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Umbrella Standing－an Externality Approach

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Authorship declaration. *I hereby declare and confirm that this thesis is entirely the result of my own work except where otherwise indicated. I acknowledge the supervision and guidance I have received from Univ.-Prof. Dr. Florian Schuhmacher, LL.M., University of Vienna. This thesis is not used as part of any other examination and has not yet been published.*

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Abstract

Umbrella harm typically refers to the overcharge paid to undertakings not taking part in a cartel ("fringe" firms), which however set prices above the competitive level having regard to the collusion. Whether or not victims suffering umbrella harm should have standing to sue cartelists has long been debated. The tort literature looks into the legal requirement but rarely discusses the effect of granting/denying umbrella standing. The "more economic" (or effect-based) literature focuses on deterrence, but does not elaborate on how umbrella standing contributes to optimal deterrence, or more specifically, why it does not lead to over-deterrence. In light of that, I propose an externality framework to determine the optimal level of liability for infringement of competition law, the principle being that liability should be imposed to correct externality, by which I am able to examine the justifiability of umbrella standing under the deterrence and compensation functions of private enforcement.

From the perspective of deterrence, umbrella harm is a wealth transfer that does not benefit the cartelists. Not causing net harm to others, it is not an external cost. Against the argument that umbrella harm is linked to deadweight loss, a practically unclaimable externality, I find that the relative sizes of umbrella harm and deadweight loss depend on the specifications of a case, and accordingly, there is no guarantee of reasonable approximation. Hence, umbrella harm is not justified by the deterrence function.

From the perspective of compensation, when umbrella victims are not end consumers, umbrella harm can harm downstream undertakings and thus distort downstream competition, which creates external costs. Compensation restores these undertakings financially and thus, to a certain extent, corrects the distortion of downstream competition. Notably, umbrella damages do not correct the external costs by internalising it to the cartelists, but rather by forcing the cartelists to pay for correcting the distortion, which finds support in the law and economics literature of "liability versus regulation". Therefore, I conclude that umbrella standing can be justified by the compensation function when the victims are not end consumers, followed by practical assessment of the effect of granting or denying umbrella standing given the characteristics of a particular jurisdiction.

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Table of abbreviations and definitions

AG	Advocate General
CJEU	Court of Justice of the European Union
CS	Consumer surplus
DWL	Deadweight loss
EU	European Union
EUR	The euro
Kone	Case C-557/12 Kone AG and Others v ÖBB-Infrastruktur AG, ECLI:EU:C:2014:1317.
L&E	Law and economics
PS	Producer surplus
TFEU	Treaty on the Functioning of the European Union, OJ C 326, 26.10.2012, pp 47-390
US	United States of America

1 Introduction

In competition law, umbrella harm typically refers to the overcharge paid to undertakings not taking part in a cartel ("fringe" firms), which however set prices above the competitive level having regard to the collusion.[1] As to whether victims suffering umbrella harm should be allowed to sue cartelists, *i.e.* whether umbrella standing should be recognised, while US courts are split,[2] the CJEU ruled against the "categorical exclusion" of umbrella claims in its preliminary ruling of *Kone*. The issue, however, remains debated.

1.1 Scope of this thesis

In this thesis, I will explore whether umbrella standing should be granted, adopting an L&E approach of externality. I note two points concerning the scope of this thesis.

First, by "standing", I do not refer to the legal definition of this term applicable in a

[1] In *Kone*, the leading EU case on umbrella damages, umbrella harm is the "loss resulting from the fact that an undertaking not party to the cartel, having regard to the practices of the cartel, set its prices higher than would otherwise have been expected under competitive conditions." (para. 38) Given the infringement, the undertakings not involved therein (the "fringe") can either be price-taking or strategic. The "competitive conditions" in *Kone* should not be understood as the fringe's price-taking behaviour given collusion, but as the conditions that would have prevailed but for the infringement.

[2] For a discussion of US cases, *see* Andrew J. Fuller, *Let the State Decide: The Efficient Antitrust Enforcer and the Avoidance of Anticompetitive Remedies*, 10 J. BUS. ENTREPRENEURSHIP & L. 203, 214-215 & footnotes (2017).

particular jurisdiction. Following the CJEU in *Kone*, for the purpose of this thesis, to grant umbrella standing means not to categorically exclude umbrella claims (which includes deciding that all umbrella harms are too remote from the collusion). My research question concerns general admissibility, but not how umbrella claims should be evaluated *ad hoc*.[3]

Second, as I employ an L&E approach, purely legal arguments concerning umbrella standing, such as the interpretation of legal principles, will be discussed in the literature review, but not further developed in my subsequent analysis.

1.2 Structure

This thesis is structured as follows: section 2 introduces the economics of the umbrella effect; section 3 reviews relevant literature and indicates how this thesis will contribute thereto from an L&E perspective; section 4, recognising the tortious nature of competition law infringements, derives the optimal liability for collusion, based on the private enforcement literature and the internalisation of externalities, a concept familiar to tort L&E; starting from the deterrence function of competition law enforcement,

[3] Umbrella standing is independent of the merits of a particular case: a plaintiff granted umbrella standing can still lose a case if it asserts umbrella harm as a result of collusion but cannot prove it, as is the case when econometric evidence indicates that other factors than collusion are more likely to be the cause of the fringe's price increase. David P. Kamp, *Monopsonistic Price Fixing and Umbrella Pricing as a Theory of Antitrust Standing: A New View of Illinois Brick*, 50 U. CIN. L. REV. 52, 61-62 (1981).

section 5 examines umbrella standing based on the optimal liability derived in the preceding section; section 6 extends the discussion to the compensation function, and touches upon the compatibility with the deterrence function; section 7 concludes.

2 The umbrella effect

2.1 The economics of the umbrella effect

Consider **Figure 1**, a supply chain with undertakings U1, U2 and U3 in the upstream market, M1, M2 and M3 in the midstream, and several others in the downstream. Purchases are indicated by the arrows below.

U1 *U2* *U3*

↑ ↑ ↑

M1 *M2* *M3*

↑ ↑ ↑

Downstream undertakings

Figure 1. Supply chain

When U1 and U2 collude, raising prices and restricting output, this generates an income effect and a substitution effect. The income effect describes how the purchasers, in face

of inflated prices, have less real income and thus cut consumption; the substitution effect describes how the rise in the prices of the cartelised goods makes their substitutes relatively cheaper, shifting demand thereto. An immediate effect of the collusion is now clear: it shifts some demand of M1 and M2 to U3, the fringe, which causes U3's price to rise given its increasing marginal cost.[4]

Another effect of the collusion travels through the supply chain. If M1 and M2 pass on some of the overcharge, this can also lead to a substitution effect in the downstream market. Purchasers of M1 and M2 shift their demand to M3 (the "volume effect" in the passing-on literature).[5] To satisfy the increased demand, M3 buys more input from U3, further increasing the demand for the product of U3 and driving the price upwards.[6] The direct and indirect effects are summarised in **Figure 2** below, with dotted lines representing diverted purchases, and double arrows representing increased purchase.

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[4] Roman Inderst, Frank P. Maier-Rigaud & Ulrich Schwalbe, *Umbrella Effects*, 10 J. COMP. L. & ECON. 739, 744 (2014). The response of U3 can differ depending on whether it is price-taking or strategic. If U3 is price-taking, the price increase is simply the result of a rightward-shifted demand curve, which causes U3 to produce at a higher marginal cost. If U3 is strategic, it will consider the impact of its output decision on market price, and thus the response to the cartel's restricted output may be less pronounced. *Id*. at 748-52. A formal mis-specification of the model of Inderst *et al*. was pointed out in Emanuel Holler & Maarten Pieter Schinkel, *Umbrella Effects: Correction and Extension*, 13 J. COMP. L. & ECON. 185 (2017), which, however, does not affect the part of their analysis cited in this thesis.

[5] Inderst *et al*, *id*. at 758.

[6] *Id*.

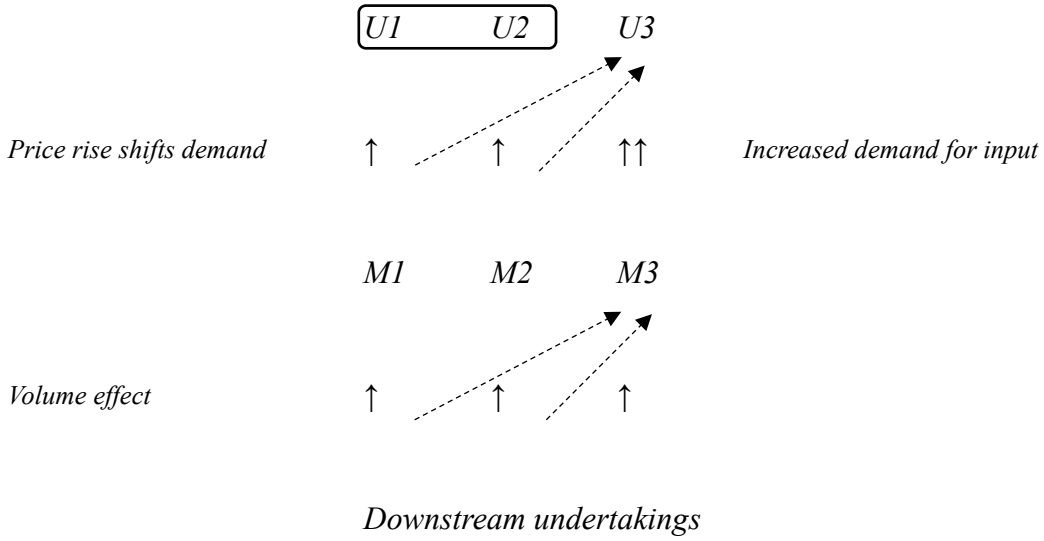

Figure 2. Umbrella effect

The collusive price fixed by U1 and U2 creates an "umbrella" under which U3's price can increase,[7] and hence the name.

