

THE COMPARISON OF THE RISKS AND FORWARDING COMPANY PERFORMANCE COMPARED TO AVERAGE PERFORMANCE IN SELECTED EU MARKETS

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Abstract

Forwarding companies are an integral part of supply chains and an intermediary between the carrier and the customer. The aim of the article is to provide information on the forwarder's position in the transport market. In connection with the procurement of transport, we focus on comparing transport performance in selected European countries. We take a closer look at the impact of the COVID-19 pandemic on transport performance in France. The transport of goods is a risk area that has various negative effects on transport companies. In this article, we provide an overview of criminal activity in France, focusing on the specific types of risk involved. As the frequency of each potential risk occurrence is an important factor, it is necessary to make a codification of the overall threats facing the company, their consequences and the likelihood of their occurrence. These risks can be prevented by making the right decisions. For the carrier, the easiest risk prevention is route planning. The effect of choosing a safer transport route on the size of the risk is described in the article.

Keywords: performance; risk; freight transport; forwarding company

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1. Introduction

The forwarder's priority should be to transport the goods to the right place, at the right time, in the right quantity and quality. In order to primarily meet these requirements, it is important to cooperate with quality carriers and customers. At present, their competitiveness is enhanced by various technological solutions, thanks to which, the forwarder is able to react faster and more flexibly to changes. From the customer's point of view, price and reliability are important factors in choosing a shipper. Carriers prefer the forwarding company which offers a higher price for the carriage and sufficient opportunities for regular carriage or carriage in their area of operation. For this reason, it is necessary for the forwarder to constantly systematically expand its portfolio with new customers and carriers. The advantage of large forwarding companies is the ability to absorb market fluctuations, which can regulate the prices of goods. The goal of all transport participants is to maximise their profits, eliminate possible risks during transport and provide quality services. In the year of 2020, the forwarding sector is also affected by the COVID-19 pandemic. With the impact of the pandemic still being felt throughout the road transport industry, many small and medium enterprises are struggling to survive.

According to the author Chen Ziyue, the evaluation of financial performance is of great importance in business. The quality of financial performance directly affects the sustainable development of companies. As the concept of corporate governance deepens, companies are paying more attention to the use of financial performance evaluation analysis to support the healthy development of the entire company. In his paper, based on the FCM clustering algorithm, a fuzzy decision model is established. Combined with the factors affecting the financial performance of enterprises, the corresponding indicators are selected from the four aspects of profitability, operation ability, debt-paying ability, and the development ability to construct the financial performance evaluation system, and the comprehensive fuzzy evaluation model is constructed according to the financial evaluation system [3].

In Article [24], the authors examine the use of Intelligent Transport Systems (ITS) as a basis for the mobility of people and consignments. The aim of this study is to understand how different ITS measures can affect multiple performance indicators (KPIs). The result suggests that corridor traffic management, traffic management (with a focus on transit traffic) and the city gate create socio-economic effects in descending order. The authors' methodology in Article [38] is based on the analysis of several case studies, where data are collected through observations, focus groups, unstructured and semi-structured interviews. Their findings from empirical data show that safety measures can cause lower operational performance. This paper discusses the importance of developing security capabilities to be integrated into existing logistics and transport information systems. This research [34] analyses the possibilities and limitations of the use of information and communication technologies (ICT) in the performance of road freight transport services. The main results highlight the identification of the benefits of ICT in improving the performance of transport services.

Forwarders organise the transport of goods on behalf of shippers. It is not only the transport of goods by one mode of transport, but it procures transport with the possibility of using intermodal transport. Long-term decisions in intermodal transport are, for example, location and arranging intermodal terminals in a railway network design. Medium-term or tactical issues relate to facility capacity planning, consolidation development and pricing strategies. Short-term problems concern the routing and planning of lorries, train loads and the redistribution of containers and wagons. In principle, we also encounter the mentioned problems of terminal or network operators, while the forwarder only deals with the operational problem of route selection services offered by other operators [30]. Intermodal transport, which uses different modes, connections and hubs, is now gaining in importance around the world. However, there are not many studies that analyse the condition of intermodal transport corridors and evaluate their performance. Based on the findings, this document identifies problems and challenges for the development and operation of intermodal transport corridors in Northeast and Central Asia [31].

Due to the complexity of freight transport and its multifaceted nature, scientists pay considerable attention to the issue of road transport development in Eastern European countries. In addition to analysing economic opportunities in road transport, the research focuses on various aspects of this area. For example, Stojanović's scientific work is focused on studying the problems of estimating the share of freight transport by own vehicles in Europe, emphasising the issue of road safety in countries such as: Greece, Romania and Hungary [35]. While the number of road deaths in the European Union (EU) decreased by 53% between 2001 and 2013, in the countries of south-eastern Europe, the reduction ranges from 64% (Slovakia) to 24% (Romania), indicating considerable diversity in road safety in the region and the need for urgent improvements [22].

In particular, the scientist raises the question of the lack of complete data on the causes of road accidents and relatively high road deaths. Opportunities for the functioning of the transport sector and the development of logistics infrastructure in some Eastern European countries are the subject of research [13, 23].

The problem of the functioning of road transport is thus largely reflected in scientific publications in the form of cases and empirical research. However, the question is open to further research, especially taking into account globalisation processes and strengthening the economic development of Eastern Europe [11].

