TI 2006-068/1
Tinbergen Institute Discussion Paper

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THE CORE OF PURE ECONOMIC LOSS*

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Abstract

Should loss of earnings be compensated? The established law and economics wisdom considers pure economic loss as a transfer of wealth from the victim to a third party, whose earnings increase as a consequence of the accident. Such transfers do not amount to a social loss and, hence, should not be compensated. We revisit these arguments and show that the social loss should be calculated by taking into account that: (a) pure economic loss often involves *impairment costs* resulting from the fact that valuable resources cannot be temporarily used; and (b) the third-party earnings come at *the cost of increased capacity*. This increased capacity mitigates the expected harm and, hence, is a form of precaution. By taking into account these factors, we show that most pure economic loss cases do result in a socially relevant loss. In addition, we argue that the absence of a social loss is a necessary, but not sufficient, condition for the denial of compensation. The victim (or a third party) may have actually paid for protection against purely private losses. Thus, compensation should be awarded irrespective of whether national law treats the case under tort or contract (where compensation is undisputed). Finally, we offer considerations on the optimal design of liability rules.

JEL Classification: K13.
Keywords: economic loss, financial loss, tort, damage, compensation.

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* The authors would like to thank Victor Goldberg, Fernando Gomez, Avery Katz, Francesco Parisi, Urs Schweizer and the participants in the conference on The Law and Economics of Pure Economic Loss at Universitat Popeu Fabra, Barcelona, April 7-8, 2005, and the seminar participants at the Institute of Law and Economics at Hamburg University, June 23, 2005, for very insightful comments. *E-mails and url*: G. Dari-Mattiacci, gdarimat@uva.nl (UvA), http://ssrn.com/author=333631; H.B. Schäfer, schaefer@jura.uni-hamburg.de.
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A. Introduction

The problem of whether pure economic loss[1] should or should not be compensated is a legal conundrum on both sides of the Atlantic.[2] This issue has lately gained momentum as European scholars busy themselves in a complex process of distilling the common core of European private law from the often very diverse national instantiations.[3]

Two features contribute to this state of affairs. On the one hand, the variety of problems that mingle under the label of pure economic loss hinders attempts to find a common denominator. As the simple taxonomy that we offer in the following shows, economic loss may arise from an assorted collection of contexts, ranging from blackout cases, to third party interference with a contractual relationship, to negligent expert reports. On the other hand, legal systems diverge with respect to the relevant legal qualification of the problem. While some systems consider pure economic loss a tort liability issue, others broaden the notion of contractual liability.

Arguments seeking to justify the frequent denial of compensation for such losses are often grounded in the belief that pure economic losses are more difficult to foresee than ordinary losses or that they would generate an open-ended series of derivative claims. These arguments have been said to be unsatisfactory, as they prove both too little and too much. They prove too little because not all pure economic losses are difficult to foresee or prone to generate derivative claims. They also prove too much because many instances of physical losses seem to cause even greater foreseeability and floodgate problems, and yet their compensation is not questioned.[4]

A second set of arguments often used relates to the nature of the interests that the compensation of accidental loss is meant to protect. Such dogmatic explanations rely on

[1] A pure economic loss may generally be defined as a financial loss not causally consequent upon physical injury to the plaintiff or his property or other infringement of his absolute (that is, protected *erga omnes*) rights. It is obvious that this definition is over inclusive as it e. g. includes cases of blockade of property (for instance, of ships blocked in a fleet), which are not regarded as pure economic loss under German law. Therefore, we restrain from any attempt to deliver a precise definition. See Feldthusen (2000, 1).

[2] See Goldberg (1994) and Gomez and Ruiz (2002) for two recent contributions. See also Gilead (1997) for a broader economic view on the problem.

[3] Koziol (1998); von Bar (1998); van Gerven, Lever and Larouche (2000); Spier (1998, 2000); Magnus (2001); Bussani, Palmer, and Parisi (2003); Bussani and Palmer (2003); Werro and Palmer (2004). See also Van Dunné (1999) for the difference between civil law and common law concerning compensation of economic loss in tort. Banakas (1996) presents a comprehensive survey of the discussion and especially a good overview of the relevant economic literature.

[4] See Bussani, Palmer, and Parisi (2003) for an illustration and a critical discussion of these arguments.

some scale of human values or legal rights, in which pure economic interests are said to occupy the lower levels. Such arguments simply turn the problem of whether to compensate pure economic loss into the similar problem of why the interests affected by such losses should deserve a lesser degree of protection than other economic interests.[5]

A third line of argumentation refers to the need to reduce litigation costs by limiting recovery in tort to those, among many plaintiffs, who suffer physical loss in addition to economic loss. The pure-economic-loss plaintiffs are thus induced to seek protection through contractual arrangements with the first set of plaintiffs, who then in turn recover from the tortfeasor.[6] Such theory of channeling contracts is, however, vulnerable to the opportunism by the plaintiffs, who may be induced to exaggerate the magnitude of the loss channeled through the contract at the expense of the tortfeasor. Such solution, on the one hand, reduces the courts' involvement in tort liability, but is likely to increase their role as guarantor of the reasonableness of the contractual arrangements between the plaintiffs.[7] It is unclear whether the balance, in terms of litigation costs, is positive or negative.[8]

For the reasons given, our analysis does not focus on the above three arguments, but rather reconsiders a fourth and more influential line of reasoning due to Bishop (1982a),[9] which first sought an economic rationale in the legal treatment of pure-economic-loss cases. In Bishop's view, pure economic losses are different from other losses because the tortfeasor causes *uno actu a purely economic* damage to a victim and *a gain* to a third party. Therefore, while ordinary losses result in the destruction of valuable resources, pure economic losses may in fact result in a transfer of wealth from one subject to another. For this reason, the private loss to the victim is less than the loss to society, which also takes into account the third-party earnings. Consequently, we are provided with a simple formula

