MTPL insurance system sufficiency to cover compensations for pain and suffering

Anna Jędrzychowska, Ewa Poprawska

Abstract

The main idea of introducing compulsory insurance is a necessity to ensure full and prompt compensation for injury victims, due to the economic and social welfare. In the case of liability insurance, insurer guarantees protection to the exhaustion of the guaranteed amount of cover. However, another barriers are held by the insurance company funds (insurers capacity). The authors plan to check what amount claims for compensation for pain and suffering after the death of a close relative person are able to exhaust the financial capacity of insurers offering MTPL insurance. As a result of the simulations sufficiency of main financial data of insurers, such as technical provisions, the technical result, net income, surplus funds to cover reserves and surplus capital to cover solvency margin relative to cover compensations for pain and suffering will be examined. The authors will analyse the consequences of possible changes in the average amount of claims, number of claims for the MTPL insurance market in Poland. Simulations will be based on financial data of insurance companies, data concerning the number of accidents, and victims of accidents in Poland (police data) and data from Polish jurisdiction will be used to analyze tendencies in claim amounts.

Key words: compensation for pain and suffering, MTPL insurance, personal injury

JEL Code: G22, G28

Introduction

The need to prepare the methodology for calculating the benefits of compensation is recognized in the literature (eg in the studies: Verrall et al., 2005, and Ward, 2005). Among the few attempts to create rules for determining the amount of benefits you can indicate, for example, papers (Lewis et al., 2003, Butt et al., 2008 oraz Butt et al., 2010), however, they are studies on compensation for lost income, not compensation for the death of a close relative. Especially noteworthy: "Moral Demages ..." (Werwigk, 2013) and "Comparative analysis ..." (Micklitz, 2004), which compare the law in various countries of the EU and allow to propose the need to prepare for the Polish market some assumptions and the rules regarding the size of

benefits. The need to develop regulation-sized payments also encourages emerging phenomenon of moral hazard (see Ebrahim et al., 2013). This phenomenon has gained importance especially in the context of increasing number of intermediaries supporting the victims in the process of compensation. It is therefore important to monitor insurance system in a situation of growing and not fully regulated claims. Therefore, it was decided as Mojżuk W. (Mojżuk 2014) to examine the strength of the Polish insurance system.

Compensation for close family members for the injury resulting from the death of a close relative provided for in Article446 § 4 of the Civil Code was introduced to the Civil Code in Poland only on 3 August 2008 as a result of the amendment of the provisions of civil law made by the Act of 30 May 2008. This is a single benefit which seeks to alleviate the suffering after the loss of the loved one. Its purpose is to compensate for intangible detriments associated with material injury which may manifest itself with a number of negative effects in the psyche and further emotional existence of authorized person. Moreover, it is the personal provision, i.e. belonging solely to the nearest member of the family of the deceased victim but also an optional one, i.e. discretionary because the court adjudicating remains free to grant and determine its amount. Optionality means that the court examines all the circumstances in each case, it may thus take into account or dismiss the claim. Taking into account the claim, the amount of compensation will depend on the overall negative effects in the scope of non-material injury - mainly its size and intensity.

The concept of a "close family member" shall be construed broadly and it shall not be limitedonly to blood ties. The main criterion is the actual degree of intimacy and personal and economic closeness that existed between the deceased and the immediate family member, in addition remaining in the same household, raising children together, as well as the negative impact of the loss of a close relative to the well-being and health of the person entitled to the benefit. In defining the concept of the family one must have regard to the actual layout of the family relationship and not a formal order of kinship.

There is no limit to the amount of the benefits and one circumstance is sufficient to grant it, i.e. to demonstrate that the claimant belongs to the circle of close family members of the deceased. In the literature (Daszewski A. 2010) certain criteria that can help to determine the size of the benefits are indicated: the time and the degree of suffering and pain after the death of a loved one, the age of the person authorized to receive this benefit, the size of psychiatric or psychosomatic disorders of the closest person, the inability to perform previous activities due tomental condition, the lack of concern and care in case of the loss of parents or

children or grandchildren, the sense of insecurity at the closest person after the loss of another close person, loss of family ties, the need for single upbringing of children or grandchildren.