It is important to note that the umbrella effect is not constrained by the boundary of the relevant market, which is quite conceivable if one recalls the hypothetical monopolist test: a 10% price increase may be profitable for a hypothetical monopolist over certain products, but a 15% increase may not. The Cellophane fallacy,[8] which can lead to

[7] Iwan Bos & Joseph E. Harrington, Jr., *Endogenous cartel formation with heterogeneous firms*, 41(1) RAND J. ECON. 92, 108 (2010).

[8] The Cellophane fallacy arises when the hypothetical monopolist test is carried out for a market where prices are already distorted. For instance, suppose that the competitive price in the market of interest is EUR 10, but due to a collusion, the price is now EUR 15. If one applies a conventional "small but significant non-transitory increase in price" of 10% of the observed price, the (hypothetical) price increase (EUR 1.5) will actually represent a 65% increase from the competitive price. The Cellophane fallacy is particularly a

excessively broad market definition, is actually a good illustration of how the umbrella effect can reach beyond the relevant market.[9] A sufficiently large price increase can drive demand from cartelised products to products that are less substitutable. Umbrella standing, if granted, does not by nature require a threshold of diversion (whereas in the hypothetical monopolist test, a market is well defined if a hypothetical monopolist can profit from a "small but significant non-transitory increase in price" in that market), but only requires proof that the fringe's price increased because the collusion caused the demand of the fringe product to rise. If umbrella standing is granted, good reasoning will be needed to limit the standing to claims stemming from certain products. After all, proving the existence of umbrella effect is an *ad hoc* enquiry and largely an evidentiary issue. The highly fact-dependent nature of whether and to what extent the umbrella effect is present makes the derivation of its theoretical magnitude extremely challenging.

2.2 Empirical evidence

The umbrella effect is more than a theoretical concern, which I show with Hüschelrath & Veith's empirical investigation of the German cement cartel.[10] Although

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concern in non-merger cases such as price fixing where the observed market price may have already been inflated. MASSIMO MOTTA, COMPETITION POLICY: THEORY AND PRACTICE 105 (2004).

[9] Inderst *et al*., *supra* note 4, at 756-57.

[10] Bundeskartellamt, press release of 14.04.2003: *Bundeskartellamt imposes fines totalling 660 million Euro on companies in the cement sector on account of cartel agreements*, *available at*

the purpose of this study is to compare the rebates (the difference between the list price, *i.e.* the announced price, and the transaction price, *i.e.* the price actually offered to a customer) and pricing behaviours of both cartelists and non-cartelists before and after the breakdown of a cartel, it contains useful information related to the behaviours of fringe firms during the cartel period.[11] The authors use data from Cartel Damages Claims of Brussels, which comprise around 340,000 transactions of 36 customers of German cement producers, including the cartelists and fringe firms.[12] The model estimates the list price and transaction price with, *inter alia*, binary variables "Cartel period" (taking the value of 1 if the transaction happened when the cartel was active, and 0 if not) and "Cartel member" (taking the value of 1 if the transaction was made with a cartelist, and 0 if not), and an interaction term, namely the multiplication of "Cartel period" and "Cartel member" (taking the value of 1 if the transaction was made with a cartelist during the cartel period, and 0 otherwise).[13]

The interaction term enables the authors to tell the effect of either "Cartel period" or

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https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2003/14_04_2003_Bu%C3%9Fgeld_Zementkartell_eng.html (last visited 11 July 2022).

[11] Kai Hüschelrath & Tobias Veith, *Cartelization, Cartel Breakdown, and Price Behavior: Evidence from the German Cement Industry*, 16 J IND COMPET TRADE 81, 82 (2016).

[12] *Id.* at 89.

[13] *Id.* at 94.

"Cartel member" depending on the value of the other variable. For example, the sum of the coefficients of "Cartel member" and the interaction term tells what happens to price when "Cartel member" goes from 0 to 1, given that "Cartel period" equals 1, thus giving the price difference between cartelists and fringe firms while the cartel is active.[14] Following this logic, one can tell by looking only at the coefficient of "Cartel period" (ignoring the interaction term) what happens to price when "Cartel period" goes from 0 to 1, given that "Cartel member" equals 0.[15] This yields the effect of the collusion on the pricing behaviour of the fringe firm, which, as Hüschelrath & Veith report, increases list price by EUR 19.19 per tonne, and transaction price by EUR 16.57 per tonne, both with statistical significance at the 0.01 level.[16] The effect is not economically trivial in light of the list price in the data set ranging from EUR 31.83 to EUR 253.22 (mean: EUR 97.97), and transaction price from EUR 1.30 to EUR 228.41 (mean: EUR 75.09) per-tonne.[17] Although prudent proof of the umbrella effect requires studies specifically devoted to that end, with special regard to the causal relation between the collusion and the fringe's pricing behaviour, the abovementioned study is at least a signal that the

[14] *Id.* at 94-95.

[15] Roger D Blair & Christine Piette Durrance, *Umbrella Damages: Toward a Coherent Antitrust Policy*, 36(2) CONTEMPORARY ECONOMIC POLICY 241, 251 (2017).

[16] Hüschelrath & Veith, *supra* note 11, at 94.

[17] *Id.* at 91.

umbrella effect is practically noteworthy.

3 Literature review

In *Kone*, the tort principles of adequate causal link and unlawfulness were important concerns that underlay the issue of umbrella standing according to the referring court, the Austrian *Oberster Gerichtshof*.[18] In line with that development, I start with the tort literature, and thereafter turn to the literature that discuss the effect of granting or denying umbrella standing.

3.1 The tort literature

The adequate causal link and unlawfulness of umbrella harm have been analysed extensively in the legal literature.[19] Pursuant to the opinion of the *Oberster Gerichtshof* in *Kone*, under Austrian law, the adequate causal link criterion requires the harm to be a foreseeable and typical consequence of the infringement, and the unlawfulness criterion requires the infringed provision's object to include the protection of the victim's interest.[20] In the legal debate, while some find adequate causal link between umbrella harm and

[18] *Kone*, para. 13.

[19] ANJA SCHWEITERT, DER EFFET UTILE UND DER KARTELLZIVILRECHT: DIE VORGABEN DES UNIONSRECHTS BEI DER AUSGESTALTUNG DER ZIVILRECHTSFOLGEN DES ART. 101 AEUV 158-68 (1st ed 2018).

[20] *Kone*, paras. 14-15. For a US law perspective, *see* Michael A. Carrier, *A Tort-Based Causation Framework for Antitrust Analysis*, 77 ANTITRUST L.J. 991 (2011).

collusion, viewing the fringe's price increase as consistent with experience, or being satisfied with the *ex ante* abstract possibility of the fringe's behaviour, others have posited that harm must be the direct and exclusive consequence of the infringement to be compensated, that cartelists never create a danger of umbrella harm since umbrella pricing is the independent decision of the fringe, and that the price umbrella is not a typical or inevitable consequence of the cartel.[21] With regard to the unlawfulness criterion, the referring court's negation on grounds that the cartelists, by the price increase, aimed at harming their own customers, but not the fringe's,[22] is countered by the consideration of the purpose of competition law to secure undistorted competition.[23]

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[21] For a summary of the relevant legal views, *see* Isabelle Pellech, *Rechtliche Aspekte des Preisschirmeffekts (Umbrella-Effekts),* 2013(5) ÖZK 178, 180-81; assessments of umbrella claims under different theories of causal connection can be found in Jan Kupčík, *Limits of Compensation of Damages in Private Enforcement of Competition Law (Umbrella Pricing)*, Master Thesis, Masaryk University, pp 31-43 (2017), *available at* https://is.muni.cz/th/hypqh/Kupcik_diploma_thesis.pdf (last visited 8 August 2022). *See also* David Kohl & Christian Wolf, *„Umbrella Claims" im Lichte der EU-Schadenersatzrichtlinie und des KaWeRÄG 2017*, 2017 WBL 675, 677-78, which discusses the scholarly writings together with *Kone*. Authors have also approached foreseeability by modelling the fringe's reaction to the cartel's price increase, arguing that umbrella harm is foreseeable to the cartelists because it is a direct consequence of the fringe's profit-maximising reaction to the collusive price. Roger D. Blair, Christine Piette Durrance, & Wenche Wang, *The Kone Decision: Economic Logic and Damage Estimation*, 61(3) ANTITRUST BULL. 393, 397-400 (2016).

