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On the preference for full-coverage policies: Why do people buy too much insurance?

Zur Shapira [a,*], Itzhak Venezia [b,1]

[a] *Stern School of Business, New York University, 40 West 4th Street #7-06, New York, NY 10012-1126, United States*
[b] *School of Business, Hebrew University, Jerusalem, Israel*

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Abstract

One of the most intriguing questions in insurance is the preference of consumers for low or zero deductible insurance policies. This stands in sharp contrast to a theorem proved by Mossin [Mossin, J. (1968). Aspects of rational insurance purchasing. *Journal of Political Economy, 76*, 553–568], that under quite common assumptions when the price of insurance is higher than its actuarial value, then full coverage is not optimal.

We show in a series of experiments that amateur subjects tend to underestimate the value of a policy with a deductible and that the degree of underestimation increases with the size of the deductible. We hypothesize that this tendency is caused by the anchoring heuristic. In particular, in pricing a policy with a deductible subjects first consider the price of a full-coverage policy. Then they anchor on the size of the deductible and subtract it from the price of the full-coverage policy. However, they do not adjust the price enough upward to take into account the fact that there is only a small chance that the deductible will be applied toward their payments. We also show that professionals in the field of insurance are less prone to such a bias. This implies that a policy with a deductible priced according to the true expected payments may seem "overpriced" to the insured and therefore may not be purchased. Since the values of full-coverage policies are not underestimated the insured may find them as relatively better "deals".

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* Corresponding author. Tel.: +1 212 998 0225; fax: +1 212 998 4234.
E-mail addresses: zshapira@stern.nyu.edu (Z. Shapira), msvenez@mscc.huji.ac.il (I. Venezia).
[1] Fax: +972 2 588 1341.

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1. Introduction

In a seminal paper, Mossin (1968) showed that under quite common assumptions, full-coverage insurance is not optimal. More precisely, he demonstrated that if the price of insurance is proportional to but higher than the expected payments made by the insurer and if the insured is risk averse, then full coverage is sub-optimal for the insured. He also showed that there exists a policy with a strictly positive deductible, which dominates the full-coverage policy.

Mossin's normative logic stands in contrast to the high demand for full-coverage policies and policies with very low deductibles. For example, almost all liability insurance policies provide full coverage or a zero deductible. Consider also collision damage insurance for rental cars. While specific rates vary by location, a typical collision damage waiver (CDW) for a rental car costs on average $25 per day, which is equal to $7200 on an annual basis. In stark contrast, comprehensive automobile insurance for one's own car does not cost more than $1000 per year in most locations in the US. The difference in price is clearly non-trivial. Why are people willing to pay such high rates for CDW when renting a car?

Another example arises from deductibles on automobile insurance policies. The deductible on automobile insurance is often as low as $100 and almost always below $500, which means that consumers are insured against losses of $500 or less. Cummins and Weisbart (1978) report that when Herbert Denenberg, Pennsylvania's Insurance Commissioner during the 1970s, tried to raise the minimum auto insurance deductible from $50 to $100, he was forced to withdraw this idea by massive consumer outcry.

Merchants who sell various electrical products such as cell phones costing $200 or less also offer insurance against loss, for a non-trivial additional cost. Consumer purchases of such insurance do not seem to be rational even when those policies include a service component. Companies offering such warranty in their service policies stand to make a high profit due to such consumer preferences. According to a Harvard Business School case (see Burns, 2004), to a first approximation Circuit City sold electronics at cost and made its profits on extended warranties.

The situation is even more salient in medical insurance. For example, the US Bureau of Labor Statistics reports that during the years 1994–1997, 34% of full time employees in the private sector enrolled in non-HMO medical care organizations had no deductibles in their medical plans. This percentage rose to 42% for "Preferred provider organizations" (US Department of Labor, 1999). Note also that HMOs typically have zero deductibles.

An attempt to explain the preference for full coverage was offered by Pashigian, Schkade, and Menefee (1966), who used US aggregate data as well as detailed data of automobile insurance purchases in Missouri. They found that the levels of deductibles chosen by clients are too low to be explained by expected utility theory. According to Pashigian et al. these deductibles can be reconciled with expected utility only if the insureds anticipate two or more accidents per year. This figure is considerably higher than the number of accidents actually expected by the average driver. Pashigian et al. conclude that: "the observed selection of deductibles can be explained [only] if there is a systematic tendency