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Insurance Law and Economics: an empirical perspective.[1]

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Abstract
The theory of insurance law and economics holds that the insured will display less care as a consequence of the insurance coverage. It also holds that bad risks are more likely than good risks to display demand for coverage. These behavioural predictions, which are associated with moral hazard and adverse selection respectively, are firmly embedded in rational choice theory. This paper reviews empirical findings and addresses the question how close insurance law and economics theory is to insurance reality. Indeed, it seems that insurance law and economics theory can be enriched by empiricism. Review of empirical evidence nuances some of the theoretical predictions and offers a proper occasion for investigating the policy implications. Both strands are explored.

Keywords
Insurance law; insurance economics; adverse selection, moral hazard; propitious selection

JEL Classifications: G22, K12, K19

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Contents

1. Introduction

[253] Any study book on insurance will teach that insurance contracts typically influence behaviour of the parties involved, both prior to and after conclusion of the contract. When an insured holidaymaker no longer faces the financial consequences of losing his camera, he is bound to display less care and may thus in fact loose his camera sooner than he would without insurance. Likewise, if consulting a GP is covered by health insurance, irrespective of the number of calls, overconsumption has to be feared.
Moreover, insurance theory not merely predicts that concluded insurance contracts influence the insured's behaviour but it also assumes that the decision to insure is invariably consistent and commensurate with the insured's risk aversion. Within this rational choice framework, people are assumed to choose insurance to avert the threat of financial losses which they prefer not to bear themselves. Therefore, the insured will choose the optimal contract assuming that he has optimal information on both the extent of the risk and the content of the policy, and he operates on an efficient insurance market.
Rational choice also implies that insurance companies must heed adverse selection. The insurer has inferior information on the magnitude of the risk to which the insured is personally exposed. Assuming that those running the bigger risk will have a proportionate demand for insurance, insurers will experience an ever increasing claims rate. Insurers will typically want to inform themselves of the risk attributes of the insured and adjust premium accordingly in order to avoid adverse selection.
[254] Admittedly, the previous is merely a set of theoretical assumptions on both the insured's and the insurer's thinking and deciding. In this paper, I would like to review the evidence: how rational is the demand for insurance, how truthful is the threatening picture of moral hazard and how lifelike is the adverse selection theorem? The approach taken is rather straightforward: first, I will review the empirical evidence against the background of insurance theory (§ 2) and then I will elaborate on the policy implications of the findings (§ 3). Note that the following focuses on individuals rather than enterprises as consumers of insurance products. The analysis is, however, not restricted to this type of the insured.

2. Is theory reflected in practice?

2.1 Demand for insurance in an empirical perspective

Rational choice assumes that risk-averse individuals will have a demand for insurance products that increase their expected utility.[2] A crucial element in this assumption is that individuals are capable of a realistic risk assessment. Psychological research into – inter alia – decision making under uncertainty has cast some doubt on man's cognitive abilities needed for this assessment task. Moreover, although full information disclosure may reduce asymmetries and thus increase the quality of the decision-making process,[3] it may not necessarily lead to optimal utility increasing de-

[2] Seminal Pratt 1964, p. 122 *et seq.* and Arrow 1965, p. 1 *et seq.*
[3] On information regulation and its limitations, Ogus 1994, p. 121 *et seq.*

cisions. For instance, the decision-making process of the insured may be thwarted by the influence of cognitive heuristics and biases. For instance, demand for flood insurance may soar in an area recently struck by terrestrial floods as a result of a temporary overestimation of the flooding risk (sc. availability bias) and a preference for an excess (deductible) may be influenced by the insurers advertising framing the excess as a rebate. Such influences may indeed amount to inefficiency.[4]

Add-on insurance policies may be prototypical of the issue at hand. These policies are offered as a secondary product with a primary product such as credit card loans and consumer electronics and cell phones. The marketing technique employed to sell add-on insurance in consumer electronics for instance is rather sophisticated: as soon as the consumer has decided to buy the product, he is offered the opportunity to buy additional insurance to protect his newly acquired property.[5] Given that he has just been endowed with property, he may then not be able to objectively weigh the premium cost against the probability of loss. This may in fact influence his willingness to avoid the loss and it may even influence the insured's willingness to obtain additional information on the terms of the contract (either at the counter or afterwards if a **[255]** termination clause or cooling-off period applies). Admittedly, the proposition of these causative mechanisms is speculation on my part but research does show that the claims/premium ratio in some of these add-on insurance policies is hugely disadvantageous for consumers. This implies that there is a structural market failure in operation in these particular markets.[6] Possibly, one of the causes for this unbalance is a combination of information asymmetry on the actual need for such insurance and the 'endowment effect' on the side of the insured.[7]