1   Metodology

1.1   Calculation scheme

Three quantities characterizing the events giving rise to compensation obligation - traffic accident are the basis of the calculations:

- The number of people who died in traffic accidents but due to the fault another person (i.e. direct victims whose death provides the basis for seeking compensation),

- The number of relatives who claim for compensation in respect of accidents,

- The average value of compensation for pain and suffering that each of the persons entitled will receive in the first notification of a claim, the so-called indisputable amount that the insurer pays without resorting to judicial proceedings. According to the reality of the Polish insurance market, it was assumed that the value of this volume is at the level of PLN 30,000 - aproximately EUR 7143 assuming that EUR 1 = PLN 4,20[1].

In addition, values characterizing the the insurance system in Poland will be necessary forthe calculations, since the purpose of this article is to examine what size of average compensation the insurance sector in Poland is able to pay in one of the following situations: a sudden increase in the amount of benefits paid for compensations (e.g. increase in the amounts awarded in such cases) or in the number of persons claiming for compensation for death of relatives (e.g. due to the activities law firm compensation). The funds paid out to eligible persons (of the so-called indisputable amount) and the financial means that insurers may allocate for the payment of compensations are considered the system in this article. These financial means can be derived from the following financial categories: technical result of MTPL insurance (group 10 according to the classification set out in the Annex to Act on Insurance Activity), the technical result of non-life insurance, net financial account of non-life insurance and own funds of non-life insurance sector. The strength of the system to a sudden change in the size or number of claims will be studied on the basis of a simple rule:

$$\dfrac{\textit{financial category} \quad + \quad \begin{array}{l}\textit{estimation of the value of compensations}\\\textit{already paid out}\end{array}}{\begin{array}{l}\textit{number of people who died in accidents}\\\textit{due to the fault of third parties}\end{array} \quad * \quad \textit{number of relatives claiming for compensation}}$$

The value obtained in this way will be interpreted as follows: the increase in the average compensation payable from MTPL insurance in the Polish reality (taking into

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[1] the average exchange rate of the National Bank of Poland: EUR 1 = PLN 4,2003, No. 087/A/NBP/2014

consideration demographic and accident statistics) up to this amount will deplete the resources of MTPL insurance or whole non-life insurance sector. In the case of persons who have previously received the benefit in the amount adopted for estimating the value of paid compensations (approximately 30,000), the obtained value of the benefit must be reduced by the previously obtained amount. And for persons who were initially not included, the compensation is adopted as a whole.

1.2   Assumptions and data

Before making the calculations described above, one should discuss the parameters adopted in the calculations. The first parameter is the number of people who died in traffic accidents but only those that were causedat the fault of a third party. Here one can use the police statistics concerning the number of people who died in traffic accidents as well as indicating who is responsible for the accident (Table 1). Due to the fact that the article refers to MTPL insurance, a value which is crucial for further consideration is the number of the deceased in those cases for which a driver is responsible. However, not all of presented data are relevant to the discussion. Claims for compensation for pain and suffering in the current meaning of Article 446 § 4 can be submitted with respect to the events that occurred after its introduction, i.e. after August 2008. Therefore, the analysis of the number of people who died in accidents will cover only the period 2008-2013.

Table 1 Selected statistics of causes of death in traffic accidents in Poland (2001-2013)

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total	5534	5827	5640	5712	5444	5243	5583	5437	4572	3907	4189	3571	3357
Persons killed at the fault of drivers	4262	4470	4382	4301	4239	3729	3753	3659	3139	2633	2841	2511	2269
Fatalities - drivers								2372	2166	1859	1945	1756	1566

Source: data from the Police Headquarters

In the period relevant to the study, the number of people who died at the fault of drivers amounted to: $5/12 \cdot 3659 + 3139 + 2633 + 2841 + 2511 + 2269 = 14\,918$.

However, this is the total number of fatalities caused by drivers, which also includes the drivers who were killed in accidents caused by themselves. In such an event the family of the deceased cannot make a claim for compensation for pain and suffering. It is therefore necessary to determine what proportion of the total number of victims of fatal accidents caused by drivers the directly affected constitute. Comparing the number of dead in accidents due to the fault of drivers with the number of all people who died in traffic accidents in the

discussed period: $5/12 \cdot 5437 + 4572 + 3907 + 4189 + 3571 + 3357 = 21861$, we get information that about 68% (14918 divided by 21961) of deaths were at the fault of drivers.

