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On the consideration of potential harm in the award of punitive damages

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Abstract

Multiple empirical studies find that juries/courts take account of potential harm in the determination of punitive damages. The received view in economic theory, however, is that punitive damages should not depend on potential harm. The purpose of this note is to provide an efficiency rationale for the courts'' behavior. Our particular result is that when the punitive damage multiplier decreases as the actual harm increases, the optimal multiplier does depend on the potential harm.

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1. Introduction

This paper sheds light on the following puzzle: while multiple court opinions have found it appropriate to use *potential* harm in the determination of punitive damage awards, the law-and-economics literature suggests that only *actual* harm should typically be taken into account. For example, as noted by Polinsky and Shavell (1998, 914), "potential harm also served as a basis for the trial court's upholding the $5 billion punitive damages verdict in the Exxon Valdez oil spill litigation; the court noted that, although 11 million gallons of oil spilled, another 45 million gallons in the Exxon Valdez could have spilled, making the potential harm much higher." Also, in *State Farm v. Campbell* (2003) the U.S. Supreme Court majority wrote "…ratios [of punitive to compensatory damages] greater than those which the Supreme Court has previously upheld may comport with due-process, where a particularly egregious act has resulted in only a small amount of economic damages." The law-and-economics literature in general, and Polinsky and Shavell (1998, 915) in particular, maintain that penalties assessed according to potential harm rather than actual harm are excessive, for the injurer would rationally take account of potential harm when computing the expected harm and therefore when computing the optimal amount of care to take. We show below that the independence of the optimal punitive damages multiplier from the potential harm, as suggested in Polinsky and Shavell (1998), is desirable *only if* exactly the same multiplier is used across all damage levels. If the multiplier when damages are high is lower than the penalty multiplier when damages are low, then the optimal value of the latter does depend on potential harm, and increases with potential harm. Empirical evidence suggests that penalty multipliers on average do fall as compensatory damages increase (see, e.g., Eisenberg *et al*. (1997), Karpoff and Lott (1999), and Hersch and Viscusi (2004)). These studies regress punitive damages on compensatory damages and find that punitive damages increase with compensatory damages at a decreasing rate, indicating that the ratio of punitive damages to compensatory damages falls as compensatory damages increase. Since compensatory damages reflect the actual harm, this suggests that the use of potential harm in the determination of punitive damages, as courts have done, is desirable from an efficiency point of view.

We are not the first to suggest that it may be efficient to take potential harm into account in the determination of punitive damages. Hylton (1998), for example, examining the case of Jacque v. Steenberg Homes (1997, Supreme Court of Wisconsin)[1] notes that the Polinsky and Shavell paradigm would yield total damages equal to zero when one should perhaps also recognize and deter the "secondary costs" of willful trespass. However, Hylton (1998) refers to secondary costs that are not covered by compensatory damages under the current law, and therefore an injurer would not take these costs into account in the absence of punitive damages. Polinsky and Shavell (1998), on the other hand, refer to potential harm as the highest harm that the injurer can directly cause the plaintiff and therefore is responsible for it in the form of compensatory damages, when such harm actually occurs. We show below that punitive damages should be a function of potential harm even when it is defined as in Polinsky and Shavell (1998) and when secondary costs are zero.

Our note proceeds as follows. We first describe the basic model in Section 2 and illustrate the Polinsky and Shavell (1998) perspective within that model. Then in Section 3, we present our result that the higher is the potential harm, the higher is the optimal deterrence punitive damages multiplier. We conclude with a few brief comments.

[1] In this case, the court awarded $1 compensatory damages and $100,000 punitive damages to Jacque when Steenberg Homes deliberately cut across Jacque's private property to deliver a mobile home.

2. The Basic Model

Suppose a potential injurer engages in an activity that yields social benefit *B* but may also result in an accident. Let $c(x)$ denote the cost of care *x* and let *p(x)* denote the associated likelihood of an accident. In the event of an accident, suppose damage can be either low, *L*, with probability π or high, *H*, with probability 1- π. Let *q* denote the probability of escaping conviction. Assume that:

(A.1) $c'(x) > 0; c''(x) > 0$
(A.2) $p'(x) < 0; p''(x) > 0$.

Assumption (A.1) means that the cost of care increases at an increasing rate, while assumption (A.2) means that the likelihood of an accident falls at a decreasing rate with care level. Given these assumptions, the social welfare from the potential injurer's activity is:

$$W(x) = B - c(x) - p(x)\left[\pi L + (1-\pi)H\right]. \tag{1}$$

This implies that the first-best care level is:

$$x^* = \arg\min_x c(x) + p(x)\left[\pi L + (1-\pi)H\right]. \tag{2}$$

In the absence of a penalty multiplier, the injurer exercises care level $\hat{x} = \arg\min_x c(x) + qp(x)\left[\pi L + (1-\pi)H\right]$ which is less than x^*. As suggested in the literature, the injurer can be motivated to take first-best care by imposing a penalty multiplier equal to (1/*q*), which is independent of the harm levels, *L* and *H*. Based on this, Polinsky and Shavell (1998, 914) maintain that damages should not depend upon the expected or potential harm, but should rather depend solely upon the probability of escaping conviction. This, however, assumes that the same multiplier is imposed across all levels of harm. We show below that if the size of multiplier is different for different levels of harm—in particular, if the multiplier is smaller for greater levels of harm—then the optimal multiplier when the actual harm is low turns out to be a function of the potential harm.

