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Description of the selected methods and ways of counteracting insurance crime – a case study of alternative spare parts and partial loss claims in no-fault insurance policies

This article attempts to highlight the methods used for counteracting insurance crime with particular emphasis on the role of insurance agents in increasing market availability of "alternative" spare parts using the example of claims for a partial loss indemnified under theft policies, and noting individual spare parts commonly used as tools to perpetrate the crime. For empirical purposes, a case study has been used – an analysis of hypothetical repair costs of selected vehicle models taking into account selected alternative spare parts.

Keywords: insurance fraud, spare parts, no-fault policy, partial damage, methods of prevention.

Introduction

One would assume that in the case of a partial loss claimed under a no-fault insurance policy, provisions included in the regulations and general terms and conditions referring to the determination of due compensation would expressly limit the possibility of "insurance fraud". Nothing could be further from the truth. Insightful analyses and observations of this sector of the market clearly indicate a select group of parts manufactured for specific vehicle makes and models that are particularly vulnerable to criminal activity in Poland. Thus, it is of key importance to pinpoint particularly vulnerable vehicle makes before insurance agreements are signed between brokers and agents, and to correctly identify individual alternative parts and commonly used spreadsheet systems, as well as make note of those parts available on the primary and secondary Polish automotive market.

This article attempts to highlight the methods used for counteracting insurance crime with particular emphasis on the role of insurance agents in increasing market availability of "alternative" spare parts using the example of claims for a partial loss indemnified under theft policies,

and noting individual spare parts commonly used as tools to perpetrate the crime. For empirical purposes, a case study has been used – an analysis of hypothetical repair costs of selected vehicle models taking into account selected alternative spare parts. The purpose of the article is to point out existing threats and ways of counteracting them, which in the future may lead to the use of available data in the process of improvement of the detection and to reduce the crime rate resulting from partial loss claims under no-fault policies in Poland, and Europe.

1. The impact of the insurance agent in counteracting the insurance crime

Firstly, in order to narrow down the research area, the process of entering into a no-fault insurance policy in most insurance companies in Poland has been approximated, which should facilitate a better understanding of the essence and meaning of the author's undertaken research. The available reports and analyses[1] indicate a growing trend in the demand for no-fault insurance on the Polish insurance market. The active role of this type of insurance portfolio is notable, particularly in regards to insuring passenger vehicles. At this point, it should be emphasised that the purchase of full-coverage insurance is voluntary, as opposed to liability insurance, which is compulsory. Thus, Insurance companies individually determine the general conditions for these agreements. One main characteristic of these types of contracts is the fact that one of the parties must sign the contract without the possibility of negotiating the general conditions of the agreement. In turn, the amount of premiums for this type of insurance depends on many factors. Policy pricing remains a highly individualized matter, but we can distinguish several general principles that insurance companies follow when determining rates for no-fault insurance, among which we can mention:

- place of actual/registered residence of the owner – residents of smaller towns can expect lower costs for motor insurance,
- location of vehicle usage,
- age and experience of the vehicle owner,
- vehicle value ,
- vehicle age,
- make of the car,
- frequency of vehicle usage,
- scope of insurance,
- history of current insurance course,
- form and frequency of the premium payment (credit card vs. bank transfer, all at once vs. payment instalments).

In insurance practice, the rules and the means of calculating insurance premiums for no-fault policies are included in General Terms of Insurance (GTI) by the individual insurance company. Most often, insurance premiums are also calculated using the base rate, i.e. base (% of vehicle value),

1. A report on the condition of the insurance sector after the III quarter of 2014. FSA Warsaw 2014.

plus adding individual increases or reductions (multipliers) resulting from an individual assessment of the vehicle risk and the insurance history of the customer, the so-called bonus-malus[2].

In recent years, most insurance companies in Poland have resigned from performing technical assessments describing actual technical conditions before concluding no-fault insurance policies, replacing this process by concluding policies over the phone based on statements submitted by clients, or rather ceding the responsibility of verification to the individual agent or insurance broker. Insurance companies have correctly established that most countries use similar practices for concluding no-fault insurance, and most have walked away from performing technical assessments of the vehicle condition before the contracting insurance. At this stage it should be noted that in these countries, the process for providing no-fault insurance in most cases is dealt with by insurance agents, who support independent experts with their knowledge, which is important for the sake of objectivity and accuracy in terms of determining the value, technical condition and equipment of a particular vehicle.

