial services which investors value. Gabaix and Laibson (2006) develop a market equilibrium model in which myopic consumers systematically make bad decisions, and firms do not have an incentive to de-bias consumers. Carlin (2009) explores how markets for financial products work when being informed is an endogenous decision. Firms have an incentive to increase the complexity of products, as it reduces the number of informed consumers, increasing rents earned by firms. Both Gabaix and Laibson (2006) and Carlin (2009) are models where firms have no incentive to provide good advice, which is essentially analogous to providing bad advice. Inderst and Ottaviani (2011) present a model with naive consumers,

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<sup>10</sup>Just over a decade ago, Indian embraced public sector exclusivity in the insurance industry. Then in 1999, with the passage of the Insurance Regulatory and Development Authority Act, market competition and private insurers grew, bringing with it new products and distribution channels as well as the limited entry of international investment. While the Life Insurance Corporation of India (LIC), the state owned giant, continues to be the dominant player in the life insurance markets (both in terms of agents and premium payments), competition from dozens of private sector competitors has decreased its market share since 2000, though recent years have been more favorable to the public option. See “LIC reverses declining trend in market share,” *The Economic Times of India*, Mar. 16, 2010, for more details. The 1999 Act also created the Insurance Regulatory and Development Authority (IRDA) - the IRDA regulates the licensing (and renewal) requirements for insurers including solvency ratios and business conduct guidelines. It also enforces more particular obligations like rural market service requirements and the prohibition on foreign investors owning more than 26% of an Indian insurance company’s shares.

<sup>11</sup>Woodward (2008) demonstrates mortgage buyers in the U.S. make poor decisions while searching for mortgages. A series of papers (e.g. Choi et al 2009, 2010) demonstrate that consumers fail to make mean-variance efficient investment decisions, paying substantially more in fees for mutual funds, for example, than they would if they consistently bought funds from the low-cost provider.

where naivete is defined as ignoring the negative incentive effects of commissions, and find that naive consumers receive less suitable product recommendations. Inderst and Ottaviani (2012) focus on the trade-offs involved with various policy interventions aimed at improving advice, including disclosure requirements and commissions bans.

The theoretical work is complemented by a small, but growing, empirical literature on the role of agents in the distribution of financial products. In a paper that precedes this one, Mullainathan et al. (2010) conduct an audit study in the United States, examining the quality of portfolio allocation guidance provided by advisors. They find that agents recommend higher-risk portfolios for wealthier individuals, are biased towards active management, and do not do a good job of undoing customer biases, instead catering to client preferences. In a much larger exercise, the European Commission commissioned a study involving 1,200 mystery-shopping visiting financial advisors in 27 EU member states (Synovate, 2011). This study characterized the quality of advice as “unsuitable” almost 60% of the time, though the authors of the study viewed a recommendation to invest in equities or mutual funds as unsuitable because it involves too much risk. Such a definition of suitability is not consistent with standard theoretical predictions that an individual should hold diversified portfolios, including equities.

Bergstresser et al. (2009) look at the role of mutual fund brokers in the United States. They find that funds sold through brokers underperform those sold through other distribution channels, even before accounting for substantially higher fees (both management fees and entry/exit fees). Buyers who use brokers are slightly less educated, but by and large similar to those who do not. They do not find that brokers reduce returns-chasing behavior.

Our results on the impact of disclosure norms are complementary to a few recent empirical papers as well.<sup>12</sup> Bertrand and Morse (2011) find that showing the aggregate level of fees over time causes borrowers to reduce their high cost pay day loan borrowing. Choi et al (2009) find that providing cheat sheets that clearly disclose fees causes Harvard staff and Wharton MBA experimental subjects to slightly improve allocations across index funds, but overall find disclosure has only minor impacts. Cain et. al. (2005) find that advisors in a laboratory setting take advantage of the greater trust created by disclosure to offer poorer advice. De Meza et al (2010) find that

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<sup>12</sup>For a general review of the literature on disclosure across health, education and financial markets see Dranove and Jin (2010).

disclosure does not change the behavior of buyers in an insurance experiment with large stakes. In a laboratory study posing questions about the market for dental services in the U.S., Schwartz et al. (2011) find that while consumers recognize second opinions may be valuable, they report reluctance to seek them out when they have a previous relationship with their current dentist.

Relative to the existing literature, our paper makes the following contributions. First, we document that the quality of financial advice can be terrible: in our baseline study, fewer than 10 percent of clients were given the correct recommendation. This is particularly troubling given the large welfare consequences of making an incorrect choice in this setting. Second, we provide what we believe is the first evidence of how financial advice responds to government disclosure requirements, consumer behavior, and competition. Measuring agents' responses is critical to understanding the financial advice market equilibrium.

In the next section we discuss the basic economics of the life insurance industry in India, why whole insurance policies are dominated by term policies, and economic theories of why individuals might still purchase whole policies. Section III discusses the theoretical framework that guides our empirical tests. Section IV presents the experimental design, while Section V and VI present our results. Section VII concludes.

## **2 Life Insurance Policies in India**

Life insurance products may be complicated. In this section, we lay out key differences between term and whole life insurance products, and demonstrate that the insurance offerings from the largest insurance company in India violate the law of one price, as long as an individual has access to a means of saving. Rajagopalan (2010) conducts a similar calculation and also concludes that purchasing term insurance and saving strictly dominates purchasing whole or endowment insurance plans. We confirm these findings examining policies offered by the Life Insurance Corporation of India, the largest insurance seller in India, and by ICICI Pru, a recent entrant that is a joint venture of a private sector bank, ICICI, and a British insurance firm, Prudential PLC.

We start by discussing features of the product offerings. In their sales literature, life insurance companies are required to provide illustrations of the payments and benefits of their policies; we focus on policies highlighted by the sellers: the LIC endowment plan Jeevan Shree (Plan #162),



and the ICICI Pru Whole Life Non-Linked policy.<sup>13</sup> The examples are priced for a 35-year old male, seeking Rs. 500,000 in coverage (approximately \$10,000). These endowment plans dominate the Indian insurance market: in 2000, the latest year for which we could find aggregate market data, over 80% of policies sold were endowment or money-back plans.<sup>14</sup> In 2012, LIC continued to report that the endowment policy is its most popular plan.<sup>15</sup>

For the endowment life policy, the illustrated policy has the consumer making 16 annual payments of Rs. 25,186 (ca. \$500 at 2010 exchange rates), for a 25-year coverage period, with a base cover of Rs. 500,000 if the client dies before age 60. In case the client survives until age 60, which would be the year 2045, the product pays a maturation benefit equal to the coverage amount. The coverage amount is not necessarily constant. In the case of the Jeevan Shree policy, it is guaranteed to increase by Rs. 25,000 per annum for the first five years. Subsequently, it may be increased via LIC's "bonus" policy, which the insurance company may declare if it earns profits. This is similar in spirit to mutual insurance, whereby profits are passed onto policy-holders, though neither LIC nor ICICI passes on all of its profits to policy-holders. In the past several years, bonuses for the Jeevan Shree plan have averaged around 4.4% of the original coverage amount of the insurance policy. Unlike interest or dividends, these bonus payments are not paid to the client directly; instead, the bonus is added to the notional coverage amount, paid in case of death of the client, or, at maturity. The insurance company does not make any express commitment as to whether, and how much, bonus it will offer in the future. However, data from 2005-2011 suggest that bonus rates remain relatively fixed. For LIC, over this period, whole life bonus was 6.6% in 2006 and 7.0% each subsequent year, the endowment bonus 4.0%-4.2%, and the bonus associated with Jeevan Shree-type plans ranged from 4.3%-4.6%.

A critical point to be made here is that the bonus is not compounded. Rather, the bonus added is simply the amount of initial coverage, multiplied by the bonus fraction. For example, the Jeevan Shree policy described above provides a guaranteed maturity value of 625,000 rupees in its fifth year. In the sixth through twenty-fifth year of the policy, the maturity value grows based on

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<sup>13</sup>The term "endowment" is typically used to describe a whole insurance plan with a shorter policy period, although different firms appear to use the terms endowment and whole to describe very similar policies. In general, there are no well-defined differences between policies with the term endowment versus whole in their titles. Both policies have substantial savings components, bonus payments, and large premiums.

<sup>14</sup>Insurance Regulatory and Development Authority, <http://www.irdaindia.org/hist.htm>, accessed August 2012.

<sup>15</sup>[http://www.licindia.in/endowment\\_001\\_benefits.htm](http://www.licindia.in/endowment_001_benefits.htm), accessed August, 2012.

the amount of bonuses paid. If the company declares a 4% bonus each year, the amount of coverage offered by the policy will increase by  $.04 * 625,000 = \text{Rs. } 25,000$  each year, above the guaranteed base of Rs. 625,000 after the fifth year. These additional discretionary bonuses thus provide Rs. 500,000 in additional coverage in the final year (25,000 for each of the 20 years of the policy from year 5 to year 25). If instead the policy grew at a 4% *compounded* annual rate from years 6 to 25, the policy value would increase by 744,452 as opposed to 500,000.<sup>16</sup> Over longer horizons and higher interest rates this difference becomes even more dramatic: some whole life plans have a maturity of 40 years, with a bonus rate around 7%. At maturity, a life insurance policy with simple bonuses would be worth one third as much as a policy which accumulated value at a 6 percent growth rate<sup>17</sup>. Stango and Zinman (2009) describe evidence from psychology and observed consumer behavior that individuals have difficulty understanding exponential growth. Consumers who do not understand compound interest may not appreciate how much more expensive whole life policies are.

The ICICI Pru life policy is a shorter-term policy, providing coverage for 10 years, after which point the policy matures. Ten annual premium payments of Rs. 15,140 provides Rs. 100,000 of coverage (“sum assured”), though in case of death over this ten year period the policy in fact pays Rs. 200,000 in benefit, plus accumulated bonuses. The illustration indicates a bonus of Rs. 1,600 per annum. Upon maturity, the policy pays the sum assured, along with the annual bonuses, and a final termination bonus, for a total payment of 137,782.

A second feature of the two policies may be their relative attractiveness to naive, loss-averse consumers. Agents frequently dismissed term insurance as an option, arguing that the customer was likely to live at least twenty years, hence the premiums would be “lost” or “wasted,” while with whole life the purchaser was guaranteed to get at least the nominal premium paid returned.

In Appendix Table I, we evaluate two investment insurance products by creating replicating portfolios which consist of a term insurance policy plus savings. All Indians can save an arbitrary amount in national savings certificates, offered by the government, which guarantee 8 percent return and have the same tax treatment as insurance policies.<sup>18</sup>

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<sup>16</sup>Rs.  $625,000 * 1.04^{20} - 625,000 = 744,452$

<sup>17</sup> $(1 + 40 * .06) / (1.06)^{40} \cong .33$

<sup>18</sup>Both insurance premium payments and deposits into national savings certificates are deductible from income tax up to any amount. The policy payouts and bonuses for insurance are exempt from tax. For national savings certificates, interest payments up to 100,000 rupees per year are exempt from taxes. None of the comparisons we make involve interest payments of more than 100,000 rupees per year, which would be very large amounts relative to the amounts of saving our auditors might plausibly have. Nonetheless, we also calculate returns assuming that

Each year, the replicating portfolio provides at least as much coverage (savings plus insurance coverage) as the investment policy, while requiring the exact same stream of cash flows from the client. Panel A considers products from LIC.<sup>19</sup> If instead of paying Rs. 25,186 per the endowment insurance plan, a buyer bought instead a 25-year term policy with Rs. 500,000 in coverage, he would pay Rs. 2,767 each year for 25 years. For the first sixteen years of that period, he could save the difference  $(25,186 - 2,767 = 22,419)$ .<sup>20</sup> In each year, the death benefit (of the term payout plus savings) would be greater than the benefit from the endowment policy, including any bonuses. The differences can be dramatic: for death at age 45, the replicating portfolio provides 23 percent more coverage; for death just before the policy expires, the replicating portfolio provides more than twice as much coverage. After 25 years, the term policy has no value, but the savings balance is on its own worth 50 percent more than the endowment policy.

Panel B evaluates term vs. whole insurance from one of the large private sector providers. Here, the differences are even more dramatic. A ten-year endowment policy with Rs. 100,000 nominal coverage will yield, after bonuses, a final value of Rs. 137,782 when it matures. In case of death before age 45, the policy will pay out Rs. 200,000 plus up to Rs. 16,000 in bonuses. A replicating portfolio here would involve taking ICICI's term life policy, which, for Rs. 3,409, provides Rs. 2,050,000 in case of death, or approximately *ten times* as much coverage. By saving the difference in premiums  $(15,140 - 3,409)$ , the replicating portfolio would yield Rs. 169,942 after ten years. Thus, the client gets ten times as much coverage and, if he survives through ten years, is left with 23 percent more cash.

But even this comparison understates the difference in value dramatically, for at least two reasons. First, the replicating portfolio builds up a substantial savings balance, which is more liquid than a life insurance policy. Clients seeking to redeem investment-type policies early may forfeit more than 70 percent of the accrued value. Second, if an individual does not pay each premium promptly, the insurance company has the right to declare the policy lapsed. Some estimates suggest

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individuals had to pay a tax rate of 10 percent on the interest earned in National Savings Certificates, and still find that term plus savings dominates the whole insurance product (our choice of tax rate is conservative, as a marginal tax rate of ten percent applies to those earning Rs. 200,000 and Rs. 500,000, which is above what our auditors reported earning to agents).