Actual demand for disaster coverage also shows puzzling aberrations from theoretical prediction. In countries where voluntary flood insurance is available, it is not always taken out by those who most need it.[8] Similar under-insurance is reported concerning earthquake risks.[9] In fact, 'salience bias' may influence demand in the sense that following an earthquake demand for home-owners earthquake insurance increases sharply only to drop within months later. Indeed, research has found flood and earthquake insurance purchases to be correlated with the level of disaster losses in the preceding year.[10] At first blush this all seems at odds with the expected utility hypothesis, or do civilians living in areas prone to flooding or quake disaster have an extraordinary appetite for risk? Admittedly, such behaviour can plausibly be explained by the lack of accurate information on the magnitude of the risk and potential benefits of insurance. Government policy could counter such informational deficiencies by informing the public most at risk of the 'pros and cons' of disaster insurance.[11] Nonetheless, perfect information processing is unattainable as a result of bounded rationality and so-called biases in individuals' risk assessment.[12]

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[4] See the overview presented by Johnson et al. 1993, p. 35-51.
[5] Similar techniques are applied in the sale of extended warranties in consumer products.
[6] Office of Fair Trading (OFT) 1997, p. 1 *et seq.*
[7] Note that the endowment effect and its extent are debated. See, e.g., Zeiler and Plott 2005, p. 530 *et seq.*
[8] See, e.g., Zeckhauser 1996, p. 113 *et seq.*; Kunreuther 1996, p. 171 *et seq.*; Endres et al. 2003, p. 284 *et seq.*; Kunreuther and Pauly 2004, p. 5 *et seq.* Cf. Kunreuther 2006, p. 175 *et seq.*
[9] Kunreuther et al. 1992, p. 60-68. Cf. Faure and Hartlief 2006a, p. 439 f.
[10] See, e.g., Browne and Hoyt 2000 p. 291 *et seq.*
[11] Generally on information policies Schwartz and Wilde 1979, p. 630-682; Ogus 1994, p. 121 *et seq.*
[12] Cf. Thomas 2007, p. 117 *et seq.* Generally on bounded abilities Slovic 2000, p. 1*et seq.*; Korobkin and Ulen 2000, p. 1069 *et seq.*

Moreover, there is some indication of a lack of willingness to insure against catastrophic damage. Decisions to insure against loss is said to be considered an investment decision: by investing a fixed premium one hopes to 'gain' by profiting from the coverage in case of disaster. Insuring against a low probability high damage event may thus be thought to be a less wise investment than insuring against more frequently occurring events.[13] If we combine these findings with the influence of 'salience bias', we can conclude that demand for disaster insurance is potentially in danger of being wrenched. Unfortunately, the **[256]** ex post stance of politicians is also unhelpful in this respect. Whenever a great number of citizens are left uncompensated from large scale disasters, electoral interests may press politicians to express solidarity and generosity by compensating perfectly insurable interests anyway by courtesy of the taxpayer. Why develop a demand for voluntary insurance coverage if the state comes to the rescue anyway?[14] There is, however, no strong empirical evidence for such calculating behaviour in citizens.[15]
There is another issue concerning insurance demand potentially inconsistent with the expected utility hypothesis. In the 19th century, in some countries child life insurance emerged as a means of financial protection of parents against loss of income and burial costs in the unhappy but all too common event of their child's death. Later, when financial loss was no longer to be expected from a child's death, the policy remained popular.[16] Possibly, emotionally valued relationships are thus substituted by insurance compensation 'as a token of consolation'.[17] A similar willingness to insure against non-pecuniary loss (loss of amenities, enjoyment of life, etcetera) is confirmed by experimental research.[18]
In conclusion, the previous somewhat smoothes the rough edges of the rationality assumption in insurance demand. Insurance decisions do not seem to be fully subject to expected utility in economic terms: disaster insurance is not always purchased where purchase would converge with utility, whereas child life insurance is purchased where purchase does actually not converge with utility. This may indeed give further credence to the strand in literature holding that individuals pursue happiness rather than maximal economic welfare.[19]

2.2 Adverse or propitious selection?

Theory holds that adverse selection is always lurking to cause a downward spiral towards uninsurability if it is not remedied by incentives for the insured to reduce risk (e.g., risk and premium differentiation, excess/deductibles, policy limits).[20] Is there