However, the high level of violent crime against lorries and vans has been a major known risk to the road haulage sector for many years. Several countries are struggling with this risk. In South Africa, attacks on foreign drivers were considered an internal problem, but as a result of the country's domestic social and economic challenges, they raised concerns about South Africa's future as an economic power. This exploratory study provides an overview of the increasingly complex issue of violent attacks on the road haulage sector against foreign nationals [25]. Problems in the transport systems also exist in cities, which are the main providers and consumers of transport services. The urban transport system has a large production base, occupies important areas, has a lot of capital construction facilities and

production relationships with large manufacturers and suppliers of technical equipment, and it is characterised by a large number of employees, etc. – that is to say, all the attributes of a large production complex are in fact an independent industry [28].

The volume of foreign trade exports has the properties of randomness, complexity and strong nonlinearity, so it is difficult to describe it using the traditional time series model algorithm. In the research work [9], the authors showed that the rate of contribution of domestic economic factors to Chinese foreign trade exports is the highest and reaches 59.65%, which also reflects the necessity and correctness of China's insistence on supply-side reform. The neural network method has a good ability to model and generalise non-stationary data on the time series of small and stable samples for import and export and can achieve high prediction accuracy and decision accuracy, especially to predict its development trend, and the model has a high degree of fit. In the research paper [20], the authors present a procedure to demonstrate the use of schematic diagrams to support the mechanisms for shaping the basic functional properties of the system, such as controllability, the accuracy of input signals, noise immunity, etc., which are not used in current traffic-safety practice, but are able to significantly increase the functional capabilities of traffic-safety systems, thus preventing road deaths.

The forwarding company operates on the principle of a single point of contact. You can see its position within the supply chain in Figure 1. The carrier has only one contact person within the company, with whom it is in contact on a daily basis. The employee is assigned to the carrier if they make a total of five shipments within six weeks. The aim is to increase the carrier's confidence in the forwarding company. If the carrier does not use the above-mentioned online platform, the assigned employee offers them free carriage on a daily basis, negotiates prices and sends orders if the carrier is interested. Employees are motivated to generate company profit through rewards. If the employee negotiates with the carrier a price that produces the profit, he is entitled to a reward of 10% of the generated profit. If the transport is sold at a higher price than offered by the customer, the employee is rewarded with a flat rate.

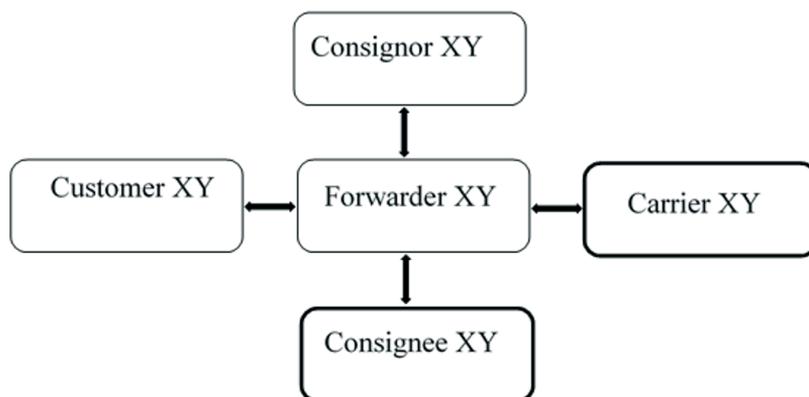


Fig. 1. Scheme of the forwarder's position within the supply chain [authors]

There is also one contact point for customers, i.e. consignors and consignees. Depending on the customer and the number of carriage, the forwarder creates teams that are in contact with both customers and employees assigned to the carrier.

1.1. Cost market in Eastern European countries

According to the UN scheme, the countries of Eastern Europe are Belarus, Bulgaria, the Czech Republic, Hungary, Moldova, Poland, Romania, Russia, Slovakia and Ukraine. Carriers from this region are considered to be reliable and high quality in other parts of Europe. Poland is the country with the highest number of carriers in Europe. Despite their high competitiveness, Polish carriers are willing to offer the lowest prices on the market. Heavy and small equipment is imported into the countries. Products from the automotive, chemical and plastic industries are mainly exported [37].

Access to the market in road freight transport in Slovakia is regulated by Act no. 56/2012 Coll. On road transport as amended and Act no. 9/2019 Coll. amending Act no. 56/2012 Coll. In the case of transport goods to EU countries, a EU Community License is required for business. In the Figure 2 you can see a ratio of import and export of goods by road freight transport in Slovakia.



Fig. 2. A ratio of import and export of goods by road freight transport in Slovakia [14]

Compared to other countries, the Slovak cost market has grown steadily each year and the travelled tonne-kilometres are significantly higher than, for example, in Austria or Belgium (Figure 3). This may be due to the industry, which is located in Slovakia for geographical and other strategic reasons [15].

1.2. Market comparison

We will compare the transit transport that has passed through the given countries and a share of selected countries in the import and export of the European 28.

