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Tort Law and Economics

EDITED BY
MICHAEL FAURE

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Michael Faure

Professor of Comparative and International Environmental Law, University of Maastricht and Professor of Comparative Private Law and Economics, Erasmus University Rotterdam, The Netherlands

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Contributors

Mireia Artigot i Golobardes, Universitat Pompeu Fabra, Spain

Omri Ben-Shahar, University of Chicago, United States of America

Steve Boccara, Université d'Aix-en-Provence, France

Jef De Mot, Ghent University, Belgium

Michael Faure, Maastricht University and Erasmus University Rotterdam, the Netherlands

Karine Fiore, Université d'Aix-en-Provence, France

Mark A. Geistfeld, New York University School of Law, United States of America

Fernando Gómez Pomar, Universitat Pompeu Fabra, Spain

Lewis A. Kornhauser, New York University School of Law, United States of America

Reinier H. Kraakman, Harvard Law School, United States of America

Siewert D. Lindenbergh, Erasmus University Rotterdam, the Netherlands

Frank Müller-Langer, University of Hamburg, Germany

A. Mitchell Polinsky, Stanford University, United States of America

Richard L. Revesz, New York University School of Law, United States of America

Hans-Bernd Schäfer, University of Hamburg, Germany

Steven Shavell, Harvard Law School, United States of America

Willem H. van Boom, Erasmus University Rotterdam, the Netherlands

Peter P.M. van Kippersluis, Erasmus University Rotterdam, the Netherlands

Ben C.J. van Velthoven, Leiden University, the Netherlands

Louis T. Visscher, Erasmus University Rotterdam, the Netherlands

Gerhard Wagner, Bonn University, Germany

Abbreviations

ACC	Accident Compensation Corporation
ACCI	American Council on Consumer Interests
AEI	American Enterprise Institute for Public Policy Research
ALI	American Law Institute
a.M.	am Main
AMA	American Medical Association
AMI	Acute Myocardial Infarction
AO	Administrative Office
ATRA	American Tort Reform Association
BGB	Bürgerliches Gesetzbuch
BJS	Bureau of Justice Statistics
CA	California
CBO	Congressional Budget Office
CCECQA	Le Comité de Coordination de l'Evaluation Clinique et de la Qualité en Aquitaine
CEO	Chief Executive Officer
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CHA	California Healthcare Association
CMA	California Medical Association
CMPA	Canadian Medical Protective Association
CPSC	Consumer Product Safety Commission
DC	District of Columbia
DCE	Designated Compensable Event
DCFR	Draft Common Frame of Reference
DES	Diethylstilbestrol
DOT	Department of Transportation
DPT	Diphtheria, Pertussis and Tetanus
DREES	Direction de la recherche, des études et de l'évaluation et des statistiques
EC	European Community
ECU	European Currency Unit
EEC	European Economic Community
EG	Europäische Gemeinschaft
ENEIS	Étude nationale sur les événements Indésirables graves liés aux Soins
EU	European Union

FDA	Food and Drug Administration
FIG	Frontier Insurance Group
HMPS	Harvard Medical Practice Study
IAEA	International Atomic Energy Agency
ICJ	Institute for Civil Justice
IGAS	Inspection Générale des Finances, Inspection Générale des Affaires Sociales
IHD	Ischaemic Heart Disease
IL	Illinois
IMO	International Marine Organization
IOPC	International Oil Pollution Compensation Funds
ISO	International Organization for Standardization
IZA	Forschungsinstitut zur Zukunft der Arbeit GmbH
JAMA	*The Journal of the American Medical Association*
JLEO	*The Journal of Law, Economics and Organization*
JLS	*The Journal of Legal Studies*
LGDJ	Librairie Générale de Droit et de Jurisprudence
MA	Massachusetts
MAI	Medical Adversity Insurance
MLDA	Minimum Legal Drinking Age
MN	Minnesota
NAIC	National Association of Insurance Commissioners
NBER	National Bureau of Economic Research
NCSC	National Center for State Courts
NEA	Nuclear Energy Agency
NEBA	Net Environmental Benefit Analysis
NGO	Non Governmental Organisation
NHS	National Health Service
NICE	National Institute for Clinical Excellence
NJ	New Jersey
NSC	National Safety Council
NY	New York
OECD	Organization for Economic Cooperation and Development
ONIAM	L'Office National d'Indemnisation des Accidents Médicaux
OSHA	Occupational Safety and Health Administration
OTA	Office of Technology Assessment
P&I Clubs	Protection and Indemnity Clubs
PIAA	Physicians Insurers Association of America
PRP	Potentially Responsible Party
QALY	Quality Adjusted Life Year