[13] Schoemaker and Kunreuther 1979, p. 603-618; Slovic 2000, p. 62 *et seq.* Cf. the experiment by McClelland et al. 1993, p. 95 *et seq.*
[14] Epstein 1996, p. 287 *et seq.*; Harrington 2000, p. 40 *et seq.*
[15] Kunreuther et al. 1978, p. 1 *et seq.*; Kunreuther 2006a, p. 208 *et seq.*
[16] Zelizer 1981, p. 1036-1056.
[17] See the analysis by Hsee and Kunreuther 2000, p. 141 *et seq.* Concerning child life insurance, one can also speculate on status quo bias as a cause of continued demand for this (in pecuniary terms: superfluous) insurance.
[18] Avraham 2005, p. 941 *et seq.*
[19] See, e.g., Frey and Stutzer 2002, p. 1 *et seq.*; Frey and Stutzer 2005, p. 207 *et seq.*; Adler and Posner 2007, p. 1 *et seq.*
[20] See the theory as presented by, e.g., Harrington and Niehaus 2004, p. 186 *et seq.*; Rejda 2003, p. 23; Schulenburg 2005, p. 297 *et seq.* Cf. Eisenhauer 2004, p. 165. Cf. Priest 1987, p. 1521 *et seq.* On the underlying problem of information asymmetry, see, e.g., Rothschild and Stiglitz 1976, p. 629-649.

any empirical evidence of adverse selection? Well, yes and no. **[257]** Sometimes, the evidence of adverse selection is rather convincing.[21] But generally speaking, there is the methodological problem of measurement. It is rather difficult to take an action picture of adverse selection. In this respect it somewhat resembles the Abominable Snowman: testimonies abound but tangible or visible evidence is less readily available. In some studies positive correlation of risk levels and insurance demand is used as a proxy for (the risk of) adverse selection.[22] With such proxies, the following outcomes were generated:

No evidence of adverse selection:	Evidence of adverse selection:
• **Life insurance in the USA**[23]	• **Annuities in the UK**[24]
• **Motor vehicle insurance in France**[25]	• **Crop insurance in the USA**[26]
• **Health Insurance in the USA**[27]	• **Health Insurance in the USA**[28]

Unsurprisingly, the evidence is not pointing in one single direction.[29] This does not tell us much. Generally speaking, research seems to indicate that the extent of adverse selection depends on the insurance market at hand. Adverse selection is not an isolated phenomenon but instead very much dependent on specific market circumstances. If the insurance market does not make an effort of premium differentiation and both bad and good risks are unaware of their status, movement of clientele is unlikely to occur. Furthermore, the insured may have superior information but nevertheless refrain from using it, for example because the transaction cost of switching from one insurer to another are too high.[30]

Looking at adverse selection from another point of view, it seems advisable not to jump to conclusions too soon. If adverse selection is hard to prove, we should equally heed jumping to conclusions on causes of soaring premiums, increasing number of policy exclusions and full withdrawal from specific markets. Obviously, these phenomena are well known in some areas of insurance, but one should not readily assume that these phenomena are in any way connected to (combating) adverse selection. The causal connection is plausible but difficult to substantiate empirically.[31]

[258] Some have even cast doubts on the soundness of the theory of adverse selection by arguing that in fact the opposite phenomenon can be witnessed: those that have the least need for insurance are most likely to buy it. In essence, this strand in insurance economics holds that there is a positive correlation between loss aversion

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[21] Thomas 2007, p. 105 *et seq.* See the excellent overview of empirical studies by Siegelman 2004, p. 1223 *et seq.*
[22] Note that economists are still in the process of developing methodology in this respect; see, e.g., Huang et al. 2006, p. 1 *et seq.*
[23] Cawley and Philipson 1999, p. 827 *et seq.*
[24] Finkelstein and Poterba 2004, p. 183 *et seq.*; Finkelstein and Poterba 2006, p. 1 *et seq.*
[25] Chiappori and Salanie 2000, p. 56 *et seq.*
[26] Makki and Somwaru 2001, p. 685 *et seq.*
[27] Cardon and Hendel 2001, p. 408 *et seq.*
[28] Cutler and Zeckhauser 1997, p. 1 *et seq.*
[29] Eisenhauer 2004, p. 166.
[30] On the influence of such factors, see, e.g. Thomas 2007, p. 117 *et seq.*
[31] Thomas 2007, p. 115.

