Risks of the insurance in road transport

J. Kubáňová*, I. Kubasáková¹, M. Poliak¹

¹ University of Zilina, Faculty of Operation and Economics of Transport and Communications, Department of Road and Urban Transport

* jaroslava.kubanova@fpedas.uniza.sk

Abstract. The growing trend of road freight transport also brings many negative factors, such as an increase in crime in the sector. In 2021, semi-trailers took the second place in the number of registered vehicles in Slovakia. This is also reflected in the crime in the road freight transport, which has had a very slow declining trend in recent years. On the contrary, what is growing is the number of insurance frauds recorded by the Slovak insurance company. We analyse in the article individual types of criminal offenses in road freight transport. We are also trying to find measures by which the risk of crime can be reduced. Whether measures in the form of insurance or options verification of information before the start of the shipment itself. Insurance does not have to be just a means of compensating for any damages, it can at the same time serve as a tool to make the services offered more attractive, confirmation complexity of the services offered, but it can also be one of the motivational tools employer.

Key words: insurance, road freight carrier, risks, insurance frauds, vehicle

1. Introduction

A number of procedures and methods for working with risk, which are successfully used in practice almost in all areas of human activity which, by its very nature, require some opportunity to influence existing risks. In road transport, we can only assess risks if we know identify the sources of risks and know their effects. Risk reduction is the process that aims to take measures to prevent losses. By identifying problems, it is possible perform adverse state modeling. If we group two or three methods, we achieve objective view of the whole problem. New security approaches are being developed combined methods. For risk assessment, these methods consist of two separate procedures, which complement each other. The first group includes mainly focused methods to identify the risk. Catalog sheets are a characteristic representative of this group. The second group includes methods for risk assessment.

Europe has removed borders within the EU for the movement of goods, services, capital and labor. This also allowed organized crime to operate more freely, which had already been extremely flexible in the previous period. However, the borders were not lifted for police and justice. Europe does not have an organization that operates at the federal level, something like the FBI. In Slovakia, issues such as phantom carriers are dealt with by police units at the district level.

Crime in road freight transport has many forms. The most common are:

- theft of semi-trailers and their often armed raids,
- drug smuggling and its distribution,
- smuggling and distribution of infringing products,
customs infringements and customs fraud,
violation of the tax regulation in the field of value added tax and excise taxes,
illegal migration,
illegal arms trade,
international terrorism,
in the past, there have also been cases of driver murders for the purpose of stealing trailers and their subsequent sale,
phantom carriers. [1]

1.1. Schemes of activities of phantom carriers
As a rule, the perpetrators concentrate on high-value goods and goods that are not difficult to dispose of profitably. The loss is generally massive. These are some of the methods used by the perpetrators in order to acquire contracts.

An important category in crime is the phantom carrier:

- Phantom 1 – fake documents,
- Phantom 2 – duplicate of an existing company,
- Phantom 3 – tucked carrier,
- Phantom 4 – big bang,
- Phantom 5 – insurance fraud,
- Phantom 6 – freight forwarding company,
- Phantom 7 – trailer thieves,
- Phantom 8 – cash on delivery fraud,
- Phantom 9 – fake consignee [1].

**Phantom 1 – fake documents**
The carrier logs in to the consignor, loads the goods and disappears with the goods. After his disappearance, it is often found that the semi-trailer set was stolen, the vehicle registration number was stolen and the driver's documents, fuses and documents from the carrier were false, or stolen. Drivers report from mobile phones, telephone lines and faxes to petrol stations, freight forwarders, etc. It is the most frequently used and so-called basic scheme. Very often, they report via internet transport databases to companies that have missed loads on the Internet or unloaded goods for several days [1].

**Phantom 2 – duplicate of an existing company**
The carrier logs in to the consignor, loads the goods and disappears with the goods. After the inspection, it is found that the carrier who was supposed to load the goods knows nothing about the transport, even though the loading vehicle had the vehicle registration number identical to the existing one from the transport company's fleet. Duplicate - the vehicle has all the basic features and the vehicle registration number the same as the original vehicle. Pre-existing vehicles are sometimes used for the actual transport companies and the documents (concessions, copies of insurance) of these companies, although the vehicles no longer belonged to them and these documents were obtained legally by criminals at a time when the vehicles still belonged to the companies [1].