R&D	Research & Development
RTDC	*Revue Trimestrielle de Droit Civil*
Stan. L. Rev.	*Stanford Law Review*
STOPIA	Small Tanker Oil Pollution Indemnification Agreement
TOPIA	Tanker Oil Pollution Indemnification Agreement
UCLA	University of California, Los Angeles
UK	United Kingdom
UNFCCC	United Nations Framework Convention on Climate Change
UPCAM	Université Paul Cézanne–Aix-Marseille III
USA/US	United States of America
VSL	Value of a Statistical Life
VSLY	Value of a Statistical Life Year
WC	Workers' Compensation
WW II	World War II

General introduction

1 Goal of this book

A central goal of this book is to provide a state of the art overview of the literature with respect to the economic analysis of tort law. The organisation of this book, whereby in 16 chapters various aspects of tort law are examined, is such that the reader not familiar with the area will get an overview of the relevant economic literature. The authors have always attempted to show the evolution of the literature in the particular domain, the further refinements of economic models and the main conclusions from this literature for the policy maker. Hence, the overviews should enable the reader to get acquainted easily with the often vast literature in the particular domain. For those who are interested in further study or reading, every chapter contains a detailed bibliography with a selection of the literature on that particular topic.

This book fits into a general series of books which together constitute the Encyclopedia of Law and Economics. It builds further on the *Bibliography of Law and Economics* (Bouckaert and De Geest, 1992), which merely contained literature references to the various domains of law and economics, as well as on the earlier version of the *Encyclopedia of Law and Economics* which was published in 2000. That Encyclopedia was published both in hard copy as well as electronically (Bouckaert and De Geest, 2000). However, an update of this project was needed because since 2000, there have been many evolutions and further refinements in the literature.

Whereas the economic analysis of tort law originated in the US and also acquired followers in the late 1980s and 1990s, the movement has clearly expanded to other continents as well. A large part of the literature on the economics of tort now also comes from Europe and Asia. A consequence of this increasing popularity of applying economic concepts to tort caused, however, the problem that over a period of almost ten years, the literature has developed so quickly that a new issue of the Encyclopedia had become necessary.

Some topics related to the economics of tort were already present in the 2000 version of the Encyclopedia. However, since this new Encyclopedia could contain a special issue completely devoted to tort, many other topics could be added as well. Since the literature has developed so rapidly, contributors have not been asked to provide what in their view would be a complete list of all the references with respect to a particular topic.

Contributors have rather been invited to provide a list of the most important references which will allow the reader to engage in further reading.

2 The authors

The authors who wrote the various chapters in this book are leading experts either in tort law or in the law and economics of tort in a particular field and constitute a mix of both lawyers and economists as well as comprising authors from the US as well as from Europe. Many contributions constitute updates by the authors who contributed to the 2000 version of the Encyclopedia. Where these authors were willing to update their previous versions, they were invited to do so. In case the authors of the chapters in the 2000 Encyclopedia were not able to revise their chapters, new authors have been approached to write a completely new chapter, of course taking into account the findings in the 2000 Encyclopedia. For topics which were not contained in the 2000 Encyclopedia (like, for example, the empirical perspective, medical malpractice or pure economic loss), new authors have been approached.

A complete list of the authors and their affiliations is provided in the list of contributors included after the table of contents.

3 The topics and structure

The 16 chapters in this book have been brought together in seven different parts in an attempt to bring together related papers and impose a structure on this volume.

Part I deals with the central question of efficient liability rules. It deals with the basic literature on what is a central question in tort law and economics, namely under what circumstances a strict liability rule will be more efficient than negligence. This is the topic of chapter 1 by Hans-Bernd Schäfer and Frank Müller-Langer. A related issue is how in bilateral accident situations (where the victim can also have an influence on the accident risk) incentives can be provided to all parties in the accident setting. It is the question which in the literature is known as the study of the comparative efficiency of contributory and comparative negligence rules and is dealt with by Mireia Artigot i Golobardes and Fernando Gómez Pomar in chapter 2.