Looking at the number of drivers who are victims of fatal accidents, we get the value $5/12 \cdot 2372 + 2166 + 1859 + 1945 + 1756 + 1566 = 10280$. Assuming that the estimated share of deaths at the fault drivers is on a similar level in the case of drivers, we get the number of 6990, which can be roughly considered the number of drivers who died in accidents which they caused. Finally, we get the number of people who died in traffic accidents at the fault of a third party: 14 918 - 6 990 = 7928 over the considered period.

The analysis of statistics on the percentage of fatal accidents caused by foreigners, indicates that over the years 2001-2013 it is only 1.8% on average. In the calculations the proportion of fatal accidents Polish citizens cause abroad, which charges MTPL insurance system in Poland, is not taken into account (due to the lack of such data). Since both of these values have contradictory impact on the system, it was decided to consider that they were in balance and were not included in the calculations.

The second key value for the calculations is the number of the relatives of the claimant. To determine how many people from the group of the relatives of the deceased as a result of a traffic accident may submit a claim to the insurer, it is worth analyzing data from sociological and demographic studies. Useful information may be found in paper (Szukalski 2005), in which the structures of family relations in society before and after the so-called second demographic transition are compared. For the purposes of this study, the authors focused only on the results presented in the aforementioned work and the definitions of closest relatives and the so called extended family. Table 2 shows the number of closest relatives and the number of relatives in the extended family.

Table 2 The average number of relatives depending on age

		the age of the person in completed years								
		0	**11**	**22**	**33**	**44**	**55**	**66**	**77**	**88**
the number of closest relatives + partner	parents	2	1.95	1.91	1.74	1.39	0.66	0.11	0	0
	children	0	0	0.14	1.45	1.84	1.85	1.86	1.81	1.68
	brothers / sisters	0.67	1.32	1.33	1.32	1.3	1.23	1.03	0.66	0.11
	wife / husband / partner	0	0	0.2	0.55	0.62	0.62	0.63	0.4*	0.05*
	the total number of closest relatives (CFM)	**2.67**	**3.27**	**3.58**	**5.06**	**5.15**	**4.36**	**3.63**	**2.87**	**1.84**
the number of relatives in extended family	previous generations	8.15	7.39	6.18	4.43	2.94	1.43	0.26	0.01	0
	next generations	0	0	0.48	3.07	4.21	5.63	7.33	7.88	7.62
	the same generation	3.15	5.66	6.34	6.41	6.19	5.72	4.82	3.16	1.37
	total number of relatives in extended family (FM)	**11.3**	**13.1**	**13**	**13.9**	**13.3**	**12.8**	**12.4**	**11.1**	**8.99**

* In the CSO data the last age category is "60 years and more." Therefore, it was necessary to estimate the average number of spouses / partners for the age group 77 and 88, when the marriage generally end up as a result of the death of a spouse. Thus, based on life tables, the probability of death of a spouse within the next 5 years was estimated (from 15 to 30% for 65 and 75 years old). Thus about one third of the persons in relationships at the age of 66 years old will lose a spouse to the age of 77 years old (hence the proportion of married persons falls from 0.63 to 0.4), in the same way the percentage of "married" persons at the age of 88 years was determined.

Source: Szukalski, 2005 and own calculations based on the CSO data

Due to the fact that none these categories includes a spouse (or more broadly, a life partner), it was necessary to make own estimates based on Central Statistical Office (CSO) data on the number of marriages in 2012, divided by the age group (CSO does not publish data on people who are married and / or remain in informal relationships in the breakdown into age groups). It was calculated what percentage of people in the age group concluded marriage in a given year (using CSO data concerning Polish population in the age group) and then the obtained values were multiplied by the extent of each of the classes (i.e., assuming that the number of marriages has not drastically changed over the following years). This enabled obtaining approximate information about the percentage of people in age group who got married in the past 5 or 10 years (depending on the span of the age group). Then the indicators obtained have been cumulated assuming that people who have entered into marriage qualifying for the previous age category are married, and in the following age groups there are new spouses so the proportion of married people is growing. The authors are aware of the shortcomings of the above mentioned calculation due to not taking into account the number of divorces. However, it was assumed that in the case of a divorce a new spouse or partner may appear. Age categories used by the CSO, unfortunately, do not coincide with the categories used in Szukalski, 2005, so further approximation of the results was necessary.