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[5] See footnote 4.
[6] Rizzo (1982b).
[7] Rizzo (1982b, 295).
[8] Bishop (1986, 74-77) and Dari-Mattiacci (2004, 173-174), discussing the plausibility of the assumptions behind the channeling contracts argument. See also Gomez and Ruiz (2002) remarking that this solution is not applicable when no plaintiff suffers a physical harm.
[9] Bishop (1982a, 1-4) discusses issues related to the first two sets of arguments accounted for above in the text. The channeling contracts argument was in fact proposed by Rizzo (1982b) in response to and as a critique of Bishop (1982a) and later criticized by Bishop (1986). See also Bishop (1982b) and Rizzo (1982a). See further Bishop and Sutton (1986), Harris and Veljianovsky (1986), Goldberg (1991, 1994), Gilead (1997), Schäfer, (2002a, 2002b, 2004, and 2005), Kötz and Schäfer (2003), Parisi (2003), Backhaus (2003), Dari-Mattiacci (2004), Schäfer and Ott (2004). For pluralistic approaches to the pure-economic-loss problem, see Goldberg (1988), Gomez and Ruiz (2002), Perry (2004), and Schwartz (1986). For references on the economic analysis of tort in general, see Cooter and Ulen (2003), Dari-Mattiacci (2002), Landes and Posner (1987), Miceli (2004), and Shavell (1987). See also Arlen (2000) for a general survey of the economic analysis of tort damages.

for the calculation of the social loss in pure-economic-loss cases: the social loss is equal to the victim's private loss minus the third-party gain.[10] If the tortfeasor were to compensate the victim fully for his private loss without being able to disgorge the third-party gain, inefficiently high levels of precaution may result.[11]

In this article we take on two tasks. First, we unveil the limitations of the above transfer argument by showing that a social loss arises when the use of valuable resources is (even if only temporarily) impaired. In fact, both impairment and destruction of resources lead to relevant social losses, although their magnitude differs.

This observation is true, even if other resources owned by a third party can be temporarily utilized for the same ends. In fact, in most cases, the third-party earnings come at a cost, an increased-capacity cost, which is analogous to a precaution cost in an ordinary accident setting. By providing a substitute for the impaired resources of the victim, the increased capacity of the third party mitigates the extent to which the initial impairment is a cost for society. As with precaution costs, the increased-capacity cost of the third party should also enter into the calculation of the social cost of accidents.

Second, we argue that a divergence between private and social loss is a necessary, but not sufficient condition to restrict damage compensation. For example, an expert might give a flawed opinion about the value of a resource that is offered for sale. In this case, there is no impairment and no increased capacity; thus, the malfeasance results in a pure transfer in Bishop's terms. However, the price paid for the contract may include protection against such involuntary transfers of wealth. If this is so, pure economic loss should be compensated.

We show that protection should be extended to victims who were not parties in the initial contract, if the cost of protection does not increase when the identity of the victim changes from a contractual to a non-contractual party. For instance, this may happen when the expert report is passed on to a friend. However, if the passing on of information increases the number of potential victims (and hence the ex ante cost of protection) such extension of liability should not take place. Our argument is purely economic and holds irrespective of whether, under national law, the case falls under contract (such as in Germany)[12] or under tort (such as in England).

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[10] The logic of the argument does not change when consumers also suffer a loss.
[11] This argument holds under strict liability, which is the framework normally used in the economic literature on pure economic loss. We discuss strict liability along with negligence later in the text; see section G.
[12] Gottwald in Münchener Kommentar (2003, § 328, sec. 137-142) for criticism of the concept of a contract with protective consequences see Canaris (1995, 441-446). See also Canaris (1971 and 1983).

In addition, in many cases, the contract may fail to specify whether the victim has paid for protection against pure economic loss. In this case, we argue that protection should be granted as a default if it is reasonable to assume that victims are generally willing to pay for such protection.

As a result, we will argue that from a theoretical viewpoint the scope of compensation for loss of earnings should be larger than it is often proposed in the law and economics literature, based on Bishop's framework. In addition, building on our previous contributions,[13] we will offer considerations on the optimal design of liability rules and the setting of negligence, showing that the optimal scope of compensation depends on the liability rule.

This article is organized as follows. In section B, we offer a taxonomy of pure-economic-loss cases. In section C, we demonstrate that the impairment of resources is a lesser form of destruction and hence counts as a social loss and consequently should lead to compensation. In section D, we examine the increased-capacity cost accompanying the third-party earnings and show that they are a form of precaution that mitigates the social loss. In sections E and F, we show that the presence of a social loss is a necessary, but not a sufficient condition for the denial of compensation and distinguish cases in which compensation should be granted from cases in which it should not. Section G, offers consideration on the optimal design of liability rules and shows that denial of compensation may not be the optimal policy in order to avoid over-precaution, even in cases in which Bishop's argument holds. Section H provides a conclusion.

B. A taxonomy of pure-economic-loss cases

The definition of pure economic loss varies across different legal systems.[14] It is, therefore, valuable to refrain from attempting a conceptual definition of the problem and to provide instead the following simple taxonomy of pure-economic-loss cases, most of which are taken from Bussani and Palmer (2003).

1. *Cable I, the blackout*: While maneuvering his mechanical excavator, an employee of the Acme road works cuts the cable belonging to the public utility, which delivers electricity to the Beta factory. The unexpected blackout caused damage to the machinery and the loss of two days of production to Beta. This case is not a pure-economic-loss case in Germany, as the machinery, and with it the property, of

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[13] Dari-Mattiacci (2004) and Schäfer (2004)
[14] Bussani and Palmer (2003, 4).

its owner is affected. However, in other countries, in spite of the infringement of property, the losses due to reduced production would be regarded as pure economic loss and not recoverable.[15]

2. Cable II: The same case as 1, but without damage to the machinery.[16]

3. Cable III: The same case as 2, but the loss is suffered by workers, who are hired by the Beta firm on a daily basis and who lose income for two days.[17]

4. Oil Spill: An oil spill causes losses at hotels near the polluted coast because tourists stay away. The oil spill also causes losses of earnings for the fishermen because the fish near the coast were poisoned.[18]

5. Football Star: The best football player in the team is injured in a car accident and cannot play for three months. The team drops in the ranking of the league and the football club suffers losses.[19]