**Phantom 3 – tucked carrier**
An unknown forwarding company logs in to the sender, reports the vehicle and the carrier. The carrier is checked by the sender and it is an existing company and the vehicle, the insurance, the driver's documents and the documents from the vehicle are in order. The carrier will unload the loaded goods at a place other than that specified in the CMR document and the goods will disappear. Subsequently, it is found that the carrier was hired by the forwarder for a different transport than the carrier should have performed according to CMR. The carrier refers to the fulfillment of the obligation according to the order received from the forwarder. In cases where the carrier refused to obey the phantom's instructions, threats of violence followed [1].
Phantom 4 – big bang
The carrier who has been operating on the market for a long time is checked in with the consignor, the documents from the trailer set, the driver's documents and the insurance policies are in order. The carrier loads the goods and disappears with the goods. After his disappearance, it is found that this carrier recently changed owners, part of the employees and within a few days loaded several lucrative goods with various vehicles and the goods disappeared. During the crisis, several transport companies could get into the hands of criminals [1].

Phantom 5 – insurance fraud
The forwarder will procure a semi-trailer set for the consignor in a critical situation or under particularly advantageous conditions. The consignor then notifies the forwarder of the disappearance of the semi-trailer set with the goods. For the insurance fraud variant, the following testifies:

- Atypical delivery composition (inventory differences).
- A customer who does not take delivery of goods or deliveries made up of parts of other orders throughout the year.
- Problems and rejections of some previous semi-trailers.
- Carrier contacts and consignor's employees from the past. [1]

Phantom 6 – freight forwarding company
Forwarding companies procure transport orders at relatively advantageous prices, and thus quickly get to large volumes of transport. It offers carriers high prices, even higher than it receives from the customer. From a certain moment, they stop paying carriers, and as long as they find out what they are about, they stop cooperating with the company, they have extremely high overdue receivables. The company disappears. Neither the staff nor the owner are available. [1]

Phantom 7 – trailer thieves
This is a case several years old when the phantom-forwarder repeatedly lured the vehicles of the carriers for loading abroad in order to obtain the vehicles themselves, not the goods. For completeness, drivers were murdered and semi-trailers continued to the former Yugoslavia. The indiscretion of the Austrian police (media information) must have led to premature arrests and the case was not fully settled. At least one driver murder occurred while police were already watching the gang [1].

Phantom 8 – cash on delivery fraud
This type of crime is in the groupage delivery service, which collects cash on delivery for the delivered goods. Before the shipment is delivered from the foreign partner, or at a greater distance from the domestic service, the information received by the delivering partner about the cancellation of the need to select cash on delivery will appear. If it is not checked by another channel (another mail, fax, telephone) and delivered without picking up the cash on delivery, it will be found that the information was false. It is possible that hackers got into the forwarder's information systems and modified the data directly. The beneficiary is a natural person, subsequently undetectable [1].

Phantom 9 – fake consignee
An unknown forwarding company logs on to the consignor, reports the trailer and the carrier. The carrier is checked by the consignor and it is an existing company and the semi-trailer set, the insurance, driver's documents and vehicle documents are in order. The carrier will take the loaded goods to their destination and there they will report to the consignee, who was added a phantom to the order. He will instruct him to unload at a place other than the one indicated in the CMR document, often with the justification "second warehouse - around the corner" and the goods will disappear. The carrier refers to the fulfillment of the obligation according to the order received from the forwarder. In addition, according to CMR document, he delivered correctly [1].
1.2. Checking information

First of all, at the beginning of every business relationship, we must try to check as much as possible the company with which we are going to cooperate. And this can be done in many ways, for example:

- Check in the list of carriers in the unified information system in road transport.
- Company control in the commercial register/trade register.
- Checking the carrier’s insurance contract.
- Licence verification.
- Driver verification.
- Verification of the carrier’s vehicle registration number. [2]

In 2021, 3,436,018 vehicles were registered in Slovakia. Of these, passenger cars have the largest representation and semi-trailers are right behind them. (Figure 1)

![Figure 1. Registered vehicles by type in the Slovak Republic in 2021 [authors].](image)