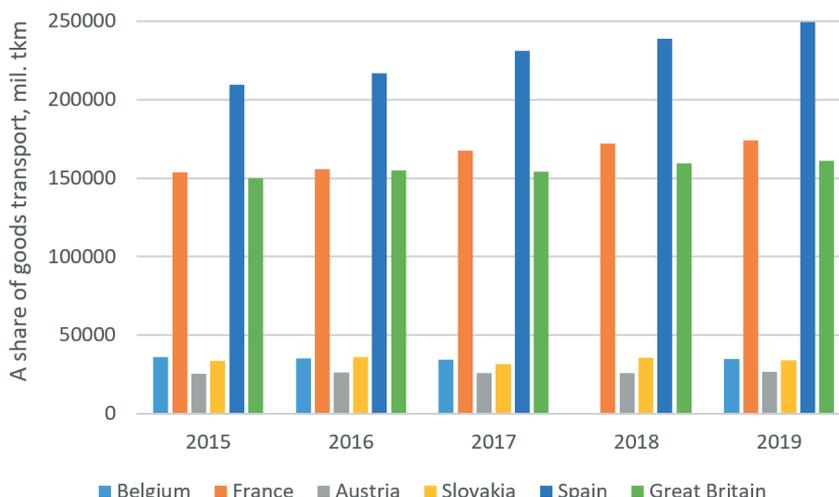


Fig. 3. A share of goods transport by road in selected EU countries [14]

Data for road freight transport of goods by selected countries were available only during the period 2015 – 2019. The largest share of transport of goods by road is France, Spain and the United Kingdom. By contrast, Austria, Belgium and the Slovak Republic have the smallest share. Of course, it also depends on the size of the country or the number of road carriers.

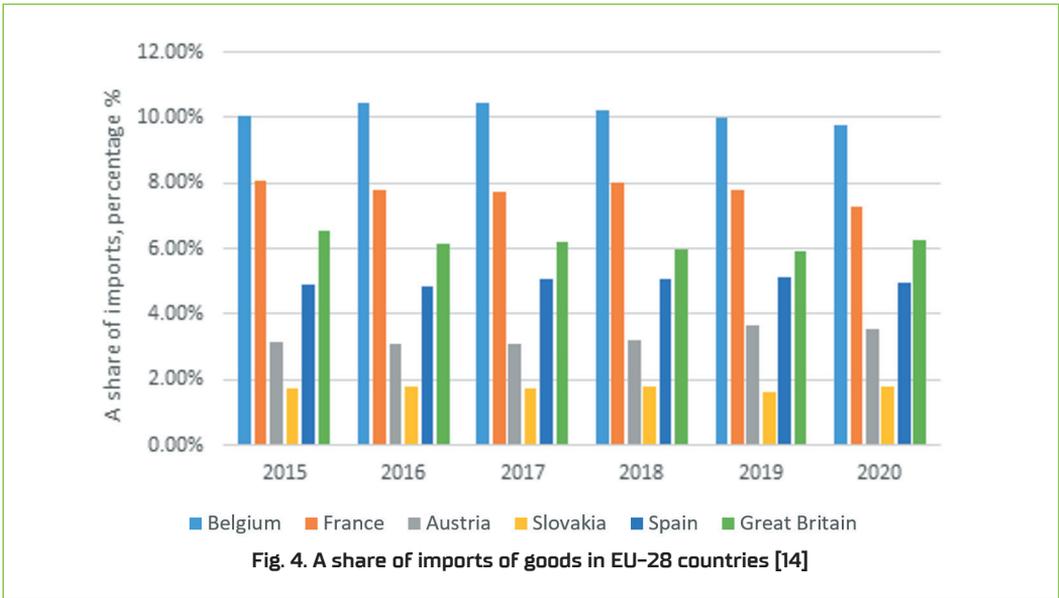
The statistics were obtained from Eurostat, which is filled with statistics from all EU countries from the Intrastat system. It is important to note that the reporting agents have different reporting conditions and procedures in each country, which may cause differences between the volumes of goods received and sent in the countries analysed. The reporting agents are all natural and legal persons who are VAT payers who have sent or received community goods in the aggregate value higher than or equal to the assimilation threshold for the previous year or since the beginning of the reference year.

Differences occur in the manner and periodicity of submitting and filling in regular and zero reports as well as in the amount of the sanction for failure to submit a report. Each country also has different procedures in place for special cases, such as the return of goods, and the repair or processing of goods. In Deloitte's 2018 Intrastat Handbook, it can be noted that the biggest difference between countries that may affect statistics is the level of the assimilation threshold according to which reporting agents are obliged to report the dispatch and receipt of goods (Table 1). Statistics are also affected by the number of statistical units, which affects the business environment and the tax burden on businesses in the countries concerned [16].

Table 1. Comparison of data collection to Intrastat systems [14, 21, authors]

Country	Dispatch		Receipt	
	Simplified	Detailed	Simplified	Detailed
Belgium	1 mil. €	25 mil. €	1.5 mil. €	25 mil. €
France	0 €	460 000 €	-	460 000 €
Austria	750 000 €	12 mil. €	750 000 €	12 mil. €
Slovakia	-	400 000€	-	200 000 €
Spain	-	400 000€	-	400 000 €
Great Britain	£ 250 000	£ 24 mil.	£ 1.5 mil.	£ 24 mil.

The statistics in Figure 4 and Figure 5 include the share of the total imports and exports in selected countries within the EU for the observed period.