Prior to the conclusion of a contract, the insurance agent verifies the data the customer wanting to enter into a no-fault insurance policy presents. The agent should first verify the make, model, and year of the vehicle and its equipment – (with valid photo documentation). This process is supplemented with a comparison of presented documents with data included in the VIN table (Vehicle Identification Number)[3] or via the organoleptic inspection and reading the model label. At this stage, what is significant is the determination of the proper equipment of the vehicle. For example, if the vehicle has lenticular headlights, but the insured person claims that it has bi-xenon headlights, their value is much higher than in case of the traditional headlights[4]. Similarly, if a car is equipped with a satellite navigation system, leather upholstery, electric mirrors or with other additional equipment, the cost of their repair or replacement in case a loss covered by a no-fault policy will be different than in case of the standard equipment.

The next step, which is very important, is the determination of the correct real market value of the insured vehicle by using the appropriate tool or program for evaluating the vehicle value[5]. At this stage attention should be paid to the fact that the author's own research and observations have indicated discrepancies of up to 40% with respect to base value depending on the selected program used for estimating the vehicle's market value[6]. A similar situation exists in case of vehicles for which market prices are not "monitored" by expert programs[7], thus leaving the value

2. Bonus-malus – a system referring to the loss history of a given driver, assigning them to a given class of damage risk in order to calculate the premium. Under this system, in the liability insurance and accident & theft (Auto Casco) insurance, premiums could rise or drop in the next period of insurance. In other words, this is a system rewarding drivers for no-claims driving and punishing them for causing damage. This depends on the client and whether or not this client is likely to report damage caused, changing the claims history. It should be considered individually whether such procedures are profitable.
3. The VIN number stores the factory data concerning the given vehicle: the place of production, the year of production, model, engine type, etc.
4. Analyses of databases of the Eurotax system indicate that the disparity of price can reach up to 400% of the base value.
5. Long-term observations of the market indicate that this issue is repeatedly marginalised to the practice of determining the market value of the vehicle in respect of any no fault insurance.
6. In the case of many vehicle models a significant difference was stated of the declared market values of the vehicles in expert systems of Eurotax and Info-Expert.
7. In this case the assistance of an independent Assessor seems indispensable.

to be determined using the estimate method. As indicated by the long-term practice, this neglect is the subject of the litigation in the further step.

Verification of a vehicle's technical condition and the equipment declared in the policy is of fundamental importance to the broker and the insurance agent in determining the market value of the vehicle, and thus the insurance company. While the insurance agent is able to easy verify vehicle mileage or the presence of elements like aluminium wheels or leather upholstery by visual inspection and photographic documentation, verification of the category of mounted spare parts and components[8] in the given vehicle at the moment of conclusion of the no-fault policy at this stage is practically impossible.

In practice, the use of different categories of spare parts in relation to, among others, xenon headlights, navigation display screens, mirrors and airbags, has become market commonplace. Thus, determination of the actual category of spare parts already installed in the vehicle at this stage may be of fundamental economic importance[9]. This relationship may be used by, e.g., repair shops at a later stage of damage repair in order to increase repair costs, and hence – to increase the amount of due compensation in case of the no-fault policy.

After correct vehicle identification and determination of the market value has been assessed, the insurance agent enters the data into the system using a "premium calculator" to estimate the due amount. It should be mentioned that the currently used "premium calculators" automatically estimate the payment amount for the particular variant of the no-fault insurance after the introduction of additional parameters affecting the size of the contribution[10]. For example, if the owner of the vehicle is not yet 25 years of age and does not have a discount for no-damage driving, the spreadsheet system will automatically charge an additional increase. The situation is similar if a vehicle is intended for rental and not private use. The program will automatically recalculate the premium, taking into account the appropriate increase of the amount of the due premium using the bonus-malus system.