On the basis of these data the average the number of close relatives and the relatives of the extended family can be calculated. It was recognized, however, that it should be the weighted average in which the weights would be the percentage of people killed in traffic accidents who belonged to various age groups. The number of "willing to compensation":

$$k_{CFM} = \sum_{i=1}^{9} CFM_i \cdot \left(wage_i \right) \quad \text{or} \quad k_{FM} = \sum_{i=1}^{9} FM_i \cdot \left(wage_i \right) \tag{1}$$

where CFM_i – the total number of closest relatives (CFM) in age i-th category,

FM_i – the total number of relatives in extended family (FM) in age i-th category,

$wage_i$ – the weight of a particular age group (percentage of people killed in traffic accidents in age group in the total number of the killed ones in traffic accidents).

Table 3 Statistics of deaths in Poland in 2012 and the resulting system of weights

Age categories in National Police Headquarters data [years]	0-6	7-14	15-17*	18-24	25-39	40-59**		60 + ***		
The percentage of dead of the age group in total number killed in traffic accidents	0.9	1.6	2.4	16.4	24.7	28.9		25.0		
Age categories used in the study [years]	0	11	22		33	44	55	66	77	88
WEIGHTS	**0.01**	**0.03**	**0,.11**		**0.25**	**0.145**	**0.145**	**0.13**	**0.08**	**0.04**

* the age category 15-17 years, separated in half to categories 11 and 22 years,

** the age category 40-59 years was separated in half for categories 44 and 55 years,

*** the category 60 plus was separated into three parts - one half of the data is assigned to the category of 66 years, 1/3 to 77 years category, the remaining 1/6 to 88 years category.

Source: National Police Headquarters data and own calculations

The percentage of persons killed in traffic accidents for each age category was calculated based on data on the number of deaths in road accidents in 2012 in Poland (the National Police Headquarters data). Age groups did not coincide with the categories used in the article, it was necessary to assign the data on the basis of subjective criterion. Thus obtained weight is presented in Table 3. Finally, the number of "willing for compensation for pain and suffering" per one deceased in the accident is equal to: in the case of closest family (with a spouse / partner): **3.9**, in the case of extended family it can increase by another **11.9** people.

3   Results

The estimated amount of already paid compensations for the death of a close relative was:

7928	*	3,9	*	EUR 7 143	=	**EUR 220 851 429**
the number of deaths (directly affected) in traffic accidents		*the number of relatives claiming*		*the average value of obtained compensation*		*the estimated amount of already paid compensations*

This value, together with the financial category, which can provide resources that can be spent to cover payments in respect of compensation, are "system" within the meaning of the paper. When determining the size of the system it was assumed that only close family members would claim for compensation. Therefore, the ratio of calls observed in the claims was not taken into account, for the sake of simplicity it was assumed that after every accident which occurred due to the fault of a third party, someone would claim for compensation - almost 4 persons. Such an element as contributing of a deceased person to an accident was also excluded, it should reduce the amount of the payment. The third simplification was to determine the compensation paid to each of the relatives at the same level. In the judicial practice, these amounts are different depending on the degree of relationship.

The results of the calculation of average compensation which exhausts the capabilities of the system are shown in the table 4 in three variants: a narrow (the number of claimants to one deceased is 3.9 persons), intermediate (7 persons), wide (15.9 persons).

Table 4 The results obtained for 2012

	Financial category value [EUR]	"System" [EUR]	Average compensation [EUR]		
			Narrow	Intermediate	Wide
Technical result for MTPL insurance	-112 365 276	108 486 152	**3 509**	**5 118**	**6 246**
Technical result for non-life insurance	158 255 379	379 106 807	**12 261**	**9 995**	**8 406**
Net financial account	793 519 928	1 014 371 356	**32 807**	**21 441**	**13 478**
Own funds	4 202 493 217	4 423 344 645	**143 061**	**82 869**	**40 692**

Source: own calculations based on Financial Supervision Commission (KNF) data

The obtained results reflect the existence of several problems:

1. In the current situation in Poland insurers are not able to cover compensations for a narrow group of persons entitled to the assumed level of EUR 7 thousand only from the technical result of MTPL insurance. They must, therefore, involve funds from the technical result of all of their activities.