Despite the decline, Belgian has the largest share in imports within EU. None of the countries recorded a significant decrease or increase in the share of imports from other EU countries during the period under review. But as we can see, in all countries except Slovakia, there was a decline in imported goods in the last year, 2020. This may be due to the COVID-19 pandemic, which has affected all states. Slovakia recorded a slight increase in import of goods from 1.62% to 1.8%.

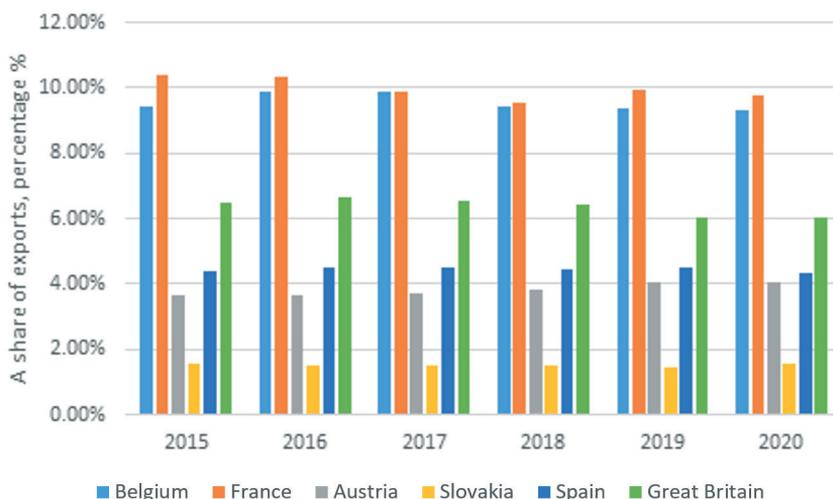


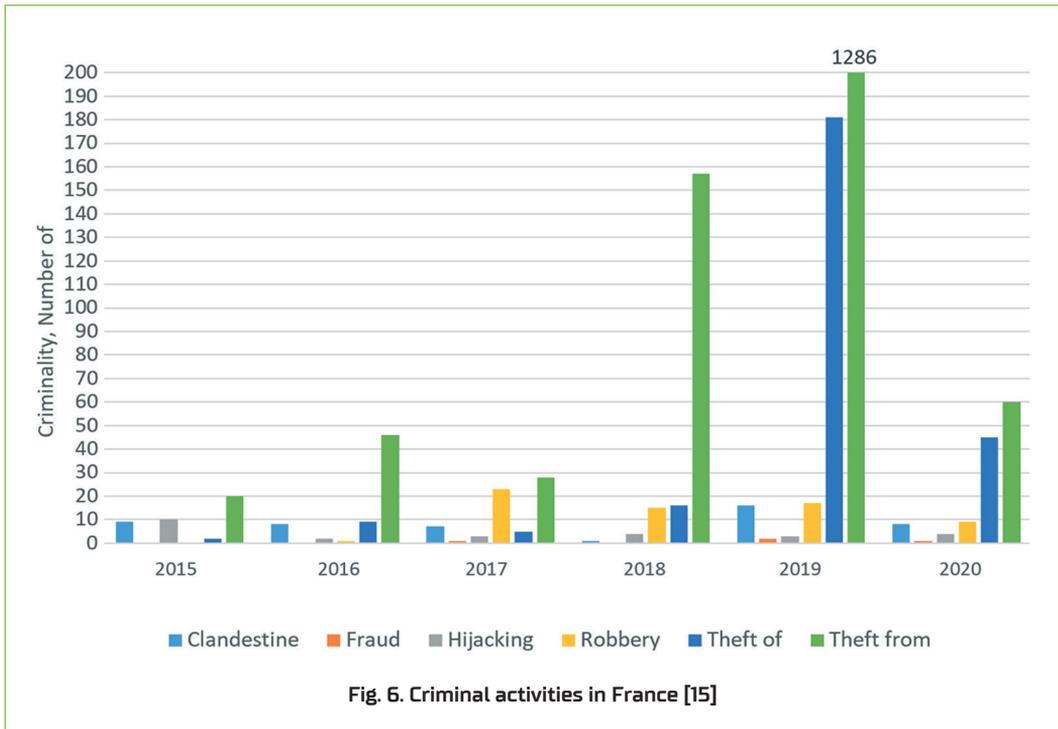
Fig. 5. A share of exports of goods in EU-28 countries [14]

France, together with Belgium, had the largest share of exports to other countries, which has recently declined, as has been the case for imports. The reason may be the same and that is the COVID-19 pandemic. The United Kingdom also saw the least significant decline in 2020. Slovakia accounted for an average of 1.5% of exports.

2. Crime in France

The French transportation services market grew from €183.94 billion in 2010 to €207.27 billion in 2019 at a compound annual growth rate (CAGR) of 1.30%. The transportation services market was negatively impacted by the spread of COVID-19. The market was expected to decline in 2020 to reach €199.8 billion. It is expected to recover and grow at a CAGR of 3.50% from 2020 to reach €280.46 billion in 2030.

Transport-related crime is a serious and growing problem. In terms of crime, France ranks eighth among European countries and 1st among the eleven Western European countries. This problem is not only in France but in the whole world. Life under the COVID-19 pandemic is not only changing how people live but also how crime occurs. The good news is that this fundamental change will see certain crimes decrease – for example, in France criminal activity fell to 127 cases in 2020 from 1505 cases in 2019 (see Figure 6). However, such a decline may also be due to the COVID-19 pandemic. As we have mentioned, COVID-19 has affected every business sector. The movement of people was restricted, production was suspended, the amount of transported goods was reduced and the number of criminal activities during transport was also reduced.