[22] *Kone*, para. 15.

[23] Pellech, *supra* note 21, at 181-82;

From another perspective, the adequate causal link debate entails a generalised evidentiary issue, which challenges the fundamental existence of umbrella harm.[24] While umbrella victims are said to be remote from the infringement, it is not clear what degree of remoteness, albeit not a new concept in tort law, should bar a claim.[25] Regarding this issue, an observation in the literature is relevant: umbrella victims are harmed because the collusion affected the fringe's price through the supply and demand conditions of the market, to which other factors could have also contributed.[26] Establishing causation of umbrella harm necessitates an explanation why the harm shouldn't instead be attributed to those other factors.[27]

3.2 The effect-based literature

[24] *See* Dorothy Hansberry, Christina Hummer, Morvan Le Berre, & Mélanie Leclerc, *Umbrella Effect: Damages Claimed by Customers of Non-cartelist Competitors*, 5(4) JOURNAL OF EUROPEAN COMPETITION LAW & PRACTICE 196, 200 (2014).

[25] Carolin Marx, Judith Solzbach, & Tobias Wetlitzky, *Cartel Damages and Causation—The Landmark 'Schienenkartell II' Judgment*, 12(6) JOURNAL OF EUROPEAN COMPETITION LAW & PRACTICE 458, 461 (2021).

[26] EDA ŞAHIN, COLLECTIVE REDRESS AND EU COMPETITION LAW 107-08 (1st ed 2021); Eugenio Olmedo Peralta, *A Legal Approach to the Kone Decision: Does the Private Enforcement of European Competition Law Need an Umbrella?* 47 IIC 697, 718 (2016). However, according to Blair & Durrance, umbrella damages are not more speculative than non-umbrella overcharges, as long as the econometric assessment is carried out properly. Blair & Durrance, *supra* note 15, at 250-54.

[27] Petra Weingerl, *Civil Liability in the EU: Exploring the Implications of the Recent Case Law and Legislation on Causal Link*, 6 EJCCL 62, 66 (2014).

Blair & Maurer consider a partial conspiracy with a price-taking fringe.[28] Since the cartel does not fully cover the market, the cartelists have to take into account the fringe's output reaction to the collusive price increase.[29] Given any candidate collusive price, the cartelists can predict the quantity demanded and fringe's output.[30] The difference of the two is the residual demand with respect to which the cartelists can behave like a monopoly.[31] The assumption that the cartelists and the fringe sell the same product results in the same market price charged by both groups.[32] The authors conclude that umbrella victims suffer the same harm as the cartelists' customers, and antitrust policy does not require different treatment.[33] Attacking the concern of ruinous damages to the cartelists, the authors highlight the deterrence function of antitrust enforcement, albeit also cautioning against unlimited damages, which may deter socially beneficial activities and cause unnecessary expenditure to avoid collusion.[34]

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[28] Roger D. Blair & Virginia G. Maurer, *Umbrella Pricing and Antitrust Standing: An Economic Analysis*, 1982 UTAH L. REV. 763, 779 & 783 (1982).

[29] *Id.* at 781.

[30] *Id.* at 780-82.

[31] *Id.* at 781-82.

[32] *See id.* at 788, n. 102.

[33] *Id.* at 785 & 796.

[34] *Id.* at 794-95. Relatedly, it has also been argued that umbrella damages account for the plaintiff's litigation costs and incentives. Jonathan M. Lave, *Umbrella Standing: The Trade-off between Plaintiff Suit and Speculative Claims*, 48 ANTITRUST BULL. 223, 246-49 (2003).

A major critique of umbrella standing is related to the excessiveness of damages in light of the nature of the umbrella effect. Because the umbrella effect does not benefit the cartelists, enforcing umbrella claims does not serve to disgorge illicit gains, but rather sanctions cartelists for the special protection that fringe firms receive under the price umbrella.[35] Considering the evidentiary doubts of umbrella harm, cartelists can even be made responsible for harm that did not result from their behaviours, or could not be foreseen, if umbrella damages are granted.[36] The widespread nature of umbrella harm has also led commentators to observe a public characteristic in it, who believe that public enforcement may be more appropriate than tort law to cure the negative impact.[37]

The excessiveness of umbrella damages has been examined by looking at the welfare effect of umbrella standing. Starting with the model of optimal sanction consisting of the deadweight loss and losses that are redistributions in favour of the cartelist, Franck sees a risk of over-deterrence with awarding umbrella damages because umbrella harm is merely windfall profit benefitting the fringe.[38] However, Franck is aware of the practical

[35] Peralta, *supra* note 26, at 717.

[36] *Id.* at 718.

[37] *Id.* at 715; Agata Jurkowska-Gomułka, *How to Throw the Baby out with the Bath Water. A Few Remarks on the Currently Accepted Scope of Civil Liability for Antitrust Damages*, 8(12) YEARB. ANTITRUST REGUL. STUD. 61, 74-75 (2015).

[38] Jens-Uwe Franck, *Umbrella Pricing and Cartel Damages under EU Competition Law*, 11 EUR. COMPETITION J. 135, 140-41 (2015).

difficulty in claiming DWL, a component of optimal sanction.[39] In his view, umbrella harm is loosely linked to DWL in that they are positively correlated, and accordingly can alleviate the under-deterrence problem caused by uncompensated DWL.[40] A more detailed analysis is carried out by Lave, who, modelling the DWL of the cartelised product and the umbrella effect with specifications of the market conditions, also concludes that umbrella damages are necessary to compensate for DWL.[41]

3.3 Remarks on the literature

The tort literature contains two questions of core importance: first, whether collusion causes fringe overcharge; and second, if it does, whether the cartelists should compensate for it. The first question is largely empirical, to which a purely legal analysis is unlikely to give a conclusive answer. As regards the second question, in addition to suggesting thresholds to be imposed upon causally related harm (*e.g.* directness), the tort literature also looks into the purpose of competition law (*e.g.* what interests should be protected).

The effect-based literature, albeit widely accepting that collusion can lead to umbrella harm, is quite split with respect to whether the cartelists should be liable for such harm. Implicitly, commentators adopt different standards in deciding the types of

[39] *Id.* at 146.

[40] *Id.* at 147.

[41] Lave, *supra* note 34, 244-45 & 258-63.

harm that should be remedied, and whether a consequence of collusion satisfies these standards, which results in the lack of a common basis for comparing the diverging theories. There is an argument in the effect-based literature that umbrella damages compensate for other factors causing suboptimal deterrence, such as low probability of detection of competition law infringements, and practically unclaimable DWL. However, it is important to note that without a quantitative link between these factors and umbrella harm, deterrence seems as unfounded as randomly decided quantum of punitive damages.[42]

Despite the tortious nature of collusion, there seems to be little discussion in the rich literature on umbrella standing expressly based on the treatment of externality, the "economic essence of tort law".[43] Externality is a useful concept that sheds light on how tort law should shape liability.[44] The principle is simple: externalities should be corrected.

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[42] *See* Edward Cavanagh, *Antitrust Remedies Revisited*, 84 OR. L. REV. 147, 174 (2005).

[43] ROBERT COOTER & THOMAS ULEN, LAW AND ECONOMICS 190 (6th ed. 2016).

[44] In many subfields of tort L&E, economic reasoning highlights the analysis of externalities, such as in environmental L&E. *See*, *e.g.* Adam D. K. Abelkop, *Tort Law as an Environmental Policy Instrument*, 92 OR. L. REV. 381, 385-407 (2013). In competition L&E, economics goes even further due to its involvement in two "layers" of the analysis, the first concerning how the law influences undertakings' behaviours (corresponding to how environmental law influences potential polluters' behaviours), and the second concerning how undertakings' behaviours affect competition. Jan Broulík, *Two Contexts for Economics in Competition Law: Deterrence Effects and Competitive Effects*, *in* NEW DEVELOPMENTS IN COMPETITION LAW AND ECONOMICS 27, 28-30 (Klaus Mathis & Avishalom Tor eds., 2019). The deeper involvement of

This principle, together with the proper identification of externalities, forms a clear analytical framework. As I will show in sections 5 and 6, this framework addresses the justifiability of umbrella standing under both the deterrence and compensation functions of private enforcement of competition law, and provides a common basis on which the benefits derived from the two respective functions can be analysed.

4 Optimal liability for competition law infringements

4.1 Optimal liability for infringements of competition law

To deter a behaviour, the expected liability[45] should be set equal to the expected benefit that the actor derives from that behaviour, so as to disincentivise the actor from engaging in it.[46] When deciding whether a behaviour should be deterred, Landes refers to the concept of efficient offences, arguing that a cartel should not be deterred if the efficiencies (*e.g.* cost savings) outweigh the DWL.[47] To ensure that an undertaking only infringes when doing so is socially efficient, Landes proposes a liability equal to the net

economics in competition L&E is another sign that the externality-based tort L&E framework has great potential in approaching issues of competition torts.

