On the political economy of public safety investments

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ARTICLE INFO

ABSTRACT

This paper explores the interaction of private precaution and public safety investments that are determined in a political process. We distinguish between a scenario in which the median-voter victim influences public safety and one in which the injurer lobbies the public agent, analyzing both negligence and strict liability with a defense of contributory negligence for each scenario. We establish that the levels of injurer and victim care are always socially optimal for the equilibrium level of public safety. However, the equilibrium level of public safety differs from its first-best level and drastically depends on both the specifics of the political process and the liability rule applied. This implies that, in contrast to results from the classic literature, the level of social costs is critically determined by the choice between liability rules (for a given political process).

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1. Introduction

1.1. Motivation and main results

The efficient management of expected harm requires the use and successful coordination of various precautionary inputs that may be provided by private and public agents. The commonly considered interaction between potential injurers and potential victims is indeed pervasively framed by choices of public agents about safety investments. This intertwining of private and public investments arises, for example, in the context of infrastructure and its use. The public agent may install lights or a railroad gate at a railroad crossing, thereby shaping the levels of precaution that can reasonably be expected from private parties. On residential streets, the government may vary the number of zebra crossings and thereby influence both the behavior of potential victims and injurers and the traffic accident risk. Similarly, the risk posed by trucks on highways will be a function of the care exerted by drivers

and the maintenance efforts of the government agency responsible for highways. The meshing of private and public safety investments also shows in other contexts. For example, the public agent chooses the capacity of the fire department and other emergency services, moderating the incentives of potential injurers (such as chemical plants) and potential victims (such as residential neighbors of the chemical plant) to take precautions on their own. A similar interaction may be at work when agencies screen products before they are marketed, because innovating firms as potential injurers and consumers as potential victims will respond to the quality of the screen of the agency with adjustments in their precautionary investment.

This paper analyzes the interaction of public safety investments and private precautions, focusing on the implications of the political dimension of public safety investments. The levels of private precaution are chosen by potential injurers and victims subject to a liability rule, either strict liability with a defense of contributory negligence or simple negligence.[1] The level of public safety investment is set by a public agent. When public agents are

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[1] We choose strict liability with a defense of contributory negligence and simple negligence, because both achieve efficient care in the standard setting (e.g., Shavell, 1987), and the injurer (victim) bears expected harm under the former (latter).

involved, it is interesting to explore how they arrive at decisions. Political economy arguments suggest that public agents – like any other agent – seek to maximize an objective function subject to constraints, where these constraints arise from the applicable political process in the given context (e.g., Mueller, 2003). In order to focus on the additional element of our model (namely, the public safety investments determined by a public agent), we contrast the findings of two standard political economy setups, the median-voter and a lobbying framework. Specifically, our analysis distinguishes the scenario in which the median-voter victim influences public safety from the one in which the injurer lobbies the public agent to modify public safety to their benefit (along the lines of Grossman and Helpman, 1994). Our comprehensive approach regarding political processes seems reasonable, since the relative importance of parties' interests for the public agent will vary according to the source of the expected harm considered. Some kinds of expected harm are simply more significant to potential victims than others; such salient issues may be explicitly addressed in the political agendas of candidates, whereas other issues may be more open to behind-the-scenes influence by lobbyists. For example, the decision about public safety investments at a railroad crossing is relatively more likely to be relevant in elections than in lobbying activities by firms when compared to the screening of products before their marketing. In practice, the concern that regulation is inefficient due to the responsiveness of public policy to pressure exerted by concerned parties is repeatedly voiced. For example, it is argued that policy makers respond excessively to groups demanding precautions against very low probability but particularly fearsome risks (e.g., Sunstein, 2002; Sunstein and Zeckhauser, 2011). In the public health domain, Oliver (2006) argues that it is often decisive which groups are affected by some health issue for whether or not policy action will result. In the environmental realm, it is often environmental groups and/or business lobbies that exert a critical influence on the policy agenda (e.g., Carter, 2007; Coen, 2004).