<sup>19</sup>Payout amounts for this policy are described in LIC sales documents, with bonus amounts based on an LIC assumption of 6% per annum return.

<sup>20</sup>In years 17-25, the replicating portfolio withdraws Rs. 2,767 each year from the savings portfolio; this is the amount necessary to continue paying the term premium.

lapse rates are high: 6 percent of outstanding policies lapse in a given year (Kumar, 2009). Lapse within three years yields no redemption value to the customer; lapses after three years promise a recovery value of only 30 percent of premiums paid (less the first year's premiums).

Thus, for an equivalent investment, the buyer receives anywhere from 40 percent to twenty times as much benefit if she purchases term plus savings, relative to an endowment or whole policy. We are not aware of many violations of the law of one price that are this dramatic. A benchmark might be the mutual fund industry: \$1 invested in a minimal fee S&P500 fund might earn 8 percent per annum, and therefore be worth \$69 after 55 years. If an investor invested \$1 in a "high cost" mutual fund that charged 2 percent in fees, the value after 55 years would be \$25, or about one third as large. The cost of a poor life-insurance decision is thus similar in magnitude to selecting the highest-cost index funds.

When making similar comparisons for products offered by other companies, or for individuals of different ages, we consistently find that term plus savings outperforms savings-linked life insurance plans. If there is truly a demand for investment-linked products, it is somewhat surprising that an insurance company has not entered this market and won a substantial amount of business by offering a better whole insurance product (i.e. by paying compounded bonuses, charging lower premiums, or both). In fact, there are some whole life products that pay a compounded bonus (i.e. the bonus rate is applied to both the sum assured amount plus all previously accumulated bonuses); thus, it is not the case that the insurance industry is unaware that consumers might like these products. Rather, it seems that it is not possible for an insurance company to win substantial amounts of business by aggressively selling whole products that pay compounded bonuses.

One explanation for this may be that competition really occurs along the margin of selling effort, as opposed to the quality of the product. In this case, the products that have the highest sales incentives will sell, and any particular insurance firm will have an incentive to pay the highest commissions on the highest profit products. We present a formal model along these lines that is consistent with our empirical results in the Appendix to this paper. Recent work on shrouded product attributes such as Gabaix and Laibson (2006) and Heidhues et al. (2012) may also provide part of the explanation. These models show that dominated products can exist in competitive equilibrium, as long as firms do not have an incentive to educate consumers about which products are dominated. In the life insurance case, one reason firms may not have such an incentive is that

educating consumers that term plus savings is better than whole insurance may cause consumers to do all of their savings with banking firms, as opposed to saving with insurance firms. This loss in savings business may outweigh the benefits of greater term insurances sales. Nonetheless, because our experimental design does not allow us to distinguish between these models at this point, we leave further exploration of this issue to future work.

## 2.1 Whole Life Insurance as a Commitment Device

One potential advantage of the whole life policy over term plus savings is that the whole life policy contains commitment features that some consumers value (Ashraf et al., 2006). The structure of whole life plans imposes a large cost in the case where premium payments are lapsed, and thus consumers who are sophisticated about their commitment problems may prefer saving in whole life plans versus standard savings accounts where there are no costs imposed when savings are missed. In particular, the LIC Whole Insurance Plan No. 2 discussed in the previous section returns nothing if the policy lapses within the first three years.

However, it is not clear that the commitment feature alone is sufficient to explain the popularity of whole life insurance. Overall demand for commitment products appears to be low: Ashraf et al. (2006) find that only 25 percent of those offered a commitment savings device take it up; Gine, Karlan, and Zinman (2010) report take-up of a smoking cessation commitment savings product to be only 11% among a group of smokers. Moreover, there are other savings products in the Indian context that offer similar commitment device properties but substantially higher returns. Fixed deposit accounts involve penalties for early withdrawal. Public provident fund accounts require a minimum of Rs. 500 per year contribution and allow the saver no access to the money until at least 7 years after the account is opened. If a saver does not contribute the 500 rupees in a particular year, the account is consider discontinued and the saver has to pay a 50 rupee fine for each defaulting year plus the 500 rupees that were missed as installments.

Finally, there is no reason that a financial services provider could not offer commitment savings accounts without an insurance component. The fact that no such product has been developed in India or around the world suggests that this product is not simply satisfying demand for commitment savings.

Nevertheless, we acknowledge that a desire to commit may be relevant for some consumers.

Hence, for any shopping visit in which we regard term insurance as the more appropriate product, the mystery shopper clearly told the insurance agent that she or he was seeking risk coverage at a low cost, rather than a savings vehicle.

### 3 Theoretical Framework

Our empirical work is motivated by recent theoretical work on the provision of advice to potential customers. Our paper tests two types of predictions that arise from this class of models. The first set of predictions concerns the quality of advice provided by commissions motivated agents. These models predict that at least some consumers will receive low quality advice; i.e. they will be encouraged to purchase an advanced product that has higher commissions but no real benefits to them (Inderst and Ottaviani, 2011, Gabaix and Laibson, 2006).<sup>21</sup> We test this by measuring the fraction of agents that recommend customers purchase whole insurance, even in the case where the customer is only seeking insurance for risk protection (i.e. we shut down any commitment savings channel).

The second set of predictions relates to how regulation and market structure affect the quality of advice. We test three predictions from the theoretical literature.

Our first test centers on the role of competition in the provision of advice. Inderst and Ottaviani (2011) and Bolton et al. (2007) show that increased competition amongst agents who provide products and advice can improve the quality of advice for customers. On the other hand, Gabaix and Laibson (2006) show that increasing competition need not lead firms to unshroud product characteristics that hurt naive consumers. Our auditors vary the level of competition perceived by agents, by reporting whether their information about insurance comes from a friend (low competition) or from another agent from which our auditor is thinking of purchasing insurance (high competition).

Second, a large literature in economics predicts that competition between firms will induce firms to disclose all relevant information regarding products (Jovanovic (1982), Milgrom (1981)).

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<sup>21</sup>While the Gabaix and Laibson (2006) paper does not explicitly deal with commissions, it does show that firms will not necessarily have the incentive to unshroud product attributes (such as commissions or low rates of return in our case) because unshrouding these will not necessarily win the firm business. In our case, the analogy would be that life insurance firms do not have the incentive to unshroud these attributes of whole insurance products because they would lose a substantial proportion of business to banks and other financial service providers if individuals move their savings out of life insurance.

In these models, mandatory disclosure enforced by the government does not change consumer decisions and does not improve welfare. However, Inderst and Ottaviani (2011) argue that disclosure requirements can improve the quality of advice by essentially converting unaware customers into customers that are aware of how commissions can bias advice. We test how a disclosure requirement on commissions impacts financial advice by studying a particular type of insurance product, a Unit Linked Insurance Policy (ULIP), where agents were forced to disclose the commissions they earned after July 1, 2010.

Lastly, a key feature of the recent theoretical models in Inderst and Ottaviani (2011) and Gabaix and Laibson (2006) is the presence of two types of agents, with different levels of sophistication. Inderst and Ottaviani (2011) predict that these sophisticated types will receive better advice. We test this prediction by inducing variation in the level of sophistication demonstrated by the agent during the sales visit.

## 4 Experimental Design

### 4.1 Setting

In this section we describe the basic experimental setup common to all experiments we ran in this study. Auditors were recruited via the employee networks of the Center for Microfinance (CMF), with the goal of recruiting reliable, capable individuals who would be able to conduct the audits effectively. Following completion of the study, several auditors continued to work for CMF in other capacities. All auditors had at least a high school education. The auditors were all middle-aged (in their late 30s), were predominantly men, and spoke the local language.<sup>22</sup>

The audit team was led by a full-time audit manager, who had previously worked managing a financial product sales team for an international bank. This employee, along with a principal investigator, provided intensive introductory training on life insurance. Each auditor was subsequently trained in the specific scripts they were to follow when meeting with the agents. Each auditor's script was customized to match the auditor's true-life situation (number of children, place of res-

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<sup>22</sup>Reports from LIC and major private providers suggest that the majority of life insurance policy holders in India are in fact men and middle-aged, leading to providers increasingly devising products to draw more youth and female customers. For more information see "Finance Ministry Asks LIC to attract younger customers," The Indian Express, June 17, 2012, and "Insurance ratio tilted against India's women," LiveMint.com (The Wall Street Journal), June 30, 2009.

idence, etc.). However, auditors were given uniform and consistent language to use when asking about insurance products, and seeking recommendations. Auditors memorized the scripts, as they would be unable to use notes in their meetings with the agents. Following each interview, auditors completed an exit interview form immediately, which was entered and checked for consistency. The auditors and their manager were told neither the purpose of the study, nor the specific hypotheses we sought to test. Auditors were instructed not to lie during any of the sessions.

Prior to beginning the experiments, we conducted a series of pilot audits. In the first two dozen pilot visits, there was no variation in agent recommendation, with each agent proposing a whole or endowment policy. We thus revised the script to include the language “I am seeking risk coverage. If I need to save, I prefer to save in a bank.” Table I presents results from the pilots after we made this change. In only 9% of the audits did the agent recommend the appropriate policy, term insurance. In contrast, whole/endowment policies were recommended 64% of the time. These numbers are quite close to the reported market share of whole and endowment policies.

Following these pilots, we ran a series of experiments to understand under what circumstances advice might approve. In each experiment, treatments were randomly assigned to auditors, and auditors to agents. Note that because the randomizations were done independently, this means that each auditor did not necessarily do an equivalent number of treatment and control audits for any given variable of interest (i.e. sophistication and/or competition). Table II presents the number of audits, number of auditors, and number of life insurance agents for each separate treatment cell in each of our three experiments. Since we were identifying agents as the experiment proceeded, we randomized in daily batches. To ensure treatment fidelity, auditors were assigned to use only one particular treatment script on a given day. Table II also reports the mean of the primary outcome variable by treatment.

Life insurance agents were identified via a number of different sources, most of which were websites with national listings of life insurance agents.<sup>23</sup> Contact procedures were identical across

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<sup>23</sup>The main form of agent recruitment was through India’s online “yellow page” equivalents, particularly justdial.com (considered India’s major local services search engine), asklaila.com, and sulekha.com. Life insurance agent listings were limited to the given geographic zone (Chennai and Ahmedabad), phone calls were made to the listed numbers to assure that the agents were in fact present, and then validated agents comprised the pool for randomization. Because Justdial is considered the advertising medium of choice for small businesses, we believe it should draw a representative sample of agents in major metropolitan cities, confirmed by the LIC market share in the sample. For further market analysis of Justdial, see for example, “Just Dial: America Calling,” Outlook India Business Magazine, Jun. 12, 2010.



the treatments. While some agents were visited more than once, care was taken to ensure that no auditor visited the same agent twice, and to space any repeat visits at least four weeks apart, both to minimize the burden on the agents and to reduce the chance that the agent would learn of the study. At the experiments' conclusion, auditors were offered a bonus which they could use towards purchasing a life insurance of their own choosing.<sup>24</sup>

Table III presents summary statistics across the three experiments on whose results we report in this paper. The Quality of Advice experiment was conducted in one major Indian city, and the Disclosure and Sophistication experiments were conducted in a second major Indian city.<sup>25</sup> Across the experiments, between 50-75% of agents visited sold policies underwritten by the Life Insurance Company of India (LIC), a state owned life insurance firm. This fraction is consistent with LIC's market share, which was 66 percent of total premiums collected in 2010.

In terms of the location of the interaction between the auditor and the life insurance agent, one major difference between the Quality of Advice experiment and the Disclosure and Sophistication experiments is that a substantial number of Quality of Advice audits occurred at venues outside the agent's office. These other locations were typically a restaurant, cafe, railway or bus station, or public park. In the Disclosure and Sophistication experiments, the majority of audits took place at the agent's office. On average, each audit lasted about 35 minutes, suggesting that these audits do represent substantial interactions between our auditors and the life insurance agents. The length of audit did not vary substantially across the different experiments.

Audit studies have generated influential evidence on discrimination in labor and product markets (e.g., Ayres and Siegelman, 1995), and often involve sending a matched pair, such as black and white car buyers, to complete an economic transaction. Critics of this approach have argued that even if auditors stick to identical scripts, they may exhibit other differences (apparent education, income, etc.) that could lead sales agents to treat buyers differently for reasons other than the buyer's race or sex (Heckman, 1998). While our study is not subject to this criticism - our treatments were randomized at the auditor level, so we can include auditor fixed effects, which absorb effects of auditor characteristics - we took great care to address other potential threats to

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<sup>24</sup>The three auditors who remained in the sophistication and disclosure experiments were offered 5,000 rupee bonuses to use towards paying the premiums on a life insurance product - all three chose a term policy, Anmol Jeevan, through LIC, with a risk cover of 650,000 - 750,000 rupees.

