Products Liability, Signaling and Disclosure: Comment

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Products Liability, Signaling and Disclosure

Comment

by

ALON KLEMENT AND ZVIKA NEEMAN

1 Main Assumptions and Results

In their paper, Daughety and Reinganum (henceforth, DR) consider a model with a monopolistic firm that produces either safe or unsafe products (DAUGHETY AND REINGANUM [2008]). Safety is exogenous. It is not chosen or controlled by the monopolist. The monopolist knows whether it produces safe or unsafe products, but consumers do not. In the terminology of Bayesian games, the safety of the monopolist's product is the monopolist's *type*. A monopolist that produces safe products is henceforth referred to as a *safe* monopolist, or of the safe monopolist type, and a monopolist that produces unsafe products is henceforth referred to as the *unsafe* monopolist, or of the unsafe monopolist type.

It is assumed that the demand for the monopolist's product is strictly increasing in the *perceived safety* of the product.

DR consider two variants of their model: one in which the marginal cost of production is increasing in the product's safety, and another in which the marginal cost of production is decreasing in the product's safety. Both assumptions are plausible. This is because the total cost of production is composed of the direct cost of production, which presumably is higher for a safer product, and of liability cost, which is higher for an unsafe product. If the difference between the direct costs of production of a safe and an unsafe product is smaller than the difference between the expected liability associated with an unsafe and a safe product, then the marginal cost of production of the safe product is higher. But if it is the other way around, then the marginal cost of production of the unsafe product is higher.

The monopolist can affect the perceived safety of its product in two different ways: (i) it can fully disclose the safety of its product, at a cost, or (ii) it can signal the safety of its product through the price it charges.

For simplicity, it is assumed that (1) the production of both safe and unsafe products enhances social welfare, but that (2) a high-safety product is socially preferred to a low-safety product.

The first result of the paper is straightforward.

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RESULT 1 *A monopolist that discloses its safety charges its full-information monopolistic price. Hence,*

(i) if the monopolist's cost is increasing in its safety, then the price charged by the safe monopolist is higher than the price charged by the unsafe monopolist, and
(ii) if the monopolist's cost is decreasing in its safety, then the price charged by the unsafe monopolist is higher than the price charged by the safe monopolist.

The second result states that if the cost of disclosure is very high, so that the monopolist is forced to signal the safety of the product it produces through the price it charges, then this has no effect on the unsafe monopolist, which continues to charge its full-information monopolistic price. But the prices that are charged by the safe monopolist are distorted away from full-disclosure prices in the opposite direction to the price charged by the unsafe monopolist. This result is rather intuitive, because the unsafe monopolist has nothing to signal, and so may as well charge its full-information monopolistic price. However, the safe monopolist can benefit from signaling the safety of its product and can do so by distorting its price away from its full-information price in the other direction from the price charged by the unsafe monopolist. This is done in order to maintain incentive compatibility, or in other words, to make it unprofitable for the unsafe monopolist to pretend to be a safe monopolist by charging the same price as the one charged by the safe monopolist.

More precisely,

RESULT 2 *Suppose that the cost of disclosure is very high. The unique perfect Bayesian equilibrium that satisfies the intuitive criterion satisfies the following properties:*

(i) It is separating.
(ii) The unsafe monopolist charges its full-information monopolistic price.
(iii) The safe monopolist distorts its price away from its full-information monopolistic price in the opposite direction from the price charged by the unsafe monopolist.

It therefore follows that

COROLLARY 1 *The safe monopolist suffers a loss in profit due to the incomplete information of the consumers, while the unsafe monopolist does not. Therefore, as the cost of disclosure is lowered, the safe monopolist will benefit from disclosing the safety of its product once the cost of disclosure becomes sufficiently small.*

REMARK 1 *The results above continue to hold under an alternative liability regime in which disclosure relieves the monopolist of liability, provided the total anticipated loss remains unchanged. If the cost decreases, then the incentive to disclose will be stronger.*

2 *Welfare Analysis*

Since, as implied by Result 2 above, the type or private information of the monopolist is revealed to consumers anyway, the focus of welfare analysis is not on the amount of information that is ultimately provided in equilibrium, but on the channel (disclosure versus pricing) through which it is provided. The welfare comparison is between the lump-sum cost of disclosure and the loss caused by the distortion due to signaling.

We note that:

(i) The private and social incentives to disclose coincide for the unsafe monopolist.
(ii) If the monopolist's cost is increasing in safety, then there may be too little disclosure; if the monopolist's cost is decreasing in safety, then there may be too much disclosure. Intuitively, if the price is high, then the safe monopolist does not mind so much not disclosing its safety, and if the price is low, then the incentive of the safe monopolist to disclose its safety is too strong.

3 *Conclusions*

(1) Abstracting away from the fact that mandatory disclosure might adversely affect the monopolist's incentive to become informed, mandatory disclosure enhances welfare only when litigation costs are small relative to safety costs (i.e., when the cost is increasing in safety). A possible example where this condition may be met is with the monopolistic producer of a specific kind of medicine. When this is indeed the case, mandatory disclosure would strengthen the incentive of the monopolist to produce safe products (relaxing the assumption that safety is exogenous).

(2) Although standard, the assumptions that underlie the analysis are rather strong.
    (a) Do consumers really know if the cost is increasing or decreasing in safety?
    (b) Can consumers really tell if the price is high or low relative to what it would have been if the monopolist were of a different type?
    (c) However, the incorporation of *naive consumers* into the model provides a partial answer to this criticism.

(3) Putting the results in context:
    (a) If the monopolist faces no liability at all, as would be the case under a negligence regime where exercising due care relieves the monopolist of liability, then it seems that the equilibrium would be a pooling equilibrium that would involve a lot of distortion. In this case, disclosure would enhance efficiency as long as it was not too costly.
    (b) If the monopolist faces full liability, as would be the case under a strict liability regime plus fee-shifting, then we expect that the equilibrium will be separating without any distortion. In this case, because consumers are compensated for their losses anyway, they do not care about safety, and so

demand is independent of the perceived safety of the product and there is no need for disclosure.

(c) Finally, if the monopolist faces partial liability as assumed in DR's paper, then the equilibrium is separating and involves some distortion. In this case, we expect mandatory disclosure to be beneficial, but only if the total cost of producing safe products is higher than the total cost of producing unsafe products. Whether or not mandatory disclosure is beneficial depends on its cost.

References

DAUGHETY, A. F., AND J. F. REINGANUM [2008], "Products Liability, Signaling and Disclosure," *Journal of Institutional and Theoretical Economics*, 164, 106–126.

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