[45] To preserve theoretical generality of the externality analysis, I use "liability" here in a general way in the sense that it can be imposed by private or public enforcement. Thorough analysis of the preferrable means of enforcement is, however, beyond the scope of this thesis.

[46] Gary S. Becker, *Crime and Punishment: An Economic Approach*, 17(2) JOURNAL OF POLITICAL ECONOMY 169, 176 (1968).

[47] William M. Landes, *Optimal Sanctions for Antitrust Violations*, 50 U. CHI. L. REV. 652, 655 (1983).

harm to persons other than the offender, i.e. DWL and overcharge.[48] When an undertaking compares benefit with liability to decide whether to infringe, overcharge, a transfer from victims to the infringer neutral in the society's eyes, cancels out as a part of both the infringer's benefit and liability, and does not affect the undertaking's decision.[49] As such, the undertaking compares DWL and cost savings, which is consistent with the society's calculus.

Divergence from optimal deterrence results in over-deterrence or under-deterrence. In Landes' framework, over-deterrence occurs when efficient offences are deterred, which is the case when cost savings are greater than DWL.[50] Implicitly, the over-deterrence concern suggests that disgorgement of all benefits from an infringement can be inappropriate. Under-deterrence, on the other hand, happens when inefficient offences are not deterred, which can be the case if an infringer is only liable for DWL, because overcharge, a wealth transfer neutral to the society, benefits the infringer.[51]

4.2 Optimal liability in tort L&E

[48] *Id.* at 656.

[49] In other words, the actor is made indifferent as to whether there is overcharge.

[50] Landes, *supra* note 47, at 655-56.

[51] *Id.* at 654-55.

Infringement of competition law is a type of economic tort.[52] The essence of tort L&E is the internalisation of externalities.[53] In a classic example, an actor is faced with the choice of whether to take precaution when it engages in an activity to prevent harm to others, and the society weighs the cost of precaution against the expected harm.[54] However, if the tort system imposed no liability, the actor would only see the cost of precaution, but not the benefit, *i.e.* the prevention of harm to others, which would result in a precaution level below social optimum.[55]

To incentivise the actor to take precaution, the society has to internalise the harm to the actor.[56] Suppose as the level of precaution taken increases, the cost of precaution increases and the marginal benefit (*e.g.* the fall in the probability that an accident happens) of precaution decreases.[57] One will then be able to identify an optimal level of precaution, at which the marginal cost of precaution equals marginal benefit.[58] Consider a tort system imposing liability based on negligence, where, given the realisation of harm, the actor is found to be negligent (and liable for the entire harm to others) if and only if its precaution

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[52] Simon Deakin & John Randall, *Rethinking the Economic Torts*, 72(4) MOD. L. REV. 519, 530 (2009).

[53] COOTER & ULEN, *supra* note 43, at 190.

[54] *Id.* at 199-201.

[55] *Id.* at 203-04.

[56] *Id.* at 199.

[57] *Id.* at 201.

[58] *Id.*

falls below the optimal level. Under a negligence system, the actor weighs the cost of precaution against the likelihood and magnitude of harm, as the society does, and the precaution taken will be socially efficient.[59]

Following William & Posner, the model can be extended to intentional tort.[60] Formally, let $p(x)$, the probability that harm occurs, be a function increasing in x, the actor's endeavour to infringe.[61] Denote the magnitude of the harm with D and the actor's gain with G.[62] Let $A(x)$ be the actor's cost, which also increases in its input.[63] The loss to the society L is thus:[64]

$$L(x) = p(x)(D - G) + A(x)$$

In the negligent tort model, G is typically 0, and x represents the actor's precaution, in which p decreases (precaution lowers the likelihood that an accident happens) but A increases (precaution is costly to the actor).[65] In the present intentional tort model, x is,

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[59] *Id.* at 204.

[60] William M. Landes & Richard A. Posner, *An Economic Theory of Intentional Torts*, 1 INTERNATIONAL REVIEW OF LAW AND ECONOMICS 127 (1981). For simplicity, I do not consider the victim's input (precaution) as William & Posner do.

[61] *Id.* at 130.

[62] *Id.*

[63] *Id.*

[64] *Id.*

[65] *Id.*

instead, the actor's devotion to the infringement, so now p increases in x, and A, the actor's cost of infringement, still increases in x as in the negligence model.[66] Since G and A are already assumed by the actor before tort law intervenes, imposing tort liability of D, the externality, will align the actor's incentive with the society's, assuming that liability is imposed with probability 1.[67]

To apply this model to competition law infringements, let x be a binary variable taking the value of 1 when the actor infringes, and 0 when it does not. Assume that $p(0) = A(0) = 0$ and $p(1) = 1$. Formally:

$$p(x) = \begin{cases} 0, & \text{if } x = 0 \\ 1, & \text{if } x = 1 \end{cases}$$

$$A(x) = \begin{cases} 0, & \text{if } x = 0 \\ A(1), & \text{if } x = 1 \end{cases}$$

Solving for $x = x^*$ to minimise $L(x)$, I obtain:

$$x^* = \begin{cases} 0, & \text{if } D - G + A(1) > 0 \\ 1, & \text{if } D - G + A(1) < 0 \\ 0 \text{ or } 1, & \text{if } D - G + A(1) = 0 \end{cases}$$

This solution echoes the concept of efficient offences. When D-G+A (net social loss) is positive, the infringement is inefficient and should be deterred (optimal x is 0); when it is negative, the infringement is efficient (negative loss is benefit) and should not be deterred

[66] *Id.*

[67] *Id.* at 135.

(optimal x is 1); when it is zero, the social is indifferent between whether or not infringement occurs (both 0 and 1 are optimal values of x).[68]

To express D, G and $A(1)$ with parameters in the collusion context, it is necessary to decompose DWL into the portions borne by consumers and producers, respectively, for proper categorisation in the intentional tort model:

$$D = overcharge + consumer\ DWL$$

$$G = overcharge + cost\ saving$$

$$A(1) = producer\ DWL$$

The overcharge is a component of both D and G, so it is cancelled out and does not affect the value of x*. What matter are consumer DWL (a component of D), cost saving (a component of G), and producer DWL (equal to $A(1)$[69]). The sum of consumer DWL and producer DWL is DWL. Accordingly, optimal x can be expressed as:

$$x^* = \begin{cases} 0, & \text{if } DWL > cost\ saving \\ 1, & \text{if } DWL < cost\ saving \\ 0\ or\ 1, & \text{if } DWL = cost\ saving \end{cases}$$

and optimal liability is:

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[68] The is a special case of *id.* at 130-32.

[69] For simplicity, I ignore other costs of collusion (*e.g.* communication costs) in this demonstrative derivation.

$$Optimal\ liability = D = overcharge + consumer\ DWL$$

This is, effectively, the optimal antitrust liability proposed by Landes. One difference is that Landes' DWL is not explicitly limited to consumer DWL.[70] Technically, "consumer DWL" is more accurate because total DWL represents the sales that no longer occur due to the collusion, which also consists of producer DWL in addition to consumer DWL. It is important to note that only the consumer DWL is the externality of collusion, since the producer DWL is already borne by the infringer,[71] as represented by $A(1)$ in the foregoing intentional tort model. Therefore, optimal liability should not include producer DWL.[72]

Be it the negligence model or the intention model, the essence is the internalisation of externalities. The above derivation shows that optimal liability in the private enforcement literature is a special case of optimal liability in the L&E of intentional tort. In fact, Landes' proposal of optimal liability equal to "the net harm to persons other than the offender" precisely describes the internalisation of external cost, which can be defined as cost of an action borne by persons other than the actor.[73]

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[70] *See* Landes, *supra* note 47, at 656.

[71] Christopher R. Leslie, *Antitrust Damages and Deadweight Loss*, 51 ANTITRUST BULL. 521, 542-43 (2006).

[72] However, Landes is not wrong in using DWL because his model assumes constant marginal cost, which results in zero PS in a competitive market, and thereby DWL equals consumer DWL under collusion.

[73] Jonathan B. Baker, *Private Information and the Deterrent Effect of Antitrust Damage Remedies*, 4 J. L.

4.3 Suboptimal deterrence

Looking into suboptimal deterrence enables one to better understand the consequence of wrongly including umbrella harm in, or excluding it from, an infringer's liability. Deterrence is suboptimal when liability is too small (under-deterrence) or too large (over-deterrence). The consequence of under-deterrence is straightforward: there will be too many infringements of competition law. Below I will discuss in more length the consequences of over-deterrence.

As I show in the preceding sections, in both Landes' optimal antitrust liability and the intentional torts models, over-deterrence will result in too few efficient infringements. Imposing liability beyond the level necessary to internalise external costs erodes the infringer's cost saving. By depriving undertakings of the benefits generated by the efficiency of the infringement, the enforcement actually creates another externality problem: these benefits, now taken from and thus no longer enjoyed by the actor, become external benefits, whose market fails in the form of under-production.