The compulsory contractual insurance is compulsory for motor vehicle owners. It has been on the rise in recent years as a result of the overall growing number of registered vehicles. (Figure 2)
Insurance companies have created a register of insurance events (RIE) since 1 January 2017. It is mandatory for all members of the Slovak Insurance Association. The data is only entered into the register when you have an insured event. Then the name and surname will be entered in the register. In the case of a legal entity, the name of the company, the registered office of the company and the date of occurrence of the insured event will be published. In the case of motor vehicles, the registration number of the motor vehicle, the serial number of the motor vehicle and the date of occurrence of the insured event will be stated. Only the date of its occurrence and the number assigned by the insurer are recorded for the insured event. Anyone who has had an insured event and is registered can find out once a year at the written request of the insurer what information is kept about him.

2. CMR neutralization

According to Article 12 (1) of the Convention on Contracts for the International Carriage of Goods by Road: The consignor is entitled to dispose of the consignment, in particular he may require the carrier to stop the shipment, change the place of delivery or issue the consignment to a consignee other than that indicated in the consignment note. In Article 4, the author seeks to better understand the problematic provisions of the Convention concerning the Contract for the International Carriage of Goods by Road (CMR). This analysis makes it possible to assess the CMR in order to decide whether it is poorly designed or misinterpreted. By showing different interpretations, this research highlights the hypothesis that CMR was not designed badly, but on the contrary that differences in the interpretation of the provisions are due to different approaches of national courts. At present, carriers quite often face customer requests to neutralize the CMR consignment note. Neutralization of transport documents is not a scientific concept; it is not defined anywhere. Neutralization in transport means the exchange of original consignment notes or transport documents for other consignment notes or transport documents. It is therefore a question of invalidating the first consignment note. Based on the analysis of commercial law in road transport, this is an act of the carrier which is not regulated by the CMR Convention. The carrier cannot know whether the neutralization of the CMR is not being used to cover up fraud on a shipper who is circumventing the regional pricing policy or are receiving unduly rebates. Or, for example, in VAT fraud, a chain of commercial transactions is declared, ending with fictitious exports to another EU country or to a third country, and in fact the goods remain in the country of origin. The consignor will claim a VAT refund and will sell the goods in the country of loading. These are often completely fictitious exports and fictitious business transactions, and the goods do not even exist or are
grossly overvalued. Unauthorized VAT refunds on timber transport have also been confirmed. One loaded semi-trailer will cross the border several times with the same load. They will claim an unauthorized VAT refund at each transfer. \[2\]

A possible solution against neutralizing the CMR is to have the driver sign a declaration as follows:

“I declare that I have received transport instructions from my employer or transport orderer that are fully in line with the content of the CMR consignment note number ........ I have not received any instructions, and I do not know of any facts that would suggest that the shipment should not be carried out exactly according to this CMR consignment note. I am aware that the loaded goods are the property of the consignor and he alone is authorized to change the instructions for the shipment. I undertake to carry out the transport myself, without reloading or changing the driver, according to the instructions of the consignor given in the CMR consignment note and I will reject any instruction to change the route or place of unloading and report to: ……… During transport, I will park in the secure car parks listed on the IRU website. I am further aware that I may be complicit in the offense of Fraud or Fraud according to the Criminal Code” \[1,2\].

3. Analysis of criminal activities in road freight transport

Road transport is a significant part of the EU economy and will remain so for a long time to come. The increase in road freight transport in the EU has been reported for the seventh consecutive year. This is the main argument for ensuring road safety in freight transport. \[7\]

The author of Article \[8\] found that attacks on foreign drivers and trucks, previously considered South Africa's internal problem due to the country's domestic social and economic challenges, raised concerns about South Africa's future as an economic power, its role as a transit. landlocked countries and its relationship with regional neighbours. For the landlocked countries in the region, any instability in South Africa can have a serious impact on logistics that support business and international trade.