<sup>25</sup>The Competition experiment was conducted as a sub-treatment within the Quality of Advice experiment, and thus shares the same summary statistics.

internal validity. Outright fraud from our auditors is very unlikely, as they were obliged to hand in business cards of the sales agents. To monitor script compliance, we paid an insurance agent within the principal investigators’ social network to “audit the auditors”—these agents reported that our auditors adhered to scripts.<sup>26</sup> The outcome we measure, policy recommended, is relatively straightforward, and auditors were instructed to ask the agent for a specific recommendation.<sup>27</sup> To prevent auditor demand effects, we did not inform the auditors of the hypotheses we were interested in testing.

## 5 Quality of Advice

### 5.1 Quality of Advice: Catering to Beliefs Versus Needs

In this experiment we test the sensitivity of agents’ recommendations to the actual needs of consumers, as well as to consumers’ potentially incorrect beliefs about which product is most appropriate for them. In particular, one reason that agents may recommend whole insurance is a belief that customers will value the commitment savings features. To examine this, we vary the expressed need of the agent, by assigning them one of two treatments. In one set of the audits, the auditor signals a need for a whole insurance policy by stating: “I want to save and invest money for the future, and I also want to make sure my wife and children will be taken care of if I die. I do not have the discipline to save on my own.” Good advice under this treatment might plausibly constitute the agent recommending whole insurance. In the other half of the audits, the auditor says, “I am worried that if I die early, my wife and kids will not be able to live comfortably or meet our financial obligations. I want to cover that risk at an affordable cost.” In this case the auditor demonstrates a real need for term insurance. By comparing agent recommendations across these two groups, we can measure whether an agent’s recommendation responds to a customer’s true needs. Appendix Table II presents the exact wording of all of the experimental treatments in this study.

We also randomized the customer’s stated beliefs about which product was appropriate for

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<sup>26</sup>After interviewing several candidates, we selected an insurance salesman with his own office as our agent to monitor auditors, and he was given a sales script. Auditors were unknowingly assigned to visit him, and the agent filled out an evaluation tool to assess each auditor’s persuasiveness and the faithfulness with which they adhered to the assigned script. Neither the salesman nor the audit manager found significant problems with the auditors’ performances.

<sup>27</sup>Agents sought to close a sale on the first visit, rather than suggesting a follow-up visit.

him or her. In audits where the auditor was to convey a belief that whole insurance was the correct product for them, the auditor would state, “I have heard from [source] that whole insurance may be a good product for me. Maybe we should explore that further?” In the audits where the auditor was to convey a belief that term insurance was the correct product for them, the auditor would state, “I have heard from [source] that term insurance may be a good product for me. Maybe we should explore that further?”

Finally, to understand the role of competition, we also varied the source auditors mentioned when talking about their beliefs. In the low competition treatment, the auditor named a friend as a source of the advice. In the high competition treatment, the auditor said the suggestion had come from another agent from whom the auditor was considering purchasing.

Each of these three treatments (product need, product belief, and source of information) was assigned orthogonally, so this experiment includes eight treatment groups.

Appendix Table III presents a randomization check to see if there are important differences in the audits that were randomized into different groups. The first two columns compare audits that were randomized such that the auditor had either a bias for term (Column (1)) or a bias for whole (Column (2)). As would be expected given the randomization, there are almost no systematic differences across the two groups. The only significant difference is that audits assigned a bias towards whole were approximately two percentage points more likely to be conducted at the auditor’s home.<sup>28</sup> We include audit location fixed effects in our specifications and find that they do not substantially change the results.

Columns (3) and (4) present characteristics of audits where the auditor was randomized into having a need for term insurance (Column (3)) or a need for whole insurance (Column (4)). The next two columns present the pre-treatment characteristics of audits where the source of the bias was another agent (Column (5)) or a friend (Column (6)). There are also no statistically significant differences in the pre-audit characteristics across these groups.<sup>29</sup>

Before describing the experimental results, we emphasize how poor the quality of advice is: for individuals for whom term is the most suitable product, only 5% of agents recommend

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<sup>28</sup>Particularly in Chennai, many agents did not have formal offices, likely due to economic constraints, and thus relied on mutually convenient locations in which to sell their goods. These locations included coffee shops, tea stalls, and public parks.

<sup>29</sup>Throughout the paper, we use robust standard errors; results and significance levels are virtually identical if we cluster standard errors at the level of randomization, auditor\*day.

purchasing only term insurance, while 74% recommend purchasing only whole. A previous version of this paper documented a range of wildly incorrect statements made by agents, such as: “You want term: Are you planning on killing yourself?” “term insurance is not for women;” “term insurance is for government employees only.” One even proposed a policy that he described as term insurance, which was in fact whole insurance.

Table IV presents our main results on how variations in the needs of customers and biases of customers affect the quality of financial advice.<sup>30</sup> Column (1) presents results on whether the agent’s final recommendation included a term insurance policy (in about 8% of the cases, agents recommend the consumer purchase multiple products). We find that agents are 10 percentage points more likely to make a final recommendation that includes a term insurance policy if the auditor states that they have heard term insurance is a good product. We also find that agents are 12 percentage points more likely to make a recommendation that includes a term insurance policy if the auditor says they are looking for low-cost risk coverage. Both of these results are statistically significant at the 1 percent level. However, it is important to note that the interaction of these two variables is statistically insignificant; agents do not respond more to a customer’s need for term insurance when the customer has already said that term insurance is a good product for them (and vice versa - the agent does not respond more strongly to the customer having a belief that term is a good product if the customer states the need risk coverage).

In column (2), we add auditor-fixed effects and controls for venue and whether the agent sells policies underwritten by a government-owned insurer. The experimental results are unaffected. Agents from the government-owned insurance underwriters (primarily the Life Insurance Corporation of India) are 12 percentage points less likely to recommend a term insurance plan as a part of their recommendation. This result suggests that the government does not encourage its sales agents to provide better advice, and that government ownership does not appear to solve the problem of unsuitable advice in this context.<sup>31</sup>

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<sup>30</sup>In this section we focus on the quality of advice given, and thus report results on how advice responds to a customer’s needs versus beliefs. Later, we discuss the impact of the competition treatment when we focus on how quality of advice might be improved.

<sup>31</sup>There are multiple possible explanations for our finding that the government does not provide better advice. Anecdotal evidence suggests that low and medium income households tend to trust the government insurance companies more than private sector firms, and the government firm might take advantage of this additional trust by pushing less suitable products. Another possibility is that agents employed by government firms are less knowledgeable about term insurance. Our experimental design does not allow us to distinguish between these explanations so we leave such an analysis for future work.

Column (3) presents the same specification as Column (1); however, now the dependent variable takes a value of one if the agent recommended only a term insurance plan. We find much weaker results here. A customer stating that they have heard that term insurance is a good product is only 2 percentage points more likely to receive a recommendation to purchase only term insurance. We find that stating a need for affordable risk coverage only causes a 1.5 percentage point increase in the probability that the agent will recommend term insurance exclusively. This effect is not statistically significant at conventional levels. When the auditor states both that they need risk coverage and they have heard that term is a good product, we find an increase of 5.3 percentage points, significant at the ten percent level. Column (4) adds controls.

Thus, comparing Columns (2) and (4), it appears that agents do respond to both the biases and needs of customers; however, they primarily do it by recommending term insurance products as an addition to whole insurance products, rather than recommending the purchase of term.

Overall, the results in Columns (1) - (4) suggest that agents will respond approximately equally to both the needs and pre-existing biases of customers. These results are consistent with the idea that agents maximize the expected revenue from an interaction, and the expected revenue depends both on the probability that the customer will purchase as well as the amount of commission that can be earned. When choosing what product to recommend, agents face a trade-off between recommending a product with higher commissions versus recommending a product that fits with the customer's pre-existing beliefs.<sup>32</sup> Agents do not seem to attempt to de-bias customers who express perceived needs inconsistent with actual needs; thus, in this context it seems unlikely that commissions motivated agents are effective in undoing behavioral biases that customers bring to their insurance purchase decisions.

Columns (5) and (6) show that stating an initial bias towards term insurance causes the agent to recommend that the customer purchase approximately 13 percent more risk coverage, while expressing a need for risk coverage increases the recommended risk coverage by 17 percentage points. Both of these effects are significant at the five percent level, but their interaction is not. Again, these results suggest that agents will cater to the stated preferences of a customer (even if those preferences are inconsistent with their actual needs), approximately equally as much as they

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<sup>32</sup>Although we do not present a formal model of this trade-off effect, it is worth noting that such a result is consistent with the Inderst and Ottaviani (2012) model of commissions where the agent has some pre-existing beliefs about the right product.

cater to the actual stated needs of customers.

Columns (7) and (8) test whether the recommended premium amounts are statistically different across the treatments. We find that the bias and need treatments have small and statistically insignificant effects on the level of premiums the agent recommends that customers pay to purchase insurance. This suggests that although agents are recommending higher coverage levels for those who either have a bias towards term or a need for term (Columns (5) and (6)), customers are not paying higher premiums to obtain this additional coverage. Instead, the increase in risk coverage observed in Columns (5) and (6) is due primarily to the fact that term insurance provides dramatically more risk coverage per Rupee of premium.

Further evidence of this interpretation is obtained from the average amounts of risk coverage and premium amounts when agents recommended term versus whole insurance (not reported). In the case where the auditor sought risk coverage at an affordable cost and said they had heard risk coverage was a good product for them, agents recommending term insurance proposed 2.3 million rupees of risk coverage, with an annual premium cost of approximately 31,000 rupees. Agents recommending whole insurance suggested customers purchase 522,000 rupees of risk coverage, with an annual premium of approximately 28,000 rupees. Our auditors' characteristics (income, dependents) are the same no matter what beliefs they express, meaning that there is no economic reason to suggest greater coverage levels when the auditor expresses a preference for coverage at low cost. One explanation for this result, consistent with the bad advice hypothesis, is that agents base their recommendations on the amount of premiums customers can pay, as opposed to the amount of risk coverage customers actually need. Our finding here is consistent with anecdotal evidence from discussions with our auditing team: agents typically start the life insurance conversation by estimating how much the individual can afford to put into life insurance per month, rather than determining how much risk coverage the customer needs.<sup>33</sup>

We note that we cannot observe what an agent infers from our experimental treatments. For example, it is possible that agents hearing a customer say that they have heard term insurance is a good product infer that the customer only needs risk coverage; or, an agent who hears a customer

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<sup>33</sup>Such an interpretation is consistent with the idea that anchoring is an important feature of conversations between financial product providers and consumers. Agents anchor customers on the amount of premiums they can pay as opposed to the amount of coverage they need. By shifting the discussion towards amounts of premiums and away from coverage amounts the agent can avoid the fact that term insurance provides much more risk coverage for the same premium amounts versus whole insurance.

has heard whole insurance is a good product assumes that the customer needs a commitment savings device. While we acknowledge that such an interpretation is possible, we have two reasons for believing that our evidence is consistent with catering. First, agents respond equally strongly to the statement “I have heard term is a good product” as they do to an explicit statement of need for term, not whole, insurance. Second, we find that agents respond equally to the “beliefs” treatments whether or not the beliefs contradict the direct statement of needs (the interaction between the “beliefs” and “needs” treatments are insignificant). If agents were primarily using our beliefs treatments as a way to make inferences about customer needs, then we would expect them to respond to beliefs less strongly when they contradict the customer’s stated needs.

In summary, we find the following. Despite the fact that term is an objectively better policy, between 60 and 80 percent of our visits end with a recommendation that the customer purchase whole life insurance. Second, even when customers 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. Third, we find that agents primarily cater to customers (either their beliefs or needs) by recommending that they purchase term insurance in addition to whole insurance, as opposed to recommending term insurance alone. It is difficult to see how combining term and whole insurance makes sense for someone who is seeking risk coverage.

## 6 Financial Advice and Market Structure

Our previous results are consistent with the models of Inderst and Ottaviani (2011), Gabaix and Laibson (2006) and Bolton et al. (2007), which suggest that commissions-motivated sales agents will have an incentive to recommend more complicated but potentially unsuitable products to customers who are not wary of the agency problems that commissions create (at least under some market structures). In this section we turn to testing theoretical predictions on how advice responds to the regulatory and market structure. As our experimental design allows us to measure the type of advice given, we focus on three predictions. First, the threat of increased competition from another agent will reduce the probability that an unsuitable product is recommended. Second, increasing consumers’ awareness of commissions will reduce the tendency to recommend unsuitable products. Third, agents will provide different advice to sophisticated versus unsophisticated consumers.

## 6.1 Competition

One way agents may compete with each other is to offer better financial advice.<sup>34</sup> Standard models of information provision suggest that competition amongst advice providers will lead to the optimal advice being given; customers will avoid salesmen who give low quality advice and thus, in equilibrium, only high quality advice will be given.

In any given interaction between an agent and a customer, it is likely that the agent perceives that he has some market power, in that the customer would have to pay additional search costs to purchase from another agent. In this treatment we attempted to experimentally reduce the agent’s perceived amount of market power by varying whether the customer mentions that they have already spoken to another agent. Auditors randomized into the high competition treatment stated that they heard from another agent that term (or whole) might be a good product for them. Auditors randomized into the low competition treatment state that they heard from a friend that term (or whole) might be a good product for them.