Part II deals with causation and multiple tortfeasors. The chapters brought together in this part have in common that they study problems that arise when there is no clear linear and simple relationship between a certain behaviour and a tortfeasor. When complications arise, uncertainties may appear, for example in the relationship between the behaviour and the damage. These issues of causation and foreseeability are dealt with by Omri Ben-Shahar in chapter 3. Clearly related are issues of multiple tortfeasors where more than one person has contributed to the harm. The rules dealing with the apportionment of damages in those situations

(joint and several liability or several only liability) are examined by Lewis Kornhauser and Richard Revesz in chapter 4. Also vicarious liability is one way of moving beyond the original tortfeasor and making for example a principal liable for the misconduct of an agent. Reasons for moving beyond the original tortfeasor towards for example a corporation are critically discussed by Reinier Kraakman in chapter 5 dealing with vicarious and corporate civil liability.

Part III deals with the broad notion of damages from an economic perspective. The central idea of the function of damages as providing incentives to the tortfeasor (and the victim) and the consequences for the types and amounts of damages to be compensated by the legal system are discussed in general by Louis Visscher in chapter 6 on tort damages. The complicated question of whether pure economic loss should be compensated as well as an economic appraisal of why legal systems have apparently different attitudes to this question is dealt with by Jef De Mot in chapter 7. The economic reasons for compensating non-pecuniary losses (deterrence and/or compensation) are critically discussed in chapter 8 by Siewert Lindenbergh and Peter van Kippersluis. A. Mitchell-Polinsky and Steven Shavell discuss the main social goals for awarding punitive damages (deterrence and punishment) in chapter 9.

Part IV deals with the application of the general findings of the economic literature on tort (dealt with in the first three parts) to a few specific cases. Tort law has undoubtedly recently also been expanding to other domains where its application gives rise to specific questions. One area where tort law is gaining popularity is undoubtedly environmental liability, which is dealt with by Michael Faure in chapter 10. Mark Geistfeld deals with the well-known area of product liability in chapter 11 and Steve Boccara with medical malpractice in chapter 12.

Part V deals with compensation systems other than the tort system and thus addresses the question to what extent alternatives can be worked out if victim compensation is a policy goal. In this respect, Gerhard Wagner deals with the relationship between tort law and insurability and also addresses to what extent insurance issues may be decisive for the liability question. Next, Karine Fiore addresses no-fault compensation systems in chapter 14, thereby analysing both the compensatory and deterrence potential of those alternative compensation schemes.

Part VI deals with perspectives on tort law other than the economic approach. Willem van Boom deals with comparative tort law and economics.

Finally, part VII deals with the highly important issue of the empirical evidence concerning the effectiveness of the tort law system. The literature in this respect is summarized in chapter 16 by Ben van Velthoven.

Of course, there is some unavoidable overlap since questions, such as for example the optimal liability rule, may be discussed in a number of chapters, but each time from a different perspective.

In this introduction, some of the main findings presented in the chapters will be summarized. Of course, it is not at all useful to attempt to rehearse what has been mentioned and discussed in the chapters. However, some similarities and differences between the approaches presented in the chapters will be sketched in order to attempt to identify a few common lines of development in the economic analysis of torts.

4 Historic evolution of tort law and economics: the basic ideas

After Ronald Coase implicitly started the law and economics movement with his seminal paper on 'The problem of social cost' (Coase, 1960), it was the lawyer Guido Calabresi who with his publication 'Some thoughts on risk distribution and the law of torts' (Calabresi, 1961) started to develop the economic analysis of tort law. In his *The Costs of Accidents*, Calabresi developed a framework for dealing with accidents through torts and alternative instruments, for the first time using insights from economic theory (Calabresi, 1970). Calabresi used the economic notion that accident costs constitute externalities which have to be internalised by the wrongdoer. Moreover, Calabresi used the simple economic wisdom that 'our society is not committed to preserving life at any cost'.[1] He thus called for the application of cost-benefit analysis to tort law and argued that 'we use relatively safe equipment rather than the safest imaginable because – and it is not a bad reason – the safest costs too much'.[2]

As Artigot i Golobardes and Gómez Pomar show in chapter 2, Judge Learned Hand had in fact already in 1947 used a proportionality test to conclude that a party should be required to take care only up to the point where the costs of such care become equal to or greater than the expected cost of the accident.