Anecdotal evidence suggests that harsh social conditions in the road freight sector are affecting traffic crime. This article analyzes traffic crime and shows how to use a combination of official statistics and crowdsourcing data in the process. The findings show that transport is more vulnerable to antagonistic threats in geographical areas where low-wage carriers are more likely to operate. \[9\]

The authors focused on the analysis of traffic accidents classified as criminal offenses. The analysis also examines the structure of traffic accidents and their clarity. The aim of the paper is to find out the development of the traffic safety situation in Slovakia and its impact on the quality of life of the population. \[10\]

The risk analysis performed by the authors in Article \[11\] was performed using original algorithms developed on the basis of artificial neural networks, which, among other things, take into account the probability of the risk of cargo theft at a particular stage of the order for different types of cargo. The authors specify the values of expected losses, which relate to the type of stolen cargo, including penalties depending on the stage of transport.

The sustainability of road freight transport is becoming increasingly important due to the ever-increasing movement of freight, globalization and operational flexibility. It is difficult for transport managers around the world to manage the growing risks in operating and implementing risk mitigation strategies for economic sustainability. This study found that risk mitigation strategies must be chosen with regard to risk criticality along with a limited budget. In addition, we found that considering subjective assessments of expert judgment and justification of costs and benefits provides a convincing result in calculating the number of risk mitigation in the FMEA approach. \[12\]

The authors of this article \[13\] have focused on some strategic risks for road freight companies. A review of some Bulgarian and European policies and guidelines has been carried out to show the development of road freight transport, which is the new "White Paper 2020" of EU transport to business.

The total number of crimes in road freight transport is shown in Figure 3 below.
Even the measures introduced to prevent criminal crime do not help to increase the volume of traffic, to reduce crime in EU road transport. The graph below (Figure 4) shows the total number of road freight offenses in the EU, in particular in the categories of vehicle theft, object theft, tractor / set theft, kidnapping, onset of an oncoming vehicle, container theft and phantom carrier. The number of criminal offenses is on the rise. Year-on-year, between 2015 and 2016, this increase was even more than double.

The largest volume of crime in road transport is vehicle theft, which, with the exception of 2020, is still growing year on year. The decline in 2020 may be due to a reduction in population movements during the COVID-19 pandemic. On the contrary, in 2020 the number of thefts from buildings increased (Figure 4).
4. Insurance options in road freight transport

The carrier's responsibilities are governed by international transport contracts. The risks associated with the transport of goods fall into the group of commercial risks in international trade.

These risks can:
1. be limited to the control of the goods being transported (can be accurately quantified and estimated)
2. extend to consequential damages if the goods are not in the right place at the right time (difficult to quantify and estimate).

Three stages of transport risk solution:
1. Risk transfer (transport and forwarding insurance).
2. Prevention or risk reduction (selection of suitable transport, suitable and safe packaging and marking of goods, national requirements for packaging of goods can be found in the International Chamber of Commerce).
3. Elimination of risk by transfer to business partners - depends on the applicable conditions governing liability:
   a) of the carrier for the goods in the individual international transport contracts,
   b) of the freight forwarder for goods according to freight forwarding contracts usually national.

The main products of the insurance company for road carriers are:
- road carrier liability insurance,
- shipment insurance.

4.1. Raod carrier liability insurance

The insurance product, which is characterized by Slovak insurance companies, has 3 forms depending on the nature of the transport: (Figure 5)

![Figure 5. Determination of the carrier's character](authors)

4.1.1. Coverage range

The insurance covers the liability of the national road carrier in the territory of the Slovak Republic and the insurance of the liability of the international road carrier covering:
- the carrier's liability for damage caused directly to the consignment during transport,
- rescue costs,
• costs associated with securing the rights of the insured and the insurer against third parties; the precondition for reimbursement of costs is that they were incurred in connection with damage caused as a result of a damage event, which is an insured event under these insurance conditions,
• costs of investigation of the insured event by persons authorized by the insurer. [15]

4.1.2. Cabotage insurance also covers:

• actual and provable other property damage caused to a third party other than damage to the shipment, if this damage occurred due to exceeding the delivery time of the shipment due to a demonstrable mistake or negligence on the part of the insured. The maximum limit of indemnity for property damage caused by exceeding the delivery time for one transport may not exceed three times the transport agreed for the transport in question,
• transport costs if incurred in connection with damage to the shipment, which is the subject of insurance benefits under these insurance conditions and the insured is obliged to reimburse them, costs under this point will be reimbursed by the insurer up to 10% of the sum insured in the insurance contract, total costs is limited to € 10,000. [15]

In the following Figure 6 you can see the number of reported insurance events in Slovakia. These are insurance events aimed at insuring liability for damage caused by a motor vehicle.