The audits on which these data are based on are the same as those used in the Quality of Advice experiment. Table V presents our results on the impact of greater perceived competition on the quality of advice provided by life insurance agents. The specifications reported here are the same as those in Table IV, but we now introduce a dummy variable that takes the value of 1 if the auditor’s bias came from a competing agent, and zero if the bias came from a friend. Columns (1) and (2) show that, overall, the induced competition does not seem to have an important effect on whether agents recommend term insurance as part of their package recommendation. Columns (5) and (6) show that the competition treatment also did not have an overall increasing effect on whether only a term policy was recommended.

Columns (3) and (4) introduce a set of interaction terms among the bias treatment, the need treatment, and the competition treatment. We are particularly interested in the treatment where the customer is biased towards whole insurance but demonstrates a need for term insurance. In this setting the agent has the potential to de-bias the auditor as their beliefs are inconsistent

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<sup>34</sup>McKinsey report “India Life Insurance 2012” documents the increasing competition in the life insurance industry, particularly for middle-class consumers. Moreover, academic researchers who have surveyed Indian consumers have found that brand loyalty ranks among the least important criteria for policy selection, while perceived product quality ranks as the most important criterion (Negi and Singh 2012). These preferences corroborate the Indian consumer cognizance of and amenability to competition among providers.



with their insurance needs. In Columns (3) and (4) we find that the agent is substantially more likely to de-bias agents when the threat of competition looms. This effect is measured by summing the coefficients on the variables Competition and (Need=Term)\*Competition. The sum suggests that agents advising customers who need term but are biased towards whole are 10 percent more likely to recommend term insurance if they perceive higher levels of competition. The hypothesis that (Need=Term)\*Competition + Competition = 0 can be rejected at the 5% level. This result suggests that if perceived competition is high enough, agents will attempt to de-bias customers as a way of winning business.

We do not, however, find that competition increases the possibility that agents will de-bias customers who have a belief that term insurance is a good product but need help with savings. We find that the coefficient on the interaction (Bias=Term)\*Competition is small and statistically insignificant.

Columns (7) and (8) report the same specification as those in Columns (3) and (4); however, the dependent variable takes the value of one if the agent recommended that the customer purchase only term insurance. We do not find any evidence that agents attempt to de-bias consumers by recommending that they only purchase term insurance. The coefficient on the interaction term (Need=Term)\*Competition is small and insignificant in Columns (7) and (8). We find that the competition treatment is only effective, in this case, when the agent has both a bias and a need towards term insurance. One interpretation of this result is that agents assume that a customer who has the knowledge to know that term insurance is the best product for someone who needs risk coverage is almost surely going to purchase term insurance from the other agent. Thus, the agent in the audit chooses to compete by recommending only a term insurance purchase as well.

Our competition manipulation was intended to signal only that an agent faces the threat of competition. However, one might be concerned that an auditor who signals she has visited another agent is perceived as more sophisticated, or having more self-control, than an auditor who mentions discussing insurance with a friend.

To help understand the mechanism through which our competition treatment works, we present in Figure I the fraction of audits that result in a term recommendation, across treatment assignments. Importantly, agents are not generally more likely to recommend term when an auditor has spoken to another agent. Thus, shopping around does not seem to be a signal of self-control

or sophistication. Indeed, competition only has an effect when the auditor had beliefs that whole insurance was a good product, but also mentioned needing risk coverage. In this treatment, agents can demonstrate competence by recommending a product that the other agent did not recommend.

It is important to note that our treatment was designed to understand how agents respond to customers for whom there will likely be more competition from other agents; the results of this experiment are not reflective of how the quality of advice might change if the Indian insurance industry was more competitive as a whole. For example, greater competition amongst Indian insurers might result in different insurance products being offered, or changes in the equilibrium commission structure.<sup>35</sup>

## 6.2 Disclosure

On July 1, 2010, the Indian Insurance Regulator mandated that insurance agents must disclose the commissions they would earn when selling a specific type of whole insurance product called a ULIP. ULIPs are very similar to whole insurance policies, except that the savings component is invested in equity instruments with uncertain returns. This regulation was enacted as the Indian insurance regulator faced criticism from the Indian stock market regulator that ULIPs should be regulated in the same way as other equity-based investment products. The insurance regulator responded to these criticisms by requiring agents to disclose commissions when selling ULIPs.

There are two specific features of this policy that we emphasize before discussing our empirical results. First, it is important to note that the disclosure of commissions required on July 1st is in addition to a disclosure requirement on total charges that came into effect earlier in 2010. In other words, prior to July 1, agents were required to disclose the total charges (i.e. the total costs, including commissions) of the policies they sell, but they were *not* required to disclose how much of those charges went to commissions versus how much went to the life insurance company. Thus, the new legislation requiring the specific disclosure of commissions gives the potential life insurance customer more information on the agency problem between himself and the agent, but does not change the amount of information on total costs. This allows us to interpret our results as the effect of better information about agency, rather than better information about costs more generally.

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<sup>35</sup>For other work that induces changes in the perceived competition a product provider faces for a particular customer see Gneezy et. al (2012) and Castillo et. al. (2012).

To focus the visits on ULIPs, agents began by inquiring specifically about ULIP products available. The experimental design here involves two components. First, we conducted audits before and after this legal change to test whether the behavior of agents would change due to the fact that they were forced to disclose commissions. Second, we also randomly assigned each of these audits into two groups, where in one group the auditor conveys knowledge of commissions and in the other group the auditor does not mention commissions. We created these two treatments as we believed only customers who have some awareness of these commissions were likely to be affected by this law change. In one group, we had the auditor explicitly mention that they were knowledgeable about commissions by stating: “Can you give me more information about the commission charges I’ll be paying?” In the control group, the auditor did not ask this question about commission charges. The variable Disclosure Inquiry takes a value of one in the audits where the auditor explicitly mentioned commissions.

Table VI presents summary statistics on the disclosure experiment audits. Column (1) pertains to the full sample audits, while (2) and (3) present summary statistics on the audits before and after the regulation went into effect. There are several differences between the pre- and post-audits. In particular, post disclosure change audits were more likely to be conducted with the Life Insurance Company of India, and the meetings took place in different venues. These differences suggest that caution is warranted when comparing the pre- and post- results. Columns (7) and (8) of Appendix Table III present summary statistics on the randomization of the different levels of knowledge about commissions.

### **6.2.1 Did the Disclosure Requirement Change Products Recommended?**

We first examine whether audits conducted after the disclosure requirements went into effect were less likely to result in the agent recommending a ULIP policy. Figure II shows the weekly average fraction of audits that resulted in a ULIP recommendation. Prior to the commissions disclosure reform, agents recommended ULIPs eighty to ninety percent of the time. Following the reform, there is an immediate and discrete drop in the fraction recommending ULIPs, to between forty and sixty-five percent of audits. The discrete drop suggests the observed differences are driven by the disclosure requirement, rather than being attributable to a steady downtrend trend in the fraction of agents recommending ULIP policies over time.

Table VII presents the formal empirical results. The dependent variable in columns (1)-(4) takes a value of one if the agents recommended a ULIP product and zero otherwise. The independent variable Post Disclosure indicates whether or not the audit occurred after the legislation went into effect, on July 1st (our earliest post-disclosure audits occurred on July 2nd). The variable Disclosure Inquiry equals one where the client expresses awareness that agents receive commissions and zero otherwise. Finally, we control for whether the agent is from a government underwriter, auditor fixed effects, and the location of the audit.

Column (1) presents a regression without controls. We find that in the post period a ULIP product was 25 percentage points less likely to be recommended. This finding is consistent with the prediction that agents treat customers who are concerned about commissions differently from those who are not, and that disclosure policy can improve customer awareness. We do not find the randomized treatment of the auditor demonstrating knowledge of the commissions significant (Disclosure Inquiry), nor do we find the interaction to be significant.

One potential threat to the validity of our analysis is the change in composition of agents between the pre- and post-period. Perhaps most important is the difference between the fraction of agents selling policies issued by government-owned insurance companies before and after the law change. In Column (2), we control for whether the agent works for a government-run insurance company, as well as location and auditor fixed-effects. The point estimate is slightly smaller, but the effect is still quite sizeable at 19 percentage points.

In columns (3) and (4) we examine agents for government-owned and private insurance companies separately. Among those selling policies underwritten by government-owned companies, there is a 30 percent decrease in the likelihood of recommending a ULIP policy after the disclosure law becomes effective. Amongst private underwriters, we find a negative point estimate, although the coefficient is not significant at standard levels. The result in Column (3) suggests that the observed reduction in ULIP recommendations in the whole sample is not driven by a compositional shift in the types of agents the auditors meet.

Columns (5) and (6) show that the disclosure rule does not result in better financial advice: agents are no more likely to recommend term insurance; instead, the disclosure requirement primarily causes them to substitute away from ULIPs and towards whole insurance. The point estimate, .17, is consistent with complete substitution from ULIPs to whole insurance.

In terms of magnitudes, given that the overall percentage of ULIP recommendations in this sample was 71 percent, the approximately 20 percent decrease in ULIP recommendations once disclosure commission became mandatory is an economically large effect. Thus, it appears that the ULIP disclosure law change primarily led to substitution away from high commission ULIP products to high commission whole insurance products.

Turning to the experimental treatment, we do not find that audits where our agents showed knowledge of the new disclosure requirements are associated with lower levels of ULIP recommendations. The coefficient on the Disclosure Inquiry variable is small and statistically insignificant in all of the specifications. This treatment does not seem to be affected by the disclosure requirement. Columns (7) and (8) present tests of whether the commission disclosure requirement had important impacts on the amount of risk coverage and premium payments recommend by agents. We find no statistically significant differences here, suggesting that the types of products recommended were similar in terms of their risk characteristics after the policy change.

The natural experiment we study here is a policy that only required disclosure for one specific high commission product, and shows that agents may attempt to avoid this disclosure. It provides less insight on what the effect might be of a more general policy change mandating commissions disclosure on all insurance policies. The fact that agents do in fact substitute away from ULIPs suggests that regulations can have some impact on product recommendations by life insurance agents.

### 6.3 Customer Sophistication

In our final experiment, we manipulated the level of sophistication about life insurance policies projected by the auditor. The purpose of this experiment was to document disparate treatment across sophisticated versus unsophisticated customers, which is a key feature of models of financial advice such as Inderst and Ottaviani (2011). We discuss the potential mechanisms underlying this disparate treatment after presenting the results. Each auditor was randomly assigned to portray either high or low levels of sophistication.

Sophisticated auditors say:

*“In the past, I have spent time shopping for the policies, and am perhaps surprisingly somewhat familiar with the different types of policies: ULIPs, term, whole life insurance. However, I*

*am less familiar with the specific policies that your firm offers, so I was hoping you can walk me through them and recommend a policy specific for my situation.”*

Unsophisticated agents, on the other hand, state:

*“I am aware of the complexities of Life Insurance Products and I don’t understand them very much; however I am interested in purchasing a policy. Would you help me with this?”*

To ensure clarity of interpretation of the suitability of recommendations, we built into the auditors’ script several statements that suggest a term policy is a better fit for the client. Specifically, the auditor expressed a desire to maximize risk coverage, and stated that they did not want to use life insurance as an investment vehicle.

Table III presents a randomization check for the Sophistication experiment. The only statistically significant difference between the sophisticated and non-sophisticated treatments is that the sophisticated treatments were about eight percentage points less likely to occur at other venues. Overall, the randomization in this experiment appears to be successful. We control for audit location in our results and find this has little impact on the effect of sophistication on recommendations.

The results from the sophistication experiment, reported in Table VIII, provide some evidence in support of our prediction that sophisticated customers will receive better advice. We use the same specification as in the previous experiments to analyze this data. In Column (1) the dependent variable takes a value of one if the agent’s recommendation included a term insurance plan, and zero otherwise. We find that the sophisticated treatment causes a ten percentage point increase in the likelihood that an agent includes term insurance as a part of their recommendation. This result is statistically significant at the 10 percent confidence level. In Column (2) we include a set of control variables; the point estimate and confidence interval are virtually unchanged. Thus, we do see that agents make some attempt to cater to sophisticated individuals by offering term insurance.

However, in Columns (3) and (4), where the dependent variable takes a value of one if the agent recommended that the auditor purchase only a term a insurance plan, we find there is no statistically significant effect of sophistication. Similar to the results in the bias versus needs

experiment, it appears that agents attempt to cater to more sophisticated types by including term as a part of a recommendation. However, they do not switch to recommending exclusively term insurance, even to customers who signal sophistication.

In Columns (5) and (6) we look at the impact of sophistication on the amount of coverage recommended by the life insurance agent. Without controls, we find that sophisticated agents receive guidance to purchase approximately 22 percent more insurance coverage (Column (5)). In Columns (7) and (8) we test whether sophisticated agents receive different recommendations in terms of how much premiums they should pay for insurance. We find that signaling sophistication does not have an important impact on the amount of premiums that agents recommend paying, although the confidence interval admits economically meaningful effects of up to 25 percent lower premium costs. Combining the results in Columns (5) - (8), we see that, similar to our results on coverages and premiums in the other experiments, agents seem to recommend that approximately the same amount of premiums be paid, regardless of our intervention; they cater to customers primarily by adding a relatively inexpensive term product on top of whole insurance to increase risk coverage without substantially changing premium payments.