Although it is common to model competition law infringements as intentional offences where undertakings or agents weigh the expected benefits against the expected

ECON. & ORG. 385, 404-05 (1988).

costs to decide whether to infringe,[74] that setting is not necessarily realistic. In many cases, high-rank managements avoid any connection to competition law infringements with their greatest efforts possible, but their subordinates cross the red line from time to time, possibly due to the unawareness of the legal risks of infringing competition law, or mis-incentivised pursuit of performance.[75] *Ex ante*, the management's decision is how to prevent infringement, which can include compliance programmes such as training and supervision (*e.g.* requiring sign-off from the legal department before an email can be sent).[76] From the management's point of view, it is taking precautions to lower the probability that its subordinates will infringe competition law. In such a case, it is inappropriate to disregard the decision-making structure of the institution and simply view the relevant actors as one deciding whether to intentionally infringe. Rather, a negligence model may suit this scenario better, in which over-deterrence results in excessive precaution (a simple tort example: if the liability for accidentally hitting a pedestrian with a car is 100 times the actual harm, drivers would probably drive absurdly slowly). In the competition context, excessive precaution can be demanding hours for

[74] *E.g.* Keith N. Hylton, *Deterrence and Antitrust Punishment: Firms versus Agents*, 100 IOWA L. REV. 2069, 2072-81 (2015).

[75] *See* Anne Riley & D. Daniel Sokol, *Rethinking compliance*, 3 J. ANTITRUST ENFORC. 31, 49-51 (2015).

[76] For suggested contents of a competition compliance programme, *see* Stefan Frübing & Kai Hüschelrath, *Competition Law Compliance Programmes: A Law and Economics Perspective*, *in* COMPETITION LAW COMPLIANCE PROGRAMMES: AN INTERDISCIPLINARY APPROACH 9, 23-24 (Johannes Paha ed., 2016).

compliance training or over-burdening the legal department to screen external communications.[77]

5 Umbrella standing and deterrence

5.1 Initial observation

Whether or not umbrella harm should be compensated depends on whether it is external cost, *i.e.* cost of the infringement borne by persons other than the infringer. Following the Becker's leading work on the theory of deterrence, the "cost" here is net harm, the difference between the harm and benefit to others.[78] One could also view the costs and the benefits arising from a same action separately, but in this case the benefits would also have to be internalised, because completely neglecting the benefits that accompany the cost would result in deterrence beyond the socially optimal level.[79] Effectively, the two approaches above lead to the same result.

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[77] Douglas H. Ginsburg & Joshua D. Wright, *Antitrust Sanctions*, 6(2) COMPETITION POLICY INTERNATIONAL 3, 8 (2010). *See* Alan R. Beckenstein & H. Landis Gabel, *The Economics of Antitrust Compliance*, 52(3) SOUTHERN ECONOMIC JOURNAL 673, 678-85 (1986) for a model of competition compliance with an undertaking's management taking into account, *inter alia*, the profit of a contemplated action, magnitude of sanction (from both public and private enforcement), and compliance costs.

[78] Becker, *supra* note 46, at 173 & 191. This approach is also taken in the torts L&E literature, *e.g.* David Friedman & William Sjostrom, *Hanged for a Sheep - the Economics of Marginal Deterrence*, 22 J. LEGAL STUD. 345, 349 & n. 11 (1993).

[79] Giuseppe Dari-Mattiacci, *Negative Liability*, 38 J. LEGAL STUD. 21, 49-50 (2009).

Turning now to umbrella standing, the answer is quite straightforwardly negative: umbrella purchasers' loss is the fringe firms' gain, so net harm (external cost) is zero.[80] Thus, one might conclude here that umbrella claims should not be entertained, so as to avoid over-deterrence.

5.2 An attempt to link umbrella harm to DWL

That conclusion, however, would be hasty. The literature points out that there can be a link between DWL and umbrella harm. Recall that consumer DWL is a component of optimal liability,[81] which, nonetheless, can hardly be recovered in practice.[82] Hovenkamp argues that measuring DWL, a result of "unmade sales and inefficient substitutions", is much more difficult than measuring overcharges.[83] Therefore, if umbrella harm reflects DWL, or a portion of it, measurability can be addressed to a certain extent in that umbrella harm is just a type of overcharge, and umbrella damages will

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[80] One can also say that umbrella pricing leads to windfall profit in favour of the fringe (Franck, *supra* note 38, at 141) and economic losses that are not costs to society, which should be excluded from the tortfeasors' liability according to a classic view in the economic analysis of pure economic losses. W. Bishop, *Economic Loss in Tort*, 2 OXFORD J. LEGAL STUD. 1, 4 (1982).

[81] *See* section 4 *supra*.

[82] A. Douglas Melamed, *Afterword: The Purposes of Antitrust Remedies*, 76 Antitrust L.J. 359, 359 (2009); Germain Gaudin & Franziska Weber, *Antitrust Damages, Consumer Harm, and Consumer Collective Redress*, 12(5) JOURNAL OF EUROPEAN COMPETITION LAW & PRACTICE, 370, 376-77 (2021).

[83] Herbert Hovenkamp, *Implementing Antitrust's Welfare Goals*, 81 FORDHAM L. REV. 2471, 2477-78 (2013).

contribute to optimal deterrence. To avoid systematic over-deterrence, umbrella harm has to be either a reasonable approximation of DWL with stably small potential deviations, or unambiguously smaller than DWL.

To show the link between DWL and umbrella harm, Lave considers a market with 3 strategic suppliers, M, S, and N, which set prices according to their best response functions of competitors' prices.[84] When S and N collude and raise prices, M, the fringe, reacts accordingly.[85] Given specific forms of demand and supply functions, Lave is able to solve for the DWL of both the cartelists' and the fringe's products, and the wealth transferred to the fringe, *i.e.* umbrella damage, from customers who were already buying from it pre-collusion, and customers who substituted to it due to the collusion.[86] DWL consists of consumer DWL and producer DWL, and dividing total DWL by umbrella harm yields two components: (1) consumer DWL divided by umbrella damage, which is a constant smaller than 1 in this setting; and (2) producer DWL divided by umbrella damage, the value of which depends on further specification.[87] Based on this result, Lave concludes that the greater producer DWL is, the more closely umbrella harm will

[84] Lave, *supra* note 34, at 258.

[85] *Id.* at 259.

[86] *Id.* at 261-63.

[87] *Id.* at 263.

approximate DWL.[88]

However, supporting umbrella standing with the foregoing approach is problematic, which I explain below.

(1) Since the producers in this setting are not price takers, they could have expanded output to avoid DWL. That is to say, DWL suffered by strategic producers, be them cartelists or the fringe, is not an externality because it is a consequence of their own behaviours.[89] Thus, producer DWL should not be included in the optimal liability.

(2) If producer DWL is excluded, total recoverable DWL becomes only consumer DWL, and according to the Lave's calculation, dividing it by umbrella harm results in a constant smaller than 1, which means that umbrella harm is always greater than DWL and may thus lead to systematic overdeterrence.

(3) In Lave's setting, consumer DWL of cartelists' product is calculated directly from the difference in outputs with and without collusion, and umbrella harm includes those suffered by customers substituting from the cartelists. DWL reflects the sales lost due to collusion. Customers lose the difference between their

[88] *Id.*

[89] *See* section 4.2, where I argued that producer DWL is not an externality.

willingness to pay (*i.e.* the demand curve) and the non-collusive price, which would have been earned by customers had the price not risen and output not reduced. Nonetheless, the existence of umbrella harm of substituting customers implies that (at least some of) the cartelists' lost sales have been shifted to the fringe, which wouldn't have occurred if the umbrella price had been strictly above the substituting customers' willingness to pay for the fringe product. Thus, umbrella harm actually implies that some of the DWL has been "brought back to life". By alternatively buying from the fringe, the substituting customers in fact recoup some of their DWL from the cartelists' product, and when they pay the umbrella harm, the fringe receives additional welfare, which could have remained DWL but for the umbrella purchases. Therefore, the welfare gains created by umbrella purchases should be deducted from the DWL, which, in this case, makes DWL even smaller and over-deterrence more serious.

The above analysis shows that even with an overstated consumer DWL, umbrella harm suffered by all fringe customers (*i.e.* original ones and those substituting from the cartelists) can be unambiguously greater and thereby lead to over-deterrence.

5.3 The fallacy of linking umbrella harm to DWL

More generally, one can look into the relation between DWL of the cartelists'

products and the substituting customers' umbrella harm to see the problem with the attempt to establish a link between DWL and umbrella harm. Lave believes that substituting customers' umbrella harm are always less then DWL because: (1) umbrella harm is a part of their payment to the fringe, which could have occurred pre-collusion; (2) however, that did not happen because buying from the cartelists (pre-collusion) gave them more CS.[90] This means that their lost CS must be greater than the umbrella harm.[91] Conceptually, if umbrella harm could be graphically represented as a part of the DWL, then one could say that umbrella harm is always smaller. In **Figure 3** below, I attempt to verify this by plotting the fringe price P^F and demand (willingness to pay) for the fringe product onto the demand and supply graph for the cartelists' product.

