

Ronen Avraham and Ariel Porat*

The Dark Side of Insurance

<https://doi.org/10.1515/rle-2022-0054>

Published online February 23, 2023

Abstract: When insurance works properly it provides insureds with optimal incentives to prevent losses, alongside coverage for losses that could not be prevented efficiently. But insurance has an overlooked dark side to it as well. Insurers employ various tactics to shift losses to their insureds or to their victims in order to minimize their own costs instead of reducing their insureds' losses. Worse, insurers might also act to increase or maintain long term risks, ensuring the future of the insurance business that can't exist without risks. We focus on the incentives of insurers to engage in anti-competitive practices and trigger harmful behaviors of their insureds or third parties, in order to increase demand for insurance coverage. Policymakers should be aware and critical of insurers' perverse incentives that counteract the interests of the insureds and society.

Keywords: insurance, regulation, risk

JEL Classification: G22, G28

1 Introduction

What do we think when we think about insurance? Many people think about protecting their family, about peace of mind in hard times, about financial security, defending against catastrophic loss, and other similarly bright features that insurance provides. This is all true. When insurance works properly it provides insureds with optimal incentives to prevent losses, alongside coverage for losses that could not be prevented efficiently.

*Corresponding author: Ariel Porat, Tel Aviv University Faculty of Law, Tel Aviv, Israel,

E-mail: porata@tauex.tau.ac.il

Ronen Avraham, Tel Aviv University Faculty of Law, Tel Aviv, Israel, E-mail: ronen3112@gmail.com

But insurance has an overlooked dark side to it as well. Insurers employ various tactics to shift losses to their insureds or to their victims. More troubling, however, is insurers' potential motivation, as a group, to increase or maintain long term risks in society in order to increase demand for their services. Whether insurers *intentionally* increase or maintain risks is not for us to judge. The goal of this article is to expose insurers' *potential* interest in increasing risks in society and point out some tactics employed by them which *could* serve this interest.

As mentioned in the article, over the years there were a few references to the idea that insurance companies profit from risks. Syverud, for example, suggested that both plaintiffs and insurers benefit from the expansion of liability insurance, and have a mutual interest in increasing it. Therefore, an increase in liability insurance gives rise to an increase in lawsuits. In fact, insurers need to keep the threat from lawsuits at a certain level, in order to keep selling liability insurance policies (Syverud 1994). In a more recent article, Hinloopen argues that insurers benefit from expensive damages, because it encourages people to buy policies and allows insurers to increase premium rates. Thus, they tend to turn to more expensive repair services—not in a collusive manner, but as a result of market reasoning (Hinloopen 2010). Hinloopen's approach received some media attention in the Netherlands.¹ It was even examined by the government Authority for Consumers and Markets, which eventually reached the conclusion that there was no violation of competition law.²

This Article is the first to focus on the dark side of insurance, put it in a theoretical framework and provide multiple examples for its existence. Let us begin by illustrating insurers' practices which result in increasing risks in society. Consider first Kidnap and Ransom (K&R) insurance. K&R is an insurance coverage plan that covers ransom payments for those who travel frequently and are thus at risk of getting kidnapped. But K&R insurance also has a dark side to it. Indeed, some commentators believe that the reason the market for K&R insurance has been increasing so vastly is because the mere existence of insurance fuels more kidnapping (as getting ransom money is easier when there is insurance in place), and more kidnapping increases the demand for insurance. The resulting 'collusive' cycle never ends; kidnappers profit from insurance and insurers profit from kidnapping. Consequently, as we later explain, there is also the risk that insurers employ tactics which increase, or at least maintain, K&R's risks in society.

¹ *Schadesturing om Tarieven Hoog te Houden*, AUTOMOTIVE, <https://automotive-online.nl/management/laatste-nieuws/schade/7395-lsquot-schadesturing-om-tarieven-hoog-te-houdenrsquo> (Last visited 07/25/2022).

² *NMa: Carglass[®] Houdt Zich Aan Mededingingswet*, CARGLASS, <https://www.carglass.nl/over-ons/persberichten/p/r/nma-carglassr-houdt-zich-aan-mededingingswet/> (LAST VISITED 07/25/2022).

And if K&R insurance seems like an esoteric insurance field consider cyber insurance, the ‘new kid in the block’ of insurance coverage. The U.S. cyber insurance market was \$3.15 billion in 2019 and it is estimated to exceed \$20 billion by 2025 (and these numbers understate coverage of cyber risk, because many cyber claims are filed under other policies) (Zhang 2021). One of the main losses cyber insurance covers is ransomware. Ransomware is a malicious software that locks and encrypts users’ data until the user pays ransom to restore access. Ransomware attacks come in various forms, including encryption, spreading viruses, and presenting attackers as law enforcement, among others. Common to all is a ransom demand associated with the data takeover. Ransomware attacks surged 300% in 2020 alone, with the sums demanded in these attacks increasing by over 170% in just one year.

Like other types of insurance, cyber insurance has bright sides to it. Because ransomware is such a disruptive cybercrime that creates costly and unpredictable financial outcomes for companies, having insurance on your side can be very helpful. Insurers have special teams that negotiate and buy more time from the attackers while cyber experts try to neutralize the attack. Of course, insurers provide financial coverage in case these experts fail, covering loss of revenue, reputational loss, and more.

But cyber insurance also has dark sides to it. Ransom payments made by insurance companies fuel the vicious hacking cycle and help hackers fund more frequent and more sophisticated cyberattacks. This of course increases the demand for insurance so the result is that hackers profit from insurance and insurers profit from hacking. Again, this raises the concern that insurers might even take steps that increase, rather than decrease cyber risks in society.

The dark side of insurance goes even deeper than that. Insurance companies have incentives to collaborate in order to increase the level of harm and the probability of risks, so as to maximize profits Avraham and Gilo (2022). For example, insurance companies can use their lobbying power to block technological progress that threatens their bottom line. Consider the car insurance industry’s reaction to autonomous cars. As is now well known, autonomous cars are expected to reduce fatal traffic accidents by 90 percent, causing the insurance industry’s largest segment of coverage to shrink by an estimated 60% by 2050. Not surprisingly, commentators have observed that insurers have tried to slow down (if not completely stop) the progress. They have done so in various ways, from attempting to convince the public that autonomous cars are dangerous, to lobbying for more regulations that raise the barriers for entry to the industry.

These three examples belong to a list of phenomena that characterize what we call the “dark side of insurance.” Indeed, we hold this truth to be self-evident that all insurers depend on the existence of risk to stay in businesses. In this Article, we

show how insurers act on and protect their intrinsic interest to maintain or increase risk in the world.

Notably, insurers have an individual short-term interest in providing their insureds with incentives to reduce risks. But all insurers as a group have a long-term interest to provide all insureds with incentives *not* to reduce risks and sometimes even to increase them. In short, if we imagine that insurers could collectively control a knob that sets the level of risks in society, we claim that they have an interest to turn it a few notches above the socially optimal level, or at least to make sure it is turned to that point or merely not prevent it from being turned to that level. Bluntly put: a private, profit-driven industry has incentives to maximize its profits, even if that means externalizing costs onto others.

Indeed, we are concerned that insurers find ways to serve their long-term interests in increasing risks even though they have no direct access to a knob. For example, insurers have significant influence over directing laws and regulations that affect the industry, allowing their risk-prone attitude to have broader impact. Thus, insurers can collaborate through the National Association of Insurance Commissioners (NAIC),³ advocating for the adoption of laws and regulations drafted by its subcommittees as proposals to legislators. Such activism raises concerns that insurers, through NAIC, would increase statewide risk if it serves their long-term interest. Metaphorically speaking, they might have access to the knob that affects the level of long-term risks in society and set it above the optimal point.

These issues comprise the first focus of this Article: insurers' long-term interest in increasing rather than reducing risks in society. The second issue of focus in the Article is insurers' interest in *shifting* rather than *reducing* short-term risks in society. While shifting risks typically results also in increasing risks in the long run, this latter effect is indirect and possibly unintentional.

The conventional wisdom is that insurers serve as private regulators of societal risks.⁴ The baseline argument is that in order to reduce the insurers' liability, each insurer monitors its insureds' behavior to reduce the insureds' own losses, such as by providing them with a discounted premium in exchange for installing

³ The NAIC is defined as a voluntary organization of insurance commissioners that “ensure[s] the solvency of insurers, protect[s] policyholders, and preserve[s] state regulation.” (Talesh 2015).

⁴ This has not always been the conventional wisdom. In the early days of modern insurance, the conventional wisdom among commentators was that insurance was problematic because it might facilitate insureds' moral hazard (Baker 1996).

smoke alarms.⁵ And if all companies incentivize their insureds to reduce fire risk, the world becomes a safer place.

However, we argue that at least some of the time, the conventional wisdom confounds *loss-shifting* with *loss reduction*. In other words, while we agree that insurers exert effort to reduce their own *liability under the policy*, we notice that this reduction is not always done through real *reduction of losses* in the world. Rather, often insurers simply escape paying under the policy by *shifting losses* from themselves to their insureds, or to the insureds' victims, such as when they unjustifiably deny coverage. Both loss-reduction and loss-shifting ultimately reduce insurers' liability under the policy; however, loss-reduction reduces accident frequency or magnitude—leading to a safer world—while loss-shifting only reduces the *insurers' liability* under a policy for the accident without concern for accident frequency or magnitude. The difference is crucial, as loss-shifting does not decrease risk in the world and may instead create more risk. Note the difference between the former and the latter focus or argument of the Article: while the former argument is that insurers intentionally increase long-term risks in society in order to increase demand for insurance, the latter argument is that in the short-term they do not care whether they affect the level of risks or not; they just care about reducing their immediate costs, even if this is accomplished through risk shifting to others rather than risk reduction.