In later years, the economic analysis of tort law has gone through a rapid development starting with Posner's *JLS* paper on a theory of negligence in 1972, followed the next year by J.P. Brown's 'Toward an economic theory of liability' (Posner, 1972; Brown, 1973). Whereas Posner used economic tools to explain certain developments in case law by common law judges (arguing that they were in fact acting as if they were promoting economic efficiency), J.P. Brown developed the first economic model addressing the question of how various liability rules (more

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[1] Calabresi (1970, 17).
[2] Calabresi (1970, 18).

particularly strict liability and negligence) could achieve the social goal of the minimisation of accident costs, already identified by Calabresi. The basic assumption in what later became known as the neo-classical model of tort law was that injurers and victims (hence the participants in a potential accident setting) are rational individuals who react to applicable tort rules striving to maximise their utility. Since then, economic models have always relaxed the assumptions and become more refined in order to make predictions concerning the efficiency of liability rules closer to the reality of the accident setting. For example, in 1974, Diamond added the importance of the activity level (in addition to care) in determining the accident risk (Diamond, 1974) and Shavell's 1980 *JLS* paper on strict liability versus negligence formalised optimal liability rules in both unilateral (when only one party can influence the accident risk) as well as bilateral (when both injurer and victim can influence the accident risk) accident situations, addressing the influence of both care and the activity level (Shavell, 1980). Many further refinements were provided *inter alia* by Grady (Grady, 1983).

The first chapter by Schäfer and Müller-Langer nicely shows how precisely on this crucial point of the comparative efficiency of strict liability versus negligence assumptions have always been further relaxed, leading to the point where the literature can now provide rather detailed advice to the policy maker on situations in which one liability rule might be better suited than the other. They stress that in principle (but under strict assumptions concerning the ability of the judge to correctly assess damages) strict liability with a defence of contributory or comparative negligence should be preferred to negligence since the latter rule only leads to efficient results if courts are able to fix the required level of due care equal to the efficient level of care. However, they equally show that when assumptions concerning the ability of the judge to assess damages correctly are relaxed, some of the advantages of strict liability disappear, which is also the case if injurers are judgement proof.

A similar evolution concerning the literature is shown with respect to bilateral accident situations by Artigot i Golobardes and Gómez Pomar in chapter 2, showing that whereas the literature initially held that contributory negligence (which means that when the victim's level of care falls short of the desired level no compensation is owed by the injurer) would be preferred to a comparative negligence rule (whereby the victim's claim on compensation would simply be reduced in proportion to the victim's contribution to the loss), but then after publications in the 1980s scholars demonstrated that in fact under both rules injurers and victims are given incentives to take efficient care. However, they equally show that developments never end since the most recent literature (from 2003)

is again increasingly critical concerning the performance of comparative negligence.[3]

5 Causation and multiple tortfeasors

Part II brings together papers which all deal in some way with linking a particular type of damage to an actor. Omri Ben-Shahar shows in chapter 3 that originally the early economic analysis of law denied the importance of the causation requirement. He equally shows that early scholars held that the causation requirements served goals other than efficiency. He argues that since a 1975 *University of Chicago Law Review* article by Calabresi causation was also put on the agenda of economic analysis (Calabresi, 1975). Difficulties more particularly arise in case of uncertainty concerning the causal relationship. Ben-Shahar discusses the disadvantage of the approach whereby the probability that event A caused damage B has to pass a certain (usually 50 percent) threshold. The latter is often referred to as an 'all or nothing' approach to causation and of course has the obvious disadvantage that it may distort the incentives for parties to take care, more particularly if the probability of causation is systematically below the threshold probability. Economic analysis (and more particularly Shavell) have therefore held that a proportional liability rule whereby the injurer is held to compensate the damage equally to the probability of causation leads to socially optimal levels of care.

Somewhat related is the issue discussed in many publications and equally in chapter 4 by Kornhauser and Revesz of the way in which the legal system should deal with multiple tortfeasors. They sketch the various scenarios of on the one hand a joint and several liability rule and on the other hand a several only (non-joint) liability, comparing both the incentives to settle and the effects on deterrence. They show that under full solvency and a negligence regime, the joint and several liability rule will produce socially optimal results, whereas several only liability leads to underdeterrence. In case of joint tortfeasors, however, they argue that strict liability leads to underdeterrence, regardless of whether it is coupled with joint and several liability or several only liability. Conclusions are different, however, under a potential insolvency, whereby the deterrence effects depend upon the specific assumptions made. They moreover show that, on the basis of the literature, it is held that joint and several liability may increase the uncertainty for insurers about the size of the award that will be paid, thus potentially increasing insurance premiums.