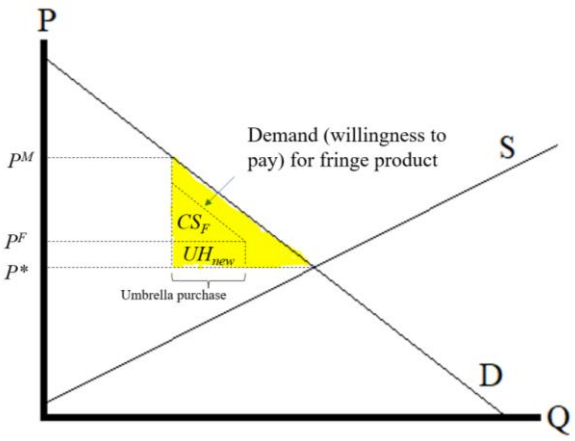

Figure 3. Umbrella harm and DWL

[90] Lave, *supra* note 34, at 245.

[91] *Id*.

The cartelised product's demand D, competitive price P^*, and collusive price P^M together enable one to identify the familiar triangle of consumer DWL (marked in colour above).

To keep the figure simple, I plot only a part of the demand for the fringe product, which falls below the demand for the cartelised product to represent the lower utility derived by the umbrella customers (and thus their lower willingness to pay).[92] The fringe price is between the cartelists' competitive price and collusive price, which indicates that there is some differentiation between the cartelised product and the fringe product. The demand shifted to the fringe, *i.e.* the umbrella purchase, does not fully compensate the cartelists' lost sales, meaning that some sales are "truly" lost due to the income effect. Multiplying the quantity of umbrella purchase by the difference between the fringe price and competitive price yields the quantum of umbrella harm suffered by substituting customers, denoted by rectangle UH_{new}. The difference between the fringe price P^F and demand for the fringe product is the CS earned from umbrella purchases, which I denote by CS_F.

In this illustration, it appears that the umbrella harm is a rectangle that fits into the consumer DWL triangle. Does **Figure 3** thus show that umbrella harm is always smaller

[92] It is reasonable to assume that substituting customers have a lower willingness to pay for the fringe product (otherwise they may have well bought from the fringe before the collusion). Lave, *id*, gives a similar argument.

than consumer DWL? I answer this question in two stages, respectively considering the overcharge paid by (1) all umbrella purchasers, *i.e.* "new" ones that switch to the fringe from the cartelists due to the collusion, and "old" ones, who have already been buying from the fringe before the collusion, and (2) new umbrella purchasers only.

In the "all umbrella purchasers" scenario, the answer is obviously negative, because **Figure 3** does not contain any information concerning the old umbrella purchasers. As observed in section 2.1, the umbrella effect is not constrained by the boundary of the relevant market. Absent a theoretical constraint on the extent and magnitude of the umbrella effect, one cannot say that umbrella harm is always smaller than consumer DWL.

Now, I turn to the new umbrella purchasers.

When demand is shifted to fringe products, one observes, on the one hand, the lost sales in cartelists' product leading to DWL, and on the other, the purchase of the fringe's product generating welfare. A part of the welfare is earned by the substituting customers (the difference between the fringe's price and their willingness to pay for the fringe product), and the other, which encompasses the umbrella harm, is earned by the fringe. Indeed, umbrella purchases can generate lower welfare than when these quantities were purchased from the pre-collusion cartelists, either due to substituting costumers' lower willingness to pay for the fringe product, or the fringe's higher production costs.

Therefore, it is perfectly likely that umbrella purchases do not offset the DWL of the cartelists' product. It is, however, non-negotiable that DWL is unrealised welfare, be the source underproduction or inefficient production,[93] whereas umbrella harm always represents realised welfare. The moment a part of the consumer DWL of cartelists' products is identified as umbrella harm to the fringe, that part is no longer DWL.[94] **Figure 3** is thus misleading. If one is to mark umbrella harm as an area in the consumer DWL triangle of the cartelists' product, the comparison should not be made with the entire pre-umbrella-purchase consumer DWL triangle, as I attempted above, but rather with the remaining consumer DWL (*i.e.* the coloured triangle less UH_{new} and CS_F). Which one is greater depends on the circumstances of the case: *e.g.*, if the income effect prevails, umbrella harm can well be smaller than DWL, in which case umbrella damages can more or less contribute to optimal liability; if substitution effect prevails, umbrella harm can, in contrast, overwhelm DWL, and granting umbrella damages can lead to over-deterrence.

The above said, there can well be specifications of supply and demand that allow mathematical relations to be drawn between DWL and umbrella harm, but it remains

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[93] *See* Ahmet Özçam, *Alternative representation of the deadweight loss triangle in oligopoly: The input/output inefficiency decomposition*, 44(3) JOURNAL OF ECONOMIC STUDIES 330, 341 (2017).

[94] In other words, umbrella sales actually mitigate DWL (compared to the case where there is no fringe for purchasers to switch to). Charles C. Van Cott, *Standing at the Fringe: Antitrust Damages and the Fringe Producer*, 35 STAN. L. REV. 763, 785 (1983).

questionable how general these specifications can be, and it is arbitrary to grant umbrella damages on deterrence grounds without regard to its relation to DWL. In sum, I find that umbrella standing is not justified by the deterrence function.

6 Umbrella standing and compensation

6.1 The L&E of the compensation function

Payment of damages entails a decrease in the tortfeasor's wealth and an increase in the victim's. While conventional externality analysis in L&E has focused on the former,[95] I will show in this section how the latter can also be covered in a fashion that further enriches the literature of private enforcement.

Collusion in the input market distorts competition in the output (downstream) market, in the sense that victims paying inflated input prices face a cost disadvantage, and they lose sales, *i.e.* market shares, when they pass on the overcharge to their customers.[96] Moreover, the ensuing loss in profits can prolong the effect of the collusion, in the form of, *e.g.*, lack of funds for innovation.[97] In contrast, other undertakings, paying uninflated

[95] Russell M. Gold, *Compensation's Role in Deterrence*, 91 NOTRE DAME L. REV. 1997, 2003-07 (2016).

[96] Frank Maier-Rigaud, *Damages Regimes on Both Sides of the Atlantic: An Economic Critique*, 62 ANTITRUST BULL. 334, 340 (2017).

[97] Hung-Lun Su, *Establishing an Effective System of Private Competition Enforcement: Inspirations from Comparative Aspects and Economic Analyses*, Master Thesis, National Chengchi University, p 23 (2018).

or less inflated prices, gain a cost advantage without being more efficient.[98] Such distortion of the competitive process resembles the exclusionary effect of abuses of which a broad category can be summarised by the term "raising rivals' costs".[99] These abuses deter entries, expel competitors, or confine them to a small portion of the market.[100] Even when a competitor survives, its competitiveness under a worsened cost structure (graphically, an upward shifted supply curve) may no longer suffice to maintain the market price at the competitive level.[101] Dynamically, weakened rivalry can reduce the incentive to innovate or to improve efficiency otherwise.[102]

Causing other undertakings' costs to increase, or weakening them generally, is not *per se* anticompetitive since competition on the merits can produce the same result.[103] Therefore, the law of exclusionary abuses assesses the weakening of a competitor in a path-dependent fashion to ensure that the Darwinian process of competition awards the

[98] *Id*.

[99] MOTTA, *supra* note 8, at 490-91.

[100] Steven C. Salop & David T. Scheffman, *Raising Rivals' Costs*, 16 J. REPRINTS ANTITRUST L. & ECON. 421, 425 (1986).

[101] *See* Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209, 243-44 (1986).

[102] MOTTA, *supra* note 8, at 55-64.

[103] *Id.* at 491.

most efficient players.[104] To that end, competition law is tasked with the removal of interference with the proper functioning of that process,[105] which is of interest in the ensuing analysis.

6.2 The L&E implication of umbrella damages' compensation function

If one focuses on the interference with competition on the merits,[106] the effects of exclusionary abuses and umbrella pricing share some characteristics: victimised undertakings face a competitive disadvantage due to a competition law infringement; some other undertakings may prevail in competition despite being less efficient, and may not need to become as efficient as it would have to (but for weakened competition) to prevail in the future. Removing the competition-weakening effect is thus welfare-enhancing.[107] Umbrella damages prevent or alleviate such effect by requiring the

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[104] CHIARA FUMAGALLI, MASSIMO MOTTA & CLAUDIO CALCAGNO, EXCLUSIONARY PRACTICES: THE ECONOMICS OF MONOPOLISATION AND ABUSE OF DOMINANCE 6 (2018).

[105] As AG Kokkot puts it, Articles 101 and 102 TFEU serve "to create and maintain a system of undistorted competition on the European internal market." Opinion of AG Kokott in *Kone*, ECLI:EU:C:2014:45, para. 56.

[106] Indeed, the legal characterisations, such as illegality and intention, of exclusionary abuses and umbrella pricing are distinct. Exclusionary abuses illegally harm the infringer's competitors, whereas umbrella pricing by the fringe, despite harming undertakings in the downstream, is legal. The purpose of the reference here is to highlight the distortion to competition that should be corrected.