The Article proceeds as follows: Part I starts with the last point and explores the “myth of risk reduction.” This Part explores systematic examples of insurers reducing only their own liability under the policy and not losses in the world. We begin by disputing directly the notion that insurers often provide quality, risk-reducing private regulation – by noting instances in which insurers barely regulate or do so in a socially undesirable fashion. After discussing how insurers stand idly by while their insureds continue their socially inefficient risky behavior, we move on to examine other, more active practices insurers engage in, perhaps for the purpose of shifting loss. We show how insurers obscure contractual manipulations of the policies that help them deny coverage after the fact, without providing any incentives to their insureds to take due care in advance. Worse, we show how insurers instruct their insureds to escape compensating their victims after the fact, instead of how to prevent losses in advance.

⁵ Steven Shavell famously laid out the theoretical groundwork for this new conventional wisdom in the law. Shavell 1979. The origins can be found in Arrow 1971a; Pauly 1968. Various prominent scholars have since demonstrated the applicability of this argument in practice, claiming that insurers not only can but actually do serve as private regulators. See Baker and Silver (2019), Ben-Shahar and Logue (2012).

Part II, which is the more important and ambitious part of our project, discusses insurers' long-term interest in setting the societal risk level knob a few notches higher than optimal. To be sure, we do not mean to suggest that insurers always favor more risk.⁶ Thus, insurers may want to reduce extreme risks to which even they are averse (Baker and Farrish 2005). Furthermore, it is not in the insurers' interest to increase risks infinitely. Very high risks would cause some insureds to prefer not to buy insurance at all, while others would refrain altogether from engaging in the underlying risky activity, such as driving. Rather, our argument is more nuanced and centers on the claim that insurers seek to self-interestedly set risk levels higher than what is socially desirable.

We then explain how insurers can coordinate in achieving their long-term interest despite federal antitrust laws that prohibit coordination. We start by exploring how the very nature of some insurance policies gives rise to third-party moral hazard. Third-party (as opposed to first-party) moral hazard happens when the mere existence of insurance encourages third parties to harm, or be harmed by, the insureds in order to collect on the policy. We show this phenomenon in the contexts of kidnapping and ransom insurance, cyber insurance, and health insurance. We show that not only are insurers aware of this phenomenon, they also actively fuel it in various ways. We then turn to discuss another example of how insurers utilize their collective power to increase risk directly by objecting to risk-decreasing technologies (such as autonomous cars, seatbelts and genetic testing).

Part III exhibits insurance practices that combine “the worst of both worlds” from Parts I and II. That is, we show practices that shift loss to the insureds (or their victims) and consequently make for a riskier world in the long term. Put differently, we argue that sometimes the mechanism by which insurers increase long-term risk is in fact by shifting loss onto others. Tort reform is our primary example. While in the cases discussed in Part I increasing risks for the long run is mostly a by-product of shifting losses, we suspect that in the cases discussed in Part III increasing risk is a major motivation of the insurers.

Table 1 below summarizes the structure of this Article. The top-left cell represents the baseline conventional wisdom, which assumes that insurers regulate insureds' behavior and therefore do not engage in loss-shifting in the short term or in risk increasing in the long term. The top-right cell represents the discussion in Part I, where we begin deconstructing the conventional wisdom first by contending that some insurers' practices aim at short-term *loss shifting*, rather than any *loss reduction*. The discussion in Part II is represented in the bottom-left cell, where

⁶ By risk we mean the multiplication of the probability of loss and the magnitude of loss. It can be shown that insurers have incentives to impact both the probability and the magnitude of loss to levels that are above the socially optimal ones (Avraham and Gilo 2022).

Table 1: Exploring short-and long-term interests of insurers’ behavior.

Short term/Long term	No loss shifting	Loss shifting
Risk decreasing/maintaining	Conventional wisdom	Part I
Risk increasing	Part II	Part III

we further contest the conventional wisdom by highlighting insurers’ behavior that has the potential to increase or maintain long-term risk levels. Lastly, the bottom-right cell—a mirror image of the conventional wisdom—represents the discussion in the last chapter of our Article and synthesizes the insights brought in the two preceding parts by presenting insurer practices that both shift loss and increase total risk levels. To be sure, there is some overlap between the cells; yet, each cell represents insurers’ practices that best capture the relevant interplay between long- and short-term interests in that cell.

In the Conclusion, we recommend some policy reforms.

1.1 Shifting Losses: Rebutting the Myth of Loss Reduction

The conventional wisdom is that insurers instruct the insureds on how to decrease the risk or the level of harm. When insurers instruct insureds to install smoke alarms, the result is fewer fires; when they instruct them to install sprinklers the result is smaller damage. This led many scholars to view insurers as capable of serving as private risk regulators and insurance as a potential mechanism for creating a safer world (Arrow 1971b; Baker 1996; Ben-Shahar and Logue 2012, at 199; Hölmstrom 1979; Rappaport 2017; Shavell 1982; Talesh 2017).⁷

We begin this Article by outright disputing the prevalence of this common perception. We think it is a myth. We argue that often, insurers do not engage in active risk regulation; and even when they do, they do it inefficiently and not for the purpose of reducing risk. Instead, we claim that insurers focus on loss shifting: rather than aiming to reduce liability under the policy by preventing *losses*, insurers’ primary goal is to reduce their *liability* by shifting these losses onto others; in this sense, insurers fail to live up to their socially desirable institutional role as private regulators.

⁷ Ben-Shahar and Logue built upon Shavell and Baker’s theories that insurers’ relationship with tort liability induces optimal incentives to take care by exploring the means by which the insurance industry’s distinctive methodology and business practice complement or even replace government regulation of risk.

In a recent article Abraham and Schwarcz also confront what they call the “Regulation Thesis”, the idea that insurance can be a replacement for, or a complement to, state regulation. Abraham and Schwarcz argue that evidence shows that insurers often fail to act as regulators and to reduce risk. That is because insurance is designed to incentive risk-taking by offering compensation for losses. This incentive results in moral hazard, when the insured’s cost of loss prevention is greater than the benefits. Abraham and Schwarcz present evidence that insurers have a “net-negative” effect on loss prevention (Abraham and Schwarcz 2022). Other scholars also reached the conclusion that the conventional wisdom is inaccurate, and that the reduction of risks is not always on the insurer’s agenda (Mendoza 2020; Schlesinger and Venezian 1990; Schwartz 1990).

While we join this literature and dispute the conventional wisdom claim that insurers generally focus on loss-reduction, we do identify a general exception where insurers indeed attempt to prevent losses on the ground. The exception is in the case of *extreme correlated losses*, because these are losses that risk insurers’ solvency if not significantly reduced. We start by describing insurers’ passive loss shifting and continue with demonstrating their active loss shifting.

1.1.1 Passive Loss Shifting

We are not the first to argue that insurers can do better in reducing risks. Prior scholars have also recognized that insurers are not “as rigorous in monitoring” insureds’ conduct as many presume (Abraham 2011; Logue 2015).

In this Section we proffer two arguments; first, that insurers barely engage in direct risk regulation; and second, that even when insurers do directly regulate, their regulation is focused on liability-reduction, not loss-reduction; hence effectively shifting loss onto others. Thus, we conclude that insurers fail to live up to their socially desirable institutional role as effective risk reducers.

1.1.1.1 Why Insurers Fail to Engage in Direct Risk Regulation

We start by providing several theoretical explanations for why in contrast to the conventional wisdom, insurers do not directly regulate to reduce risks. First, as Kyle Logue identifies and illustrates through negligent inspection law, direct regulation may *increase* insurers’ liability. Under negligent undertaking law, if an accident occurs after the insurer has regulated enough to have legally “undertaken” the insured’s responsibility for safety incidents, the insurer has dramatically increased its liability for the incident (Logue 2015).

The second reason insurers do not engage in direct regulation is that in cases like Corporate Directors and Officers (“D&O”) insurance, if insurers engage in

direct regulation or even raise awareness of potential risks, they can increase their *insureds'* liability. Specifically, D&O insurers neither require insureds to adopt any practices nor monitor insureds' behavior; many such insurers do not advise insured on any loss-preventing practices, as a director's awareness of the risk in itself can give rise to liability down the line if a loss does occur (Heimer 2013). In D&O insurance, insurers notoriously "do almost nothing to monitor the behavior of the corporations that they insure." (Abraham 2011).

Finally, if insurers' regulation is effective, it creates two types of positive externalities; one for other insurers who now know how to improve their insureds' risks, and another one for insureds, since the safety regulation reduces their risk to the point that possessing any insurance at all may not be necessary (Cohen 1997). And, as is well known, whenever positive externalities are involved, under-provisions of safety regulation are likely unavoidable.

The next sections address the question of what can explain insurers' motivation to regulate insured's behavior in the occasions they do so. We stress that even in instances when insurers oversee their insured's behavior, they are likely to strictly adhere their advice to the rules set by preexisting—often outdated—legislation, thus failing to fully fulfil their potential to privately regulate.

1.1.1.2 Self-Interested Interpretation of Existing Legislation

We now turn to the argument that even when insurers directly instruct their insureds, often it is not for the purpose of getting them to *efficiently* invest in precautions. Quite the contrary, insurers may distort the interpretation of existing legislation they provide to their insureds, which in turn leads to suboptimal incentives to take care. Punitive damages serve as an excellent example. Although many states prohibit insurers from providing coverage for punitive damage, insurers often include venue clauses or jurisdictional clauses that ultimately enable such coverage to be provided (Talesh 2015). However, coverage for punitive damages may well decrease deterrence, and that, from insurers' perspective, may ultimately result in more demand for insurance coverage.

Insurers similarly frame their discussions of U.S. Supreme Court decisions "around shifting risk and avoiding liability." Consider insurers' recent focus on interpreting a Supreme Court decision, *Vance v. Ball State*, in which the Court narrowed the definition of "supervisor." In *Vance*, the question was whether a coworker who is vested with the authority to oversee the daily work of another worker is considered a "supervisor" for the purpose of determining employer liability for harassment under Title VII. Rather than developing an understanding of the supervisor's role under this new regime, insurers generally offer recommendations for employers that would better situate the insurer to avoid liability or defend a case should an incident arise. This type of interpretive discretion is concerning, as

insurers become chiefly focused on legal risk-management instead of loss prevention, providing a service that “leans more toward making claims defensible rather than fostering a discrimination-free workplace.” (Talesh 2017).