2. The increase in the level of benefits to the size of about EUR 32.8 thousand would force insurers to spend the whole net profit to cover the compensations.

3. After the plane crash near Smolensk[2], where the indirectly affected have been awarded the amount of EUR 60 thousand as compensation after the death of a close relative, the volume of the amount makes the basis for compensation claims in the case of indirectly affected in traffic accidents. To cover the claims on such a level (even in narrow variant) Polish insurers already have to use their own funds.

4. In addition, with the increase in the number of claimants, insurers must resort to financial categories such as net income or own funds already even when the high amounts of benefits are not very high. The increase in the number of claimants to the intermediate level (7 persons) forces insurers to use their own funds at the amount of approximately EUR 21 thousand per person.

5. The highest level of compensation that can be paid out from the system at the maximum average number of claimants (variant wide) is EUR 40.7 thousand, which, as mentioned, is the amount lower than the amount compensation after the plane crash near Smolensk.

Conclusions

The results obtained with some simplifications and assumptions show that MTPL insurance

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[2] Polish government plane crash in Smolensk (Russia) - plane crash , which occurred in Smolensk on Saturday, April 10, 2010. 96 people were killed in it, among them the President of the Polish Republic Lech Kaczynski, Deputy Marshal of the Polish Parliament, a group of MPs, the commander of all types of Armed Forces, heads of institutions of state, ministers, and other members of the Polish delegation flying for the celebration of the 70th anniversary of the Katyn massacre.

system, as well as the whole sector of non-life insurance in Poland, is not a highly durable system. The maximum amounts of compensations for pain and suffering that, at the maximum possible financial involvement (use of own funds), insurers are able to pay amounts to EUR 143 thousand at 4 claimants, EUR 82.9 thousand at 7 claimants and EUR 40.7 thousand at 16 claimants. These levels are low, in practice adjudicated judgments often reach the level of EUR 60 thousand or higher, often on the level of EUR 120 thousand or even EUR 240 thousand (1 million PLN).

Analyzing the Polish insurance market, insurance claim law firms should be mentioned, which play an important role especially in the process of liquidation of personal injuries. One should focus on the two biggest ones - Votum and EuCO since both of them together have a 55% market share (the remaining 45% of the market has about 600 smaller firm (Lesniak, 2012). Looking at the number of cases conducted by these firms, their dynamic growth can be notice (for Votum increase from 12.6 thousand in 2008 to 18.7 thousand in 2011, EuCO respectively from 4.8 thousand to 15.3 thousand). In addition, these firms acquire still higher and higher compensation payments for their customers (these are not only the amounts of compensation for pain and suffering but also other benefits). The increase in the average compensation from 2008 to 2012 for Votum is 150.5% and for EuCO it is 218.5%. In the situation described the raising of the problem connected with the role of the insurance claim law firms in the liquidation of personal damage seems substantiated. Owing to their actions, the number of people aware of the entitlement to claim for compensation increases and simultaneously due to support of lawyers from the law firm the amounts of these compensations are higher. The results obtained show that for instance the increase of the entitled from 4 originally applying persons to 7 and the increase of the average compensation to the level of approx. EUR 10 thousand will force the insurers to cover the claims with a technical result from their entire activity. Such a situation may explain the arguments, appearing on the Polish market, on the necessity to introduce the tables settling the amounts of compensations or certain schemes of determining the compensation amount. It is even argued for that the compensation for the death of a close person could not be higher than PLN 300 thousand (approx. EUR 71.5 thousand).

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Contact

Anna Jędrzychowska

Wroclaw University of Economics

Wroclaw, Komandorska 118/120, 53-345

anna.jedrzychowska@ue.wroc.pl

Ewa Poprawska

Wroclaw University of Economics

Wroclaw, Komandorska 118/120, 53-345

ewa.poprawska@ue.wroc.pl