In chapter 5 Kraakman discusses situations where a party other than

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[3] They more particularly refer to Bar-Gill and Ben-Shahar (2003).

the original tortfeasor may be held liable to compensate the victim. This is more particularly the case under vicarious and corporate civil liability. He discusses the traditional argument in favour of vicarious (and corporate) liability being that agents (more particularly employees) are more likely to suffer from insolvency than principals (employers). Thus vicarious liability for ordinary torts is, so Kraakman argues, more likely to increase social welfare as the disparity between the agent's assets and the magnitude of prospective tort liability increases. Similar arguments are also advanced in favour of corporate criminal liability even though there is literature which is equally increasingly critical of corporate criminal liability, *inter alia* since it may have potentially perverse effects.[4]

6 Damages

The chapters brought together in part III discuss the economic function of damages and more particularly the question of how damages should be assessed if optimal deterrence (of both injurers and victims) were the social goal of accidents. Visscher provides a broad overview of all issues involved in the determination of damages and describes *inter alia* the economic method for the assessment of losses in case of death. He shows, using Kaplow and Shavell, that the abstract method of damage assessment is more efficient than the concrete method since the administrative costs are lower. Moreover, since the injurer cannot *ex ante* assess how much loss he will cause, a better (more accurate) assessment *ex post* will not change his behaviour *ex ante* (Kaplow and Shavell, 1996). Visscher equally discusses many other aspects of damage assessment, *inter alia* the point often made in the economic literature that damages for fatal accidents are often too low from an economic perspective. He argues that incorporating the literature estimating the value of a statistical life could lead to a better assessment of damages in the case of fatal accidents, at least with better incentives for injurers.

Many of Visscher's points are worked out in further detail in subsequent chapters, for example in chapter 8 by Lindenbergh and van Kippersluis discussing compensation for non-pecuniary losses. They make a distinction between various functions of compensating non-pecuniary losses. The economic literature has argued that since victims would not self-insure against non-pecuniary losses, compensation cannot be an adequate reason to force injurers to pay for pain and suffering. From an economic perspective, deterrence is the appropriate reason to force injurers to compensate non-pecuniary losses as well. However, since a rational victim would not

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[4] So more particularly Arlen (1994).

self-insure against those losses, liability could be decoupled since injurers could then still be exposed to pay damages (for optimal deterrence) but not necessarily to the victim.

The complicated issue of whether compensation should be awarded for so-called pure economic loss is addressed by De Mot in chapter 7. He shows that traditional explanations seeking to justify the denial of compensation for pure economic loss in many legal systems which are not based on notions of efficiency all lead to practical inconsistencies. Economic analysis traditionally provided a more powerful explanation (based on the fact that an economic loss would merely lead to a private loss for the victim but not necessarily to a social loss). Compensation of an economic loss which would not at the same time constitute a social loss would thus only lead to a waste of administrative costs. However, De Mot holds that more recent literature comes to more nuanced conclusions and shows that also large differences still exist between legal systems as far as the recoverability of pure economic loss is concerned, which can so far also not be fully explained on economic grounds.

Chapter 9 by Polinsky and Shavell discusses the deterrence and punishment-based explanations of punitive damages. They show that according to the basic economic theory of torts, punitive damages are basically used to outweigh the situations where the probability of being found liable is less than one. To outweigh this lower probability, damages have to be higher than compensatory in order still to reach deterrence. Several other economic explanations, also relating to the fact that harm can be underestimated or gains can be socially illicit, are presented as well. They also argue that the punishment objective may conflict somewhat with the deterrence objective since for punishment, the level of damages is likely to be higher if the chance of being found liable is high, whereas for deterrence, damages should be high precisely if the probability of being found liable is low. The optimal level of damages overall, thus maximising both deterrence and punishment, may therefore result in a compromise between both objectives.