1.1.1.3 Other *Motives to Regulate (Inadequately)*

Omri Ben-Shahar and Kyle Logue explore the argument that insurers are motivated to reduce liability through loss-reduction by cataloging multiple real-world examples. These examples center on using premium reduction or other methods to regulate areas where the government has not intervened, such as through homeowner’s insurance. However, several of Ben-Shahar and Logue’s examples only reveal the *potential* for insurers to perform private regulation, without satisfactorily showing that insurers actually regulate insureds and prevent loss. For instance, their best example for loss-reduction is environmental liability insurance, which Ben-Shahar and Logue identify as a “striking example” of insurers reducing moral hazard and loss. They argue that insurers seek to reduce liability through loss-reduction by offering site-specific environmental coverage and ensuring licensing and regulation compliance, enforcing government regulation compliance, and even going beyond minimal government standards to promote stricter safety (Ben-Shahar and Logue 2012).

However, we note four problems with this view. First, if the environmental liability insurance example works as Ben-Shahar and Logue claim it does, it merely exemplifies our prior point that insurers pay significant attention to extreme correlated losses (indeed, the potential liability for an environmental harm can be enormous), but will not refrain from shifting medium and smaller losses to preserve the demand for insurance. Second, there is no broad consensus that insurers (at least those operating in the United States) always realize their full potential to mitigate environmental risk even when it relates to large correlated losses. Such is the case with climate change. In 2018, the Asset Owners Disclosure Project provided an analysis of the world’s eighty largest insurers rated on their approach to climate-related risks and opportunities. Twenty-four of the eighty were US insurers, and twenty-one of those insurers scored the lowest. They are viewed as “bystanders” for failing to consider the financial impact of climate change (Asset Owners Disclosure Project 2018).

Third, while insurers’ actions may incidentally result in loss-reduction, loss-reduction is not the motivating factor to enact such policies. While this reality may be convenient for now, it means that insurers have no reason to maintain this incidental loss-reduction and that these loss-reduction practices can disappear as soon as cheaper liability reduction measures emerge.

The fourth and greatest problem is that we have no reason to assume that the regulations or other metrics insurers use are optimal. The literature on regulation has made clear that government-provided regulation is problematic; among

other shortcomings, scholars have noted administrations' hostile agendas, regulatory capture, and the inability to update the regulation in a timely fashion (Avraham 2009).

Against all this, one might wonder whether firm competition would not eventually solve the current unsatisfactory condition of insurers' lax private regulation. After all, firms are known to operate in a cartel-like environment and might have inherent incentives to deviate from the rest of the pack and offer better, cheaper products to gain market power. Although it is possible that heightened competition would eventually ease the severity of the inefficiencies in the insurance market, notably, insurers have strong instruments in place – such as NAIC-to secure their long-term collective interest (Randall 1999). In Part II below we demonstrate how insurers accomplish this, for example by lobbying against risk-reducing technological progress.

In sum, in this section we rebutted the myth of risk reduction by focusing on ways insurers omit to take efficient actions that would reduce the risk generated by their insureds. The next section will focus on practices insurers *actively* engage in to prevent their own liability under the policy by shifting losses onto the insureds and third parties, further disproving the myth of effective loss reduction.

1.1.2 Active Loss Shifting

1.1.2.1 Contractual Manipulations

The most notorious example of how insurers shift loss onto the insured is through policy-term misdirection. The idea of contractual manipulations or deceptive contracting that violates consumer expectations was recognized at least since the case of *C & J Fertilizer Inc.* There the Supreme Court of Iowa ruled that a policy that violates the reasonable expectations of the policyholder is unconscionable, and should be interpreted from the viewpoint of an ordinary person (*C&J Fertilizer Inc. v. Allied Mut. Ins.* 1975).

Loss shifting occurs when insurers place liability-limiting terms into a policy without pointing those terms out to a potential insured, or in such a way that it is impracticable and unlikely for a potential insured to see the terms. Normally, these liability-limiting terms may be justifiable, for instance, in that they might reduce moral hazard. However, such a regulating effect is only realized when the insured knows about the term, and thus can make an informed decision to adjust future behavior in compliance (Schwarcz 2014). This means that as no precaution is being taken to limit the harm that the insurer has disclaimed liability for, the insurer is merely shifting the loss onto the insured, rather than actually reducing it (Schwarcz 2017).

1.1.2.2 Apology Law and the Sorry Works! Coalition

Another example that highlights insurers' concern with reducing liability regardless of loss is the Sorry Works Coalition ("Sorry Works!"). Sorry Works! is a development of "apology law," which includes "laws designed to privilege apologies made by injurers" by making the apologies inadmissible at trial (Arbel and Kaplan 2016). In other words, these laws prohibit the use of physicians' apologies as a legal admission of fault. Moreover, as Baker and Silver note, some of the leading figures heading these programs and occupying their boards are (you guessed it ...) insurance executives (Baker and Silver 2019). Apology laws spurred a 60% reduction in hospital payments to victims, roughly \$32,000–\$73,000 per case. These astounding reductions are explained through victims' documented desire to receive an apology, leading to a greater willingness to settle once the apology is received. Moreover, apology laws and the resulting payout reductions prompted many commercial players to engage in a highly orchestrated, commercialized practice of apologizing complemented by apology training, psychological techniques, and professional guidance to create the most effective apology at the lowest cost. Apology law and Sorry Works! are often featured as positive methods to meet both patient and insurer interests—i.e., reducing insurer liability while satisfying patients' need for compensation through the apology. Observing the orchestrated system of apology law through Sorry Works! demonstrates that insurers are motivated and exert efforts to ultimately reduce liability only, making any consequential loss-reduction incidental and unrelated to insurers' primary interests. Although one might think that apologies really do mitigate emotional harm due to their therapeutic value—and as such, are an efficient loss-reduction tool—scholars argue that the real motives for victims' decision to settle are much less auspicious; indeed, several apology practices are meant to "create emotional pressure on victims to accept them, a decision that the victim will later come to regret." Apology programs not only fail to diminish loss, they might even increase risk. Specifically, as healthcare providers know they can easily escape liability by later generating an apology, their incentives to take care decrease. Thus, notably, even if apology programs actually do carry *some* potential to reduce emotional harm *ex-post*, they still distort doctors' incentives to take proper care *ex-ante*. This example shows that even if harm mitigation is an incidental benefit of apology programs, insurers are primarily focused on liability reduction through loss-shifting, in this case shifting loss onto the patient, and remain at best indifferent to actual loss-reduction practices for future patient safety events (Arbel and Kaplan 2016).

1.1.2.3 Dash Cameras

Consider an example recently analyzed by Yotam Kaplan and Yonathan Arbel (2016): dashboard cameras ("dash-cams"). Insurers encourage drivers to use

dash-cams, which sounds like a good policy to encourage safer driving, much like smoke alarms. However, at least until every car has them, dash-cams merely shift risks to the other drivers, thereby diluting the incentives of the insured drivers to take precautions. Why? Because insureds know that if the accident is their fault, they can argue that they did not have a camera or that it did not work, thus improving their chance to escape liability. On the other hand, if the accident is not their fault, then insureds can use the camera as proof, again improving their chance to escape liability.⁸ The option for such a strategic use of the dash-cam might lead insured-drivers to drive less carefully. The important point is that insurers only care about the fact that their own insureds escape liability (losses were shifted to the other driver) and do not care that driving becomes more dangerous. In fact, they might benefit financially from it.

Our discussion so far has demonstrated that the myth contending that insurers habitually engage in risk reduction is not always true; many times, insurers do not reduce risk, but merely reduce the payouts they will owe for the materialization of such risk. Of course, in the long run such practices may indirectly increase risks in society. For example, instructing employers on how to escape liability by making sure their supervisors are not deemed legally as supervisors is problematic in the long term not just because the victims are left to bear the losses, but also because this practice leads to suboptimal behavior, to more harm, and (importantly from the insurers' perspective) to increased demand for insurance coverage. In the next Part we revisit this example and explore the more radical and concerning claim that insurers have an intrinsic, long-term interest in maintaining sufficient levels of risk within society. We demonstrate this claim through additional direct evidence.

⁸ Furthermore, dash-cams may also be in the best interest of those with prior accidents, as they know that they will be held suspect in any future claims they are involved in; dash-cams are a way for such drivers to protect their own interests by shifting the loss of any potential accident as they drive safely in the future (Lando 2006). Furthermore, insurers also seem to prefer that insureds have dash-cams, although this preference is not particularly intense; insurers in the US have yet to find a strong enough benefit to having dash-cams (Allan 2015). Insurers do find utility in cases that can otherwise be ambiguous, but where fault is obvious to a direct observer. In those cases, the harm either is not the insured's fault, so the insurer can loss-shift onto the other driver, or it is the insured's fault, and the insurer can loss-shift onto the insured directly by raising premiums in the future (Fereiro 2019). The dash-cam is particularly useful since 94% of crashes are caused by driver error (Singh 2015). Additionally, through a dash-cam, the insured gives huge amounts of data to the insurer, which is something insurers have demonstrated they find useful (Allen 2018). Still, in the US, most insurers do not offer an upfront discount for having a dash-cam (George 2019).

1.2 Increasing or Maintaining Risks

In this Part we switch to our more ambitious claim that insurers engage in creating, maintaining, or at least not preventing long-term risks. We commence with the observation that in a world with no accidents, no one will need insurance; there is no need for fire insurance without fires. Since the insurance business model depends on the existence of risk, the conclusion that insurers possess an intrinsic interest in having sufficient levels of risk in the world is quite sensible. This is worrisome because it means that insurers are intrinsically incentivized to act against society and insureds' best interests. It may be important to mention that scholars have identified a different set of incentives when it comes to mutual insurers as opposed to ordinary for-profit insurance. Mutual insurers are much more willing to promote loss (or risk) prevention efforts than for-profit insurers, who are naturally more likely to channel their efforts to maximize profits (Abraham and Schwarcz 2022). With that said, the reality for most policies is that insurers may be encouraged to maintain or even increase risks.