[107] Harry S. Gerla, *Restoring Rivalry as a Central Concept in Antitrust Law*, 75 NEB. L. REV. 209, 223-33 (1996).

cartelists to restore the victimised downstream undertakings to the pre-infringement financial condition, thereby enhancing the weakened competition.[108]

In the preceding discussion, I actually identified another externality from collusion, which is a result of weakened downstream competition, and I argued that umbrella standing can address such externality. However, the underlying rationale seems inconsistent with my approach to deterrence in section 5. Here, the externality is the potential welfare loss from weakened competition. The quantum of the potential welfare loss depends on the chain of events following the distortion of competition, and there is no reason why it must equal the umbrella harm. In this case, umbrella standing does not internalise the welfare loss to the cartelists; rather, it actually compels the cartelists to

[108] In *Kone*, AG Kokott is of the view that the compensation function of private enforcement "is to correct the negative consequences resulting from the commission of infringements of the law." Opinion of AG Kokott in *Kone*, ECLI:EU:C:2014:45, para. 71. In addition, the CJEU has read the right to damages for an Article 101 infringement as an "effective protection against the adverse effects". Case C-536/11 Bundeswettbewerbsbehörde v Donau Chemie and Others, ECLI:EU:C:2013:366, para. 24. Although competition law aims at protecting competition, not individual competitors, when the "negative consequences" or the "adverse effects" of an infringement are inflicted upon undertakings that are the source of competition, to the effect that competition is weakened, "protecting competitors" and "protecting competition" can converge. Marshall Steinbaum & Maurice E. Stucke, *The Effective Competition Standard*, 87(2) U. Chi. L. Rev. 595, 604 (2020). The "as efficient competitor" test is arguably an effort to ensure that competitors are not protected inefficiently. *See generally* RENATO NAZZINI, THE FOUNDATIONS OF EUROPEAN UNION COMPETITION LAW: THE OBJECTIVE AND PRINCIPLES OF ARTICLE 102, Ch 7 (2011).

prevent the welfare loss. I explore below whether this approach is justified.

6.3 Prevention *versus* internalisation

A natural question is: why not deny umbrella standing and make the cartelists liable for the inefficiencies that follow weakened competition (which could, *e.g.*, partly be claimed by customers to whom the inefficiencies are passed on in the form of higher price)? Doing so would turn the present issue essentially into the same internalisation problem presented previously, the difference being that now another externality is identified. One may think that the cartelists should not be forced to prevent, but instead be liable for the welfare loss, so their incentives would be aligned with the society's, and the resulting decision would be socially optimal.

Granting umbrella damages effectively enjoins the weakening of competition. Whether cartelists should bear the potential welfare loss or should the welfare loss be prevented by enjoining the weakening of competition, in fact, is a variant of the "liability versus regulation" issue in L&E analysis of the control of potentially dangerous activities, which concerns how externality, *i.e.* the "danger" that these activities may generate, should be addressed.[109] Under the first approach, a liability regime, the actor is free to

[109] Steven Shavell, *Liability for Harm versus Regulation of Safety*, 13 J. LEGAL STUD. 357 (1984). Shavell explains that injunction, is a substitute of regulation, and thus the theoretical determinants of whether regulation or liability is preferrable also apply to the weighing of injunction and liability, after necessary

behave however it wishes to, possibly at a "price" equal to the quantum of the liability, and the society seeks to prevent (inefficient) harm by the deterrence effect of potential liability.[110] The second approach to externalities is regulation, which, coming in the form of *ex ante* commands to act in a particular fashion, modifies behaviours in an immediate way,[111] and the actor hardly has a choice to deviate.

In the umbrella harm scenario, "liability" corresponds to denying umbrella standing and leaving internalisation to actions brought by those suffering the welfare losses, and "regulation" corresponds to granting umbrella standing to enjoin the weakening of competition. Admittedly, the mapping may appear bizarre at first glance because both umbrella claims and action for welfare loss are liability suits in the legal context. Nonetheless, the point of distinguishing liability and regulation here is more about the mode by which behaviours are influenced than about the legal form of the remedies sought, and in any event, comparisons can be made between a court hearing an action for welfare losses and a court hearing an umbrella claim to decide which is likely to perform better, which further mitigates the importance of the differences between the legal forms of remedies.

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modifications (which I will explain *infra*). *Id.* at 373-74.

[110] *See id.* at 357.

[111] *Id.*

6.3.1 The determinants

Shavell proposes four determinants to decide whether liability or regulation is preferred, which are explained below.

(1) *Knowledge*. If private parties have better knowledge about the risks of the activity, then liability is preferred, where *ex ante*, parties' calculation will enable them to take optimal preventive measures under a negligence rule, and *ex post*, the court can rely on the information supplied by the parties to reach its decision of liability.[112] In contrast, if the regulator has better knowledge, then it will be more capable of issuing a correct prohibition/clearance, and regulation will be preferred.[113] Generally, private parties enjoy an advantage in knowledge because they are the ones involved in the activity.[114] Private parties' informational advantage is, however, not absolute. A regulator's knowledge can be superior when knowledge about the externality does not necessarily come with engaging in the activity.[115]

(2) *Insolvency*. Liability ceases to internalise harm once it exceeds the actor's

[112] *Id.* at 359.

[113] *Id.*

[114] *Id.* at 360.

[115] *Id.*

capacity to pay, as is the case with activities that can potentially generate massive externalities, *e.g.* operation of nuclear power plants.[116] If an actor easily becomes insolvent in face of liability, regulation is advisable because un-internalised harm (harm exceeding the actor's asset) causes liability to under-deter.[117]

(3) *Threat of suit*. The liability regime effectively fails if actors will not be sued.[118] Small and dispersed harm, evidentiary obstacles and difficulty in attribution of harm can all undermine the threat of suit.[119] Under such circumstances, regulation is likely to work better.

(4) *Administrative costs*. The society incurs different costs from enforcement procedures of liability and regulation.[120] Shavell observes a likely advantage of the liability regime in that most of its costs realise only when there is actual harm, whereas regulation is constantly in operation and society continues to incur costs.[121] Furthermore, the *ad hoc* nature of the liability regime enables resources

[116] *Id.* at 360-61.

[117] *Id.*

[118] *Id.* at 363.

[119] *Id.*

[120] *Id.*

[121] *Id.* at 364.

to be more focused on controlling the actors most likely to cause harm.[122]

Now, I will apply these four determinants, with necessary adjustments (*e.g.* Shavell's "court" corresponding to the court hearing actions for welfare losses, and "regulator" to courts hearing umbrella claims), to decide whether umbrella standing should be granted. If the assessment favours "regulation", umbrella standing should be granted to prevent welfare losses; if the assessment favours "liability", umbrella standing should be denied, and society should count on actions for welfare losses to deter infringements.

6.3.1.1 Knowledge

Quantifying the external costs of weakened competition is an extremely challenging exercise, [123] which is arguably more complex and speculative than estimating overcharges. It is doubtful whether cartelists and victims will be more capable of computing them just because they are closer to the infringement. Furthermore, the consequence of wrongly tasking the control of externalities with a regulator with inferior knowledge, according to Shavell, is that regulation will be too stringent if the regulator overestimates the harm or underestimates the accompanying benefits, and too lenient if it

[122] *Id.*

[123] *See* PETER DAVIS & ELIANA GARCÉS, QUANTITATIVE TECHNIQUES FOR COMPETITION AND ANTITRUST ANALYSIS 378 (2010).

makes the reverse mistake.[124] Nonetheless, that is less of a concern here, because the harm to be controlled here results from the distortion of competition, which is hardly accompanied by any benefit.

Before proceeding, I would like to note a fundamental difference between Shavell's scenario and the scenario of umbrella standing:

(1) *Shavell's scenario*. The knowledge at issue is of the same content for private parties and the regulator: a private party, knowing that it will be liable for any harm that realises, needs to predict the magnitude of the potential harm to assess whether performing the action is profitable, and a court uses the same information in case the harm realises; a regulator needs the same predictive information to decide whether to prohibit an action.[125]

(2) *The umbrella standing scenario*. An undertaking deciding whether to collude needs to predict the magnitude of the welfare loss from weakened competition to internalise that cost *ex ante*; and *ex-post*, the court hearing action for welfare loss, though not having to predict a market outcome, will still have to estimate the hardly quantifiable welfare loss that realised, which is similar to Shavell's

[124] Shavell, *supra* note 109, at 359.

[125] *See id*. at 359-60.

scenario. However, with respect to the "regulation" counterpart, a court hearing an umbrella claim does not need to attempt the same quantification; as long as umbrella harm is established, the court can award the damages to enjoin the weakening of competition.