Overall, these results suggest that agents do discriminate based on their impression of customers. One possible mechanism is that agents internalize that sophisticated agents are not swayed by false claims, and thus presenting dishonest information to sophisticated agents is wasted persuasive effort. In the specific context of our audits this prediction suggests that life insurance agents should be more likely to recommend the term policy to sophisticated agents. Another possible mechanism is that conveying knowledge about insurance products signals to the agent that this customer is the type who would prefer term insurance. Understanding the contribution of these mechanisms driving agents' choices to discriminate is an important area for future work. <sup>36</sup>

## 7 Conclusion

A critical question facing emerging markets with large swaths of the population entering the formal financial system is how these new clients will receive good information on how to make financial

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<sup>36</sup>Note that we designed our scripts so that sophistication here only means that the potential customer is knowledgeable about life insurance products; both sophisticated and unsophisticated agents state that they have the same objective needs in terms of life insurance. Nonetheless, it is possible that agents inferred something about the needs of sophisticated customers and based their recommendations on those perceived needs.

decisions. Clearly, the private sector will be important in educating new investors and providing suitable products. Recent events in developed economies suggest that regulation or improved consumer awareness may be necessary to ensure that the private sector's own incentives do not compromise the quality of financial decisions made by private individuals. This issue is of particular importance in emerging markets where new investors have little experience with formal financial products to begin with.

In this paper, we show that whole life insurance is economically inferior to a combination of investing in savings accounts and purchasing term insurance. Despite the large economic losses associated with investing in whole insurance, we find that life insurance agents overwhelmingly encourage the purchase of whole insurance.

We then use an audit study to test two types of predictions emerging from recent theoretical models on commissions and financial advice. The first prediction is that agents will have an incentive to recommend more expensive, less suitable, products to consumers. Throughout our three experimental designs, we find that life insurance agents rarely recommend term insurance. Even in audits where there should be no commitment savings motivation, we still find that agents predominantly recommend whole insurance.

We also find that agents cater to customers' pre-conceptions of what the right product is for them as much as (if not more than) to objective information about what the right product is. This suggests that, at least in our sample, agents do not actively try to de-bias customers. This result holds even in the case where an agent has an incentive to de-bias the customer because a de-biased customer would purchase a higher commission product. These results suggest that relying on competition to de-bias consumers of their misconceptions may not lead to markets that inform consumers.

We find that government underwriters are much more likely to recommend the dominated product. We view the government underwriter result as important. Government ownership is sometimes advanced as a solution to market failures, yet in this setting, agents representing government underwriters, in particular the Life Insurance Company of India, were much less likely to recommend a suitable product.

We then proceed to test predictions on how changes in the regulation and competition (between agents) can affect advice given by financial agents.



We test the theoretical mechanism that competition amongst agents can lead to better advice. As mentioned above, the first order fact seems to be that competition does not suffice to motivate agents to provide good advice in this context. In an experiment, we find that increasing the apparent level of competition does lead to the agent attempting to de-bias the customer by offering term insurance. This also suggests that encouraging customers to shop around when looking for consumer financial products may be a simple way to improve the quality of advice provided by agents. However, we find that agents mainly compete by recommending term policies on top of whole insurance policies, as opposed to completely de-biasing the customer and recommending only term insurance policies.

In another experiment, we find that requiring disclosure of commissions on one particular product led to that product being recommended less. This result is interesting in that it suggests that hiding information may be an important part of life insurance agents' sales strategy, and that disclosure requirements can change the optimal strategy of agents. In this case it appears that the disclosure requirement on one product simply had the effect of pushing agents to recommend more opaque products. These results suggest that the disclosure requirements for financial products need to be consistent across the menu of substitutable products.

Lastly we find that agents who signal sophistication by demonstrating some knowledge of insurance products get better advice. Auditors who stated that they had an understanding of insurance products were 10 percentage points more likely to receive a recommendation that included term insurance. This result suggests that the worst educated may suffer most from commissions-motivated sales behavior. Further, it suggests that agents may play an important role in helping financial firms discriminate between sophisticated and unsophisticated consumers, which can be valuable if unsophisticated consumers can be persuaded to purchase dominated products.

We believe our study opens some important questions for further research. First, how effective is the persuasive power of agents? Second, how important are behavioral biases such as loss aversion and exponential growth bias in driving demand for a dominated product? In the spirit of Bertrand and Morse (2011), could consumers be de-biased? Lastly, to what extent do agents know that whole insurance is a dominated product in this context? Would agents be more likely to compete by providing better advice if they themselves understood that term insurance was a better product

for most consumers?<sup>37</sup> The answers to these questions have important implications for optimal regulatory policy and household financial decision-making.

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<sup>37</sup>It is worth noting that the official study guide for prospective Indian life insurance agents states that whole insurance is a unique product that cannot be replicated in any other way; thus, it seems unlikely that agents are systematically taught that term plus savings can dominate whole insurance for many customers. Nonetheless, it is possible that agents learn, through their own experience, that whole insurance is a dominated product and future work investigating the true beliefs of life insurance agents would be useful.

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## 9 For Online Publication: Appendix - Model of a Dominated Financial Product

We, and others, have argued that whole life insurance is dominated by term insurance for individuals who seek insurance mainly for risk coverage. While the goal of this paper is to understand commissions-motivated agent behavior (rather than offer a competitive analysis of the Indian insurance industry), it does raise a puzzle: why do the more expensive, dominated products, such as whole insurance, persist in a setting with competition? We consider here how a dominated product could survive, even in a competitive equilibrium.

We present a simple model, inspired by Gabaix and Laibson (2006), which provides one explanation for how a dominated financial product might exist in competitive equilibrium. The model takes the empirical results found in this paper, that commissions-motivated agents appear to provide poor financial advice, and shows how if at least some consumers are persuaded by bad advice, then it is possible that a dominated product like whole insurance could persist. The model may be particularly relevant for a country like India with a large number of new insurance customers entering the market who are still learning about these products and may be less sensitive to important differences in the long run returns available.<sup>38</sup>

In the model, we focus primarily on the risk coverage offered by the insurance products. The price of term insurance is the premium, while the “price” of whole insurance should be thought of as the premium cost minus any savings value that exists beyond the risk coverage. This is equivalent to assuming that whole insurance can be replicated by purchasing term insurance and investing in a savings account. Thus, the model is set up such that buyers should choose whole insurance only if the price is cheaper than term insurance. However, we show that an equilibrium is possible where whole insurance has a higher price than term insurance.

The model has two types of consumers. Sophisticated consumers understand that whole and term insurance are the same product (and thus would always choose the cheaper one), know their own optimal amount of insurance, given prices, and are immune to the persuasive efforts of agents.

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<sup>38</sup>Our model differs from Gabaix and Laibson (2006) in two ways. First, we explicitly include the idea that unsophisticated consumers can be persuaded to purchase dominated products by commissions motivated agents. Second, agents choose to shroud the quality of the product (i.e. the poor financial returns of a whole insurance product) as opposed to the price of the product.

There is a fixed, exogenous number of sophisticated consumers,  $s$ , who want to purchase term insurance, and each has a demand function for term insurance equal to  $\alpha - p_t$ , where  $p_t$  is the price of term insurance.

Unsophisticated consumers, in contrast, can be persuaded to purchase a dominated product if there is an agent that exerts enough effort. In particular, we assume that unsophisticated agents demand an amount of insurance  $\alpha - p_w$  once they have met with a commissions-motivated agent. Agents must exert effort to identify and sell to unsophisticated consumers. We assume that the number of customers they find is equal to the commission on selling insurance set by the insurance company,  $c$ . Intuitively, the higher the insurance firm sets commissions, the more incentive agents have to approach customers and sell insurance. In addition to commissions payments, the insurance firm incurs an underwriting cost of  $k$  per unit of either term insurance or whole insurance sold.

The game play is as follows. In period 0, the firm(s) choose whether to offer term, whole, or both insurance products. They also choose the prices  $p_w$  and  $p_t$  and the commissions they will pay agents to sell whole and term insurance ( $c_w, c_t$ ). In period 1 agents respond to the incentives set by the insurance companies, and consumers make decisions on how much whole and term insurance to purchase. The last two sections of this Appendix present the specific calculations for the model; we omit those calculations here to focus on the main intuition of the results.

## 9.1 Monopolist Insurance Company

A monopolist insurance firm has three possible options: (1) offer only term insurance, (2) offer whole and term insurance, (3) offer only whole insurance. In a later section of the Appendix, we show that the monopolist insurance firm will choose to offer both term and whole insurance. The monopolist firm will pay zero commissions for the sale of term insurance (as paying commissions on term insurance does not increase demand) and will charge a price of  $\frac{\alpha+k}{2}$  for term insurance. The monopolist firm will pay positive commissions for the sale of whole insurance because demand is increasing in commissions. The firm will set the whole insurance price ( $p_w$ ) equal to  $\frac{1}{3}(2\alpha + k)$  and will pay commissions  $\frac{1}{3}(\alpha - k)$ . Note that as long as  $\alpha > k$  (a condition necessary for there to be positive demand for insurance), the price of whole insurance will be higher than the price of term insurance.

The intuition for this solution is that offering both term and whole insurance offers the

monopolist firm a way to set different commissions and prices for sophisticated versus unsophisticated customers. Sophisticated consumers cannot be persuaded by commissions-motivated agents, and thus the firm chooses to set commissions to zero and charge lower prices for term insurance. However, unsophisticated consumers can be persuaded to purchase whole insurance. Thus, the insurance firm chooses to pay higher commissions to encourage agents to persuade consumers to purchase insurance, and then passes these higher commissions onto the consumer in terms of higher prices.

## 9.2 Two Competing Insurance Companies

We now analyze the impact of competition by considering a Bertrand pricing game where two firms compete by setting term and whole commissions and prices. This game has two players, firm  $i$  and firm  $j$ . A strategy in this game consists of, (1) a choice of which products to offer (term, whole, or both), (2) prices and commissions for each product offered. A firm's payoff function is the profit it earns given its choice of what products, prices, and commissions to offer as well as the other firm's choices.

The payoffs are defined as follows. For term insurance, we use the usual Bertrand pricing game (with homogenous products) assumption that firm  $i$  obtains the full market of all  $s$  sophisticated consumers if  $p_i < p_j$  (and vice versa). For whole insurance, consumers can be influenced to purchase both by higher commissions and lower prices. The number of unsophisticated consumers that firm  $i$  sells to given it pays commissions  $c_i$  is  $c_i - bc_j$ . The parameter  $b$ , which we assume is always greater than zero, measures the degree to which firm  $i$  and  $j$ 's insurance products compete with each other for customers. If  $b$  equals zero then the fact that firm  $j$  is paying high commissions does not change the demand for firm  $i$ 's insurance. If  $b$  is large, however, then an increase in commissions by firm  $j$  causes a fraction of consumers to switch from firm  $i$ 's insurance product to firm  $j$ 's product.

Note, however, that once unsophisticated consumers have been persuaded to purchase from a particular firm because of commissions, the insurance company can charge them the monopoly price. In this sense, competition for unsophisticated consumers happens primarily through commissions, and not through prices. The intuition is that unsophisticated consumers respond strongly to the persuasiveness and effort of agents in choosing what product to buy, but less strongly to the level of prices.



Bertrand competition over prices in the market for term insurance leads to both firms pricing term insurance at marginal cost  $k$ . Later we show that the Nash equilibrium commissions on whole insurance are  $c_i^* = c_j^* = \frac{\alpha-k}{3-2b}$ , and the Nash equilibrium prices are  $p_i^* = p_j^* = \frac{(2-b)\alpha+(1-b)k}{3-2b}$ . Note that for commissions and prices to be positive we need  $b \leq \frac{3}{2}$ .

Even though term and whole insurance are the same product in this model, an equilibrium exists where whole insurance has a higher price than term insurance, and where competition between firms will not eliminate this dominated product. Analogous to the result in Gabaix and Laibson (2006), a strategy of un-shrouding the whole policy does not work because selling the dominant term policy does not offer the margins necessary to pay large commissions. In other words, if commissions are the best way to educate consumers about products, then the firm must somehow make up for this higher commissions by selling a higher cost product. Thus, it is not profitable for firms to educate consumers on the fact that whole insurance is simply an expensive version of term insurance. In equilibrium, firms sell low commission term insurance to sophisticated consumers, and high commission whole insurance to unsophisticated consumers.<sup>39</sup>

The model also has an interesting prediction on the impact of competition in this market. When paying commissions causes the competitor to lose more business ( $b$  increases), competition amongst firms leads to an increase in commissions and prices.<sup>40</sup> Thus, when insurance firms attract customers mainly through commissions, competition can actually lead to higher prices (and commissions), relative to a monopoly provider. The intuition for this result is that for a monopoly provider, paying higher commissions loses more in profits due to higher costs than it gains in extra business. However, when firms compete over commissions, then it becomes necessary to pay higher commissions to win business, and profits for each sale are lower because more commissions have to be paid.