Much of what we argue below that insurers can do, requires cooperation between them. Indeed, insurers often collude by lobbying together in order to increase risks to gain profits (Avraham and Gilo 2022). But how can they do that? Don't antitrust rules prohibit anti-social cooperation? We begin this Part by discussing the history and present of collusive behavior within the insurance industry, not only in private agreement to increase rates but also in efforts to enable regulatory capture of insurance commissioners and legislation surrounding the industry. This overview provides the theoretical background for how insurers can possibly increase risk in the world.

We next turn to showing how this plays out in practice. We start by discussing the phenomenon of third-party moral hazard. Scholars have acknowledged for years that the very existence of insurance might dissuade insureds from behaving carefully; this is the "classic" problem of first-party moral hazard, to which insurers responded by introducing contractual tools aimed at mitigating the problem, such as a deductible or discounts for installing safety devices in one's home or car. The problem of third-party moral hazard differs from the "classic" moral hazard in that it describes how the existence of insurance incentivizes *third parties* to increase risk, rendering old contractual tools irrelevant to the solution of the problem. We start by discussing kidnapping and ransom insurance and show how the mere existence of coverage feeds the kidnapping industry. We then move on to cyber insurance and health insurance and show similar phenomena.

We continue Part II by turning to show how insurers advance their long-term interest in having, maintaining, and even increasing risk by objecting to risk-reducing technologies. We demonstrate this claim by describing the conflict regarding autonomous cars, passive restraints in cars, and the genetic testing.

1.2.1 Anti-competitive Behavior in the Insurance Market

At least since the 19th century, insurers engaged in collusion and anticompetitive behaviors between companies. The earliest organization of insurance companies designed to promote their political goals was the National Board of Fire Underwriters, established in 1866. The Board was hostile to state regulation, and decided therefore to promote the adoption of federal regulation (Meier 1988). As the business of insurance spread throughout the different states, each had an independent agency to regulate insurance within its borders, the industry sought federal oversight that would weaken state regulation (Randall 1999). In 1869 the Board took this battle to the Supreme Court in *Paul v. Virginia*, but to their disappointment the Court ruled that insurance was not a matter of interstate commerce, and therefore can be regulated only by states. Soon after state insurance commissioners decided to establish the National Association of Insurance Commissioners (NAIC) (Meier 1988).

The brighter side of *Paul* was that insurance companies were exempted from federal antitrust laws. This cartel-like nature of interstate insurance, was disrupted only 75 years later in *U.S. v. South-Eastern Underwriters Association* (1944). After the revealing of a large-scale price fixing conspiracy, the Supreme Court (partially) overruled *Paul v. Virginia*, and ruled that interstate business of insurance is an act of commerce and therefore the Sherman Antitrust Act applies. Only a few days after the Supreme Court's decision, the insurance industry presented a bill to exclude the entire industry from federal antitrust law. Though it was almost passed by both houses, the bill was eventually defeated, and another bill, the McCarran-Ferguson Act offered by NAIC, was the one that passed. At this point, both insurers and state commissioners were on the same side, promoting state regulation (Meier 1988). The new act largely granted immunity to insurance companies from federal antitrust laws, save for cases involving boycott, coercion, or intimidation (Anderson 1983).

Indeed, since its creation in the 19th century NAIC has been influencing the regulatory law on insurance through the creation of universal model laws on the

various kinds of insurance throughout the states (Meier 1988).⁹ For many years the NAIC has explicitly set rate standards within these model laws, including implementing a rate approval system.¹⁰ Indeed, NAIC has not necessarily acted exclusively on behalf of state commissioners. Being a voluntary and private organization, it was closely related to the insurance industry. Towards the end of the 20th century, about a half of the organization's budget arrived from insurance companies' fees (Randall 1999).

Overtime, free from federal scrutiny, the NAIC gained lots of control over states' insurance laws by developing a comprehensive accreditation program that pushes for standardized regulation (Randell 1999).¹¹ For example, when New York stalled in adopting some of the NAIC's proposed model laws in the 1990s, the NAIC suspended New York's accreditation. This pushed some, such as state Senator Guy Velella, to accuse the NAIC of acting "in a collusive manner" and of committing antitrust violations. Likewise, many insurance commissioners expressed concerns that the NAIC was exercising inappropriate control over regulators and threatening the notion of state sovereignty.

Insurance companies' anti-competitive behavior goes beyond lobbying for more lenient regulation. In *Hartford Fire Ins. Co. v. California* (1993), there was an alleged conspiracy between American insurers and foreign reinsurers. The Supreme Court ruled that the US market was in fact harmed by the collusion, and that American antitrust law should therefore apply to foreign reinsurers. Indeed, the conspiracy attempted to limit the coverage and applicability of existing policies, and therefore resulted in shifting losses.

Another big concern in policing insurers involves the practice of 'revolving door,' referring to insurance companies' practice of hiring former insurance commissioners who have ended their terms (Heath and Crenshaw 1993). One recent

⁹ Some model laws were drafted by an All-Industry Committee—a group of industry representatives organized by the NAIC. Randall, at 634.

¹⁰ *McCarran-Ferguson Act*, NAIC, https://content.naic.org/cipr_topics/topic_mccarran_ferguson_act.htm [<https://perma.cc/Z4MC-S432>] (last updated May 20, 2020). The NAIC openly states its mind-set to maintain conformity amongst the state-level insurance laws, stating itself to be "the US standard-setting and regulatory support organization created and governed by the chief insurance regulators from the 50 states, the District of Columbia and five U.S. territories." *FAQ*, NAIC, https://www.naic.org/documents/about_faq.pdf [<https://perma.cc/TBW4-EYF6>] (last visited Feb. 2, 2021).

¹¹ While all states and many territories are accredited now, early controversies developed as the NAIC would sanction states that did not fall in line with the accreditation standard, which mandated certain model rules written by the NAIC to be adopted; these sanctions would risk insurance companies based in unaccredited states to be subject to manifold financial examinations at their cost whenever they did business in an accredited state that had adopted the regulations (Randall 1999).

study looking at the employment history of 271 insurance commissioners between 2000 and 2018 found that 38% end up working in the insurance industry after their term, and that 29% of those 271 commissioners ended up working in the insurance industry within a year of leaving office (Tenekedjieva 2020). The same study also found that those commissioners who did go into the insurance industry after their term were generally and measurably laxer regulators, with those entering the industry immediately being the most lax.

In sum, the combination of a weak *de jure* enforcement of federal and state antitrust laws with strong *de facto* enforcement of industry collaboration through the NAIC and its ‘revolving doors’ system, enabled the industry to collaborate according to its long-term interest in maintaining risks in society (Burns 2020).

In subsection B below we start with the less controversial claim that the mere existence of insurance facilitates some long-term risks, and that insurers contribute their share to the persistence of this phenomenon. In Subsection C we make the more ambitious claim that anti-social collaboration between insurance companies is not just possible, as we have shown above, but also plausible.

1.2.2 Third-Party Moral Hazard

Third-party moral hazard, as recently identified by Parchomovsky and Siegelman, differs from the “classic” (first party) moral hazard because its influence is indirect in that the mere *existence* of insurance incentivizes actors unconnected to the insurance contract to behave less carefully, thus increasing overall risks. Stated differently, what distinguishes third-party moral hazard is its focus on losses caused by third parties, instead of the insureds themselves. Examples range from bus passengers who are aware that bus companies have insurance and might intentionally engage in dangerous behaviors on buses resulting in injuries to themselves to murders motivated by life-insurance plans. Third-party moral hazard is a particularly insidious mechanism for increasing risk, since for insureds the increasing risky behavior appears exogenous—i.e., the harm appears to be independent of the insurance policy. But often, the root of the risk is the incentives to third parties caused by the existence of the insurance policy itself and compounded by the behavior of the insurance companies handling this risk.

More specifically, we identify several problems related to third-party moral hazard. First, the mere existence of some insurance policies gives rise to third-party moral hazard; third parties—be it kidnappers, hackers, or medical providers—are attracted to the deep pocket behind the insureds. Second, insurers, aware of this phenomenon, often exacerbate third-party moral hazard by avoiding to protect their insureds against it, thus facilitating their long-term interest in increasing risk levels. Third, insurers too easily pay money on the policy to those third parties.

Although it is in the short-term interest of insurers to reduce these payouts, they avoid doing so because abstaining from action serves their long-term interests.

The next sections demonstrate these three problems in the cases of kidnapping and ransom insurance, cyber insurance and health insurance.

1.2.2.1 Kidnapping and Ransom Insurance

Kidnapping and ransom insurance coverage (“K&R”) exemplifies the phenomenon that insurers seek to increase risks in the world by fueling third-party moral hazard. K&R is an insurance coverage plan designed for wealthy individuals and those who travel frequently and are thus at risk of getting kidnapped (Bell 2015). K&R policies, offered by dozens of insurance companies, typically cover “ransom payments, loss of income, interest on bank loans,” and medical and psychiatric care.¹²

K&R demonstrates insurers’ long-term interests in increasing and maintaining risk, because the coverage for negotiated ransom and other costs arguably energizes more kidnappings and thereby fuels the kidnapping industry (Clendenin 2006). Specifically, the existence of K&R results in “an unintentional conspiracy” between “the terrorist, the victim, and the insurance companies” because as long as K&R exists, the kidnappers continue to be paid, victims continue to purchase insurance, and the insurance company continues to receive premiums. This exchange perpetuates the cycle beyond what may have been if insurers were not providing continuous and definite payouts for the kidnapping victims. But the problem does not end with the mere existence of insurance; insurers’ behavior before and after the occurrence is problematic as well.