Therefore, in the present case, having better knowledge does not mean being more capable of addressing the same knowledge requirement. Unlike Shavell's scenario, the "liability" and the "regulation" regimes in our case require different knowledge because intervention happens at different stages.[126] The liability regime requires knowledge on welfare losses from weakened competition. Estimating such losses *ex post* is already nearly impossible, let alone predicting its magnitude *ex ante*, which the liability regime expects actors to do.[127] In contrast, the regulation regime only requires estimation of umbrella harm, which merely involves the exercise of establishing the but-for (fringe)

[126] Legal intervention can happen (1) "before an act is committed", (2) "after an act has been committed but before harm results", or (3) "after harm has occurred". Steven Shavell, *The Optimal Structure of Law Enforcement*, 36 J.L. & ECON. 255, 257-58 (1993). One can roughly say that the regulator in Shavell, *supra* note 109, intervenes "before an act is committed"; a court hearing umbrella claims in our case intervenes "after an act has been committed but before harm results"; and a court hearing actions for welfare losses intervenes "after harm has occurred".

[127] This reflects the economic function of the foreseeability requirement in tort law reviewed in section 3.1. Making an undertaking liable for an unforeseeable harm does not increase its incentive to refrain from (or prevent) infringement. Steven Shavell, *An Analysis of Causation and the Scope of Liability in the Law of Torts*, 9 J. LEGAL STUD. 463, 500 (1980).

price familiar in cartel overcharge cases. In other words, the "regulator" in our case answers a much easier question. The "knowledge" determinant is thus overwhelmingly in favour of regulation.

6.3.1.2 Insolvency

As stated above, it is difficult to identify the quantum of the welfare losses from weakened competition, but that does not imply that the harm is so large that cartelists easily become insolvent in face of actions for welfare losses. Whether insolvency is likely is case-specific, meaning that this determinant is not strictly in favour of regulation.

6.3.1.3 Threat of suit

As a consequence of weakened competition, welfare loss is potentially widespread, and the victims suffering welfare losses from weakened competition are likely to be dispersed. Although the difficulty in measuring the welfare loss bars the conclusion that the harm is small, it also implies evidentiary obstacles. Relatedly, while attribution to a particular cartelist might not be necessary because cartelists are in principle jointly and severally liable,[128] the multitude of factors and non-infringing market players that can

[128] Article 11(1), Directive 2014/104/EU of the European Parliament and of the Council of 26 November 2014 on certain rules governing actions for damages under national law for infringements of the competition law provisions of the Member States and of the European Union, OJ L 349, 5.12.2014, pp 1-19.

contribute to a particular outcome poses serious challenges in attribution. Accordingly, it can be expected that cartelists would not face a meaningful threat of suit, and welfare losses will be better addressed by regulation through umbrella standing.

6.3.1.4 Administrative costs

Shavell observes a likely advantage of the liability system because its costs are only incurred when there is harm, and thereby avoids expending resources controlling actors that are unlikely to cause harm.[129] That observation would hold if courts were to constantly monitor every market, and to interfere when they believe that competition is distorted. Obviously, that is not the case because umbrella claims are privately initiated, which is a key difference between injunction and regulation, as Shavell observes.[130] It is true that not all upstream collusions distort downstream competition warranting restoration to the same extent. Courts adjudicating umbrella claims still have to review the evidence presented to them, but compared to regulation, enforcement of umbrella claims is already focused on infringing undertakings, and the submission of an umbrella claim more or less implies that the harm is not trivial. Lastly, in light of the evidentiary issues with proving welfare losses, as discussed above, the legal expenses of trying an umbrella claim are arguably smaller than that of trying an action for welfare losses. The

[129] Shavell, *supra* note 109, at 364.

[130] *Id*. at 373.

"administrative costs" determinant, therefore, supports umbrella standing.

6.3.2 Possible objection

A possible objection to the analysis above is that the action for welfare loss can be replaced by public enforcement imposing fines to internalise the welfare loss, in that fines internalise harm as liability does, and in addition to that, overcomes the "threat of suit" disadvantage of liability.[131] Nevertheless, this argument does not address liability's compelling drawback in knowledge. To impose an optimal fine as liability to internalise the harm, a public authority will still face the almost impossible task of quantifying welfare loss. From the above assessment, there seems to be no reason to deny umbrella standing and rely on liability suits brought by victims suffering the welfare loss, or on fines representing such loss. Hence, umbrella standing appears justifiable under the compensation function.

6.4 Limitations of the L&E analysis of the compensation function

One limitation of the above L&E analysis of the compensation function is obvious: the benefit of restoring downstream competition does not apply when end consumers are the "downstream". If no benefit is derived from compensating end consumers *per se*, granting umbrella standing to end consumers can result in over-deterrence, or at least has

[131] *Id.*

to be justified otherwise. From an economic perspective, a policy recommendation may be to reject an umbrella claim if the victim is an end consumer, but it is questionable whether the legal community will accept this discriminatory approach.

A practical position is to note that the actual extent of over-deterrence will also depend on actual enforcement activities. If end consumers don't enforce their rights, then the concern of over-deterrence associated with also granting umbrella standing to them will be limited, or even moot. It is acknowledged that consumer actions in the EU are difficult.[132] The obstacles to consumer actions create a *de facto* bar that selects umbrella harms to be brought to court, especially considering, in addition, the possible evidentiary challenge uniquely related to umbrella claims.[133] In light of these realities, it is perhaps arguable that granting umbrella standing in the EU does not create serious over-deterrence. To the contrary, in jurisdictions where consumer redress is more available, *e.g.* in the US, with the help of opt-out class actions, end consumers' umbrella standing can pose an issue of over-deterrence worth a more profound consideration.

Another limitation is that my foregoing analyses, whether based on deterrence or

[132] Roger van den Bergh, *Private Enforcement of European Competition Law and the Persisting Collective Action Problem*, 20 MJ 1, 33-34 (2013).

[133] Niamh Dunne, *Umbrella Effects and Private Antitrust Enforcement*, 73 CAMBRIDGE L.J. 510, 512 (2014).

compensation, holds a neutral view on the static distribution of wealth: EUR 1 is worth the same regardless of its owner. While such treatment is common in the welfare analysis of L&E,[134] it is important to remember that this treatment is just an assumption of preference. Aggregate wealth is not what L&E by nature requires to be maximised, but rather a proxy for utility, which probably most commentators can agree on maximising, but can hardly be quantified.[135] Rather, the maximisation of utility and that economic analysis need not reject values other than the conventional economic efficiency.[136] If the abovementioned indifference in distribution is relaxed, then umbrella overcharge *per se* can cause a net harm constituting external cost. Specifically, under the consumer welfare standard, it is possible to argue that a transfer of wealth from end consumers to the fringe harms welfare if one assumes that the society attaches more value (utility) to the same wealth owned by an end consumer than by an undertaking, and requiring an infringing undertaking to compensate end consumers *per se* can thus be welfare improving.[137]

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[134] Matthew Dimick, *The Law and Economics of Redistribution*, 15 ANNU. REV. LAW SOC. SCI. 559, 562 (2019).

[135] Francesco Parisi, *Positive, Normative and Functional Schools in Law and Economics*, 18 EUR. J. LAW ECON. 259, 269 (2004).

[136] Martha T. McCluskey, Frank Pasquale & Jennifer Taub, *Law and Economics: Contemporary Approaches*, 35 YALE L. & POL'Y REV. 297, 301 (2016).

[137] *See* Roger van den Bergh, COMPARATIVE COMPETITION LAW AND ECONOMICS 91-100 (2017).

7 Conclusion

In this thesis, I develop an externality framework, and apply it to discuss the justifiability of umbrella standing based on both the deterrence and compensation functions of competition law. I find that deterrence does not justify umbrella standing because umbrella harm is neither externality nor a reasonable proxy thereof. The compensation function supports umbrella standing for undertakings in the supply chain, but not end consumers. To justify end consumers' umbrella standing, indifference of wealth distribution may have to be relaxed. If society attaches more value to the same wealth when an end consumer, instead of an undertaking, owns it, compensating end consumers *per se* can be welfare enhancing, which is worthy of consideration in justifying end consumers' umbrella standing.

The internalisation of harm is a straightforward extension of economics into law[138] that has been tested in various subfields of L&E. Addressing umbrella standing with an externality framework, this thesis obtains fruitful results with the help of the rich literature already available in the L&E toolkit and the widespread application of externality theories in other subfields of L&E. Within the externality framework, future researchers can, with appropriate assumptions, readily extend the analysis to encompass other consequences of

[138] Thomas J. Miceli, *Economic Models of Law*, *in* THE OXFORD HANDBOOK OF LAW AND ECONOMICS: VOLUME 1: METHODOLOGY AND CONCEPTS 9, 13 (Francesco Parisi ed., 2017).

collusion that may be of interest, further enriching the discussion of umbrella standing.[139]

[139] For instance, the effect of umbrella standing on cartel size can also be analysed under the externality framework, with the incentive to form larger cartels being a source of another externality. For a discussion of such effect, *see* Stefan Napel & Dominik Welter, *Umbrella Pricing and Cartel Size (version: 23 February 2022)*, *available at* https://www.vwl4.uni-bayreuth.de/pool/Publikationen_Napel/2021_Umbrella-Pricing-and-Cartel-Size.pdf (last visited 8 August 2022).

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