6. Wrong recommendation letter: An employer writes a confidential letter of recommendation for one of his former employees in which he wrongly asserts that the employee had a history of dishonest behavior. He carelessly mixed up the identity of the employee with that of another person. The employee, therefore, loses the job for which he applied to another candidate.[20]

7. Leased ship: A ship owner leases his ship to a ship company for a price of $200 per month. The ship company re-leases it to another company. Due to a sudden demand shift, the price for the re-lease is $300 per month. The ship is brought to a routine inspection at a dockyard, under a contract between the owner of the ship and the dockyard. In the dockyard a worker negligently damages the ship, which has to be repaired and cannot sail for a month. The lessee of the ship must now pay the rent of $200, but loses his rent of $300. Can he sue the dockyard company for lost earnings?[21]

8. Careless architect: An owner hires a contractor to build a house. The owner also hires an architect to supervise the construction. As a result of poor supervision of the architect, the

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[15] E.g. under English law (see Bussani und Palmer, 2003, 179-180 and 189-191).
[16] Bussani und Palmer (2003, 192-207), see also Kötz and Schäfer (2003, 36-52) for an economic analysis - in German - of a similar case.
[17] Bussani und Palmer (2003, 208-221).
[18] For an analysis of the similar Exxon Valdes Oil Spill case see Goldberg (1994) and Schäfer (2003, 42, in German).
[19] See Bussani and Palmer (2003, 241-254).
[20] See Bussani and Palmer (2003, 473-487).
[21] Based on Robins Dry Dock vs. Flint; see Goldberg (1991).

contractor has to do the same work twice. Can the contractor sue the architect if the owner does not have to pay for the additional work?[22]

9. Careless expert 1: An art gallery hires an expert, who declares a faked painting as authentic, due to careless work. The buyer suffers loss. Can he recover the loss from the expert?[23]

10. Careless expert 2: The same case as 9, but the buyer has resold the painting in good faith to a third party, who discovers the fake and suffers the loss.[24]

11. The wrong audit 1: A careless auditor testifies regarding a balance sheet for the prospectus of an initial public offering. He overlooks that the real estate of the company is grossly overvalued. After the shares are placed on the market, the error is discovered and the share price drops below the price of the initial public offering.

12. The wrong audit 2: The same case as 11, but the audit is made for the yearly balance sheet, for the secondary market.

13. The wrong audit 3: The same case as 11, but the audit is made for internal purposes, for the management. A third party receives the audited balance sheet and discovers that the value of the firm in the balance sheet is twice as high as the valuation by the stock market. He buys the whole company in a takeover bid only to discover later that the market valuation was correct. He suffers losses from the transaction.[25]

14. Subcontractor's liability: Laura hired the Cronos Company to refurbish her flat. Cronos called in Giovanni, an independent contractor to lay the floors. This was performed badly and Laura had to hire another workman to do the work again. Cronos Company is bankrupt. Can Laura recover the loss from Giovanni?[26]

These cases have three features in common. First, with two exceptions (cases 1 and 4) in none of these cases was an economic resource destroyed or damaged. Second, with one exception (case 1) the damage is not associated with the infringement of an absolute right.[27]

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[22] See Bussani and Palmer (2003, 271-290).
[23] See Bussani and Palmer (2003, 344-361).
[24] Schäfer (2002a, 822).
[25] See Bussani and Palmer (2003, 453-472); the case is similar to the case Caparo Industries plc v. Dickman, [1990] 2 AC 605 (HL).
[26] Bussani and Palmer (2003, 385).
[27] It is debatable whether the blockade of property is an infringement of property. The German Bundesgerichtshof regarded the blockade of factory premises because of a fire in the neighborhood as an infringement of property and granted damage compensation (BGH NJW 1977, 2264) Also, in a case where a

Third, in none of the cases does the victim have an explicit contract with the tortfeasor, which would entitle him beyond doubt to compensation for financial losses resulting from a breach of contract.

The first feature has led law and economics scholars to see a rationale for not compensating or severely restricting damage compensation, as purely financial losses may be simple transfers of wealth, rather than socially relevant losses. In the following, we will re-examine this economic argument and offer an alternative framework for the valuation of the social loss.

The second feature leads legal scholars to a rejection or restriction of damage compensation, as pure financial losses occupy the lower ranks of a scale of protected rights, on which we have commented in the introduction.

The third feature leads to the question of the tort-contract boundary.[28] Under a narrow concept of contract – such as in England – none of these cases would be a contract case. Under a broad concept of contract – such as in Germany – some of these cases might lead to contractual or quasi-contractual claims. For case 8 (the careless architect), the German Bundesgerichtshof came to the conclusion that both the architect and the contractor are jointly liable vis-à-vis the owner and that the contractor may recover from the architect who was at fault.[29]

The question of the tort-contract-boundary is central because it is unquestioned that pure economic losses must be compensated if compensation is part of a contractual arrangement or is stipulated in a market-mimicking default rule.[30] If victims are willing to pay (or actually paid) for protection against purely private losses, such losses should be compensated. It should be made clear, however, that our argument is purely consequentialist as it reinterprets the problem of whether a certain victim's interest should be protected under contract or tort only on the basis of their respective effects in terms of the injurers' equilibrium level of precaution. Contractual (or quasi-contractual) liability is called upon only as a way to remedy the lack of protection of purely economic interests

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barge was blocked in a fleet for several months the Bundesgerichtshof held that the loss of the use of the ship was a violation of property rights (BGHZ 55, 153, 159 (1970)). In contrast, in another case where the access of an owner of land to a public road was only blocked for a few hours no damage compensation was granted (BGH NJW 1977, 2264, at 2265-2266). In the cable cases, where an economic resource could not be used the Bundesgerichtshof denied compensation on the grounds that an absolute right was not violated (BGHZ 29, 65).

[28] For a discussion of the tort-contract boundary and non-consensual liability of a contractual party, see also Gilead (2002).

[29] BGH GrZS 43, 227; BGH GrZS 51, 275. See also Bussani and Palmer (2003, 284-285).

[30] See Craswell (2000), de Meza (1998) and Katz (1998) on the economic analysis of contracts.

under tort law in some jurisdictions. These main considerations and some other additional considerations will enable us to comment on whether compensation should be awarded in the above 14 cases.