After the occurrence, insurers are “softer” with kidnappers than one would expect, paying out and conceding as a matter of policy. Indeed, insurers’ unwillingness to cooperate with U.S. government hostage-crises stances of being “tough” on kidnapping further supports their interest in increasing risk. The Department of State holds that making concessions to hostage takers ultimately increases the danger that others will be taken hostage and thus prohibits concessions when government employees are kidnapped. The Department of State is clear that any U.S. private organizations engaging in hostage resolution in a manner differing from U.S. government policy undertake such action without U.S. approval (Clendenin 2006). Despite this clear policy and warning that concessions lead to future hostage

¹² In Canada for example, such policy can be purchased from one of 26 companies offering it: Insurance Business Canada, Kidnap and Ransom Insurance Products <https://www.insurancebusinessmag.com/ca/business-insurance-products/?inclusion=30&p=1>.

takings, K&R insurers continue to concede, potentially enabling kidnapping for the sake of K&R premiums.¹³

Anja Shortland, on the other hand, who has extensively studied the K&R insurance market suggested that the K&R market is governed by, effectively, a cartel that keeps payments to kidnappers at levels that are not too high (Shortland 2019). We conjecture however that insurers make sure that payments are neither too low.

Insurers' behavior seems suboptimal not just after-the-fact. Indeed, a big puzzle is why insurers do not focus on kidnapping-reduction or rescue missions rather than on ransom negotiations (Prochnau 1998). Insurers' tendency to resolve the extortion risk only *after* the action has occurred, rather than make preventative efforts prior to a kidnapping incident, furthers the argument that insurers' primary interest is to continue fueling the "unintentional conspiracy" (or tacit collusion) of kidnapping and extortion to serve their intrinsic interest of increasing or maintaining risk in the world.

To be sure, there is a short-term/long-term tension here: insurers still have an interest in lowering payout in individual cases. Indeed, many K&R plans may be voided if unnecessarily revealed to the kidnappers; this is because insurers know that such disclosure creates incentives for kidnappers to target *their* insureds and demand higher ransoms from *them* specifically. As insurance companies would like to limit their own liability, they take precautions to keep their involvement undisclosed, even in negotiations (Prochnau 1998). And yet, the idea that K&R incentivizes kidnappings is so clear that in some countries K&R insurance is banned to prevent increases in the extortion market and harm to travelers (Parchomovsky and Siegelman 2022).

1.2.2.2 Cyber Insurance

Insurers' interest in fueling third-party moral hazard is also present in ransomware attacks and payouts from cyber insurance. Ransomware is a malicious software that locks and encrypts a users' data until the user pays ransom to restore access (Fruhlinger 2018). Ransomware attacks vary in harm, but common to all is a ransom demand associated with the data takeover. Insurers have developed cyber insurance plans to protect users against these attacks; indeed, this model is eerily similar if not exactly identical to the K&R model. Just like K&R, cyber insurers effectively incentivize ransomware attackers by providing a certain payout for their attack (Murphy 2017). Just like our theoretical framework predicts, this cycle consequently

¹³ In consistence with the policy and with our claim that K&R insurance increases risks (though not necessarily as a causal proof), when Italy instituted a legal ban on paying ransoms in 1991, the local rate of kidnappings dropped substantially. From 1969 to 1991, 653 kidnappings occurred; in the seven years following the ban, only 38 occurred (Bohlen 1998).

fuels the ransomware practice, ultimately increasing the number of ransom attacks. In fact, the number of cyberattacks increases annually, leading to greater claim frequency, premiums and profit for insurers.

Insurers' disregard for increased risk in the world is supported by cyber insurance policies that lack essential characteristics intended to prevent ransom attacks—thus further solidifying the claim that insurers are not only aware of the issue of third-party moral hazard, but also fuel it. For example, few cyber insurance policies require security software or policies, security system vetting, or an audit of the organization. Very rarely do insurers base premiums on the presence or lack of such measures.¹⁴ Indeed in a recent article Tom Baker and Anja Shortland argue that these kinds of loss prevention techniques are not cost-effective for insurers (Baker and Shortland forthcoming).

However, Kyle Logue and Adam Shniderman argue in a recent article that the “common sense intuition” that the availability of cyber insurance increases ransomware attacks and that it makes cyber-attacks more profitable, is inaccurate. The authors suggest that cyber insurance may increase social welfare because of two major properties: the risk-spreading benefits may be greater than the moral hazard harms, and insurers may implement ex-ante and ex-post regulatory measures to reduce losses. However, as the authors themselves admit various market failures prevent these benefits from materializing (Logue and Shniderman).

1.2.2.3 Health Insurance

Perhaps the clearest example of third-party moral hazard lies within the health insurance industry. One salient example is physicians' and providers' widespread practice of recommending and administering procedures that have little-to-no medical value and cause overutilization of the health care services (Silver et al. 2018).

Indeed, over utilization can happen for many reasons. The two important ones are defensive medicine, where physicians provide (and health insurers cover) excessive care to avoid legal liability, and offensive medicine (what economists call-induced demand) where physicians pursue excessive care to maximize their reimbursements (Avraham 2009). As Charlie Silver and David Hyman have shown, “only 10–20% of the medical procedures used” have had proper clinical trials to determine if they are medically effective. The mere existence of health insurance incentivizes physicians to administer and recommend even those procedures that have not undergone adequate scrutiny, because if the patient has insurance s/he does not bear the cost and the physician herself may

¹⁴ See generally *CyberRisk Coverage Application*, TRAVELERS, <https://www.travelers.com/iw-documents/apps-forms/cyberrisk/cyb-1100-ind-0116.pdf> (last visited Apr. 11, 2020).

profit from it. Indeed, it has been estimated that the costs associated with offensive medicine are much higher than the costs associated with defensive medicine (Avraham 2009, pp 560).

Consider percutaneous vertebroplasty, which is a procedure that involves injecting bone cement into the spine to treat vertebral fractures. As of a decade ago, it was well publicized that this procedure is essentially worthless. However, insurers would still cover the costs of the procedure; consequently, physicians still provided the procedure. The reason for coverage may be twofold: (1) more procedure payouts creates more profits for the insurers, as they receive back a small percentage of each payout directed at covering medical procedures; and (2) facilitating a false need for medical procedures incentivizes patients to purchase insurance by maintaining high enough perceived risk levels to support the insurance business (Silver et al. 2018). Notably, these unnecessary procedures carry risk, even if mild (Al-Nakshabandi 2011). As of today, recent studies found that percutaneous vertebroplasty does have some advantages in treating a specific uncommon disease (Xiao et al. 2021), but this understanding does not apply to all complications, and was not known in the last decade. The results were a continuous subjecting of patients to risk without reason, solely to sustain business and profit. These interests cause insurers to develop coverage policies that give physicians and treatment centers strong financial incentives to continue procuring these unnecessary or ineffective tests and treatments, thereby perpetuating the cycle. Thus, just like K&R or cyber insurance, unnecessary and ineffective tests and procedures in the healthcare industry amount to another way in which insurers can and sometimes do increase risk through third-party moral hazard.

Overall, the phenomenon of insurers fueling risk through third-party moral hazard is rife in the healthcare field. The rise of HMOs in the past decades is best explained as an attempt by society to combat this phenomenon; but, as Silver and Hyman explain, this attempt ended with a “managed care backlash,” which “made it clear to insurers that there would be real costs in trying to reduce health care providers’ revenue streams.” (Silver et al. 2018).

1.2.3 Objecting to Technological Progress

Insurers’ approach to innovative technologies that significantly reduce risk reveals their capacity to promote their long-term interest. In this Section we show that in several key areas, insurers were fierce opponents to the adoption of such technologies. We argue that their opposition might have been motivated by their understanding that more rather than less risks better serve their long-term interests.

1.2.3.1 Autonomous Vehicles

The claim that insurers might be better off with a more dangerous world could best be illustrated by their reaction to autonomous cars.¹⁵ Reportedly, autonomous cars will reduce fatal traffic accidents by 90 percent. With the introduction of driverless cars, the insurance industry's largest segment of coverage would shrink an estimated 60% by 2050 (Hammond 2018). Not surprisingly, insurers are already claiming that there are issues when drivers rely too heavily on autonomous systems (Cellan-Jones 2018).

Moreover, insurance companies are pushing against the adoption of autonomous vehicles in multiple arenas. For example, insurance companies are putting insurance pricing pressure on the consumer. At least some companies are charging higher premiums for autonomous vehicles, with premium quotes reaching up to \$10,000 a year to insure a Tesla vehicle (Tullis 2019). One could argue that the increased price of the technology justifies this cost; however, even for luxury vehicles, insurance barely broaches the range of \$4000 (Vallet 2019). This price difference may suggest that insurance companies have a strong aversion towards insureds having autonomous vehicles.

Insurance companies have also been lobbying on regulations for autonomous vehicles (Levin 2018). In 2018, GM launched a petition with the National Highway Traffic Safety Administration (NHTSA) to seek regulatory changes that would allow their fully autonomous vehicles on the market (Shepardson 2019). When the NHTSA put the petition out for public comment, insurance companies advocated for more regulations, for more data being collected before these autonomous vehicles made it onto the roads, and even for a complete denial of the petition. The Insurance Institute for Highway Safety (IIHS), a group funded by a multitude of insurance companies, said that GM should not be allowed to withhold safety features such as high-beam headlights from their autonomous vehicle designs. On the surface this would seem rational, until one recalls that autonomous vehicles do not have a need for high-beam lights, using radar and lidar sensors instead. Such features, while useful for human drivers, may well serve only as a regulatory and cost barrier for autonomous vehicles.

The federal government is "all in" on autonomous vehicles, indicating enthusiastic support without adding new regulation (Shepardson 2020). The Advocates for Highway and Auto Safety, a group at least partially directly funded and run by insurance companies, responded negatively to the government's position, calling

15 The whole discussion about autonomous cars can be understood as an insurance companies' genuine resistance to a threat on their very existence, and not as a risk increasing method. One way or another, it is a representative example for insurers' use of political power to prevent risk mitigation.

its response inadequate for public safety. As the next section shows, this is not the first time the insurance industry puts its interest first.