We believe this model is a plausible explanation for why a dominated product like whole insurance can persist in this market. The model fits the basic empirical facts observed in this

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<sup>39</sup>In recent related work, Heidhues et. al. (2012) present a model where competition amongst firms does not eliminate dominated products. Their model makes the plausible assumption that there is a natural lower bound on the up-front prices that firms can charge. For example, a mutual fund cannot charge less than a zero percent fee, otherwise they would be paying people to invest. The authors show that under such an assumption, a separating equilibrium can exist where sophisticated consumers purchase the transparent product (term insurance plus savings) and unsophisticated consumers purchase dominated products (whole insurance). More work is necessary to determine whether such a model is a good description of the life insurance market, as it is unclear whether the up front life insurance premiums are plausibly at a lower bound.

<sup>40</sup>See appendix for the proof that prices increase.

market: 1) term insurance and whole insurance co-exist, although whole insurance can be replicated by term insurance and savings accounts, 2) commissions on whole insurance are substantially higher than those on term insurance, 3) agents provide poor advice (i.e do not try to de-bias consumers towards whole insurance), 4) the industry has multiple, seemingly competitive, insurance providers. Nonetheless, further empirical work is necessary to distinguish the model presented from other potential explanations for the existence of dominated products, such as entry barriers or other market frictions.<sup>41</sup>

### 9.3 Calculations: Monopolist Insurance Company

The monopolist has three possible options. One option is to offer only term insurance. If he chooses this option he chooses prices and commissions to maximize:

$$\max_{\{p_t, c_t\}} s(p_t - c_t - k)(\alpha - p_t) + c_t(p_t - c_t - k)(\alpha - p_t)$$

The first order condition with respect to price  $p_t$  is  $(s+c_t)(p_t - c_t - k)(-1) + (s+c_t)(\alpha - p_t) = 0$ , which simplifies to  $p_t = \frac{\alpha + k + c_t}{2}$ . The first order condition with respect to  $c_t$  is  $(s + c_t)(p_t - \alpha) + (\alpha p_t - \alpha k - p_t^2 - c_t \alpha + k p_t + c_t p_t) = 0$ . Solving this system of equations yields the solution  $c_t = \frac{\alpha - k - 2s}{3}$  and  $p_t = \frac{2\alpha + k - s}{3}$ . Note that we need  $s \leq \frac{\alpha - k}{2}$  to guarantee that commissions are non-negative (this condition also guarantees that prices are non-negative).<sup>42</sup>

The monopolist's second option is to offer both term and whole insurance. This option essentially constitutes price discrimination, where low prices and zero commissions are associated with term insurance for sophisticated consumers, and high prices and commissions are associated with whole insurance and unsophisticated consumers. The firm will pay zero commissions for the sale of term insurance; paying commissions does not increase demand but it does increase costs. The monopolist firm chooses the term insurance price  $p_t$  to maximize  $s(p_t - k)(\alpha - p_t)$ . The first order condition for  $p_t$  is  $\alpha - 2p_t + k = 0$ . The firm will choose to charge a price  $\frac{\alpha + k}{2}$  for term insurance. Total profits from the sale of term insurance will equal  $\frac{s(\alpha - k)^2}{4}$ .

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<sup>41</sup>It is important to note that the Indian insurance industry is characterized by significant barriers to entry, including licensing restrictions and capital requirements, as well as scale economies.

<sup>42</sup>Intuitively, this condition rules out a situation where there are a large number of sophisticated consumers, and thus the firm would choose to pay negative commissions (i.e. force agents to pay the firm for selling to sophisticated consumers). If commissions were negative, agents would have no incentive to sell insurance in this model.

The firm will pay positive commissions for the sale of whole insurance, because demand is increasing in commissions. The firm maximizes the total profit function from selling whole insurance to unsophisticated customers:  $c_w(p_w - k - c_w)(\alpha - p_w)$ . The first order condition with respect to price is  $c_w\alpha - 2p_w c_w + c_w k + c_w^2 = 0$ . The first order condition with respect to the commission level  $c_w$  is  $c_w(p\alpha - k\alpha - 2c\alpha - p^2 + pk + 2cp) = 0$ . Solving these two first order conditions we find that the firm will set the whole insurance price ( $p_w$ ) equal to  $\frac{1}{3}(2\alpha + k)$  and will pay commissions  $\frac{1}{3}(\alpha - k)$ .

We now show that when both products are offered and prices and commissions are chosen separately for each, the price of term insurance will be lower than the price of whole insurance:

$$\frac{\alpha + k}{2} < \frac{1}{3}(2\alpha + k)$$

This expression can be simplified to  $\alpha > k$ , which must be true for there to be any positive demand for either insurance product. Thus, the monopolist will always choose higher prices for the whole insurance product than the term insurance product. Intuitively, the monopolist pays higher commissions on whole insurance to attract consumers, and then passes on those commissions as higher prices. Total profits from the sale of whole insurance under the price discrimination strategy is  $\frac{(\alpha-k)^3}{27}$ . Total profits from the strategy of offering both term and whole products is  $\frac{s(\alpha-k)^2}{4} + \frac{(\alpha-k)^3}{27}$ .

The monopolist's third option is to offer only whole insurance. The sophisticated types never buy this, and the chosen  $p_w$  and  $c_w$  would be equivalent to those in Case 2. Thus, the firm can always add term insurance paying zero commissions and increase its profits. Thus, the monopolist firm will never offer only whole insurance.

We now show that the monopolist firm will always choose to offer both products as opposed to offering just term insurance. Intuitively, the monopolist can offer term and whole insurance products to price discriminate amongst the two types of consumers. In this case, price discrimination takes the form of offering higher commissions for sales of whole insurance to unsophisticated customers, and commissions equal to zero for sales of term insurance to sophisticated customers. We begin by showing that the profits from term consumers will always be lower when only term insurance is offered versus when both term insurance and whole insurance are offered.

The total profits from selling term insurance when both products are offered are  $\frac{s(\alpha-k)^2}{4}$ . The

total profit from sophisticated consumers when only term insurance is offered is  $s[\frac{1}{3}(2\alpha + k - s) - \frac{1}{3}(\alpha - k - 2s)][\alpha - \frac{1}{3}(2\alpha + k - s)]$ . We wish to show that:

$$\frac{s(\alpha - k)^2}{4} > s[\frac{1}{3}(2\alpha + k - s) - k - \frac{1}{3}(\alpha - k - 2s)][\alpha - \frac{1}{3}(2\alpha + k - s)]$$

$$\frac{(\alpha - k)^2}{4} > \frac{1}{9}(\alpha - k + s)^2$$

Taking the square root of both sides, we have  $\frac{\alpha - k}{2} > \frac{1}{3}(\alpha - k + s)$ , which simplifies to  $\frac{\alpha - k}{2} \geq s$ . Note that this is the same condition we needed to guarantee that commissions and prices are positive. Thus, the profits from selling to sophisticated consumers will be higher when both term and whole insurance products are offered, with different commissions and prices, than when term is sold to all customers.

We now show that the profits from unsophisticated consumers are also higher when the price discrimination strategy is followed. The profits on unsophisticated consumers under the price discrimination strategy are  $\frac{(\alpha - k)^3}{27}$ . The total profits from unsophisticated consumers when only term insurance is offered are  $[\frac{1}{3}(\alpha - k - 2s) - \frac{1}{3}(\alpha - 2s)][\alpha - \frac{1}{3}(2\alpha - s)]$ . Simplification shows that the price discrimination strategy yields higher profits as long as  $3(\alpha - k) + 2s > 0$ , which must be true, as both  $\alpha - k$  and  $s$  are non-negative.

Thus, we have shown that a monopolist firm will choose to sell both term and whole insurance, at different prices, to sophisticated and unsophisticated customers respectively. We have also shown that the monopolist will choose higher prices and commissions for whole insurance than for term insurance.

#### 9.4 Calculations: Two Competing Insurance Companies

The setup of this problem is defined in the Conclusion and Discussion section of the main text. We first solve for firm  $i$ 's optimal behavior given firm  $j$ 's possible behavior. Suppose firm  $j$  only offers whole insurance paying commission  $c_j$  and charging price  $p_j$ . In this case firm  $i$  will always choose to sell both whole and term insurance. If he chose to sell only one of these products, he could increase his profits by entering the term insurance market as a monopoly provider. Thus, there cannot be an equilibrium where both firms only sell either only term insurance or whole insurance.

Now suppose firm  $j$  offers both term and whole insurance. We show that there is one possible equilibrium in this case. Bertrand competition in the market for term insurance gives a Nash equilibrium  $p_{i,t} = p_{j,t} = k$ . In the term insurance market prices get driven down to marginal cost. Competition in the market for term insurance leads to lower prices, as sophisticated consumers are not persuaded by commissions in their decisions to purchase insurance products.

We now solve for a Nash equilibrium in the market for whole insurance. A price and commissions pair  $(c_1^*, p_1^*, c_2^*, p_2^*)$  is a Nash equilibrium in the market for whole insurance if  $(c_i^*, p_i^*)$ , for each firm  $i$ , solves the following problem (we suppress  $w$  subscript, but the commission and price term refer to whole insurance):

$$\max_{c_i, p_i} (c_i - bc_j^*)(p_i - k - c_i)(\alpha - p_i)$$

The first order condition with respect to  $p_i$  can be simplified to:  $\frac{1}{2}(\alpha + k + c_i) = 0$ . The first order condition with respect to  $c_i$  can be simplified to  $c_i^* = \frac{1}{2}(p_i - k + bc_j)$ . Solving these two equations in two unknowns we find that firm  $i$ 's optimal choices given firm  $j$ 's choices are:  $c_i^* = \frac{\alpha - k + 2bc_j}{3}$  and  $p_i^* = \frac{1}{3}(2\alpha + k + bc_j)$ . In a Nash equilibrium, firm  $j$  plays the same best responses given firm  $i$ 's behavior, and thus we have:  $c_j^* = \frac{\alpha - k + 2bc_i^*}{3}$  and  $p_j^* = \frac{1}{3}(2\alpha + k + bc_i^*)$ .

Solving this system of equations we find that the Nash equilibrium commissions are  $c_i^* = c_j^* = \frac{\alpha - k}{3 - 2b}$ , and the Nash equilibrium prices are  $p_i^* = p_j^* = \frac{(2 - b)\alpha + (1 - b)k}{3 - 2b}$ . Note that for commissions and prices to be positive we need  $b \leq \frac{3}{2}$ .

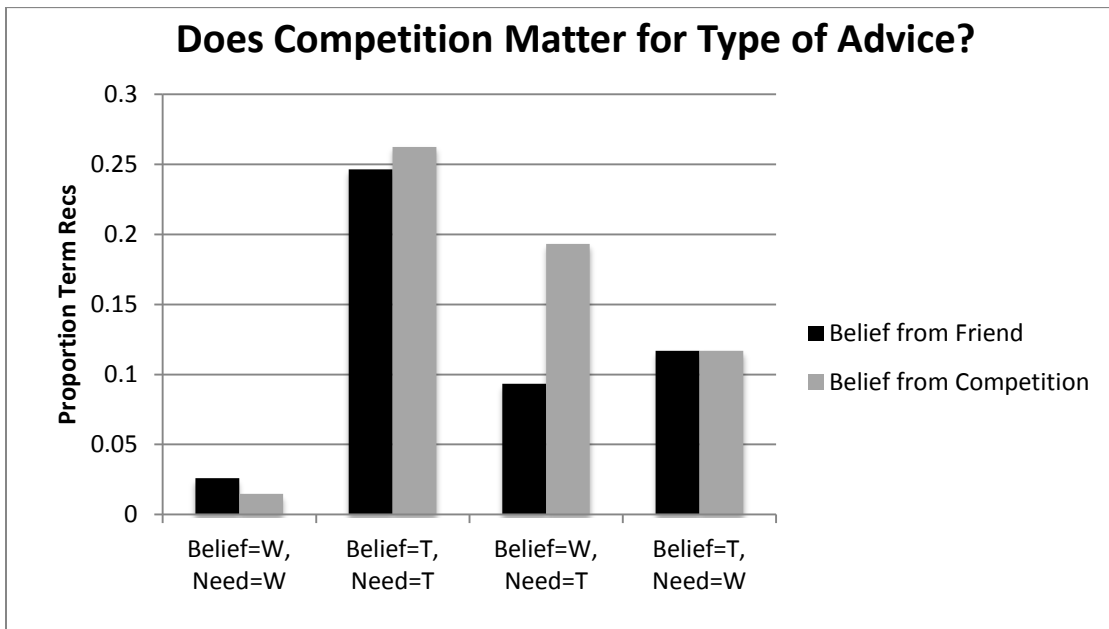
It is clear from the expression  $c_i^* = c_j^* = \frac{\alpha - k}{3 - 2b}$  that the level of commissions paid will increase in the degree to which the insurance products compete with each other ( $b$ ). We now show that prices are also increasing in  $b$ . We wish to show that the derivative of the expression for equilibrium prices with respect to  $b$  is greater than zero:

$$(3 - 2b)^{-1}(-\alpha - k) - (3 - 2b)^{-2}((2 - b)\alpha + (1 - b)k) > 0$$

This expression can be simplified to  $\alpha > k$ , which must be true for there to be any positive demand for the insurance product.