C. Impairment of resources is a social loss

The economic analysis of the pure-economic-loss problem first provided by Bishop (1982a)[31] is grounded in the assertion that a financial loss generally consists of a transfer of wealth and hence does not count as a social loss. If a firm loses profits due to an accident, it is likely that a competing firm will benefit from an increase in profits as a consequence of the same accident. From a social point of view, there is no loss because some wealth has simply been transferred from the former firm to the latter. Compensation should only be based on the existence of a social loss; otherwise injurers will take levels of precaution that are excessive from societies' point of view. However, even if the victim's private loss and the third-party earnings are the same, there may be a social loss deriving from the impairment of socially valuable resources.

In economic terms, the value of a resource corresponds to the utility that individuals derive from it through use.[32] Impairment is the impossibility to use, that is, to derive utility from a resource for a certain, limited period of time. Destruction implies such impossibility ad infinitum. It is clear that the difference between impairment and destruction is only quantitative. For the sake of our argument, impairment and destruction are social losses of the same nature. The quantitative difference between them only affects the actual calculation of the magnitude of the loss, but does not amount to a substantial divergence between them.

The problem may be reconsidered from a graphical perspective. We can visualize the total value of a resource as an array of utility units that may be derived from it over time. Destruction corresponds to the annihilation of the complete array, while impairment only affects a portion. It follows that the idea that destruction of resources makes a social loss, while impairment only amounts to redistribution cannot be defended, as both are losses. The objection that another resource may be used as a substitute would still hold when resources are destroyed. Again, the difference would only be quantitative: an impaired

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[31] See also Bishop (1986), Bishop and Sutton (1986) and Van Dunné (1999) for the debate that followed.
[32] Considering conceptions of value – such as the existence value – independent of human use, would only increase the quantitative difference between destruction and impairment, but would not qualitatively affect the core of our reasoning. See Cross (1989) on different methods of resource valuation.

resource ought to be substituted for a limited period of time, while a destroyed one must be permanently substituted.

D. Increased capacity is a precaution cost

One fundamental objection to the transfer argument has been raised by Rizzo (1982a),[33] remarking that the transfer argument is based on the assumption that substitutes be readily available on the market at no cost.[34] In the hotel example above, rooms need to be available at the competitor's hotel for the full year. This implies excess capacity on the part of the competitor, which is inefficient in the first place, because such capacity would not be built up in an accident-free world. That is, rooms at the competitor's hotel should not be empty in the first place in such an accident-free world.

Both Bishop and Rizzo consider capacity as exogenous. We instead consider capacity as an endogenous variable. More precisely, we argue that the third-party increased capacity (that is, capacity in excess of what would be optimal in an accident-free world) is a precaution cost and, as such, enters the calculation of the total social loss.[35]

Traditional law and economics analysis regards the problem of accident prevention, in its simplest setting, as a game between two parties, one of which (the victim) suffers an accidental loss, which is reduced if the other party (the injurer) makes precaution costs. Both the victim's loss and the injurer's precaution cost count as a social cost.[36] In pure-economic-loss cases, as well as in other accident cases, we observe third-party mitigation of the accident loss, which results in a replacement sector.

Consider again the hotel example: the social loss due to the impairment of the first hotel would be much greater if there were no available rooms in the competitor's premises, as consumers would have to give up their holiday plans altogether. From the social point of view the competitor is providing a valuable way to mitigate the total loss. Such mitigation effort has a cost, which is precisely the increased capacity: those rooms would not exist in the absence of accidents. Increased capacity is a form of precaution.

The same occurs in ordinary accidents. To provide an example, consider that a car would have to be replaced with a new one in the case of an accident if there were no market

[33] See also Bishop (1982b) and Rizzo (1982b).
[34] See Bishop (1982a, 5, and sections III and IV).
[35] See on this point the first 1986 German-language edition of Schäfer and Ott (2004), Dari-Mattiacci (2004, 174) and Perry (2004, 757).
[36] Calabresi (1970). The same type of argument can be repeated for cases in which both the injurer and the victim can take precaution.

for spare parts. In a world without a spare-parts market, injurers would have to pay an amount of damages equal to the value of the car. Instead, since spare parts are available on the market, they only pay damages equal to the repair cost. The market for spare components provides an example of a real market for third-party mitigation.[37] The car industry itself partially functions as a market for third-party mitigation to the extent that it provides substitutes for cars destroyed in accidents. Each year, the car industry produces a certain number of cars that would not be produced in a world without accidents.[38]

Likewise, the social loss due to the impairment of any other substitutable resource (such as the hotel in the example) should be valuated considering the "repair" or mitigation cost, that is, the cost of operating additional hotel rooms by the competitor.

The availability of a market for third-party mitigation of accidental loss depends on the probability and magnitude of accidents. In a world without traffic accidents, there would be no mechanics, or far fewer of them, only dealing with maintenance. Capacity in a market is endogenous. In fact, the availability of a market for third-party mitigation is driven by the potential gain in providing such services.[39]

The arguments of Bishop and Rizzo are based on the assumption that there is some unused capacity, although their opinions diverge on whether this capacity is to be considered inefficient. Instead, we regard capacity as a form of (costly) precaution in the Calabresi (1970) framework and hence as a component of the total social loss. It is true that increased capacity is a cost for society, but it is not true that such cost is necessarily inefficiently made. In fact, it has the benefit of lowering the expected accident loss.

Thus, as the mitigation cost is a social cost, compensation should be awarded in order to reduce the mitigation services (or capacities) to an optimal level. On the contrary, the exclusion of damage compensation is likely to inflate increased capacities to an inefficiently high level.

Our argument does not become invalid, if one concedes that increased capacities also exist for other reasons other than to mitigate damages. If an oil spill occurs out of season and a hotel is temporarily out of business, many other hotels are available for the few guests. However, these considerations do not change the core of our argument. In the off-

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[37] See Calabresi (1970, 75) on this point.

[38] Worldwide, in 1999 more than 500.000 people were killed and around 20 million were injured in motor-vehicle accidents (from Investor Services Fact Book 2000), which gives an indirect indication of the size of the replacement and repair sector in the automobile industry.