![Figure 6. Number of insured events in Slovakia](image)

4.1.3. Insurance amount

In the liability insurance of a national road carrier performing transport on the territory of the Slovak Republic and in the liability insurance of an international road carrier, the sum insured is agreed in the insurance contract, which represents the upper limit of the insurance indemnity in the following options:
• Option A - the sum insured is the highest limit of indemnity for one and all insured events in one insurance period,
• Option B - the sum insured is the highest limit of indemnity for one insured event that occurred during the insurance period. [15]

In the case of an arrangement of Option B of the sum insured, the sum of paid insurance benefits from all claims incurred in one insurance period may not exceed ten times the agreed sum insured. [16] Unless a specific variant of the sum insured has been agreed in the insurance contract, it is assumed that Option A of the sum insured applies to the insurance. Cabotage insurance is always covered by Option
A of the sum insured, so the sum insured represents the highest limit of indemnity for one and all insured events in one insurance period.

There are the following additional insurances for the product Liability of the road carrier:

- unsecured car parks,
- specialized vehicles,
- loading / unloading,
- used motor vehicles,
- live animals,
- theft of a transported consignment, including a vehicle,
- disposal costs,
- legal costs,
- simple damages,
- Phantom Carrier. [15]

4.2. The consignment insurance
Scope of coverage Insurance against all risks - ALL RISKS insurance. The insurance is arranged in case of damage, destruction, theft or loss of insured consignments as a result of all risks that may arise during the transport of consignments, carried out in accordance with the insurance contract and these insurance conditions.

This insurance covers the costs of a joint accident and rescue costs. There are additional insurances for this insurance product:

- loading / unloading,
- disposal costs,
- additional transport and storage costs,
- winter costs,
- expected profit. [15]

5. Insurance frauds
The Slovak Insurance Association publishes statistics on insurance fraud in the period from 2016 to 2020. Figure 7 shows significant increases in the number of investigated insurance frauds in 2016 and 2020. This suggests a cyclical situation, which may also be caused by the way in which fraudulent activity is detected by insurance companies. If an insurance company identifies a new type of fraud, it will incorporate it into its detection methodology (either by training or using algorithms in automated systems), which will increase the identified frauds. Detection can act as a precautionary measure and at the same time leads to the search for more sophisticated ways to commit new frauds. This creates space for cyclic repetition. This could be verified by longitudinal data collection and analysis.
The quantified value of insurance fraud in Slovakia by Allianz Insurance represented the following values (Figure 8).

The primary objective of this study was to examine whether road traffic accidents are directly linked to the purchase of car insurance, and their examination of data on car insurance policyholders revealed that those drivers who purchase more insurance cover are more likely to be involved in accidents, as a result, they will tend to submit more applications. [19] This suggests that insurance coverage may contain information that can be used to assess the levels of probability of RTA risk. We have also found that less safety-conscious drivers will tend to buy more cover and that those who buy more cover will have more accidents and more applications. [20, 21]
6. Conclusion

Measuring something as complex and elusive as organised crime requires a clear understanding of the object of study. It takes a great deal of conceptual clarity and deep insights into the processes and mechanisms at play to know what empirical referents to choose for the measurement and how to interpret whatever data are collected. The scientific process is framed as much by what we know (or believe to know) as by what we do not know. Strategic planning and policy development, in contrast, have to rely on whatever knowledge is available and often appear to be inclined to disregard how narrow a basis of knowledge there is. Today's business environment is made up of business entities that carry out their activities in order to ensure their economic stability. Their goal is to make a profit. In order to achieve these goals, it is necessary to prepare in advance for situations and factors that would lead to destabilization or loss in a particular company. There are currently several options for reducing and eliminating risks. The most preferred type of financial risk coverage is insurance. Businesses have the right to choose, at their own discretion and financial capabilities, the appropriate type of insurance product that will meet their requirements. Insurance is one of the best ways to cover the risks arising from business activities. For businesses, it represents aid in the form of eliminating or reducing losses caused by adverse environmental effects. Today, a number of different insurance products can be found on the insurance market. It only depends on the carrier whether, in order to protect his business, he decides to take out only those types of insurance which are compulsory for him, or whether he also chooses to cover possible damages with one of the voluntary insurances. Insurance helps to solve basic problems that arise in connection with an extraordinary and unexpected event. The reason for the insurance is the existence of risks that endanger any human activity and can cause incalculable damage to the carrier, or even its complete extinction. At the beginning of the 21st century, a comprehensive increase in the level of security is one of the most important tasks facing the entire company, the governments of individual countries, but also the management of each company. On the other hand, the issue of achieving a safe life and continuously improving the standard of living is the goal of every human being. The criminals disguise their activities well. It is nevertheless possible to deploy a number of relatively simple measures to prevent the type of transport loss described here. The objective is always to make sure of the integrity and reliability of any potential business partners. This makes it possible to distinguish any black sheep from the reliable transport companies. In particular, if you are intending to establish new business contacts, it is crucial to subject the potential business partner to a rigorous examination.