and carefulness in day-to-day life.[32] From an insurer's point of view, this 'propitious selection' or 'advantageous selection' hypothesis is good news. To whom would you most like to sell motor insurance: a member of the local Hells Angels branch or the local vicar? Moreover, if the vicar turns out to be most likely to buy your insurance and least likely to claim under the policy, surely this is beneficial to the insurance company's claims/premium ratio. All the more reason for empiricists to look into the evidence: is there any truth to the 'propitious selection' hypothesis? To a certain extent, there is indeed evidence of propitious selection. In legal systems where motor liability insurance is not compulsory, it has been found that those who do not take out insurance are more accident-prone than others. On this basis it has been argued that those who do take out insurance have less use of it. Other research indicates a positive correlation between purchasing health insurance (in countries where this is a voluntary insurance) and buckling up when driving, as well as a negative correlation between health insurance purchase and drunk driving. Moreover, there is also evidence – in some countries at least – that persons buying life insurance have a longer life expectancy than those not buying it (controlled for income differences).[33]

Propitious selection reveals personality traits in the insured and his preference for insurance.[34] Note that, as always, evidence of correlation seems easier to obtain than evidence of the causative mechanism. Assuming then that the propitious selection proposition is correct in the sense that the stronger the risk aversion in individuals, the more likely these individuals are to take out insurance *and* display carefulness in avoiding the insured event, then obviously the insurance industry is most interested in identifying these individuals: they have a stronger appetite for insurance than others and meanwhile they will **[259]** claim less than others.[35] Moreover, this appetite may be amplified by the fact that risk aversion is also said to be correlated with overestimation of risk.[36]

To conclude, there is little evidence as to whether propitious selection is a weaker or stronger driver in insurance market failure than adverse selection. It seems likely that this depends on the specific insurance product at hand. From a practical point of view, if the claims/premium ratio of a certain insurance product is extremely favourable to the insurance industry, this may be an indication of propitious selection.[37] Fur-

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[32] Seminal Hemenway 1990, p. 1063 *et seq.*; Chiappori and Salanie 2000, p. 56 *et seq.*; cf. Eisenhauer 2004, p. 167 *et seq.* Note that there is disagreement on the exact extent of this phenomenon; cf. De Donder and Hindriks 2006, p. 1 *et seq.*

[33] Cf. Cawley and Philipson 1999, p. 827 *et seq.*; Mahdavi s.d., p. 3. Contrast Li et al. 2007, p. 441 *et seq.*, who demonstrate a correlation between insured's choice for a higher deductible and careful driving behaviour.

[34] A first indication of propitious selection is also to be seen in the Dutch health insurance market, which is a mixed system of a compulsory insurance contract consisting of a basic coverage and a voluntary additional coverage for specific health care expenses. Research shows a positive correlation between the choice for a relatively low deductible in the compulsory insurance contract and opting-in for the additional coverage. Smit and Mokveld 2006, p. 14. As such, this merely expresses risk aversion. It does not demonstrate that those with a preference for insurance consume less than others.

[35] Using propitious selection as a marketing tool for insurance seems even more promising if it is possible to find other personality traits that correlate with increased willingness to buy insurance. To some extent, this seems possible. A study into bad hospital debts (Clyde et al. 1996, p. 100 *et seq.*) showed a positive correlation between not using safety belts, not having a health insurance and defaulting on hospital debts, which may be relevant for hospital debtor risk containment strategies.

[36] That is at least a conclusion that can be inferred from Andersson and Lundborg 2007, p. 67 *et seq.* Note also that risk aversion and income are (moderately) positively correlated. See Cohen and Einav 2007, p. 745 *et seq.*

[37] See Office of Fair Trading (OFT) 1997, p. 1 *et seq.*

ther research is needed to establish the cause – perhaps (other) information asymmetries or aggressive marketing strategies are involved.

2.3 Empirical evidence of moral hazard?

In this section I look into the so-called 'ex ante moral hazard'.[38] This phenomenon is theoretically grounded on the prediction in (insurance) economic theory that individuals shielded from financial loss by insurance coverage will demonstrate adapted behaviour and will thus actually increase the risk of the insured loss.[39] The moral hazard hypothesis has a long history of influencing both scholarly and practical debates on insurance. Interestingly, in 19th century England child life insurance was heavily debated from a moral hazard point of view: some argued that parents would be enticed to neglect or even murder their offspring in order to collect on the insurance. Others argued – very much in line with the propitious selection argument – that this type of insurance was mostly obtained by the thrifty and respectable who had little reason for infanticide.[40]
In contrast to this type of 'moralizing' rhetoric, less attention has been paid to the empirical comprehensiveness of moral hazard. Again, empirical evidence seems difficult to obtain since human behaviour is hardly ever exclusively driven by one determinant. Influences countering moral hazard dispositions range from internalized ethical considerations to external drivers such as criminal prosecution for negligence.
[260] The evidence seems to suggest that moral hazard is more likely to occur in some insurance markets than others.[41] Research has found evidence of both ex ante and ex post moral hazard in workers' compensation. A positive correlation has also been demonstrated between increase of statutory sick pay levels and the recovery period of employees suffering from difficult to diagnose diseases (such as lower back pain).[42] Other research shows a positive correlation between increase of the coverage – both in time and level of compensation – and the number of both accidents and sick leave.[43] American research has furthermore shown that moral hazard in workers' compensation not merely shifts costs from one party to another but can also frustrate productivity.[44]
Less emphatic is research that was able to demonstrate moral hazard in consumption of general practitioners' visits but unable regarding hospital admission. We can assume that the threshold for increasing consumption of the latter is much higher. This would indicate that moral hazard is a bigger problem in insurance products that