3. Potential Harm and Punitive Damages

Let *m* denote the multiplier when the harm is low (*L*) and αm the multiplier when the harm is high (*H*), where $\alpha < 1$. For any given *m*, the potential injurer will choose care *x* for which,

$$c'(x) + qp'(x)\left[\pi mL + (1-\pi)\alpha mH\right] = 0 \tag{3}$$

To ensure that the actor exercises care x^*, we need:

$$qp'(x)\left[\pi mL + (1-\pi)\alpha mH\right] = p'(x)\left[\pi L + (1-\pi)H\right] \tag{4}$$

or, we need:

$$m = \frac{1}{q}\left[\frac{\pi L + (1-\pi)H}{\pi L + (1-\pi)\alpha H}\right] \tag{5}$$

Differentiating the RHS of (5) with respect to H gives $\frac{\partial m}{\partial H} = \frac{1}{q}\frac{(1-\pi)\pi L(1-\alpha)}{\left[\pi L + (1-\pi)\alpha H\right]^2} > 0$. That is, holding other things equal, the higher is H, the higher is the optimal m. In other words, the size of the optimal multiplier when the actual harm turns out to be low (L) depends upon the potential harm, H, if the multiplier when the actual harm is high is smaller than the multiplier when the actual harm is low. As shown by Eisenberg *et al.* (1997), Karpoff and Lott (1999), and Hersch and Viscusi (2004), the empirically-observed multiplier is indeed smaller when the actual harm is high than when it is low. For example, Karpoff and Lott (1999, 541, Table 3) regress punitive damages P on compensatory awards C, compensatory awards squared (C^2) and some other variables, and find that the coefficient on C^2 is negative. Letting β denote this coefficient and differentiating the penalty multiplier with respect to C, we have:

$$\frac{d\left(\frac{P+C}{C}\right)}{dC} = \beta < 0 \tag{6}$$

which implies that the penalty multiplier decreases as C increases. Note that even if we increase H and decrease L such that expected harm and therefore optimal care remains unchanged, we still find m in equation (5) to be an increasing function of H. That is, the increase in m referred to above is not because of an increase in the optimal level of care that needs to be induced when H increases. We state this result in the following proposition.

Proposition. *If the penalty multiplier when the actual harm is low, L, is greater than the penalty multiplier when the actual harm is high, H, then the optimal size of the multiplier when harm turns out to be low is a function of potential harm.*

The intuition behind this proposition is the following. A smaller multiplier (αm) when harm is H, compared to the multiplier *(m)* when the harm is L, can be interpreted as using the same multiplier m for both harm levels but reducing the payment by $m(1-\alpha)H$ when the actual harm is H (since $mH - m(1-\alpha)H = \alpha mH$). To ensure that sufficient incentive exists for the injurer to exercise optimal care, m has to be increased to make up for this reduction in expected payment. The greater the reduction in expected payment, the greater has to be the amount by which m is increased. Note that the reduction $m(1-\alpha)H$ is an increasing function of H, indicating that the higher is H the higher m has to be.

We should take care to note that our model does not explain why the empirically-observed multiplier falls as the actual harm increases. This could be motivated by factors such as caps on damages or judgment-proofness. Or perhaps, as Karpoff and Lott (1999, 540) note, juries simply view compensatory and punitive damages as substitutes, and for this reason, they are negatively related.

Finally, note that our interpretation of a smaller multiplier when harm is H as reduction in damages when harm is H should not be confused with liability being smaller than the realized harm. The liability imposed on the defendant can be greater than H, i.e., αm can be greater than one. We are saying that even if the penalty when harm is H exceeds H, as long as $\alpha < 1$, it makes sense to make the multiplier when actual harm turns out to be low (L) dependent on H and an increasing function of H.

4. Concluding Comments

It is observed that courts take account of potential harm in the determination of punitive damages. The received view in economic theory is that punitive damages should not depend on potential harm. The purpose of our paper is to provide an efficiency rationale for the courts' behavior. We first observe that the empirical punitive damage multiplier decreases as the actual harm increases, and we show that when this is the case, the optimal multiplier does depend on the potential harm. Our model does not explain why the empirical multiplier falls as the actual harm increases; generalizing the model to endogenize this aspect is an important next step.

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