In conclusion, the insurance agent in order to minimise the risk of insurance fraud in relation to no-fault policies, regardless of the variant of the concluded insurance, should:

- properly identify the vehicle manufacturer, model and equipment,
- verify the technical condition of the vehicle,
- perform the proper determination of the market value,
- attempt to identify the type of spare parts used in the vehicle if it is not possible to consult an expert.

8. In the literature and on the Internet, the division of spare parts into four categories was adopted: "*Original spare parts*" provided by the supplier of the vehicle, most often labelled as OE (and as 0, Q1). "Original spare part from a third undertaking. Others are most often labelled as OEM (and as Q, Q2) (Eng. "*Original Equipment Manufacturer*"). "*Not original spare parts – replacements*". Many are often labelled as AM (and as Z, Q3) (Eng. *After Market*). "*Spare parts of match quality*". Literature lacks the established labelling, so the OEQ labelling was proposed (and as P, Q4) (Eng. "*Original Equipment Quality*").
9. As demonstrated by original research on the Polish automotive market there are significant disparities in price between individual categories of parts.
10. Variables were not the topic of the author's considerations of this article.

2. The impact of the use of alternative parts on the increase of insurance crime, a case study – partial loss claims under no-fault policies

In retrospect, it is obvious that insurance companies have not wasted time adapting to the new market conditions in Poland, rightly noticing in their applicable regulations[11] the chance for further significant reduction of awarded amounts and paid compensation from no-fault policies[12]. Moreover, in most cases, regulations concluded in general insurance conditions clearly determine the categories of parts that must be used for vehicle repair under this type of policy. Thus, reimbursement of repair costs under the no-fault policies can take into consideration other categories of spare parts rather than just original ones[13].

Though at first glance, it may seem that these types of regulations limit insurance crime, nothing could be further from the truth. Due to the fact that insurance companies have clearly defined the general insurance conditions and categories of parts included as a given variant of comprehensive insurance, perpetrators of insurance fraud have developed an entire identification system of selected vehicle makes and models for which the availability of individual part categories have not been initially identified by the insurance company. Because of this loophole, insurance companies can be defrauded due to their practice of cash pay-outs for new "service" parts, when in reality the damage, theft or devastation took place on parts of much poorer quality.

In most cases, it is possible to easily identify parts and components of vehicles particularly at risk of "fraudulent activity in the scope of general insurance conditions". The key determinant for the likelihood of criminal activity here is the economic factor in respect to the high cost of original spare parts and the market availability of other categories of spare parts.

Market observations and the author's own research[14] have facilitated identification of spare parts most often damaged, stolen or devastated in cases of a loss claimed under no-fault policies[15] and these are:

- satellite navigation display screens mounted in the centre console of the vehicle,
- headlights (xenon, bio-xenon),

11. See the Regulation of the Council of Ministers of 8 October 2010 on exempting certain vertical agreements in the sector of motor vehicles from the prohibition of agreements restricting the competition, Journal of Laws 2010 no. 198 item 1315
12. In particular, that the European Commission in 2010 decided to extend the duration of the validity of regulations concerning group exemptions in the automotive sector until 2023.
13. Taking into account only the theoretical aspect of the spare parts category, it can be mistakenly concluded that all parts occurring on the home market are available in all categories described in EU and Polish legal regulations. Both the insightful observations of the market and the original studies indicate that in case of many vehicle brands found on the Polish market the full assortment coverage has not been stated in respect to each category of spare parts.
14. Original studies were conducted in 2014/2015 while maintaining scientific standards both in terms of sampling (about 250 motor claims from the no-fault insurance) and also in the way of inference.
15. Literature indicates that the current version of the market division divides the population of passenger cars into 10 categories, while the first six stem directly from the criterion of the total length, and further ones from usability values related to the type of the body. Individual categories were marked with consecutive letters of the alphabet. This division is periodically upgraded, so as it is adapted as far as possible to the current situation on the automotive market.

- tail lights,
- side mirrors,
- airbags: of the passenger, driver and side ones,
- roof rails,
- leather seat and door upholstery,
- filters of permanent particles,
- aluminium wheels.