[38] Intentional fraud in the sense of fabrication of an accident or simulation of damage is not dealt with here. On this 'ex post moral hazard' see, e.g., Cummins and Tennyson 1996, p. 29 *et seq.*; Bolduc et al. 2002, p. 623 *et seq.*
[39] See Dionne 1981, p. 422-423; Dionne 2000, p. 153; Parsons 2003, p. 448 *et seq.*; Shavell 2005, p. 63 *et seq.*; Shavell 1986, p. 43-58; Schulenburg 2005, p. 282 *et seq.*; Baker 1996, p. 267 *et seq.*; Adams 1985, p. 1 *et seq.*, Finsinger 1983, p. 1 *et seq.* and Finsinger 1988, p. 1 *et seq.*
[40] Strange 2005, p. 231 *et seq.*; Wohl 1983, p. 34 *et seq.*; Zelizer 1985/1994, p. 73 *et seq.*
[41] Chiappori 2000a, p. 371.
[42] Dionne and St-Michel 1991, p. 236. Cf. Cummins and Tennyson 1996, p. 29 *et seq.*; Bolduc et al. 2002, p. 623 *et seq.*; Butler and Worrall 1991, p. 191 *et seq.* Contra Baril and Lanoie 1996, p. 1 *et seq.*
[43] Overview at Fortin and Lanoie 2000, p. 421 *et seq.* Cf. Johansson and Palme 2005, p. 1879 *et seq.*
[44] Butler et al. 1998, p. 671 *et seq.*

have a lower level of cost of behavioural change. [45] Relevant is also American research which showed that the introduction of compulsory auto insurance in fact increased accident rates.[46]
In conclusion it can be said that, yes, there is the problem of moral hazard, but no, it is impossible to generalize the results of the empirical studies available. Possibly, moral hazard is more of a problem regarding two types of insurance benefits. Firstly, moral hazard may be a more serious issue if the benefit is acquired by changing behaviour at relatively low costs (relative elasticity of demand of general practitioners' services versus relative inelasticity of hospital admission; moreover, in order to be submitted to a hospital one generally needs to have more severe health complaints and pass a gatekeeper of some sort). Secondly, insurance products where the insured stands to gain considerably from the insurance rather than merely be indemnified by it may be more problematic. Admittedly, those cases would sooner amount to fraud rather than inadvertent negligence.

2.4 How does the insurance industry actually respond?

Theory has it that insurers fight moral hazard and adverse selection by asking risk assessment questions at the conclusion stage of the insurance contract, by **[261]** risk and premium differentiation and by providing incentives in the policy such as introducing limits, deductibles/excess clauses, warranties, and disclosure duties, et cetera.[47]
Indeed, insurers will emphasize that they "have found ways of dealing with the problem of moral hazards by implementing mechanisms that protect the insurance scheme from undue exploitation and bad risks." [48]
One of these ways is the well-known deductible (excess); there is ample empirical evidence of the efficacy of deductibles in health insurance. It seems that the deductible has to be set at an effective level: applying a deductible for every doctor's visit is more effective in reducing health care consumption than a singular annual deduction irrespective of the number of visits.[49] Moreover, the actual form of the deductible can be of influence as well, or so it seems. In financial terms, an annual deductible of € 150 is fairly equal to a proportionate no-claim return of € 150 at the end of each year. The insured, however, may react differently. In The Netherlands, for instance, the 2007 statute introducing a health insurance scheme started out with a no-claim return, but as of 2008 this has been changed into a deductible. It turned out that the no-claim regime was not effective in reducing health care demand.[50] The government argued that this was caused by the psychological deficit of a return: the financial consequences of health care consumption are not felt immediately and this causes con-