In 2019, TAPA EMEA recorded the most criminal cases. This was due to the fact that in 2019, a massive campaign was carried out for carriers to report every criminal activity that happened to them. Hijackings are most common in Great Britain and in France. The largest share of criminal activities falls on theft. In Figure 6, we can see the theft divided into theft from trucks, trailers and containers and theft of trucks, trailers and containers.

Figure 7 shows the areas of criminal activity in France. The highest crime rates were recorded in Paris, Lyon, Montpellier and Dunkerque.

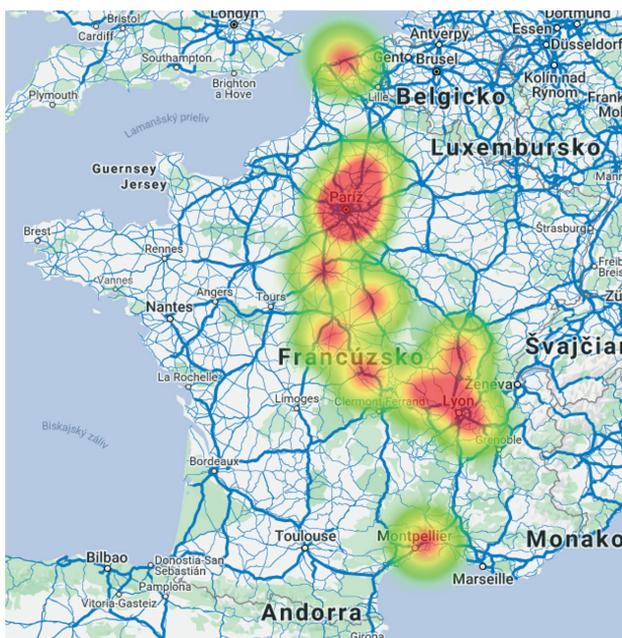


Fig. 7. Areas of criminal activity in France [15]

Most criminal activities take place mainly in unsecured truck-parking areas. The share of these in the total number of criminal activities in France can be seen in Figure 8.

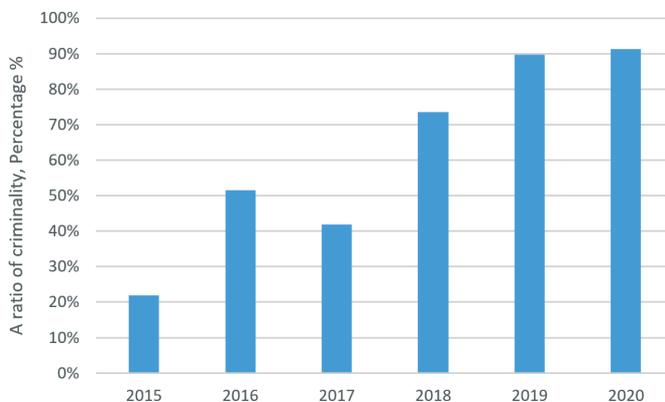


Fig. 8. Percentages share of criminal activities in unsecured truck parking areas [15]

Migrants had the largest share in criminal activities. In 2019, there were several monthly reports of stowaways discovered at the border checkpoints in Calais, Dover, Zeebrugge and other parts. In the case of these discoveries made either in France, Belgium or in the UK,

the stowaways have often boarded trucks either deeper in the French or Belgian mainland or other European countries that the lorries have traversed. The stowaways or accomplices will often have entered through the roof or by breaking into the back of the trailers. This can be done in stops as short as five minutes at parking areas or can even happen in heavy traffic. Also, there are reports of more sophisticated cases of lock tampering by human traffickers, making detection by drivers more difficult. Over the autumn and December of 2019, the French authorities reported that they were clearing several migrant camps weekly. The latest clearing of a major migrant camp took place at Dunkirk in September 2019, where some 800 migrants were evicted from a makeshift tent-camp just east of the ferry terminal. The next week, new camps had sprung up in its place.

Goods road transport operators in France are still suffering, although the sector as a whole is in a better position than at the start of the pandemic earlier in the year, when, for example, first quarter revenue was down by 27%. Even now, 5% of all trucks are still non-operational, and revenue for the sector was down by 12% in June 2020.

2.1. Reducing the risk of criminality by planning the route transport

The carrier must ensure safe transport when planning the transport. If they have information about the number of criminal attacks on the transport route, it can be safely designed. All criminal activities can be obtained from the IIS TAPA database. As an example of calculating the risk index, we planned two routes. One route goes from Barcelona via Paris to Dunkerque (Figure 9). And the second from Barcelona via Lyon to Dunkerque (Figure 10). We focused on the number and type of risks on selected routes.