1.2.3.2 Passive-Restraint Battle

Another example of how insurers utilize institutional power to object to risk-reducing technology is their reaction to passive restraints (airbags and seat belts) in the 1970s and 1980s. Ben-Shahar and Logue bring this example to demonstrate that insurers can increase safety in the world. While ultimately auto-insurers led the charge in lobbying and promoting mandatory passive restraint laws, the picture is more nuanced. Insurers fought for these laws through litigation, leading to a unanimous Supreme Court decision in favor of passive restraints and a decision from the Secretary of Transportation that all newly manufactured cars must include passive restraints (Kneuper and Yendel 1994). Car manufacturers initially favored neither seatbelts nor airbags because both make cars more expensive, but ultimately decided to go with seatbelts because they were the cheaper of the two. In contrast, insurers strongly supported airbags while providing “at best only lukewarm support for seat-belts.” At first blush, it seems insurers should have been interested in advocating for both airbags and seatbelts to decrease total insurance claims; but upon closer inspection, supporting only air bags presented a much more profitable strategy. Specifically, air bag technology required insurers to deem a car with deployed air bags as a “total loss” due to the need to repackage the airbag after deployment. Insurers preferred total losses in car crash contexts because they represented a certain loss in property damage, compared to volatile bodily injuries. So, even though promoting seatbelts would translate into a dramatic reduction of bodily injury claims, insurers could significantly increase the number and certainty of property losses across all accidents if more airbags deployed. At the end, the insurance industry won the battle and car manufacturers needed to install airbags (Lemov 2015).

The point to pull from this battle is how insurers were willing to achieve their long-term goal of airbag mandates even if it meant sacrificing seatbelt restraint mandates—i.e., additional loss prevention—along the way. This history illuminates the concerning dynamic of insureds valuing their own long-term financial interest over the safety interests of their insureds and the world at large.

1.2.3.3 Genetic Testing

Another concerning example is insurers’ objection to genetic testing and coverage for genetic testing. Consider BRCA (commonly known as the ‘Angelina Jolie’) gene. Blood testing can detect mutations for the gene that have been associated with breast and ovarian cancer, allowing women who are at risk for an inherited breast or ovarian cancer gene to act proactively to mitigate risk of the cancer manifesting. In 2015, insurers raised concerns about the utility of genetic tests and

limited doctors' ability to order tests, even though screening for BRCA can save lives.¹⁶ This was not the first time insurers objected to such technological progress. Insurers in the past have "vehement[ly] object[ed]" to genetic nondiscrimination legislation, most notably the Genetic Information Nondiscrimination Act (GINA) (Rothstein 2008). GINA prevents insurers from requiring genetic tests or inquiring about results in making coverage decisions. Fortunately, GINA overcame these objections and was eventually signed into law. Because genetic testing is used to prevent or mitigate illness and disease, failing to pass GINA would have increased patients' overall risk (Sandler Alfino and Saleem 2018). Insurers framed their objections to genetic testing as a legitimate concern for the stability of the insurance industry. Genetic tests threaten to send health insurance industries into a "death spiral" or at least "perturb the market," (Kolata 2017) given the risk arising from adverse selection. Namely, those who take cheaply administered genetic tests will discover an impending illness and then insure against such illness, making it more difficult for insurers to manage risk pools (Avraham Logue and Schwarcz 2014). These insurers' claims make sense in theory, but are much less convincing in practice as the reality is that genetic testing does not really place at risk the stability of the insurance industry, making insurers' disapproval indicative of their interest in hindering risk-decreasing technologies. First, the demand for health insurance is consistently found to be price-inelastic, such that the likelihood of low-risk individuals dropping their health insurance is very small (Ringel et al. 2002); and second, because GINA prevents *all* insurers from utilizing genetic information, the risk of cream-skimming by other insurers simply does not exist. Indeed, GINA has existed for over a decade without any visible risk to the insurance industry. Again, we are not saying there might not be alternative explanations for insurers' behaviour other than maintaining or increasing risks. It is totally possible that the (unfounded in advance, and unmaterialized in hindsight) fear from death spiral motivated insurers' resistance, yet we believe our framework should not be overlooked as it provides at least as good as explanation for their behavior.

Policymakers and lawmakers must be aware of insurers' interests when considering regulation or implementation of future technological advances, to ensure that new legislation or regulations surrounding technological developments comport with society's interest in optimal risk levels. This awareness is critical because technology will continue to develop and present novel ways to reduce risk. Properly assessing insurers' arguments against these advances will further society's and insureds' interest in producing a safer world.

16 *BRCA Gene Test for Breast and Ovarian Cancer Risk*, MAYO CLINIC, <https://www.mayoclinic.org/tests-procedures/brca-gene-test/about/pac-20384815>.

In sum, examination of insurers' practices in fueling third-party moral hazard and objecting to risk-reducing technological progress, seems to indicate that insurers have a stake in maintaining or increasing risk levels in society. Moreover, what is worrisome is not merely the prospect of an actor interested in increasing risk, but also the fact that this interest is diametrically opposed to the insureds and society's interest in optimally reducing risk and overall harm. Thus, considering this far-reaching impact, it is essential that policymakers incorporate insurers' potential ulterior interest in risk-increasing when assessing future regulations, laws, or other policies, particularly when those decisions involve legislation that may increase risks, impact technological progress, or manifest in third-party moral hazard.

We now turn to discuss a final category of insurer practices that policymakers should be especially aware of. This category harbors practices that combine the demerits described in the last two chapters; that is, practices that are motivated by both shifting losses and increasing total risk.

1.3 Shifting Losses and Increasing Risks Simultaneously

The first two Parts of the Article attempted to classify insurers' harmful activities into two categories: those that are primarily aimed at shifting loss once the risk has materialized and those primarily aimed at increasing or maintaining risk in the long term. Yet some insurers' actions are particularly detrimental, as they are not only intended to shift loss to the insureds or third parties, but also to increase long-term risk. In fact, the very mechanism insurers use to increase risk involves shifting it to others.

To get an initial sense of how such mechanisms operate, consider auto insurers' strict control of choice of repairs (Ben-Shahar and Logue 2012). By controlling the repairs, insurers control the cost of mitigating the insured's damage regardless of the quality of the repair, potentially shifting costs to the insured who may not only lose money when later selling his repaired car, but worse, may drive a car that is less safe. And because this phenomenon is prevalent, road safety is in danger. Or consider insurers' opportunism at the underwriting stage, a problem discussed above. Insurers often ask intentionally vague questions on the applications to "create the opportunity for a misrepresentation defense" later on should litigation arise (Ben-Shahar and Logue 2012). By this process, the insurer shifts loss to the insured, who is unaware of that shift at the time of the application. Through this loss-shifting practice, insurers also achieve another important objective: if the insured is unaware of the full scope of coverage and overestimates it, she is unlikely to invest in efficient precautions aimed at reducing risks. Actually, the same can be said anytime insurers limit their liability via obscure and hidden clauses in the

insurance policy, as long as these clauses can potentially provide insureds with incentives for optimal precautionary behavior.

Perhaps no better example exists to demonstrate the interaction of insurers' short- and long-term interests in handling risks than the battle for tort reform, wherein insurers promote their long-term interest in increasing risks, while also shifting loss to insureds. Consider insurers' lobbying efforts for caps on damages (Medical misdiagnosis 2003). Studies have shown that these coverage limits for physicians act as a "*de facto* cap on payments" in a vast majority of cases (Zeiler et al. 2007), meaning total liability is determined "as much by coverage limits in defendants' policies as by the magnitude of loss incurred by plaintiffs." This practice shifts losses to the insureds' victims. Hence, for example, med mal insurance companies lobbied under the Trump administration to propose stricter limits on non-economic damages for some plaintiffs (Kindy 2017).

Caps on damages initially appear to benefit only insurers' short-term interest in reducing their own liability, as the cap cuts off total coverage costs, shifting uncompensated losses to their doctors-insureds' patients. One would expect that caps would reduce premiums for doctors-insureds as a consequence. Unfortunately, this did not happen. Why? Perhaps because caps on damages also have the ulterior consequence of de-incentivizing doctors to behave carefully, as the caps reduce the total potential liability risk on their actions. This relaxation in care might result in a riskier world as doctors-insureds have suboptimal incentives to take due care. This of course is one possible explanation to the phenomenon, that should not be disregarded even if there might be other explanations.

Indeed, empirical studies reveal premium *increases* after states enact damage caps. For instance, after Oklahoma passed insurer-supported damages caps, medical malpractice premium rates increased by 83 percent. Likewise, in Maryland, Missouri, and other states, insurers lobbied for damage caps claiming that they would reduce premiums. Ultimately, rates increased after legislature enacted reforms. Other studies support this conclusion, finding that caps above \$750,000 increase premiums substantially (Nelson et al. 2007). Considering the widespread evidence of premium increases under cap regimes, especially with higher-level caps, we see that insurers' motives in supporting caps on damages or other reforms do not stem only from their short-term interest in liability reduction but may also stem from their long-term interest in increasing or maintaining risk.

Texas's 2003 tort reform displays this interest precisely. Specifically, the Texas legislature adopted HB 4 in 2003, which among other restrictions, capped non-economic damages (Silver et al. 2018). After the bill, med mal premiums dropped; however, despite this drop, no reduction in loss or risk emerged, as healthcare spending remained steady and "hospitals made more avoidable errors." These

empirical findings show that damage caps, despite insurers' lobbying, do not necessarily reduce risk and in fact may increase it.

With HB 4 and other state's caps, the number of mistakes that hospitals and physicians made increased. Indeed, preventable events occurred more frequently after these reforms. As Zabinski and Black noted, these declines square with traditional tort law deterrence theory, as the damage caps reduced physicians' and providers' incentives to care. Despite lack of risk-reduction, insurers benefited immensely from HB 4, as their profits soared. In fact, their medical malpractice premia-to-payout ratio increased from 4.4 prior to HB 4 to 24.9 after HB 4. Zabinski and Black argue that this premia-to-payout ratio jump demonstrates how insurers benefit from reforms like HB 4 and that insurers lobby for them because they can take advantage of significant drops in premiums by "slowly and gradually reflecting those lower payouts in lower premia" (Zabinski and Black 2019). We suspect that another reason insurers lobby for such reforms may be that they increase risks in the long term.