[45] Sapelli and Vial 2003, p. 459 *et seq.* Cf. Vera-Hernández 2003, p. 670 *et seq.* Note that Dave and Kaestner 2006, p. 1 *et seq.* indicate that moral hazard in the sense of increased consumption of general practitioner aid under senior citizens under the USA Medicaid regime has other positive health effects.
[46] Cohen and Dehejia 2004, p. 2004, p. 357 *et seq.*
[47] See, e.g., Harrington and Niehaus 2004, p. 179 *et seq.*; Faure and Bergh 1989, p. 114-122; Faure and Hartlief 1998, p. 697 *et seq.* ; Katzenmeier 2002, p. 1455 f.
[48] Liedtke 2007, p. 217.
[49] Agurzky et al. 2006, p. 1 *et seq.*
[50] In 2004, a Dutch Government Agency theorized that no-claim return would suppress increasing health care consumption (CPB Notitie "De invoering van een no-claimteruggaveregeling in de ZFW" d.d. 31 maart 2004). Ex post research showed that the no-claim return had no such downward effect of any significance (Goudriaan et al. 2007, p. 1 *et seq.*).

sumers to attach different value to postponed financial benefits and immediate financial detriment. [51] Note that the time value of money may be have to discounted as well here when framing the financial incentive; Thaler and Sunstein would probably consider this to be an issue of 'nudging'.[52]
Another experiment with alternatives for deductibles is the so-called Medical Savings Account, where the insured witnessed that part of his monthly premium was credited onto a blocked bank account with which he could pay for health care services during the running period of the insurance policy. This setup made the insured pay not only a risk premium but also a savings premium, which made him co-owner of the insured risk. The behavioural effects of the Medical Savings Account seem promising.[53] Perhaps the psychology of saving works better than the psychology used in deductibles and no-claim returns. **[262]** What one saves is already considered to be part of one's patrimony and the willingness to part with one's property is thought to be less than the willingness to acquire it.[54] This discrepancy may be relevant for insurers and legislators when deciding on what form to frame in the deductibles.
Unsurprisingly, the majority of the examples given here relate to health insurance. In most Western countries this insurance market is troubled in many respects and it is hardly astonishing that both insurers and legislators are looking at various methods of curbing demand for health care services. There are other insurance markets, however, where there is less activity to be seen on the side of the insurance industry in countering moral hazard and adverse selection. In some insurance products there is a disconcerting lack of premium differentiation or a lack of interest in controlling the insured's behaviour.[55]
Obviously, insurers as a rule try to fix the right premium level at the beginning of the insurance contract by collecting information from the insured, but the cost of monitoring the insured during the running period of the contract are usually considered to be excessive compared to the expected benefits thereof.[56] So, less energy is spent on monitoring the insured, but that does not mean that this is an inefficient state of affairs: the cost of controlling moral hazard and avoiding adverse selection must be set off against the expected benefits. Some degree of moral hazard and adverse selection can be efficient, provided that the insurance market at hand itself is functioning properly. Nevertheless, too little effort by the insurance industry may result in an inefficient level of precaution and may eventually indeed cause adverse selection and uninsurability.

3. Relevance of behavioural insights for European insurance law and policy

Having explored some of the empirical findings on behaviour of both the insured and the insurer, we now turn to the relevance for legal policy: are there lessons for insurance law to be learned by legislators and courts? Obviously, the empirical studies

[51] See Parliamentary Proceedings 2d Chamber 2006/07 (Kamerstukken II 2006/07, 31 094, nr. 3).
[52] Thaler and Sunstein 2008, p. 1 *et seq.*
[53] Schreyögg 2004, p. 689 *et seq.*
[54] On endowment effect (divestiture aversion), e.g., Korobkin and Ulen 2000, p. 1107 *et seq.* ; Kahneman et al. 2003, p. 55 *et seq.*
[55] E.g., Faure and Van den Bergh 1989, p. 308 *et seq.*; Van Boom and Pinna 2007, p. 158 *et seq.* (concerning medical liability insurance).
[56] See, e.g., the extensive study by Baker and Griffith on the Directors' & Officers' Liability Insurance (Baker and Griffith 2007, p. 487 *et seq.*; Baker and Griffith 2007a, p. 1795 *et seq.*). On monitoring cost in general, e.g., Ogus 2006, p. 108 f.

reported here are merely 'snapshots' of practice that do not disclose a coherent picture invalidating or affirming insurance economical theory. The available material is not consistently pointing in one direction. Having said that, the review of empirical evidence nuances some of the theoretical assumptions and offers a proper occasion for investigating the policy implications.
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3.1 Insurance demand and information