For our analysis, we extend the bilateral-care framework with a third kind of precautionary input, namely, public safety investment. The level of public safety is determined before the injurer and the victims simultaneously choose care. Due-care standards used in liability rules are socially optimal care levels contingent on the circumstances created by public safety investment, the idea being that courts set the standard of care conditional on, for instance, the presence of warning signs or the quality of roads. Potential victims vary in their level of expected harm and may thus have different valuations for a given level of public safety investment. The injurer optimizes against the distribution of victims, that is, cannot tailor injurer care to victim type. The expenditure on public safety investment is paid for by proportional income taxes. To help us work out the implications of the political dimension of public safety investments, we use a very stylized setting. We will provide a discussion about possible limitations and potential avenues for further research in our final section.

We find that both liability rules considered (i.e., strict liability with a defense of contributory negligence and simple negligence) induce potential injurers and victims to take private precautions that are socially optimal contingent on the level of public safety investments. In this sense, we preserve the results from the classic literature about the irrelevance of the liability rule chosen (e.g., Shavell, 2007). However, the social costs that result under strict liability with contributory negligence will differ markedly from the level obtained under simple negligence when holding the political process constant. The divergence of the levels of social cost can be attributed to distortions in the level of public safety investments resulting from externalities introduced by the political economy of public safety investments. To see this, we

consider the median-voter victim setup. When the median-voter victim determines the level of public safety investments and simple negligence applies, distortions follow from the fact that the median-voter victim takes marginal effects (i.e., the direct marginal benefit of lowering expected harm and the marginal costs of increasing the tax burden) into account only insofar as they apply to him. Moreover, part of the motivation of the median-voter victim under negligence is to increase the care-taking of the injurer because the due-care standard directed at the injurer is a function of public safety investments. When the median-voter victim determines the level of public safety investments and strict liability with a defense of contributory negligence applies, distortions follow from that fact that the median-voter victim considers more public safety investments to be desirable only if they lower the standard of care directed at the median-voter victim. In other words, in this scenario, excessive public safety investment is likely to result when more public safety investment lowers the costs of obeying the due-care standard for politically influential victims. Moving to the alternative political process – lobbying by the injurer – it can be established that the levels of public safety investments are very different, because the politically influential party in this context (i.e., the injurer) internalizes other marginal effects. In summary, the central forces that drive the distortion of public safety investments include the lack of complete marginal internalization by policy-setting parties and the resultant existence of strategic effects of changes in the level of public precautions for the level of private costs.

Our paper contributes to the literature in the following way. We show that even though both negligence and strict liability induce optimal behavior by the private parties for given public safety investments, the two regimes affect the public investment and thereby the level of social costs differently. In this way, we contribute to the large literature on the preferability of negligence versus strict liability.[2]

1.2. Related literature

The present paper is related to articles addressing political economy aspects in the field of law, contributions dealing with the relationship between liability and regulation, and papers that consider multilateral care.

Some researchers have observed that the design and the functioning of law can be strongly affected by the political context. For example, Rubin (2005) discusses the ways in which the tort regime has been shaped by the influence of various organized groups such as lawyers, doctors, and businesses. Epstein (1988) and Rubin and Bailey (1994) provide related analyses. Rubin et al. (2001) compare litigation and lobbying as two alternative avenues for changing the law in common-law systems, both of which are open to any organized group. Our general interest – how the performance of policy instruments is influenced by the specifics of the political process – has been addressed in different streams of the literature. For example, in the area of environmental economics, Van't Veld and Shogren (2012) analyze the combination of environmental federalism and environmental liability rules, finding that regions choose between liability rules and their design without internalizing all of the repercussions of these decisions. Focusing on environmental taxes instead of environmental liability, Fredriksson et al. (2010) consider the potential distortions arising from a majority bias, that is, the majority party's favoring home districts over other districts. Such majority bias may

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[2] For a recent survey, see Schäfer and Müller-Langer (2009), for example.