[39] On the possibility that parties other than the injurer may be able to mitigate the accident loss see also Bishop (1982a, 8) and Goldberg (1994).

season period, the price for the hotel room is equal to the marginal variable cost plus a small contribution to other costs. Consequently, the damage is lower in the off-season period than it is in the high season, but the argument is qualitatively unaffected by the existence of seasonal increased capacity.

Hotel owners may not directly adjust their capacity to the frequency of accidents, but they surely respond to the increased demand for rooms caused by accidents. Arguing that accident losses may be too unpredictable to drive demand upwards in a stable way is a well-taken point. However, the problem in this case is one of causation and foreseeability, which bears upon accident law in general and not only upon pure-economic-loss cases.

In short, as in a normal accident context, the social loss in pure-economic-loss cases should be compensated. If there is mitigation available, then compensation should equal the mitigation cost (the cost of repair, the cost of finding a substitute good or service) and not the amount of initial loss (the entire reduction in the value of the good or the service impaired).

Consequently, the victims should in principle be compensated in all of the cable cases (cases 1-3), including the ones in which no absolute rights are infringed. The same applies to the losses of the hotel owner and the fishermen in the oil spill case (case 4) and the losses of the football club. Also, there is no economic rationale to compensate such losses only if they are associated with the infringement of an absolute right. Furthermore, the football club should be compensated, as it suffers income losses when its best player suffers an accident (case 5). People go to other clubs or entertainments, which would not exist or would be smaller in size without their function as third party mitigation. The wrong recommendation letter also impairs an economic resource until the effect of the wrong information is corrected. This causes a real loss to the employee, as well as to society.

E. Cases in which there is a divergence of private and social loss but compensation should be paid

In the former sections, we have explained why we reject the idea that the impairment of a resource leads to mere wealth redistribution. However, pure economic loss may also occur without impairment. In such cases, the transfer argument by Bishop remains valid, and indeed the private loss may be perfectly made up by a third-party gain, without residual social loss.

We now turn to such cases and show under what conditions a wrongful act can lead to private losses, which are indeed smaller than the social loss. We will show that the divergence between social and private loss is a necessary, but not a sufficient condition for compensation, because sometimes a party is willing to pay (or has actually paid) for protection against an involuntary wealth transfer. These cases are often related to a wrong expert report about the value of such resources like real estate, artwork or the value of a corporation.

Let us start with a simple example. One wants to buy a house and hires an expert to value the house. The expert works carelessly and overvalues the house because he overlooks the fact that the roof truss is to be replaced. The transfer of ownership of the overpriced house has two effects: it leads to (1) a loss for the buyer and (2) an equivalent gain for the seller. The effect of the expert's lack of care is redistributive, because contrary to what we have observed in the former section, the third-party gain comes at no impairment or increased-capacity cost.[40]

In this case, Bishop's observation that the social loss is equal to the victim's private loss minus the third-party gain holds true, but it does not necessarily imply that the expert should be relieved of liability towards the buyer. Unless the parties have explicitly stated otherwise in the contract,[41] it is reasonable to suppose that the buyer has hired the expert in order to specifically avoid a transaction that he might regret ex post. He requires the expert to take a certain level of care, which minimizes the sum of the costs of care and his personal expected loss. Usually, he wants damage compensation ex ante, as a way to ensure the expert's compliance with such a standard of professional care. Consequently, he has a willingness to pay for the desired care level, as well as for the expected liability costs, which are internalized in the price of the contract. As a result, the divergence between social and private loss is not sufficient to exclude compensation.

There is no doubt among lawyers and economists that compensation should be awarded under contract in this and similar cases. However, the situation becomes different if a slightly different case is considered: the potential buyer loses interest in the house and gives the expertise to a friend, who buys the house and suffers the loss. Does this circumstance change the argument? Now the person who suffers the loss is not in a contractual relationship with the expert, but the economics of the case remains the same.

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[40] This case may also lead to an efficiency loss because now the resource might not be in the hands of the highest-valuing owner. However, this occurrence does not change the substance of our argument, as here the social loss is still lower than the private loss and it indeed corresponds to the victim's private loss minus the third-party gain.

[41] The price paid by the buyer will be higher depending on the more comprehensive the protection against private losses. It is possible that the parties have agreed to limit or exclude such implicit insurance component of the contract.

The expert was paid for reaching the due level of care and for the expected liability costs.[42] If the identity of the buyer changes, this does not change the liability risk of the expert, as the damage can occur only once. Even if the expertise passes into the hands of someone who is not even known to the expert, the liability payment is fully internalized in the cost of the expertise. The fact that the expert liability is extended to a large number of people is likely not to change his cost or risk. Therefore, the expert should be liable, even though this is a case of pure economic loss and there is a divergence between private and social loss.

Different legal orders treat this case differently. In England it would be a tort case and in Germany it might be framed as a contractual case. However, this is not essential for finding a common core. It is essential that the price of liability was internalized and that it can be assumed that the person who is protected has a willingness to pay for the protection. It is not essential that the expert might face any plaintiff among a large set of people. It is also not essential that the expert had a contract with the person who suffered the loss. It is only important that the ex ante willingness to pay of the victim can be inferred from the context and the fact that this willingness to pay has influenced the price.

We now change the setting of the case a second time. Not the buyer, but rather the seller pays for the expertise to prepare the transaction. As long as the seller acts in good faith towards the buyer and as long as the expert reaches the due level of care, this arrangement saves transactions costs, because all potential buyers can rely on the expertise. Should the buyer, who has no explicit contract with the expert, be entitled to compensation? As long as the expert is hired with the explicit purpose of facilitating the transaction, then the seller acts as an agent of the buyer.[43] Therefore, the buyer indirectly pays for a diligent expertise through a higher price for the good. Also, this case should lead to compensation even though the loss is purely economic, the social and private losses diverge, and there is

[42] It is possible to criticize this argument on the grounds that the potential buyer has a willingness to pay only for his own protection, but not for the protection of his friend. And that this would reduce the price of the expertise if the expert is not liable to a third party. The expert could then calculate that with a certain probability the customer would not buy the asset. If the expert takes this possibility into account it would be profitable for him to reach a level of care, which is below the efficient level. This is, however, not in the interest of the customer. The customer wants the expert to reach a level of care, which is efficient, in case he buys the asset. He arguably does not want the expert to take into consideration the possibility that he might not buy the asset and consequently reduces his level and costs of care. The only possibility to reach this result is to let the expert believe that the transaction will take place with certainty or a high probability.