References

[1] Association of Logistics and Forwarding of the Slovak Republic. 2012. Falošná identita a jej zneužívanie pri páchani trestnej činnosti v kamiónovej deprave. Conference e-Logistika 2021, Žilina. Available at: falosna_identita.ppt (live.com), (20.3.2022).
[2] Association of Logistics and Forwarding of the Slovak Republic. 2012. Neutralizácia CMR. Conference e-Logistika 2021, Žilina. Available at: neutralizacia_cmr.ppt (live.com), (20.3.2022).
[3] Daras M. 2018. Register poistných udalosti pomáha odhaľovať podvody. O poistení.sk Technologie. Poistný trh. Available at: Register poistných udalosti pomáha odhaľovať podvody - oPoistení.sk (opoisteni.sk). (18.3.2022)
[4] Defossez D. CMR: what if the courts got it wrong? Uniform Law Review, Volume 21, Issue 1, March 2016, Pages 75–100, https://doi.org/10.1093/ulr/unw003
[5] Denes AT. Considerations on the contract for the international carriage of goods by road. SO REVISTA DE LA FACULTAD DE DERECHO. 2018, 44, 253-285, DOI: 10.22187/rfd2018n44a9.
[6] Poliak M., Tomicová J. and Jaśkiewicz M. 2020. Identification the Risks Associated With the Neutralization of the CMR Consignment Note. Transportation Research Procedia. 44. 23-29. DOI: 10.1016/j.trpro.2020.02.004.
[7] Road freight transport statistics - Statistics Explained (europa.eu). Available at:
[8] Mlepo A. 2022. Attacks on road-freight transporters: a threat to trade participation for landlocked countries in Southern Africa. Journal of Transportation Security. 1-18. DOI:10.1007/s12198-021-00242-6.

[9] Sternberg He. and Lantz B. 2018. Using crowdsourced data to analyze transport crime. International Journal of Logistics Research and Applications. 1-15. DOI:10.1080/13675567.2018.1431211.

[10] Soltés V., Kubas J. and Stofkova Z. 2017. The impact of a transport safety situation on crime situation and quality of life. Transport Means, Lithuania, 963-967, https://www.webofscience.com/wos/woscc/full-record/WOS:000576601500171

[11] Lorenc, A. and Kuźnar, M. 2018. An intelligent system to predict risk and costs of cargo thefts in road transport. International Journal of Engineering and Technology Innovation. 8. 284-293. ISSN 2226-809X. Available at: (PDF) An intelligent system to predict risk and costs of cargo thefts in road transport (researchgate.net)

[12] Dadsena K., Sarmah S.P. and Naikan, V. 2019. Risk evaluation and mitigation of sustainable road freight transport operation: a case of trucking industry. International Journal of Production Research. 57. 1-23. DOI:10.1080/00207543.2019.1578429.

[13] Hsu Y.CH., Shiu Y.M., Chou P.L. and Chen, Y.M.J. 2015. Vehicle insurance and the risk of road traffic accidents. Transportation Research Part A: Policy and Practice. Volume 74, 2015, Pages 201-209, ISSN 0965-8564, DOI:https://doi.org/10.1016/j.tra.2015.02.015.

Acknowledgments
This work was developed under the support of project: MSVVS SR – VEGA No. 1/0245/20 Poliak, M.: Identification of the impact of a change in transport related legislation on the competitiveness of carriers and carriage safety.