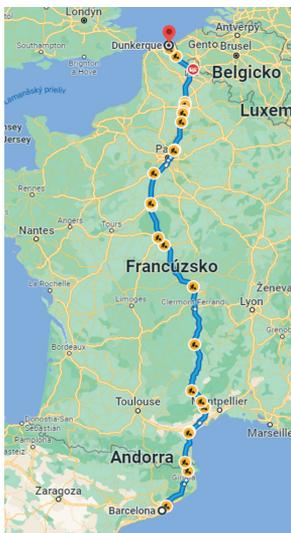


Fig. 9. Transport route via Paris [16]

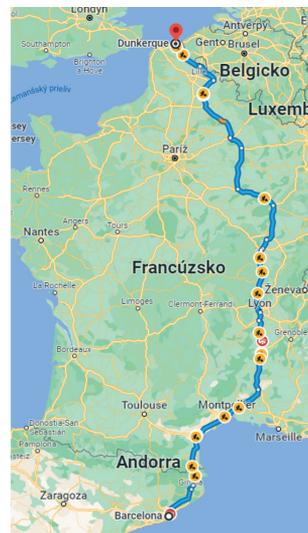


Fig. 10. Transport route via Lyon [16]

Since the frequency of each potential occurrence is an important factor, this assessment risk matrix can be used to codify the risk assignment, which in conjunction with the risk assessment table, present the total picture of the threats that company faces, their consequences and these likelihood of occurrence [21] (Table 2).

Table 2. Risk-assessment matrix [21]

likelihood / frequency	Risk category			
	I catastrophic	II critical	III Marginal	IV negligible
frequent	1	3	7	13
likely	2	5	9	16
occasional	4	6	11	18
remote	8	10	14	19
unlikely	12	15	17	20
Risk index		Risk-acceptance category		
1 – 5		not acceptable		
6 – 9		not desirable		
10 – 17		acceptable with extra control		
18 – 20		acceptable with no extra control		

The risk-assessment matrix is characterized according to the color scheme that best describes the desired security level for each risk situation.

Category table of risk:

Incident type:

- Category I – hijacking, robbery, fraud,
- Category II – vehicle theft,
- Category III – theft from vehicle,
- Category IV – other theft (theft of container, theft from facility, ...).

Likelihood Index:

This index is calculated based on the following formula:

$$\text{likelihood index} = \frac{\text{index/years}}{\text{km}/100} = \frac{\text{index} \cdot 100}{\text{km} \cdot \text{years}}, \quad (1)$$

where:

km – the length of the route in km,

incidents – the number of incidents across the route,

years – the time period that includes the incidents [20].

The data needed for calculation were taken from the IIS Database provided by TAPA. All incidents are reported by TAPA EMEA members only. For the public, data from the database are provided only for the last 90 days. The complete database is only for members who pay for

membership every year. The number of accidents on selected routes is for the whole of year 2020 (Table 3).

Table 3. Matrix of the first and second route information [authors]

	kms	countries	incidents	likelihood index	risk index
route 1	1322	2	66	4.99	7
route 2	1413	2	48	3.40	9

$$66 \cdot 100 / 1322 \cdot 1 = 4.99$$

$$48 \cdot 100 / 1413 \cdot 1 = 3.40$$

Results of route planning

From the case study can evaluate the following conclusions:

Route 1:

Risk category: 7

Through:

- Barcelona, Paris, Dunkerque

Countries crossed: 2

Distance: 1322 km

Estimated total duration: 21.35 hours (Average speed 65 km/h)

Short breaks: 45 min – 2

Long breaks: > 45 min – 2

Likelihood index: 4.99

Number of incident: 66

According to the likelihood index, this risk is classified as frequent.

Assessment Methodology:

Incident type: 76% of incidents reporting incidents type are recorded as theft from vehicles, trailers, containers or facilities

Category III

Risk acceptable category: **not desirable**

Route 2:

Risk category: 11

Through:

- Barcelona, Lyon, Dunkerque

Countries crossed: 2

Distance: 1413 km

Estimated total duration: 21.74 hours (average speed 65 km/h)

Short breaks: 45 min – 2

Long breaks: > 45 min – 2

Number of incident: 48

Likelihood index: 3.40

According to likelihood index, this risk is classified as occasional.

Assessment methodology:

Incident type: 58% of incidents reporting Incidents type are recorded as theft from vehicles, trailers, containers or facilities

Category III

Risk acceptable category: ***acceptable with extra control***

From our example, it can be observed that route number 2 is longer, but safer in terms of risk. When the dispatcher is planning a transport, it is important to keep in mind that the driver needs to take a break from work and a daily rest period in secured car parks. Risk assessment of route safety should always be part of route planning. The road risk assessment applies a standard risk-assessment approach to the many hazards associated with the transport route, including the length of the journey, sufficient time for transport, observing breaks at work, route selection and thinking about transport route alternatives. Risk assessment is beneficial for carriers and their customers and can lead to the prevention of possible losses from the occurrence of risks.

2.1. Cost market in France

The companies most severely impacted by the pandemic are those working with the automobile sector and those transporting hazardous materials. In June, 76% of trucks in the automobile sector and 70% of hazardous materials trucks were still non-operational. Removal companies did not work at all between March and May 2020 [17, 27].

The French freight market is characterised by low exports, mainly from areas such as Brittany and the Loire-Atlantique, and higher imports. Prices from/to abroad also depend on the chosen route. A two-way crossing through the Mont Blanc tunnel, which connects Italy with France, currently carrier's costs EUR 530.90 (from 1.1.2020). In addition, only vehicles over 7.5 tonnes with an emission class of at least EURO 3 are allowed. Many carriers try to avoid the tunnel for these reasons and therefore choose longer routes. The most popular are domestic transports up to a distance of 800 km [5, 18].