It was found that in most cases, this practice applies to 3- to 8-year-old vehicles belonging to C to Premium class market segments. The impact here comes from the considerable availability of parts not only on the secondary market, but also with a different quality class. The identification of listed parts and components in the conclusion of insurance policies by the insurance agent, and in further steps with regard to the process of eliminating the motor insurance claims, can cause many problems, since we can observe a trend for the availability of alternative parts or those in different categories on the market that are not defined in spreadsheet systems. This may lead to an increase in the likelihood of attempted fraudulent compensation, thereby creating a new trend in order to achieve the economically satisfactory amount from the criminal activity.

The changes introduced in general insurance conditions by insurance companies have led to more deliberate behaviour in terms of the perpetuation of insurance crimes guaranteeing significant profit[16] without raising any suspicions. Therefore, it can be theorised that insurance criminals found a new market niche with respect to the no-fault policies, minimising their risk while simultaneously generating profits.

In practice, detection of the criminal methods described by the author involving price differentiations between original parts and alternative parts may be very difficult because, among others:

- Realistically, burdening the insurance intermediary (an insurance agent) with the need to verify the quality of parts is unrealistic, as it requires not only expert knowledge, but also technical support. In addition, potential offenders of insurance crimes may install original parts at the inception of a policy, only to replace them later on.
- In theft claims, there is no possibility to control for which parts have been stolen – only in cases of vandalism does the loss adjuster have the chance to easily determine damaged parts.
- Some categories of parts, like airbags and leather upholstery, cannot use subpar substitutes – like the clumsy imitations from Asian countries available on the market. Moreover, in the case of airbags, the market offers remanufactured parts that do not meet safety standards, also hampering the verification process.
- A method frequently used by potential perpetrators of crime is the replacement of original parts with damaged ones in order to disguise damage, raising other technical problems.
- The issue of price differentiation may also lead to the non-compliance of accounts documenting the purchase of original parts by the victim or the repair workshop itself.

In summary, although described vehicle parts and components are not particularly emphasised by agents, brokers or insurance companies in the conclusion of no-fault policies, they can be a tool for insurance crime in relation to all motor claims reported and indemnified by insurance companies in Poland, and as it has been shown by the simulations presented below, this issue requires appropriate attention.

16. While assuming that the damage, theft, or devastation applied to the selected zones and parts of the vehicle.

3. The analysis of hypothetical repair costs for selected vehicle makes from particular market segments – a case study of partial loss claims under no-fault policies – an economic aspect

First off, it should be stressed that the records and regulations included in the GTAC concerning cost reimbursement in terms of individual categories of spare parts required the author to show the significant correlations of the alternative approach. Therefore, the presented numerical experiment used preconceived behavioural patterns. Thus, a subject for further consideration is not the analysis of the individual variants of comprehensive insurance offered on the Polish market, but rather only a summary of hypothetical bills for spare part prices presented from selected vehicles with a specially chosen scope of loss. Moreover, for the purposes of these studies, it was assumed for simplification purposes that simulations will only refer to the market prices of spare parts, and not the overall sum of eventually awarded or paid compensation.

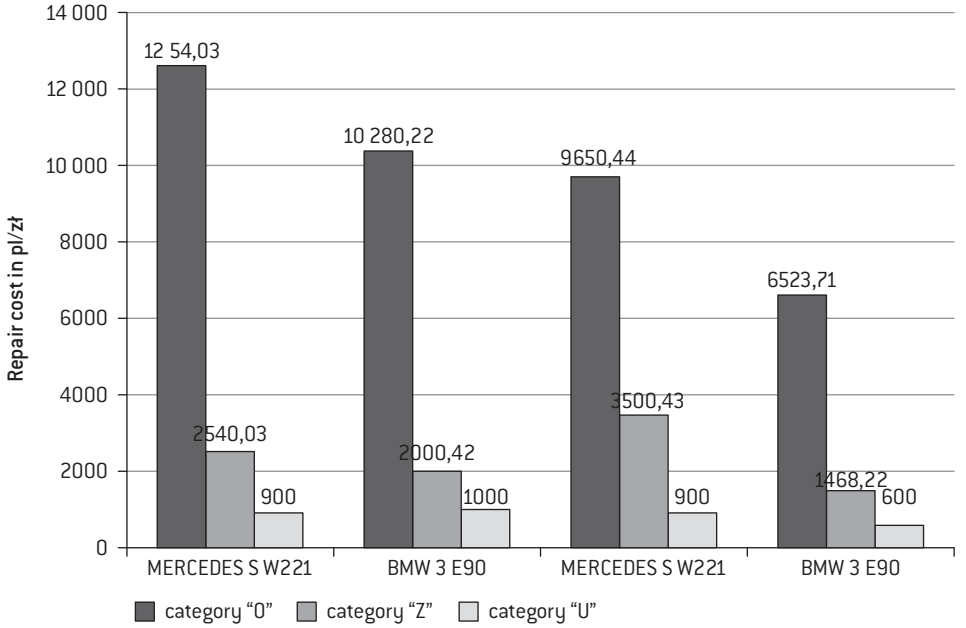
At the very beginning, in order to maintain the logical accuracy and methodological value of the studies, it was adopted that:

- The scope of the analysis covered selected vehicles from different market segments with a strictly defined character of claims made under the no-fault policies[17]. These reports involved acts of theft: in the first case, of the display screen of the satellite navigation (figures are presented in two first columns in figure 1), in the second case, of xenon headlamps, two pieces (two other columns in figure 1).
- Two vehicles models with specified features and purposes were selected for the analysis. The experiment involved: the Mercedes S-class model W 221 and BMW model E90.
- As it has been shown by insightful market observations in relation to these selected vehicles, a considerable increase in claims on both was noted at the turn of 2014/2015.
- Considering the scope of the hypothetical claim under the no-fault policy it was assumed that the cost analysis would cover the insurance variants, including the options for cost reimbursement, while applying the highest category of parts (original parts marked with the O symbol). For the purposes of comparison, the prices of spare parts from February 2015 were used in each case.
- In order to illustrate these dependencies, the "price" simulations were analysed for three basic variants, where the given vehicle before no-fault policy claims were made was equipped with original parts marked with the O symbol, "non-original" parts marked with the Z symbol[18], and parts from the secondary market marked with the U symbol.
- In order to estimate the projected prices of parts we used the specialised expert tool called Eurotax with the Monex[19] active module, supporting the numerical experiment with price data of parts from the secondary market – meaning average prices – occurring on Internet portals.

17. It was assumed that the report covers the damage consisting in the first case of the satellite navigation theft, and in the second case of the headlamps.
18. That is parts defined in the Commission Regulation (UE) NO. 461/2010 of 27 May 2010 on the use of art. 101 par. 3 of the Treaty on functioning of the European Union to the category of vertical agreements and practices agreed on in the sector of engine vehicles. Journal of Laws.L.129/52 of 28 May 2010.
19. This part is not defined in expert systems, despite the fact of the availability on the Polish automotive market.

From the point of view of the correctness of exploration and the possibility to capture the required data, the results of the numerical experiment are presented in figure 1.

Figure 1. The analysis of potential economic benefits in PLN while declaring during the AC insurance process with vehicles equipped with only O category parts.



Source: Own study. Pricing of the database Eurotax on 2015-02-15.

From the above cumulative simulation concerning the analysis of potential economic benefits related to having parts other than original ones in a vehicle, results show that the Polish automotive market has a considerable disparity in pricing between different categories of parts (hypothetical bills of costs indicate differences up to 70%). In relation to these specific models, Z quality parts and parts from the secondary market are available. It is worth noting that in relation to these two vehicle models, it has been simultaneously stated that the identification of individual categories of parts while concluding an insurance policy may be virtually impossible. Moreover, a large amount of the parts available on the market, meaning used parts, have not been included in the currently used spreadsheet systems[20] for these specific vehicle models, in turn allowing de facto a significant yield from criminal activity in reference to a partial loss reported in AC policies.