7 Specific cases

Part IV contains a few chapters dealing with specific types of tort. In these cases, basically the general models are applied and some specificities related to the cases are stressed. A common feature in two specific tort cases (products liability and medical malpractice) is that a contractual relationship exists between the potential injurer and the victim. As Geistfeld shows in chapter 11, this potentially gives rise to contractual solutions as a result of which the producer would adopt an efficient care and activity level. However, he equally makes clear that contracting will not lead

to efficient outcomes when information costs prevent consumers from being adequately informed about product risk. In that respect, Geistfeld notices (again) a remarkable development and refinement of the economic models. Where in the mid-1970s economic analysis of product liability was based on the study of the market behaviour of perfectly informed, completely rational actors, this has since completely changed. Economists now regularly address the type of (informational and other) problems that courts have long had to confront without the aid of economic analysis. A similar development can be noticed in the field of medical malpractice as sketched by Boccara in chapter 12. The first law and economics publications in this domain which emerged in the mid-1970s, mostly by Epstein (1976), also suggested that private agreements between the physician and the victim could lead to optimal solutions concerning the level of care and desired allocation of risk, taking into account varying preferences. Later the literature took into account the difficulties for the patient of assessing the physician's care as well as the difficulties for the physician in passing on liability costs via the price system. Especially in Europe where healthcare services are highly regulated, this (Coasean) idea of passing on liability costs via the price system is in practice often not feasible. Still both chapters 11 and 12 show that the starting point for the analysis is different where (as in the fields of product liability and medical malpractice) a contractual relationship between the injurer and potential victim exists. In cases where the potential victim would be informed about the allocation of risk, society should in principle worry less about efficient liability rules since these could result from Coasean bargaining between the parties. Even when this bargaining may not be feasible, given information problems, the contractual relationship remains important since providing information on the risks may in some cases be a more appropriate tool than immediately regulating the liability rule to be applied.

Another specific case on which quite a bit of economic analysis has emerged concerns environmental liability. Chapter 10 makes clear that environmental liability is for obvious reasons a good candidate for economic analysis: whereas traditional lawyers will sometimes challenge the starting point from economic analysis that potential parties in an accident setting will adopt their behaviour on the basis of an applicable liability rule, this assumption seems to be less of a problem in environmental liability. The idea that potential polluters adapt their behaviour when confronted with liability costs is now common also among many environmental lawyers. Environmental liability is for example a field where the traditional choice between strict liability and negligence (explained in chapter 1 by Schäfer and Müller-Langer) clearly leads to favouring a strict liability regime since these cases can mostly be considered as unilateral or at least

as situations where the injurer has more influence on the accident risk than the victim. However, given a potentially important insolvency risk inherent in environmental pollution cases, strict liability may be inefficient when the magnitude of the damage exceeds the polluter's assets. This provides a strong case for imposing duties on the potential polluter to provide financial guarantees to cover his liability such as for example compulsory insurance. Moreover, environmental liability is also a field where often the fundamental question arises as to what the particular function of a liability system is. If the deterrence of polluting behaviour is the main goal of environmental liability, applying new liability rules to past pollution (so-called retroactive liability) is clearly inefficient. Nevertheless, one can notice in many environmental liability rules (such as those which emerged under CERCLA, also known as the superfund legislation) that potentially responsible parties are held liable also for pollution with a source in a distant past. This clearly shows that the policy maker in this area also has other objectives than preventing environmental pollution through deterrence. Also the problem of causal uncertainty discussed by Ben-Shahar in chapter 3 can play an important role in environmental liability cases in as far as the causal relationship between for example a particular emission and (health) damage cannot be established with certainty. Again, the solution proposed by Shavell and discussed in chapter 3 by Ben-Shahar which would provide efficient incentives to potential polluters aiming at welfare maximisation is a proportional liability rule.

8 Alternative compensation systems

Even though traditional lawyers still see victim compensation as the main task of tort law, it has been an important achievement of economic analysis to show lawyers that tort law is a particularly ill-suited instrument to reach victim compensation. Already in 1965 Calabresi held that 'if compensation were the only goal, then by far the most effective and efficient method of accomplishing it would be through a system of general social insurance, which would externalise the costs of accidents from any market decisions'.[5] Even though Calabresi of course recognised that risk-spreading is an autonomous goal of tort law as well (referred to by Calabresi as the so-called secondary cost reduction), many alternatives have also been worked out which can precisely achieve this goal of victim compensation at lower costs. The chapters in part V deal more specifically with these alternative compensation systems and more specifically with their relationship to the tort system as well. Wagner sketches in general in chapter 13 how various

[5] Calabresi (1965).