2 Conclusion

The conventional wisdom that insurers make the world a safer place is overstated. Against the conventional wisdom we revealed insurers' interests in increasing or maintaining long-term risks in society, as well their interests in shifting losses away from themselves to injured parties or their victims, rather than reducing those losses overall. Specifically, contrary to the conventional wisdom, in many cases insurers are not interested in purely reducing loss and only incidentally reducing their liability under the policy, but rather vice versa—insurers are interested in reducing their liability, and only incidentally in reducing loss.

We have demonstrated this phenomenon first by showing that the cornerstone of the conventional wisdom—the notion that insurers effectively regulate their insureds' behavior—often is mistaken. We then moved on to discuss more active strategies insurers deploy, like contractual manipulations and apology laws. This phenomenon is concerning, as these loss-shifting practices under-deter potential wrongdoers who are incentivized to rely on these practices that reduce future *legal liability* rather than what they believe they are reducing—future loss. Accordingly, insureds do not guard their behavior optimally and might well create a more dangerous world.

Observations about insurers' interest in loss-shifting compared to loss-reduction form just part of our criticism of the conventional wisdom. The more ambitious claim we make is that insurers have an intrinsic, long-term interest in increasing or at least preserving sufficient levels of risk. We argue that insurers carry out this interest through behaviors such as failing to combat moral hazard of insureds and fueling third-party moral hazard, and opposing risk-reducing technologies.

Lastly, we warned that in some situations, such as those involving health and medical malpractice, a perfect storm might emerge. In such instances, insurers' actions are particularly detrimental, as they not only aimed at shifting loss to the insureds or third parties, but also at increasing long-term risk. As we explained, the very mechanism insurers use to increase long-term risk involves shifting it to others. We demonstrated that through highlighting insurers' lobbying effort to pass federal and state tort reforms, primarily caps on damages. By limiting payouts, victims are left to bear the uncompensated costs, and this under-compensation of victims results in under-deterrence of care-providers and consequently in increased risks in society.

In Table 2 below, we summarize all the insurance practices discussed in this Article, using the framework set out in Table 1, in the Introduction.

As we noted above, the boundary separating these categories is sometimes vague and unstable. Any of the examples discussed in Part I can also make insureds and other parties lower their investment in precautions, thus rendering itself an example suited for Part III. Yet we propose that these categories form a valuable theoretical framework, enabling us to better understand and assess the merit of different insurers' practices.

More specifically, we criticize the conventional wisdom that insurance reduces overall risk in society by managing risks and controlling moral hazard through our observation that the interaction between the short-term, liability-reducing interest and the long-term, risk-increasing interest reveals more surprising insurer interests. Insurers' interest in creating a riskier world is two-fold: as an industry, insurers attempt to increase total risk values—to turn the knob a few inches higher; but as competitors in the market, they often fail to engage in loss-reduction and focus instead on attaining the lowest liability coverage payout.

We do not argue that insurers engage in such practices exclusively. Yet to better formulate future policy, it is important to understand when insurers improve safety and when they do not, and why this difference might occur.

An urgently needed reform would be to eliminate the McCarren-Ferguson Act, which provides the insurance industry exemption from federal antitrust laws. Whereas the chances for abolishing this seventy-seven-year-old federal statute

Table 2: Summary–classifying insurers’ practices.

Short term/Long term	No loss shifting	Loss shifting
Risk decreasing/ maintaining	Conventional wisdom Directing insured on how to efficiently reduce risk (e.g., smoke alarms).	Part I Abstaining from regulating insured’s behavior; Engaging in active loss-shifting actions, including: Obscure contractual language; apology laws and instructing insureds (e.g., police officers, employers) how to avoid liability rather than harm.
Risk increasing	Part II – Third-party moral hazard – Lobbying against risk-reducing technology	Part III Tort reforms

have always seemed negligible, in early 2021, in the last days of the Trump administration, Congress passed the Competitive Health Insurance Reform Act or CHIRA, which removes the exception for health insurers. The law not only removes the antitrust immunity for that subset of insurers, but also places practical limits on the sharing of sensitive data for all insurers, which was ostensibly one of the main purposes of the McCarren-Ferguson Act. Even though some kinds of lobbying efforts may be allowed in the US under the Noerr-Pennington antitrust doctrine (Avraham and Gilo 2022), the new act limits the range of possibilities for insurers to collude. This is increasingly important as market concentration seems to be especially high for health insurers. But other kinds of insurers in the U.S. also seem to have high market concentration levels, such as auto insurance, property and liability insurance, and life insurance. Notably, it seems that high market concentration in the U.S. insurance market leads to greater profitability for those insurers.

Acknowledgements: We thank Tom Baker, Yotam Kaplan, Kyle Logue, Mitch Polinsky Haggai Porat, John Rappaport, Daniel Schwarcz, Steve Shavell, Peter Siegelman, Kathryn Spier, Shauhin Talesh, Abe Wicklegren and participants at workshops at Harvard, Stanford and the University of Texas Law Schools. We thank Tal Abuloff, Nick Catherall, Daniel Cohen, Idan Dobrecki and Sean Kelly for their capable research assistance.

References

- Abraham, K.S. (2011). Catastrophic oil spills and the problem of insurance. *Vand. L. Rev.* 64: 1767–1791.
- Abraham, K.S. and Schwarcz, D. (2022). The limits of regulation by insurance. *Indiana Law Rev.* 98: 215–274.
- Allan, P. (2015). *Will a dash cam actually help you after a car accident?* Lifehacker, Available at: <<https://lifehacker.com/will-a-dash-cam-actually-help-you-after-a-car-accident-1732054157>> (Accessed 21 September 2015).
- Allen, M. (2018). *Health insurers are vacuuming up details about you — and it could raise your rates*, ProPublica, Available at: <<https://www.propublica.org/article/health-insurers-are-vacuuming-up-details-about-you-and-it-could-raise-your-rates>> (Accessed 17 July 2018).
- Al-Nakshabandi, N.A. (2011). Percutaneous vertebroplasty complications. *Ann. Saudi Med.* 31: 294–297.
- Anderson, A.M. (1983). Insurance and antitrust law: the McCarran-Ferguson act and beyond. *William Mary Law Rev.* 25: 86–88.
- Arbel, Y.A. and Kaplan, Y. (2016). Tort reform through the back door: a critique of law and apologies. *S. Cal. L. Rev.* 90: 1199.
- Arrow, K.J. (1971a). Insurance, risk and resource allocation. In: *Essays in the theory of risk-bearing*. Markham, Chicago.
- Arrow, K.J. (1971b). *Essays in the theory of risk-bearing*. Markham, Chicago.
- Avraham, R., Logue, K.D., and Schwarcz, D. (2014). Towards a universal framework for insurance anti-discrimination laws. *Conn. Ins. L. J.* 21: 3, (describing the theory of adverse selection).
- Avraham, R. and Gilo, D. (Forthcoming). *Insurance collusion, imperfect competition and regulation when insurers increase risk*.
- Asset Owners Disclosure Project, (2018). Got it covered? Insurance in a changing climate, Available at: <https://legacy-assets.eenews.net/open_files/assets/2018/05/24/document_cw_01.pdf>.
- Avraham, R. (2009). Private regulation. *Harv. J. Law Publ. Pol.* 34: 543.
- Baker, T. (1996). On the genealogy of moral hazard. *Tex. Law Rev.* 75: 237.
- Baker, T. and Farrish, T.O. (2005). Liability insurance and the regulation of firearms. In: Lyotton, T.D. (Ed.), *Suing the firearms industry*. University of Michigan Press, Michigan.
- Baker, T. and Shortland, A. (Forthcoming). *Insurance and enterprise: cyber-insurance for ransomware*, (On file with authors).
- Baker, T. and Silver, C. (2019). How liability insurers protect patients and improve safety. *DePaul Law Rev.* 68: 209.
- Bell, A. (2015). *A Guide to kidnap and ransom insurance coverage*. Investopedia, Available at: <<https://www.investopedia.com/articles/personal-finance/062915/guide-kidnap-ransom-insurance-coverage.asp>> (Accessed 29 June 2015).