[43] This argument does not exclude the possibility of a waiver. The norm should be a default rule, not a mandatory rule. However, the waiver should be invalid if the buyer, who uses the expertise, is not informed.

no explicit contract. The economic structure of the case is not different from the original example in which the buyer himself hires the expert.[44]

We can conclude that the art expert (cases 9 and 10) should be held liable regardless of whether the loss was suffered by the person who hired him or by any other person, who suffered a loss by using this expertise. Some legal orders would frame this case under contract law and others under tort law. However, this has no relevance for the question as to whether the legal rule induces the level of care that is optimal from the buyer's point of view.

This case of expert liability is not different from the liability of an auditor, who approves a financial statement for the initial public offering of a corporation. An auditor, who prepares an expert report that reduces the asymmetry of information between the management, the inside investors and the public, should be liable for negligence if he causes a damage to investors on the primary market. There is no conceptual difference between this case and the expert in the case above. In case 11, the auditor should therefore be liable.

F. Cases in which there is a divergence between private and social loss and compensation should be restricted or denied

We shall now turn to those cases, in which compensation for pure economic loss should indeed be restricted. These cases have two features in common. The private loss is higher than the social loss and the liability costs were not internalized in the price either because there was no willingness to pay or for other reasons. We will identify these cases and discuss the appropriate liability rule. We will discuss such cases from three different perspectives. In each case, a wrongful act causes gains and losses. In section F.1, we discuss cases in which victims are willing to pay for protection against involuntary transfers, but there is no mechanism that allows an actual payment; in section F.2, we analyze cases in which victims are not willing to pay because they do not know ex ante whether they will belong to the winners' group or to the losers' group; and in section F.3, we consider cases in which the same party might be a loser or a winner and compensating losers would also require disgorging the winners' gain, which is in general not possible.

[44] This argument holds irrespective of whether the seller was in good or bad faith. Also, in the latter case, the buyer should arguably have a claim against the expert, as long as the expert is aware of the purpose of the expertise.

F.1. Liability costs are not internalized although the victim was willing to pay

In case 13, a company hired an auditor for internal purposes. The wrong statement was later handed over to a third person, who bought the company and made losses because the company was overvalued in the financial statement. Ex ante the expert report was not made to prepare a transaction. The management had no willingness to pay for the protection and the protection was not part of the price. Here, we have a pure financial loss, most of which is redistributive. The protection was not part of the price of the audit. Therefore, liability should be excluded or restricted. Otherwise, the victim would free-ride on the contract between the auditor and the company. This was the constellation in *Caparo v. Dickman*,[45] in which the House of Lords denied compensation. The investor could have avoided this result by offering the auditor a price for a guarantee. From this analysis we can see that the rejection of the claim is backed by economic analysis. However, the reason is not that the auditor has no personal relations with the investor or faces a large and unknown number of potential claimants.

The same reasoning applies in those cases in which the use of wrong information by various persons can multiply the pure economic loss but that this is not reflected in the price. Take the following case from the Hamburg Court of Appeals.[46] A bank clerk recommends that a customer buy bonds from the Dutch firm "Fokker", which had been taken over by Daimler. This behavior was negligent, because it was already public information that Fokker was close to bankruptcy and that Daimler had no financial commitment vis-à-vis Fokker. The firm goes bankrupt and the bondholders lose all their money. Here, it is reasonable to argue that the bank customers should be protected as their contract with the bank includes diligent advice by the bank, for which they pays a price. Under German law this situation would amount to contractual liability.[47]

Assume that the customer informs his friends about the advice from the bank and all of them buy Fokker bonds. In that case, we have the paradigmatic rationale for not compensating pure economic loss. The bank is not comparable with somebody who caused an accident with a large amount of collateral damage to property, for which it would be liable under tort law no matter how large the group. The bank has not caused any damage, because for every person who lost something there is another person, who gained the same amount. The social loss is zero, because the owners of the bonds would lose everything

[45] Caparo Industries plc v. Dickman, [1990] 2 AC 605 (HL).
[46] OLG Hamburg, 06.05.1998, 5 U 159/97 (ZBB 1999, 310).
[47] According to the German BGH, the bank and the customer conclude an implicit advisory contract whenever a customer asks for advice in the range of financial investment (BGH WM 1993, 1455).

with or without the advice from the bank clerk. The bank has only influenced the identity of those who suffered the final loss.

In addition, the buyers have not paid anything for their protection. Should they be compensated, they would free ride on the contract between the customer and the bank. Moreover, the bank would be forced to finance a guarantee for free for an unknown group of people. In case of liability for third parties, the bank would have to increase its fees for the customers above their willingness to pay. This rationale for non-compensation applies to all cases in which the release of wrong information can multiply the private damages. Another case would be an expert report, which overvalues a condominium, because the expert has overlooked the fact that the city plans to build a highway in the vicinity of the house, which will substantially reduce the value of the flats. A potential buyer, who pays for the expert report, is protected by the contract. But, if he gives the report to other potential buyers, who buy other flats in the same house there is no rationale for compensation. This reasoning is unquestioned by the fact that the third parties, who did not pay anything for their protection, might be willing to pay for such protection.

These cases are, therefore, conceptually different from those cases in which by the spreading of information, only the identity of the victim changes, whereas the ex ante expected loss remains the same for the tortfeasor.[48] In this section, instead, we have examined cases in which the passing on of information expands the tortfeasor's exposure to liability, which should thus be restricted. In these cases, the victims could be assumed to be willing to pay for protection, but there is no mechanism to channel such willingness to pay into an actual payment. Awarding compensation would allow free-riding on the part of the victim and lead to over-priced goods and services.