If courts and legislators take the view that the insurance contract is a welfare enhancing vehicle, they will obviously try to address market failures. For instance, the duty on the insured to disclose material information is traditionally justified with reference to information asymmetry inhibiting an efficient contract. Likewise, legal policy may be aimed at reducing the reverse information gap between insurer and insured. Does the insured have enough information to compare insurance offers and to appraise policy techniques, terms, and exclusions? Is transparent information easy to come by in the insurance market or is it a market in which premium is the only visible object of competition? In consumer insurance markets the latter seems to be the actual case whereas the former seems to be more and more the policy objective.
For instance, under French law every seller of an insurance policy must inform the consumer of the essential characteristics of the policy.[57] Under the recent German Insurance Contract Act 2008, the insurer has a potentially far-reaching and specific obligation to obtain information from the client and advise what insurance to buy on the basis of this information.[58] According to Dutch law, the direct writer in indemnity insurance is obliged to furnish the potential client 'information needed for forming an adequate opinion' of the insurance contract.[59] The Unfair Commercial Practices Directive (2005/29/EC) generally forbids insurers from withholding material information "that the average consumer needs, according to the context, to take an informed transactional decision and thereby causes or is likely to cause the average consumer to take a transactional decision that he would not have taken otherwise".[60]
This begs the question what information is really needed by the insured prior to contracting. Assessing both the quality of the insurance product and **[264]** whether it matches his preferences is a difficult task for individuals and SMEs lacking specific insurance knowledge. If I were to take out a Payment Protection Insurance with my credit card or hire-purchase agreement, I could be expected to be interested in the magnitude of the risk of default: how likely is it that an individual of my age and edu-

[57] Article L. 111-1 du Code de la Consommation ('Tout professionnel vendeur de biens ou prestataire de services doit, avant la conclusion du contrat, mettre le consommateur en mesure de connaître les caractéristiques essentielles du bien ou du service.'). Cf. Lambert-Faivre and Leveneur 2005, p. 127 ; see also Clarke 2007, p. 99-100 ; Basedow and Fock 2002, p. 30 *et seq.*
[58] § 6 (1) Versicherungsvertragsgesetz 2008. Note that § 6 also states that the extent of this duty depends on a certain proportionality between the cost of such advice and the expected premium.
[59] Article 4:20 Financial Supervision Act (Wet Financieel Toezicht).
[60] Note that Directive 2002/65/EC concerning the distance marketing of consumer financial services merely pays lip service to the transparency principle. Recital 21 states: "In the interests of transparency this Directive lays down the requirements needed to ensure that an appropriate level of information is provided to the consumer both before and after conclusion of the contract. The consumer should receive, before conclusion of the contract, the prior information needed so as to properly appraise the financial service offered to him and hence make a well-informed choice." In fact, the Directive does not really deal with disclosure duties of a substantive kind as dealt with here.

cation will default on his credit obligations due to illness as defined by the PPI policy? This type of aggregate information is usually not given and not generated by the market, leaving the insured to make a private risk assessment. If indeed, as mentioned earlier, willingness to insure is correlated with exaggerated risk perception, then this bias may cause the purchase of 'unnecessary' insurance. Market specific information may shed further light on this demand issue. Now suppose that PPI has a claims/premium ratio of 20 %, which denotes that for every Euro in premium the insurance company pays out 20 Eurocents in covered claims. If the median ratio in comparable consumer insurance products is 50%, one could argue that there is something atypical and possibly problematic about PPI. Perhaps consumers claim less under the PPI, have less need for it, or the policy exclusions bar a considerable number of their claims? Perhaps the marketing technique used in selling PPI should be scrutinized. Perhaps if it is sold as an 'over the counter' add-on insurance right after the moment of purchase of the primary product, the willingness to insure newly acquired property is at its strongest at that precise moment. Then, the marketing technique of the add-on product may in part be the cause of the low claims-premium ratio.[61] This is not to say that the add-on product necessarily is a scam and that people should be protected against it by banning it; that would amount to overzealous paternalism against which Ogus has warned.[62] This issue does illustrate that it is difficult to assess what information consumers actually need to make a balanced choice in buying insurance.

3.2 Insurable interest

Many legal systems are critical of insurance products other than indemnity insurance. If an insurance policy does not indemnify but merely pays out a certain amount – for instance, in case of life insurance – the insured may lack a financial interest which is compensated. It has been argued that without an insurable interest, insurance might lead to negative externalities. Such insurance may amount to illegal gambling and may cause serious moral hazard issues.[63] On the other hand, as the example of child life insurance shows, people may have a preference for insuring in order to compensate the loss of non-pecuniary relationships with money. They may even – as some research suggests – have a willingness to insure against non-pecuniary loss in general. If indeed individuals in some respects have such preferences, what implications does this have for the **[265]** doctrine of insurable interest? There is much to be said for the approach taken by the Dutch legislator which has stipulated that other types of insurance than indemnity insurance and life insurance are only allowed if so provided by royal decree.[64] This allows for careful consideration of, e.g., moral hazard concerns.