- Ben-Shahar, O. and Logue, K.D. (2012). Outsourcing regulation: how insurance reduces moral hazard. *Mich. Law Rev.* 111: 197–199.
- Bohlen, C. (1998). *Italian Ban on paying kidnappers stirs anger*. New York Times, Available at: <https://www.nytimes.com/1998/02/01/world/italian-ban-on-paying-kidnappers-stirs-anger.html> (Accessed 1 January 2023).
- C. & J. Fertilizer, Inc. v. Allied Mut. Ins. Co., 227 N.W.2d 169, 179 (Iowa 1975).
- Burns, J.M. (2020). *“Historic” settlement of blue cross blue shield association antitrust action may significantly boost competition in health insurance markets in 2021*. Available at: <https://www.jdsupra.com/legalnews/historic-settlement-of-blue-cross-blue-44828/>.
- Cellan-Jones, R. (2018). *Car insurers warn on ‘Autonomous Vehicles’*, BBC, Available at: <https://www.bbc.com/news/technology-44439523> (Accessed 6 January 2023)
- Clendenin, M. (2006). No concessions with No teeth: how kidnap and ransom insurers and insureds are undermining U.S. counterterrorism policy. *Emory Law J.* 56: 741.
- Cohen, G.M. (1997). Legal malpractice insurance and loss prevention: a comparative analysis of economic institutions. *Conn. Ins. Law J.* 4: 305–337.
- Fereiro, S. (2019). *Does installing a dash cam affect your car insurance?* Economical, Available at: <https://www.economical.com/en/blog/economical-blog/september-2019/dash-cams-and-car-insurance> (Accessed 26 September 2019).
- Fruhlinger, J. (2018). *What is ransomware? How these attacks work and how to recover from them*, CSO, Available at: <https://www.csoonline.com/article/3236183/ransomware/what-is-ransomware-how-it-works-and-how-to-remove-it.html> (Accessed 19 December 2018).
- George, S. (2019). *Dashcams and car insurance*. Available at: <https://www.finder.com/dash-cam-discount> (Accessed 18 November 2019).
- Hammond, T. (2018). *Where are driverless cars taking industry?* Insurance Thought Leadership Com, Available at: <http://insurancethoughtleadership.com/where-are-driverless-cars-taking-insurance/> (Accessed 1 October 2018).
- Hartford Fire Ins. Co. v. California. 509 U.S. 764 (1993).
- Heath, T. and Crenshaw, A.B. (1993). *Insurance regulators’ revolving door stirs doubts*. Wash Post, Available at: <https://www.washingtonpost.com/archive/business/1993/01/21/insurance-regulators-revolving-door-stirs-doubts/96aa61e7-ebe4-4155-8c7b-3e2625b52ea6/> (Accessed 6 January 2023).
- Heimer, C.A. (2013). Failed governance: a comment on baker and griffith’s ensuring corporate misconduct. *Law Soc. Inquiry.* 38: 480–485.
- Hinloopen, J. (2010). Verzekerde marktmacht. *TPEdigitaal* 4: 149–178.
- Hölmstrom, B. (1979). Moral hazard and observability. *Bell J. Econ.* 10: 74.
- Kolata, G. (2017). *New gene tests pose a threat to insurers*. N.Y. Times, Available at: <https://www.nytimes.com/2017/05/12/health/new-gene-tests-pose-a-threat-to-insurers.html> (Accessed 12 May 2017).
- Kindy, K. (2017). *In Trump era, lobbyists boldly take credit for writing a bill to protect their industry*, The Washington Post, Available at: https://www.washingtonpost.com/powerpost/in-trump-era-lobbyists-boldly-take-credit-for-writing-a-bill-to-protect-their-industry/2017/07/31/eb299a7c-5c34-11e7-9fc6-c7ef4bc58d13_story.html?utm_term=.a72002dcba44 (Accessed 6 January 2023).
- Kneuper, R. and Yandle, B. (1994). Auto insurers and the air bag. *J. Risk Insur.* 61: 107.
- Lando, H. (2006). Does wrongful conviction lower deterrence? *J. Leg. Stud.* 35: 327–328.
- Lemov, M.R. (2015). *Car safety wars: one hundred years of technology, politics, and death*. Fairleigh Dickinson University Press, Medison, p. 159.

- Levin, M. (2018). *Safety would take a back seat if senate passes bill on driverless cars, critics say*. Fair Warning, Available at: <<https://www.ishn.com/articles/109360-safety-would-take-a-back-seat-if-senate-passes-bill-on-driverless-cars-critics-say>> (Accessed 6 January 2023).
- Logue, K.D. (2015). Encouraging insurers to regulate: the role (if any) for tort law. *UC Irvine Law Rev.* 5: 1355–1357.
- Logue, K.D. and Shniderman, A.B. (Forthcoming). The case for banning (and mandating) ransomware insurance. *Conn. Insur. Law J.*
- Medical misdiagnosis: challenging the malpractice claims of the doctors' lobby (2003). Public citizen, Available at: <<https://www.citizen.org/wp-content/uploads/FinalBRIEFING-BOOK-MISDIAGNOSIS.pdf>> (Accessed 6 January 2023). pp. 27–28.
- Meier, K.J. (1988). *The political economy of regulation: the case of insurance*. State University of New York Press, Albany, NY, p. 52.
- Mendoza, M.A. (2020). The limits of insurance as governance: professional liability coverage for civil rights claims against public school districts. *Quinnipiac Law Rev.* 38: 375–384.
- Murphy, I. (2017). Is cyber insurance fueling ransomware? *Enterprise Times*, Available at: <<https://www.enterprisetimes.co.uk/2017/12/11/cyber-insurance-fuelling-ransomware/>> (Accessed 11 December 2017)
- Nelson, L.J., Morrissey, M.A., and Kilgore, M.L. (2007). Damages caps in medical malpractice cases. *Milbank Q.* 85: 259–268.
- Parchomovsky, G. and Siegelman, P. (2022). Third party moral hazard and the problem of insurance externalities. *J. Leg. Stud.* 51: 93.
- Pauly, M. (1968). The economics of moral hazard: comment. *Am. Econ. Rev.* 58: 531–536.
- Prochnau, W. (1998). *Adventures in the ransom trade*. Vanity Fair, Available at: <<https://www.vanityfair.com/style/2018/04/adventures-in-the-ransom-trade>>.
- Rappaport, J. (2017). How private insurers regulate public police. *Harv. Law Rev.* 130: 1539–1574.
- Randall, S. (1999). Insurance regulation in the United States: regulatory federalism and the national association of insurance commissioners. *Fla. State Univ. Law Rev.* 26: 625.
- Ringel, J.S., Hosek, S.D., Vollaard, B.A., and Mahnovski, S. (2002). *The elasticity of demand for health care: a review of the literature and its application to the military health system*. RAND Corporation, Santa Monica, CA, pp. 8–9.
- Rothstein, M.A. (2008). *Is GINA worth the wait?* *J. Law Med. Ethics* 36: 174.
- Schlesinger, H.E. and Venezian, E.C. (1990). Ex ante loss control by insurers: public interest for higher profit. *J. Financ. Serv. Res.* 4: 83–84.
- Schwarcz, D. (2014). Transparently opaque: understanding the lack of transparency in insurance consumer protection. *UCLA Law Rev.* 61: 394–425.
- Schwarcz, D. (2017). Coverage information in insurance law. *Minn. Law Rev.* 101: 1457–1461.
- Schwartz, G.T. (1990). The ethics and economics of tort liability insurance. *Cornell Law Rev.* 75: 313–357.
- Shavell, S. (1979). On moral hazard and insurance. *QJE* 93: 541–562.
- Shavell, S. (1982). On liability and insurance. *Bell J. Econ.* 13: 120–121.
- Shepardson, D. (2019). *GM faces pushback on U.S. self-driving vehicle plan*. Reuters, Available at: <<https://www.reuters.com/article/us-gm-selfdriving/gm-faces-pushback-on-u-s-self-driving-vehicle-plan-idUSKCN1SS2TQ>> (Accessed 6 January 2023).
- Shepardson, D. (2020). *U.S. outlines strong support for self-driving cars at CES*. Reuters, Available at: <<https://www.reuters.com/article/us-tech-ces-selfdriving/u-s-outlines-strong-support-for-self-driving-cars-at-ces-idUSKBN172I1>> (Accessed 8 January 2020).
- Shortland, A. (2019). *Kidnap: inside the ransom business*. Oxford University Press, Oxford.

- Silver, C., Hyman, D.A., and Black, B. (2018). Fictions and facts: medical malpractice litigation. Physician supply, and health care spending in Texas before and after HB 4. *Tex. Tech L. Rev.* 51: 627.
- Silver, C., Hyman, D.A., and Flier, J.S. (2018). *Overcharged: why Americans pay too much for health care*. Cato Institute, Washington DC.
- Singh, S. (2015). *Critical reasons for crashes investigated in the national motor vehicle crash causation survey*. U.S. Dept. of Transportation Nat'l Highway Traffic Safety Admin, Available at: <<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812115>> (Accessed February 2015).
- Syverud, K.D. (1994). On the demand for liability insurance. *Tex. Law Rev.* 72: 1629.
- Talesh, S.A. (2017). Insurance companies as corporate regulators: the good, the bad, and the ugly. *DePaul Law Rev.* 66: 463–490.
- Talesh, S. (2015). A new institutional theory of insurance. *UC Irvine Law Rev.* 5: 617.
- Tenekedjieva, A.-M. (2020). *The revolving door and insurance solvency regulation*. vol. 2, Ph.D. dissertation. Univ. of Chicago (ProQuest), Available at: <<https://search.proquest.com/openview/1fb338f095c8a5a45f07412479de72bf/1?pq-origsite=gscholar&cbl=18750&diss=y>>.
- Tullis, P. (2019). *Self-driving cars might kill auto insurance as we know it*. Bloomberg, Available at: <<https://www.bloomberg.com/news/articles/2019-02-19/autonomous-vehicles-may-one-day-kill-car-insurance-as-we-know-it>> (Accessed 19 February 2019).
- Vallet, M. (2019). *Insure.com's 2019 most and least expensive vehicles to insure*, Insure.com, Available at: <<https://www.insure.com/car-insurance/insurance-rates-by-car.html>> (Last update 18 March 2019).
- Xiao, Y.-P., Bei, M.-J., and Jian-Zhong (2021). Analysis of the effect of percutaneous vertebroplasty in the treatment of thoracolumbar Kümmell's disease with or without bone cement leakage. *BMC Musculoskel. Disord.* 22: 2021.
- Zabinski, Z. and Black, B.S. (2019). The deterrent effect of tort law: evidence from medical malpractice reform. *NW. U.L. SCH.*, Research Paper No. 13-09.
- Zeiler, K., Silver, C., Black, B., Hyman, D.A., and Sage, W.M. (2007). Physicians' insurance limits and malpractice payments: evidence from Texas closed claims, 1990–2003. *J. Leg. Stud.* 36: S02.
- Zhang, D. (2021). *NY regulators issues new guidance on ransomware attacks*. Law360, (Accessed 1 July 2021).

Bionotes

Ronen Avraham is Professor of Law at the Tel Aviv University Faculty of Law and a lecturer at the University of Texas at Austin.

Ariel Porat is the President of Tel Aviv University. Formerly, he was Alain Poher Professor of Law, Tel Aviv University Faculty of Law, and Associate Member and Fischel-Neil Distinguished Visiting Professor of Law, the University of Chicago Law School.