F.2. Liability costs are not internalized because the victim is not willing to pay for protection

We now turn to cases in which the wrongful act causes losses and gains, as in the Bishop framework, but a potential victim is not willing to pay for protection against involuntary transfers because he does not know ex ante whether he will belong to the group of gainers or losers. This reasoning applies to audits in the secondary stock market. Take the following paradigmatic case. The auditor works carelessly and overlooks the fact that the real estate of a company is grossly overvalued. The company is actually over-indebted and should file for bankruptcy. Due to the wrong audit, the company is overvalued and the

[48] See section E.

management can continue to make losses. These are losses for all shareholders[49] and decrease the wealth of society by an equal amount. Assume that this loss is €5. After some months the overvaluation is corrected by the market through other channels of information. The share price plunges by 90 percent from €100 to €10 after the bad news reaches the stock exchange. Should the shareholders, who lost €90, be entitled to recover damage compensation from the auditor? Had the auditor worked carefully, each shareholder would have lost €85 at the date when the audited financial statement was published.

As the bad news reaches the stock exchange with a delay due to the auditor's negligence, we have three groups of shareholders facing different changes in their wealth. The first group has invested for the long run and loses 90 percent of the value. Had the auditor worked correctly they would have suffered a loss of €85. Therefore, the auditor has caused them a private loss of €5, which is equal to the social loss. The second group has purchased shares after the wrong audit and still holds them after the decrease in prices. The auditor has caused them a damage of €90 per share. The third group has sold the shares after the audit when they were overvalued. Consequently, they made no losses. Had the auditor reported correctly they would have made a loss of €85. By the negligent act of the auditor they made a comparative gain of €85 per share. Thus, we have some losses, which correspond to social losses, and others, which result from a wealth transfer.

Now we introduce an observation, which is crucial to determine the shareholders' willingness to pay for protection.[50] The typical outside investor, for whom the audit is made, holds a diversified portfolio of stocks, bonds and money. The main motivation for selling and buying shares is to improve the structure of the portfolio, to spread risks and to accommodate the portfolio to changing economic indicators. In this case, the ex ante probability of buying or selling overvalued shares at any moment must be equal. If the auditor overvalues the company and the investor buys, he will make a loss. If he sells, he will make a gain. The probabilities of these two events are equal.

Therefore, the typical shareholder is not interested ex ante in protection beyond the social loss. This situation is, therefore, completely different from one in which the expertise is given to prepare a transaction, in which the buyer's and seller's identities are known ex ante. Therefore, our conclusion is that auditors' liability in secondary markets should be different from liability in primary markets.

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[49] It is a loss to the shareholders if, after the bankruptcy procedure, the business continues and it is a loss to the creditors if the company is liquidated.

[50] Schäfer (2002b and 2004).

F.3. Negligent interference with a contract

We proceed with case 7, which examines the negligent interference with a contract. Goldberg (1991, 249-275) analyzed a similar case. A ship owner had leased his ship to a ship company (the lessor) for a price of $200 per month. The ship company released it to a second company (the sub-lessor). Due to a sudden demand shift, the price for the release was $300 per month. The ship was brought to a routine inspection at a dockyard, under a contract between the owner of the ship and the dockyard. In the dockyard, a worker negligently damaged the ship, which had to be repaired and could not be used for a month. The lessor of the ship is not required to pay the rent of $200, but loses his rent of $300. Economic reasoning shows that damage compensation of the shipyard to the lessor should be denied.

There is not doubt that if the ship owner had leased for $300, he would have been entitled to damage compensation for the same amount. Why should the lessor be treated differently? The reason is that if the price had plunged to $100 instead of increasing, the ship owner would have recovered only $100. In this case, the lessor makes a gain that should be disgorged: he leases for $200, but can only receive $100 from the sub-lessor. The accident prevents him from making a loss of $100.

There are, thus, two possibilities. First, if we allow the lessor to recover $100 from the dockyard when the price rises, we should also allow the dockyard to recover $100 from the lessor if the price plunges. As the latter would generally be very difficult, the liability rule would implicitly protect the lessor against unfavorable changes in price. The second option is to deny the lessor's claim, so that the lessor always recovers 200 (that is, he does not pay the rental price to the owner) irrespective of the fluctuation in price. This measure is correct only on average, but it is preferable to the former option and does not distort the incentives of the dockyard.

G. How to avoid excessive precaution

The framework usually employed in economic analysis of pure-economic-loss cases is explicitly or implicitly constructed around strict liability. In this case, the injurer internalizes the victim's loss by means of the damage award and, as it is well known, the amount of damages affects the injurer's ex ante level of precaution. If damages are in excess of social loss, his level of precaution will also be excessive and vice versa.[51] From

[51] See Diamond (1974). See also Cooter and Ulen (2003, 337–342), and Arlen (2000, 693–695).

this observation it follows that if the injurer's liability is not restricted to the social loss, but also includes the victim's private loss, his precaution will be more than the socially optimal level.[52]

The need to deny or curb damages in order to avoid excessive precaution, however, is far from self-evident in a negligence regime and depends on whether the level of due care is precisely defined or consists of a vague standard.[53] If the level of care is precise, then over-compensation cannot lead to over-deterrence. The argument is straightforward. If the tortfeasor knows ex ante which level of care is necessary in order to avoid compensation, he will choose this level of care and altogether avoid compensation. He has a stronger incentive to take the due level in case of over-compensation, but does not have an incentive to take more precaution than such level. Therefore, if the level of care is efficient and precise, over-compensation cannot lead to over-deterrence.

However, often the due level of care is not precisely known ex ante, neither to courts nor to tortfeasors, due to lack of information or to vague standards of care such as *bonus pater familias* or *reasonable man*. Only during the trial, when the parties present the facts of the case, is the due level of care established in a precise way. This is a realistic assumption for most cases. An ex ante precise level of care is to be found more often in regulation where it is set by experts. It is also to be found in those areas of tort, in which a long accumulation of judicial decisions has led to a precise rule. However, in dynamic fields with changing technology, this is not to be expected and the due level of care is most likely known only as a probability distribution when the tortfeasor decides on his level of care.