[61] Cf. research by the English Office of Fair Trading into PPI. Cf. Office of Fair Trading 2006, p. 1 *et seq.* and the commissioned market studies by London Economics.
[62] Ogus 2006, p. 31; p. 227-228, p. 252.
[63] Rea 1993, p. 147.147. Cf. Clarke 2007, p. 36 *et seq.*
[64] Article 7:964 Dutch Civil Code.

3.3 Moral hazard and adverse selection

Insurance law and policy practice provide insurers with a number of tools to fight moral hazard and adverse selection. Indeed, the fundamental idea is that efficient insurance markets will iron out adverse selection. In reality, however, there is a limit to what insurers do to fight adverse selection. In some countries insurers assume a socio-political role – either voluntarily or under political pressure – by providing coverage to some individuals at a loss. By doing so, insurers may signal their 'responsibility to society'.[65] Offering life insurance to HIV positive individuals at an acceptable premium seems to have been such a gesture.

The insurance industry may thus choose to accept a certain level of adverse selection by cross subsidizing good and bad risks that should otherwise have been categorized under distinct pools.[66] Indeed, legislators may also choose so-called 'regulatory adverse selection' by forbidding risk differentiation to a certain extent.[67] In American legislative policy this is quite common and, although the European insurance market is more relaxed and less regulated, it may show examples of such covert redistribution of wealth too. [68] EU non-discrimination laws may forbid differences in premiums charged. Obviously, such a redistributional policy does not offer boundless possibilities for redistribution in an insurance market working efficiently, but it seems that in practice there is some room for the insurance industry to manoeuvre. Some degree of redistribution imposed by insurers on customers seems possible in saturated markets where newcomers are not laying in wait to penetrate and force competitors into a cutthroat race to the lowest premium.[69] Moreover, in those markets where the insured that pose a 'good risk' are less mobile – for instance because the cost of switching insurers outweighs the expected benefits, or because insurers are chosen because of their trustworthy reputation rather **[266]** than the quality of their service – there are opportunities for insurers not to follow theory but stick to the practice of suboptimal risk differentiation.[70]

This is why legislators should be most careful with introducing compulsory insurance: it may fight the symptoms of adverse selection but if the disease is insurer inactivity, rendering the insurance compulsory will not cure the disease.[71] Indeed, insurers operating in an inefficient market who secure their market by the introduction of compulsory insurance are bound to apply less risk and premium differentiation than would be advisable.[72]

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[65] Note that European competition law naturally forbids price cartels but it does allow agreement on common coverage of certain types of risks. See Commission Regulation EC 358/2003 on agreements, decisions and concerted practices in the insurance sector.
[66] Thomas 2007, p. 108.
[67] Faure 2007, p. 81 *et seq.*
[68] Cf. Von Ungern-Sternberg 2004, p. 32-33 who points out that sometimes insurers decide not to raise premiums proportionate to the change in risk perception because of the feared consequences for society.
[69] On the correlation between demand elasticity and potential for redistribution, e.g., Ogus 2006, p. 229.
[70] Von Ungern-Sternberg 2004, p. 81 argues that this is more likely to occur in B2C markets than in professional markets.
[71] On compulsory insurance, e.g., Faure and Hartlief 2006, p. 223 *et seq.* On criteria for introducing compulsory insurance, see, e.g., Faure 2006, p. 149-168.
[72] Cohen and Dehejia 2004, p. 357 *et seq.*

4. Appraisal

Testing the theoretical assumptions of insurance law and economics to empirical evidence bears some resemblance to trying to find the Abominable Snowman: known by many but actually seen by few. We are all familiar with theory on moral hazard, and adverse selection, but can we now claim to have actually seen them? Yes and no. Unlike the Snowman, the number of sightings of moral hazard and adverse selection is considerable but there are counter indications as well: insurance demand is not always perfectly rational, moral hazard does not always seem to be a serious problem and propitious selection has been spotted as well. Moreover, insurers do not always follow the antidotes that theory provides them. This implies that the theoretical assumptions of insurance law and economics can be nuanced in this regard. Far from being killed by empiricism, insurance law and economics can benefit from empirical findings. Perhaps in the long run these findings can even be framed in a true 'behavioural insurance law and economics' perspective. Having said that, the previous discussion has not generated broadly applicable suggestions for policymakers to address insurance law issues in general. In fact, if problems arise in specific product areas, these need to be dealt with specifically rather than by promulgating general rules for non-existing problems.

[267-276]

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