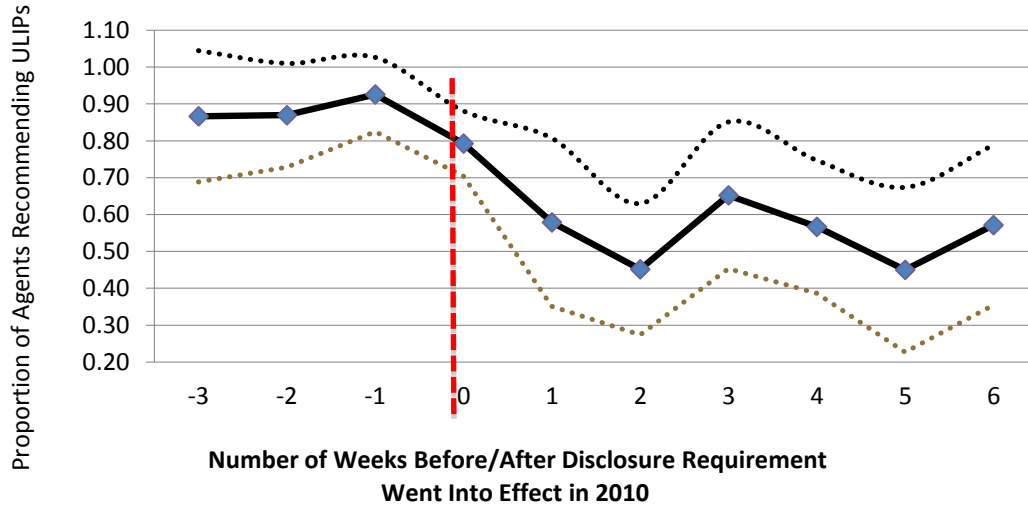
**Figure I: Fraction of Agents Recommending Term Products Across Different Belief, Need, and Competition Treatments**

Figure I presents the fraction of agents recommending term policies across the different beliefs, needs, and competition treatments. The left most set of bars represent audits where the auditor stated they had heard whole was a good product, and also had a need for a savings device. The remaining three pairs of bars represent the audits with the other combinations of beliefs and needs. The dark colored bars are treatments where the auditor's belief came from a friend, and the light colored bars are those treatments where the auditor's belief came from another agent.



**Figure II: Fraction of Agents Recommending ULIP (Unit-Linked Life Insurance) Products**

Figure II plots the fraction of agents each week recommending ULIP products to our mystery shoppers. The day the reform went into effect, July 1, 2010, is indicated by a red line.



**Table I: Product Recommendations from Pilot Audits**

This table characterizes the range of recommendations given to auditors during the initial pilot script, in which auditors described their product needs in a manner such that the appropriate recommendation would be "only term" insurance.

<b>Recommendation (N=60)</b>	<b>Fraction</b>
Only Term Policy Recommended	9%
Any Term Policy Recommended	16%
Only Whole/Endowment Type Recommended	31%
Any Whole/Endowment Type Recommended	64%
Any Other Policy Type	18%



**Table II: Experimental Design**

This table contains audit counts from our three experiments, disaggregated by treatment combinations. The first column provides the total number of audits for each treatment combination, the second column provides the total number of auditors involved for each treatment combination, and the third column provides the number of distinct agents visited for each treatment combination. The fourth column indicates the mean of the main dependent variable, by treatment assignment, for each experiment. Quality of Advice refers to the experiment where we varied the auditor's needs, beliefs, and the source of their beliefs (competing agent or friend). Disclosure refers to the experiment where we varied whether the auditor made a disclosure inquiry, both before and after the mandatory disclosure law, to test the law's effect on agent behavior. Sophistication refers to the experiment where we varied the auditors' expressed financial sophistication.

**a) Since agents may have been visited by more than one auditor, the number of agents visited is less than the total number of audits.**

<i>By need, belief, and source of beliefs (competition)</i>			Audits	Auditors	Agents	Term Recommended
Need Term	Bias Term	Recommendation from other Agent	61	4	57	0.26
Need Term	Bias Term	Recommendation from friend	65	4	61	0.25
Need Term	Bias Whole	Recommendation from other Agent	57	5	53	0.19
Need Term	Bias Whole	Recommendation from friend	75	4	70	0.09
Need Whole	Bias Term	Recommendation from other Agent	77	4	70	0.12
Need Whole	Bias Term	Recommendation from friend	77	4	71	0.12
Need Whole	Bias Whole	Recommendation from other Agent	68	4	62	0.01
Need Whole	Bias Whole	Recommendation from friend	77	5	73	0.03
<i>Total<sup>a</sup></i>			557		304	
<b>Panel B: Disclosure Experiment (City #2)</b>						
<i>By timing and whether auditor inquired about commission</i>			Audits	Auditors	Agents	ULIP Recommended
Ask about commission		Pre-Disclosure Requirement	82	4	67	0.85
Ask about commission		Post-Disclosure Requirement	61	3	58	0.54
Do not ask about commission		Pre-Disclosure Requirement	67	4	54	0.81
Do not ask about commission		Post-Disclosure Requirement	47	3	40	0.55
<i>Total<sup>a</sup></i>			257		198	
<b>Panel C: Sophistication Experiment (City #2)</b>						
<i>By level of sophistication</i>			Audits	Auditors	Agents	Term Recommended
Low level of sophistication			114	7	110	0.18
High level of sophistication			103	6	103	0.27
<i>Total<sup>a</sup></i>			217		209	

**Table III: Summary Statistics From Audits**

This table presents summary statistics from our three experiments. **Quality of Advice** refers to the experiment where we varied the auditor's needs (savings vs. risk), beliefs (whole vs. term) and the source of their beliefs (competing agent or friend). **Disclosure** refers to the experiment where we varied whether the auditor made a disclosure inquiry, both before and after the mandatory disclosure law, to test the law's effect on agent behavior. **Sophistication** refers to the experiment where we varied the auditors' expressed financial sophistication. Note that "LIC" refers to the Life Insurance Corporation of India, a government-owned insurance company that has the largest share of insurers in the country.

	Quality of Advice	Disclosure	Sophistication
LIC Underwriter	0.73 (0.44)	0.50 (0.50)	0.69 (0.46)
Audit Location			
Agent Home	0.18 (0.39)	0.14 (0.34)	0.12 (0.33)
Agent Office	0.12 (0.33)	0.72 (0.45)	0.55 (0.50)
Auditor Home	0.01 (0.09)	0.06 (0.23)	0.03 (0.18)
Auditor Office	0.01 (0.12)	0.02 (0.12)	0.18 (0.39)
Other Venue	0.68 (0.47)	0.07 (0.26)	0.11 (0.31)
Audit Duration	37.13 (10.22)	37.58 (15.88)	33.22 (12.58)
Recommendations:			
Only Whole	0.81 (0.39)	0.25 (0.43)	0.75 (0.43)
Only Term	0.03 (0.17)	0.01 (0.09)	0.14 (0.35)
Only ULIP	0.08 (0.27)	0.71 (0.45)	0.16 (0.37)
Any Whole	0.90 (0.30)	0.27 (0.44)	0.82 (0.38)
Any Term	0.13 (0.33)	0.01 (0.11)	0.22 (0.42)
Any ULIP	0.10 (0.30)	0.72 (0.45)	0.18 (0.38)
Observations	557	257	217

**Table IV: Do Agents Cater to Customers Beliefs or Respond to Customer Needs?**

This table reports regressions where the dependent variables are the (exclusive) presence of term insurance in the agent's recommendation in columns (1) - (4). The dependent variable is the logarithm of risk coverage recommended in Columns (5) and (6) and of premium amount recommended in Columns (7) and (8). The main independent variables are whether the auditor expressed a bias for term, whether the auditor expressed a genuine need for term, and an interaction between these two variables. The bias for term is expressed through an auditor's explicit stated preference for term, while a need for term is expressed by the auditor mentioning his/her desire to cover risk at an affordable cost (as opposed to the need for whole, which is expressed by wanting to save and invest and not feeling self-disciplined enough to do it on one's own). Dummy variables for venue location (agent office is the omitted category), whether the agent was selling insurance from a government underwriter, and auditor fixed effects are also included in columns (2), (4), (6), and (8). The number of observations in Columns (5) and (6) are less than those in (1) and (2) because agents did not recommend specific levels of coverage in 19 audits.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Any Term		Only Term		Ln(Coverage)		Ln(Premium)	
Bias=Term	0.096 *** (0.029)	0.105 *** (0.028)	0.019 * (0.011)	0.022 ** (0.011)	0.131 ** (0.060)	0.125 ** (0.058)	-0.013 (0.050)	-0.019 (0.045)
Need=Term	0.116 *** (0.032)	0.126 *** (0.031)	0.015 (0.011)	0.019 * (0.011)	0.170 ** (0.075)	0.177 ** (0.075)	0.002 (0.051)	-0.005 (0.048)
(Bias=Term)*(Need=Term)	0.021 (0.057)	0.006 (0.055)	0.053 * (0.030)	0.049 * (0.028)	0.055 (0.128)	0.051 (0.127)	0.043 (0.065)	0.038 (0.060)
Government Underwriter		-0.121 *** (0.039)		-0.017 (0.021)		-0.222 ** (0.094)		-0.039 (0.050)
Audit Location								
Agent Home		0.012 (0.047)		-0.021 (0.027)		-0.069 (0.105)		-0.113 (0.071)
Auditor Home		-0.132 (0.105)		-0.018 (0.026)		-0.499 * (0.282)		-0.673 (0.517)
Auditor Office		0.329 ** (0.155)		0.206 (0.140)		0.315 (0.250)		-0.554 *** (0.212)
Other Venue		-0.018 (0.041)		-0.018 (0.022)		-0.081 (0.089)		-0.122 ** (0.052)
Auditor Fixed Effects	No	Yes	No	Yes	No	Yes	No	Yes
Observations	557	557	557	557	538	538	540	540

Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table V: Does the Presence of Competition Improve Agent Advice?**

This table reports regressions where the dependent variables are the (exclusive) presence of term insurance in the agent's recommendation. The main independent variable is competition (the main effect and the interactions with bias and need), which is signaled in an audit in two ways: first, by the auditor mentioning meeting with other providers and second, by the auditor stating a preference based on advice from another agent. Dummy variables for venue location (agent office is the omitted category), whether the agent was selling insurance from a government underwriter, and auditor fixed effects are also included in even-numbered columns

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Recommended Any Term				Recommended Only Term			
Bias=Term	0.105 *** (0.028)	0.106 *** (0.027)	0.091 ** (0.041)	0.090 ** (0.038)	0.043 *** (0.014)	0.045 *** (0.014)	0.026 (0.018)	0.027 (0.017)
Need=Term	0.127 *** (0.028)	0.130 *** (0.027)	0.067 * (0.038)	0.068 * (0.035)	0.042 *** (0.015)	0.044 *** (0.014)	0.027 (0.019)	0.029 (0.020)
Competition	0.024 (0.028)	0.033 (0.027)	-0.011 (0.023)	-0.008 (0.024)	0.010 (0.014)	0.012 (0.014)	0.000	0.001 (0.006)
(Bias=Term)*Competition			0.011 (0.057)	0.030 (0.056)			-0.013 (0.022)	-0.008 (0.022)
(Need=Term)*Competition			0.111 * (0.067)	0.135 ** (0.067)			-0.027 (0.019)	-0.023 (0.021)
(Bias=Term)*(Need=Term)			0.062 (0.076)	0.075 (0.071)			-0.006 (0.037)	-0.004 (0.036)
(Bias=Term)*(Need=Term)*Competition			-0.095 (0.115)	-0.158 (0.113)			0.125 ** (0.059)	0.113 ** (0.055)
Government Underwriter		-0.122 *** (0.039)		-0.128 *** (0.039)		-0.020 (0.021)		-0.013 (0.020)
Audit Location								
Agent Home		0.009 (0.047)		0.002 (0.047)		-0.022 (0.028)		-0.019 (0.027)
Auditor Home		-0.138 (0.108)		-0.140 (0.112)		-0.018 (0.029)		-0.015 (0.025)
Auditor Office		0.331 ** (0.156)		0.332 ** (0.158)		0.207 (0.139)		0.202 (0.137)
Other Venue		-0.020 (0.040)		-0.028 (0.040)		-0.022 (0.023)		-0.016 (0.022)
Auditor Fixed Effects	No	Yes	No	Yes	No	Yes	No	Yes
Observations	557	557	557	557	557	557	557	557

Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table VI: Disclosure Experiment Summary Statistics**

This table presents summary statistics from the disclosure experiment disaggregated by timing. They are used to perform a balance check, univariate regressions (with robust standard errors) of the treatment on each independent variable. Significant differences are denoted by asterisks.