20. I.e. expert systems such as Audatex, Eurotax, DAT.

Summary

Undoubtedly the availability of the alternative parts on the market has significantly affected the reduction of sums awarded as compensation in case of claims indemnified under no-fault policies[21] by insurance companies in Poland. On the other hand, this has also led to the evolution of behaviours and changes in "tool" selection used for insurance crimes within the motor insurance from no-fault policies. Our market observations and presented research have allowed the identification of spare parts frequently subject to criminal activity, including:

- satellite navigation display screens mounted in the centre console of the vehicle,
- headlights (xenon, bio-xenon),
- tail lights,
- side mirrors,
- airbags: of the passenger, driver and side ones,
- roof rails,
- leather seat and door upholstery,
- filters of permanent particles,
- aluminium wheels

Moreover, it has been stated that in most cases, insurance crimes concern 3- to 8-year-old vehicles and belonging to the C to Premium class market segments.

In many publications describing the methods and problems of insurance crime in terms of no-fault insurance, the role of the agent or the insurance broker has been omitted. However, is this person's interdisciplinary knowledge that can save an insurance company even at the stage of concluding a policy from the dealings of the insurance fraud.

The insurance agent, in order to minimise the risk of the insurance fraud in relation to no-fault policies, regardless of the variant of the concluded insurance, should:

- correctly identify the vehicle manufacturer, model and equipment,
- verify the technical condition of the vehicle,
- perform the proper determination of the market value,
- attempt to identify the type of spare parts being used on a vehicle that is the subject of the insurance, and if this is not possible use the services of an expert.

This form of prevention in this insurance sector should be the key element in the fight against insurance crime in Poland, although, as it has been demonstrated by the author, in practice the detection of the described criminal methods involving price differentiation between original and alternative parts, among others, can in practice be very hard because:

- Realistically, burdening the insurance intermediary (in the form of the insurance agent) with the need to verify the quality of parts is unrealistic, as it requires not only expert knowledge, but also technical support. In addition, potential offenders of insurance crimes may install original parts at the inception of a policy, only to replace them later on.

21. Keep in mind that significant changes also apply to claims paid under third party liability insurance policies. The author wishes to emphasise that this issue was not explored in this article.

- In theft claims, there is no possibility to control for which parts have been stolen – only in cases of vandalism does the loss adjuster have the chance to easily determine damaged parts.
- Some categories of parts, like airbags and leather upholstery, cannot use subpar substitutes – like the clumsy imitations from Asian countries available on the market. Moreover, in the case of airbags, the market offers remanufactured parts that do not meet safety standards, also hampering the verification process.
- A method frequently used by potential perpetrators of crime is the replacement of original parts with damaged ones in order to disguise damage, raising other technical problems.
- The issue of price differentiation may also lead to the non-compliance of accounts documenting the purchase of original parts by the victim or the repair workshop itself.

While the analysis of potential economic benefits from criminal activity involving declarations of only O category parts in vehicle during the process of obtaining no-fault insurance has shown that:

- on the Polish automotive market there are significant price disparities between individual categories of alternative parts (hypothetical bills of costs indicate differences of up to 70%).
- in relation to these specific models there are also Z quality and secondary market (used) parts available.
- the identification of individual part categories at the stage of concluding an insurance policy may be virtually impossible.
- a significant number of parts available on the market, meaning used parts, are not included in current calculation systems in the case of specific vehicle models.

In summary, attempts undertaken by the author to assess the impact of the use of alternative parts in the increase of insurance crimes, a case study – a partial loss under no-fault policies does not fully cover the essence of the issue, and is only an attempt to indicate the complexity of studies on issues concerning the impact of market availability of different categories of parts on the automotive-insurance market in relation to insurance crimes in Poland.

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Charakterystyka wybranych sposobów i metod przeciwdziałania przestępczości ubezpieczeniowej – studium przypadku części alternatywne a szkoda częściowa likwidowana z polisy autocasco

W artykule podjęto próbę zasygnalizowana problematyki metod przeciwdziałania przestępczości ubezpieczeniowej w aspekcie wzrostu dostępności rynkowej do „alternatywnych" części zamiennych na przykładzie szkody częściowej likwidowanej z polisy autocasco. Dla celów empirycznych posłużono się studium przypadku – analizą hipotetycznych kosztów napraw wybranych modeli pojazdów z uwzględnieniem zastosowania w tym procesie alternatywnych części zamiennych.

Słowa kluczowe: przestępczość ubezpieczeniowa, części zamienne, polisa autocasco, szkoda częściowa, metody przeciwdziałania.

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