The access of foreign carriers is hampered by legislation. According to Decree no 2016/418 of 7 April 2016 of the Labour Code, carriers who send employees to France are obliged to issue a certificate containing:

- business name, postal and e-mail address, employer's telephone number and legal form of the company;
- name and surname, date and place of birth of the responsible transport representative and the relevant social security report paid by the employer for social contributions;
- name and surname of the employee, date and place of birth, address of usual residence, nationality, date of signature of the employment contract and the applicable labour law;
- the gross hourly wage converted into euros and details of travel and subsistence allowances for posted staff;

- name and surname or the name, electronic and postal address of the appointed representative in France, the representative must be appointed for at least 18 months after the termination of their employment in France;
- reference to the company's registration in the electronic register of road freight transport operators ERRU.

This certificate is issued in two originals. One is for a representative of a carrier in France, or a French employer of a driver, and the other one is for the driver's employer. Aside from this, other copies of the certificate must be on the board in case of inspections. Lastly, the employment contract and if possible, the collective agreement, should be translated into French. The penalty is up to € 2 000 per employee and up to € 4 000 per year in case of a repeat offence. The total penalty is up to € 500 000 [1].

Based on data obtained from Eurostat for the years 2015 – 2020, it was possible to find out how many tonnes of goods flowed from/to France by the international road freight transport (Figure 11) [13].

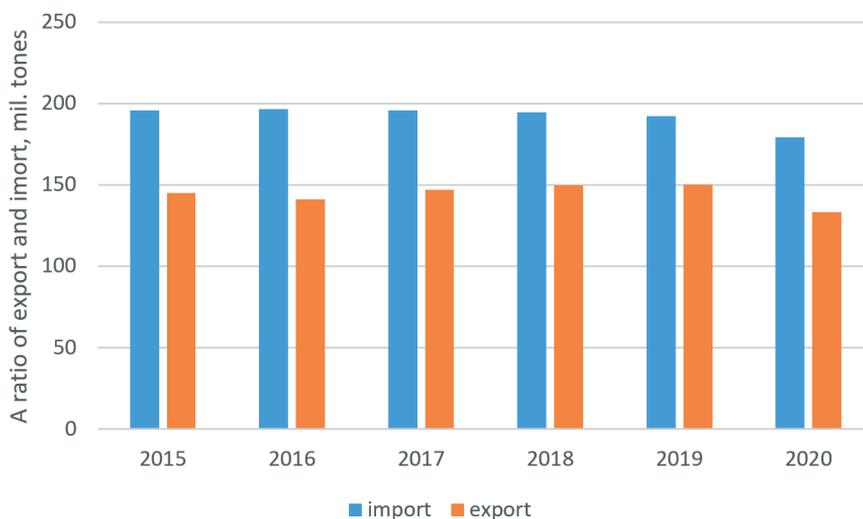


Fig. 11. A ratio of import and export of goods in France [14]

The share of imports and exports of goods in France remains relatively balanced year on year. In 2016, there was a decrease in imported goods from EU countries to France. The most significant decrease in imports as well as exports was recorded in the last pandemic year [10, 29].

It is estimated that the French economy shrank at a record pace in 2020, as the COVID-19 pandemic hampered activity. The performance of the French road-transport industry is not too different from other major countries such as Italy and Germany in terms of market

growth. In what has become a trend across countries in the EU, the industry of freight transport by road is only expected to grow at a modest pace.

There is currently a shortage of 20,000 drivers, despite there being many open job offers. French carriers observed a reduction in the market share when it comes to international road freight transport due to increasing competition. On the other hand, the positive impact of the COVID-19 pandemic is the reduction of criminal activity in the transport of goods.

The reason for slow growth is the shortage of truck drivers in the EU and in France.

3. Discussion

It should be in the interest of the freight forwarder itself to expand its own portfolio. Employees need to be trained to target potential partners. The company's management has access to free carriages through important transport databases such as TimoCom, where carriers publish the location of their free capacities and, among other things, telephone or e-mail contact. Another suitable tool for new carriers are databases of national electronic registers of road transport companies, the so-called ERRU, which is governed by Regulation (EC) No. 1071/2009. Although in some cases it does not provide contact information of carriers, it is possible to search it in another way. The forwarder's participation in various trade show and conferences is also important, where they can come into personal contact with carriers [12, 32].

In order for the portfolio to be expanded in a targeted manner, the forwarder must also look for language-skilled employees and reduce the current employee turnover with appropriate tools. Due to the relatively strong competitive environment, it is necessary to consider that the outgoing employee can also take the acquired contacts with them, which can deprive the employer of quality partnerships with carriers. It is important to build strong corporate identity for employees and systematically reward their work based on work results.

Even though there are databases in which customers can book a specific transportation, they turn to people. With 400 shipments per month per employee, the obligations associated with tracking a shipment and selling new shipments become unbearable, and therefore the company could in some cases consider creating employee pairs where one sells shipments and the other tracks shipments along the way. The obligation to track consignments could be completely eliminated in possibly 100% of the functionality of the tracking system as well as 100% of the connection of carriers to the system [2, 6].