	<u>Overall</u>	<u>Pre-Regulation</u>	<u>Post-Regulation</u>	<u>Difference</u>
LIC Underwriter	0.50 (0.50)	0.44 (0.50)	0.58 (0.50)	0.15 *** (0.06)
Audit Location				
Agent Home	0.14 (0.34)	0.09 (0.29)	0.19 (0.40)	0.10 *** (0.05)
Agent Office	0.72 (0.45)	0.75 (0.43)	0.67 (0.47)	-0.09 * (0.06)
Auditor Home	0.06 (0.23)	0.07 (0.26)	0.04 (0.19)	-0.04 (0.03)
Auditor Office	0.02 (0.12)	0.02 (0.14)	0.01 (0.10)	-0.01 (0.01)
Other Venue	0.07 (0.26)	0.06 (0.24)	0.09 (0.29)	0.03 ** (0.03)
Audit Duration	37.58 (15.88)	36.14 (14.33)	39.56 (17.67)	3.41 *** (2.07)
Recommendations:				
Only Whole	0.25 (0.43)	0.15 (0.36)	0.39 (0.49)	0.24 *** (0.06)
Only Term	0.01 (0.09)	0.01 (0.12)	0.00 (0.00)	-0.01 (0.01)
Only ULIP	0.71 (0.45)	0.83 (0.37)	0.55 (0.50)	-0.29 *** (0.06)
Any Whole	0.27 (0.44)	0.15 (0.36)	0.43 (0.50)	0.27 *** (0.06)
Any Term	0.01 (0.11)	0.01 (0.12)	0.01 (0.10)	0.00 (0.01)
Any ULIP	0.72 (0.45)	0.83 (0.37)	0.56 (0.50)	-0.28 *** (0.06)
Observations	257	149	108	

**Table VII: Disclosure Regulations and Product Recommendations**

This table reports regressions where the dependent variable is a binary equal to 1 if a ULIP product is recommended for columns (1) -(4). The dependent variable in columns (5) and (6) are whether a term policy was recommended, or a whole policy was recommended, respectively. The dependent variable in columns (7) and (8) are, respectively, the logarithm of the risk coverage and premium of the recommended policy. The ULIP product is the product where disclosure of commissions was made mandatory on July 1, 2010. The main independent variables are whether or not the audit occurred after the commissions disclosure law came into effect (*post disclosure*), whether or not the auditor made an explicit commission *disclosure inquiry*, and an interaction between these two variables. Dummy variables for venue location (agent office is omitted), whether the agent is selling insurance from a government-owned insurer, and auditor fixed-effects are included in even-numbered columns.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent Variable:	ULIP Recommendation				Term	Whole	Ln(Risk Cover)	Ln(Premium)
Sample:	All	All	Government Underwriter	Private Underwriter	All	All	All	All
Post Disclosure	-0.25 *** (0.09)	-0.19 ** (0.08)	-0.30 ** (0.12)	-0.07 (0.08)	0.00 (0.03)	0.17 ** (0.07)	0.15 (0.13)	0.03 (0.07)
Disclosure Inquiry	0.05 (0.06)	0.02 (0.06)	0.07 (0.13)	0.00 (0.05)	0.00 (0.02)	-0.02 (0.06)	0.02 (0.11)	0.00 (0.06)
Post * (Disclosure Inquiry)	-0.06 (0.12)	-0.02 (0.10)	-0.06 (0.17)	0.07 (0.11)	-0.02 (0.03)	0.03 (0.10)	0.02 (0.17)	-0.01 (0.09)
Government Underwriter		-0.42 *** (0.05)			0.01 (0.02)	0.43 *** (0.05)	0.29 *** (0.10)	0.01 (0.05)
Audit Location								
Agent Home		-0.01 (0.08)	-0.02 (0.10)	0.07 * (0.04)	-0.01 (0.01)	0.03 (0.08)	0.06 (0.12)	0.04 (0.08)
Auditor Home		-0.02 (0.11)	-0.25 (0.16)	0.03 (0.05)	0.01 (0.01)	0.03 (0.11)	0.65 * (0.37)	0.24 (0.21)
Auditor Office		0.18 (0.13)	0.65 *** (0.12)	0.05 (0.05)	-0.01 (0.02)	-0.16 (0.12)	0.62 *** (0.19)	0.30 * (0.17)
Other Venue		0.06 (0.09)	0.04 (0.13)	0.06 * (0.04)	-0.01 (0.01)	-0.04 (0.09)	0.07 (0.14)	-0.01 (0.07)
Auditor Fixed Effects	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	257	257	134	123	257	257	257	257

Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table VIII: Effect of Sophistication on Quality of Advice**

This table reports regressions where the dependent variables are the (exclusive) presence of term insurance in the agent's recommendation. The main independent variable is whether or not the audit is part of the "sophisticated" treatment group. Sophistication was signaled to the agent by a script in which auditors mentioned how they had been shopping around and were aware of the different types of policies (such as ULIPs, term, etc.) In unsophisticated audits, auditors acknowledged that life insurance was complex but admitted to knowing very little about the types of policies. Dummy variables for auditor identity, venue location, and whether the government purveyed/underwrote the insurance policy are also included in the even-numbered columns.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<u>Recommended Any Term</u>		<u>Recommended Only Term</u>		<u>Ln(Coverage)</u>		<u>Ln(Premium)</u>	
Sophisticated	0.10 *	0.10 *	0.02	0.03	0.22 *	0.21 *	-0.03	-0.06
	(0.06)	(0.06)	(0.05)	(0.05)	(0.12)	(0.12)	(0.09)	(0.10)
Government Underwriter		-0.08		-0.09		-0.25		0.05
		(0.07)		(0.06)		(0.16)		(0.10)
Audit Location								
Agent Home		0.10		-0.01		0.21		-0.21
		(0.10)		(0.06)		(0.18)		(0.18)
Auditor Home		0.02		-0.11 **		0.32		0.03
		(0.14)		(0.05)		(0.29)		(0.14)
Auditor Office		0.13		0.13		0.20		-0.17
		(0.09)		(0.09)		(0.16)		(0.13)
Other Venue		-0.01		0.06		-0.17		-0.28
		(0.09)		(0.09)		(0.24)		(0.19)
Auditor Fixed Effects	No	Yes	No	Yes	No	Yes	No	Yes
Observations	217	217	217	217	209	209	209	209

Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

### Appendix Table A-I: Comparison of Whole vs. Term Plus Savings

This table compares endowment/whole policies to term policies offered by two leading insurance companies in India, the Life Insurance Corporation of India and ICICI Pru Life. The replication portfolio assumes savings earn 8% per annum (compounded), which is the government-guaranteed rate offered through National Savings Certificates.

#### Panel A: Life Insurance Corporation of India Product Comparison

	Whole/Endowment Policies		Term Life Insurance	
Specific Plan Example	Jeevan Shree - 1 (Plan #162)		Andmol Jeevan (#164)	
Coverage Amount		500,000		500,000
Premium for 35 year old male		Rs. 25,186		Rs. 2,767
Years client pays premium		16		25
Policy Pays Out		At death or age 60		At death, if death during term of policy
Products Purchased	Rs. 500,000 in life insurance at Rs. 25,186 per year, policy matures in 25 years		Rs. 500,000 term insurance policy at a cost of Rs. 2,767 per year Savings deposit of $(25,186 - 2,767) = 22,419$ per year for years 1-16. Withdrawal of Rs. 2,676 from savings balance from years 17-25 to continue paying premium	
Value Upon Death (Rs.)	Whole Payout / Maturity Value <sup>a</sup>		Term Payout (if any) + Savings <sup>b</sup>	
Dying at age:	36	500,000		522,419
	45	672,500		824,774
	55	814,500		1,411,449
	60	878,000		1,821,686
Value at Policy End		878,000		1,321,686

#### Panel B: ICICI Prudential Life Insurance

1.505337347

	ICICI Pru-Whole Life Non-Linked		ICICI Pru iCare Term Policy	
Specific Plan Example	ICICI Pru-Whole Life Non-Linked		ICICI Pru iCare Term Policy	
Coverage Amount		100,000		2,050,000
Premium for 35 Year Old Male		15,140		3,409
Years client pays premium				
Policy Pays Out				
Products Purchased	Rs. 100,000 life insurance at 15,140 per year, policy matures after ten years		Rs. 2,050,000 term insurance policy at a cost of Rs. 3,409 per year, with savings deposit of $(15,140 - 3,409) = 11,731$ for ten years	
Value Upon Death (Rs.)	Whole Payout / Maturity Value <sup>c</sup>		Term Payout (if any) + Savings <sup>d</sup>	
Dying at age	35	201,600		2,061,731
	40	209,600		2,136,058
	45	216,000		2,219,942
Value at Policy End		137,782		169,942

a) LIC of India Benefits Illustration

b) Calculations: For policy years 1-16, the amount available at death is the policy coverage, Rs. 500,000, plus the accumulated savings, calculated in Excel " $=FV(8\%,_n_,22419)$ ". For years 17-25 the value is the  $500,000 + (Value[_n-1] - 2676) * 1.08$

c) "ICICI Pru Whole Life Non-Linked Life Insurance Plan" brochure

d) Coverage is Rs. 2,050,000 plus value of accrued savings, calculated in Excel " $=FV(8\%,_n_,11731)$ "



**Appendix Table A-II Text of Treatments**

**Quality of Advice Experiment**

**Bias treatment**

Text of statement

Bias towards term

"I have heard from [source] that term insurance is a really good product."

Bias towards whole

"I have heard from [source] that whole insurance is a really good product."

**Needs treatment**

Text of Statement

Need term

"I am worried that if I die early, my wife and kids will not be able to live comfortably or meet our financial obligations. I want to cover that risk at an affordable cost."

Need whole

"I want to save and invest money for the future, and I also want to make sure my wife and children will be taken care of if I die. I do not have the discipline to save on my own."

**Competition Treatment**

Competition

High Competition

"I have already met with some providers, but would like to learn more about the specific products your firm offers so I can make a comparison" [source] in bias statement is "another agent"

Low Competition

"What are the different products that you offer?" [source] in bias statement is "friends"

**Disclosure Experiment**

Knowledge treatment

Knowledge of Commissions

"Can you give me more information about the commission charges I'll be paying?"

No Knowledge

No mention of commission charges

**Sophistication Experiment**

Sophistication treatment

Sophisticated

"In the past, I have spent time shopping for the policies, and am perhaps surprisingly somewhat familiar with the different types of policies: ULIPs, term, whole life insurance. However, I am less familiar with the specific policies that your firm offers, so I was hoping you can walk me through them and recommend a policy specific for my situation."

Unsophisticated

"I am aware of the complexities of Life Insurance Products and I don't understand them very much; however I am interested in purchasing a policy. Would you help me with this?"

**Appendix Table A-III: Tests of Randomization**

This table presents summary statistics from our three experiments disaggregated by treatment. They are used to perform randomization checks, univariate regressions (with robust standard errors) of the treatment on each independent variable. Significant differences are denoted by asterisks. **Quality of Advice** refers to the experiment where we varied the auditor's needs (*suitability*), beliefs (*bias*), and the source of their beliefs, competing agent or friend (*competition*). As mentioned in Table 1, **Disclosure** refers to the experiment where we varied whether the auditor made a disclosure inquiry, both before and after the mandatory disclosure law, to test the law's effect on agent behavior. **Sophistication** refers to the experiment where we varied the auditors' expressed financial sophistication. Note that "Government Underwriter" includes LIC, State Bank of India (SBI), United Trust of India (UTI), and the Industrial Development Bank of India (IDBI).

	Quality of Advice						Disclosure			Sophistication				
	<i>Bias Treatment</i>			<i>Suitability Treatment</i>		<i>Competition Treatment</i>			Inquiry	No Inquiry	Dif	Low	High	Dif
	Term	Whole	Sig	Term	Whole	Friend	Agent	Dif						
(1)	(2)	Dif	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Sig			
Government Underwriter	0.82	0.79		0.79	0.82	0.80	0.82		0.50	0.55		0.72	0.71	
LIC Underwriter	0.74	0.73		0.71	0.76	0.73	0.74		0.48	0.52		0.68	0.70	
Agent is Male	0.84	0.84		0.86	0.83	0.84	0.84		0.88	0.93		0.89	0.93	
Agent Dress (1-simple to 5-sophisticated)	4.07	4.03		4.05	4.05	4.11	3.98 **		3.60	3.53				
Physical Quality of Office (1-low to 5-high)	4.18	4.19		4.13	4.23	4.19	4.18		3.57	3.69				
Audit Location														
Agent Home	0.19	0.18		0.17	0.19	0.16	0.21		0.17	0.10 *		0.11	0.14	
Agent Office	0.13	0.11		0.12	0.12	0.13	0.11		0.69	0.75		0.53	0.58	
Auditor Home	0.00	0.02 **		0.01	0.01	0.01	0.01		0.06	0.05		0.04	0.03	
Auditor Office	0.01	0.01		0.01	0.02	0.02	0.01		0.00	0.04 **		0.18	0.18	
Other Venue	0.67	0.68		0.69	0.66	0.69	0.66		0.08	0.06		0.15	0.07 *	
Audits	280	277		258	299	294	263		143	114		114	103	

Stars in the "Sig Dif" column indicate the significance level of a test of equality of the variable listed in that row by treatment status. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1