As a result, the injurer cannot be guaranteed that he will avoid liability by taking a certain level of precaution, as there is a residual probability that such level of precaution will be considered too low during adjudication. Even if the damage award is set at the socially optimal level, uncertainty concerning the due level of care may result in over-precaution or in under-precaution. This is due to the fact that by taking more care, the injurer reduces the expected accident loss and the probability of being found negligent, but also increases his costs of precaution. Either of these effects may prevail in a simple negligence framework, thus inducing the injurer to take either more or less care than is

[52] Bishop (1982a).
[53] The model of vague standards can be used to analyze a situation in which injurers make errors while taking care under a precise due-care standard, thereby at times resulting negligent.

socially optimal.[54] If damages are in excess of social loss, the over-precaution outcome is only more likely.

There are various methods to avoid the problem of over-deterrence. The simplest and most obvious is to deny compensation altogether, except in cases of willful and intentional behavior. This method is preferable if the economic loss is entirely redistributional. The mistake of the bank clerk, for instance, who recommended bonds from a company that was known to be close to bankruptcy, did not destroy any wealth.

In other cases, only a portion of the total harm to the victim is purely private, while another part is a socially relevant loss. If one were to exclude damage compensation altogether, this would lead to under-deterrence instead of over-deterrence. In this case, one could restrict damage compensation to the social loss rather than to the private loss.[55] Auditor's liability for a wrong audit of the yearly balance sheet could, for instance, be restricted to several times the price of the audit. One would then use this measure as a proxy for the social loss caused by the auditor.

Another method is to grant full damage compensation, while lowering the negligence standard to the most obvious cases of gross negligence.[56] The change from a negligence regime to a gross-negligence regime can limit the unintended consequence of over-deterrence. In fact, it makes it easier for the injurer to avoid liability and hence reduces his incentives to take precaution beyond the socially optimal level.

While a formal analysis of the optimal design of liability rules for pure-economic-loss cases exceeds the scope of the present article, the considerations above should be sufficient to make the point that, although the social loss may be less than the victim's private loss, a reduction in the damage award does not necessarily follow as the obvious policy choice.

H. Conclusions

In this article we have re-examined the established way in which the social loss in pure-economic-loss cases is calculated. We have shown that the traditional framework fails to consider two important issues that bear on the social loss. One is that the impairment of resources is a social cost, not conceptually different from the destruction of resources. The

[54] For a formal analysis see Craswell and Calfee (1986). See also Schwartz (1998) and Ewert (1999).
[55] Gilead (1997). See Craswell and Calfee (1986, 294 and 297) for a discussion of the optimal damage multiplier in the case of uncertain negligence standards, both in the case of negligence with full damages and in the case, discussed by Grady (1983), of negligence with incremental damages.
[56] Schäfer (2004, 198).

second is that increased capacities used to substitute impaired resources are costly and dependent on the frequency of accidents. Therefore, increased capacities come at an opportunity cost and are endogenous. In addition, we have shown that pure economic loss should also be compensated in some cases in which it does not correspond to a social loss.

Our results seem to advocate a broader scope for the compensation of pure economic loss, which goes beyond what is usual in many European countries, especially in England and Germany. In both countries, some losses caused by an impairment of resources are not compensated,[57] though for different dogmatic reasons. Our considerations are more in line with the Italian and Dutch approaches, which in principle grant compensation, even if an absolute right was not infringed.[58]

To extend liability to a scope favored in this article may lead to some practical problems. Pure economic losses might often arise at the end of a long chain of events. A delivery truck might lose the fresh meat it transported due to an accident. The supermarket runs short of supply and suffers losses. The restaurant owner cannot make purchases in the supermarket as usual and loses customers. This chain might be never ending and the courts may face the need to cut it at some point. However, this is not a problem of pure economic loss alone. It is a more general problem, which consequently has to be solved by more general legal concepts such as causation. The proximate cause doctrine can be used to cut off this chain at some reasonable point.[59]

Another problem is that pure economic losses are often difficult to assess. If there is a blackout for two days are all workers of a firm necessarily idle or can they do something else? But requesting convincing evidence of the damage from the plaintiff can solve this problem. If the plaintiff has done nothing to mitigate the damage, that would reduce compensation. If for instance, the fishermen at the polluted beach did not care to follow the fish where they swam after the pollution, they would not be entitled to recover much of their losses under the mitigation principle.[60] A person who is blocked in traffic congestion during his leisure time might not recover losses, because these losses are not financial. Many legal orders completely exclude non-financial losses such as sentimental value or

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[57] See e. g. Bussani and Palmer (2003, 196; 200-202); Banakas (1996, 27-53, 55-87).
[58] See e. g. Bussani and Palmer (2003, 193-194, 198-200); Banakas (1996, 197-201).
[59] See also the discussion in Goldberg (1994, 17-20)., pointing out that the pure economic loss doctrine solves the problem of actually establishing the optimal level of ex ante and ex post mitigation efforts by victims and third parties. We make a different point.
[60] It may be argued that in this case the state could sue instead of the fishermen for recovery of the damage to the fishery. This possibility does not affect the core of our argument, which does not depend on who sues for compensation but is aimed at clarifying what should determine the amount of the compensation.

non-physical pain from compensation,[61] as their calculation overtaxes the abilities and capacities of courts. All of these problems should be solved by other dogmatic legal constructs. They might arise in the field of pure economic loss more often than in other fields of tort law, but conceptually they are disconnected from the main core of the pure-economic-loss problem.

We have also discussed several solutions to avoid the over-precaution problem that compensation would create, in excess to socially relevant losses. Our point is that denying or reducing compensation is not necessarily the optimal policy because the functioning of negligence and uncertainty surrounding the standard of due care may suggest other policy measures.

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[61] Also, in Germany the compensation of non-financial losses is restricted. § 253 BGB excludes in principle compensation for sentimental value. This implies the non-compensation of the consumer surplus for all irreplaceable goods such as photographs and paintings. Also, in principle the damage from psychological pain is not recoverable. Though, with the last reform of the German civil code (BGB) in 2002, compensation for pain and suffering was enlarged significantly. Since then, compensation for pain and suffering is possible not only in tort, but also in contract cases; see § 253 (2) BGB and Heinrichs in Palandt (2003, § 253, sec. 1).

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