In addition to used transport routes, the forwarder also offers its services for single shipments. If a single shipment is properly valued, it is possible to make a profit on it as the customer needs to transport the goods and he is willing to pay extra for this service. These shipments valued by management based on previous experience or a telephone survey among carriers. A more accurate method is certainly to use dedicated software that can plan the route correctly according to the constraints of trucks, such as length and weight.

As a result, the forwarder can avoid errors caused by human factors, such as incorrect valuation of the shipment due to a poorly chosen distance between the place of loading and unloading. However, the quality of single shipments can move the forwarder to the forefront of the customer's supply chain.

Valuation of shipments that compete through tenders, and often in package with other shipments, which is based on the principle of clusters. As it is difficult to estimate the costs of carriers from the position of the forwarder, it is necessary to build on previous experience of employee and management. Economic and industrial centres together with municipalities and cities within 50 kilometres of the air distance form so-called clusters. Especially in densely populated parts of Europe, such as in Randstad agglomeration in the Netherlands, some clusters even overlap. For shipment valuation, the forwarder divides cluster into important and unimportant. Shipments that go from an important cluster to another important one are valued at the lowest rates. Increased movement of carriers is expected [7, 19].

Shipments from an important cluster to an unimportant one and in the opposite direction is more expensive. Shipments from an unimportant cluster to another unimportant one are valued at the highest rates. It is assumed that the carrier will have to cover at least 150 empty kilometres from/to the place of loading/unloading. In this way, we also appreciated the analysed shipment from Belgium to France, where the forwarder was not able to make a profit during the entire cooperation with the customer. Despite the fact that one shipment was loss-making, for the forwarder it could ultimately be a profitable customer. Therefore, it is necessary to look at the activities of the forwarder as a whole [36]. The forwarder, who has their own investor is an important element in the supply chain, because they can regulate and absorb prices in transport and thus the prices of goods [33].

For the other forwarding companies operating in Europe, the analysed freight forwarder lacks 24-hour operation. Carriers do not have contact with the forwarder in the event of problems during the night, weekend or holiday. All problems are solved only during working hours, which can be unsatisfactory for some carriers and a sign of low flexibility. The introduction of a 24-hour contact line would be appropriate in a workplace which has some most language-skilled employees, despite the higher staff costs. The COVID-19 pandemic has exposed the vulnerability of extended and complex value chains to production disruptions, particularly in the East Asia Pacific region [4, 8]. As a reaction, many of these supply chains may shorten or diversify through a reliance on alternative partners or intensified efforts to bring home strategic value chains [26]. The shortening of supply chains may benefit countries with capable manufacturing sectors and beneficial exports' policy (for example, Colombia, India, and Mexico) to partially substitute China over the medium term. There may also be a trend towards placing additional warehousing capacity or dry ports near demand centres to shorten the time needed to get goods to market.

4. Conclusions

The transport routes that the forwarder obtains in tenders are usually more convenient for customers. The forwarder undertakes to realise transportation at a set price usually for a long period of time. However, the market is evolving and changing, to which carriers are adjusting their rates. The competitive advantage of the analysed forwarding company is the acquisition, which took place in 2019. The company was taken over by a larger investor, globally one of the strongest logistics companies. The condition of the parent company in this case was to provide mainly full-vehicle transport for their purposes. When it comes to acquiring and retaining larger companies than customers, the parent company can invest its resources. The forwarder is thus in a position where they are able to absorb even bigger market fluctuation, or accept rates that ultimately make them less profitable. By cooperating with world-famous customers, it builds its credibility and the brand. However, this approach can be liquidating for small forwarders over a few years, mainly due to rapid automation and their limited financial resources.

Nevertheless, a certain flexibility on the customer's site would allow the forwarder to further develop its business activities. In particular, insufficient communication on the customer's site is a problem, such as failure to inform the forwarder of late loading or unloading or restrictive and very specific transport requirements. Sometimes the customer has to suffer the costs of delays, especially when the capacity of the loading or unloading point is very limited and even after escalation of the problem is not solved. In this way, the forwarder can also lose quality carriers, because it may seem incompetent to the customers.

The reactivity, escalation and proactivity of the forwarder are very important both from the carrier's site and customer's site. If problems with the customer or carrier continue to exist, they need to be escalated by both the forwarder's management and carrier's or customer's management. The conditions of cooperation are contractually set so that there are advantageous for all three parties.

Other competitive advantages that needs to be maintained and improved is the automation of processes and the associated tracking of shipment. The forwarder who works in a transparent area is able to provide a faster response. Among other thing, the system provides information on whether the vehicle was brought to load on time or late and can optimise its key performance indicators accordingly. A present, a rapid entry of technology into the transport and logistics sector is expected. The advantage will be those carriers and forwarders who use tools such as block chain, the Internet of Things and an artificial intelligence for their activities. The market will adapt in particular to those who are prepared and those who are willing to invest in technology.

Movement (or its absence) is the central point of everything because the potential offender must encounter a potential target of crime. The fact that the movement of goods was restricted due to COVID-19 for some time was immediately reflected in a reduction in the number of criminal activities. However, with the gradual easing of measures we can expect an increase in this type of criminal activity.

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4. References

- [1] Cempirek V., Gasparik J., Zitricky V., Blaho P.: Control of modular conveyor and automated handling devices interconnection. *Advances in science and technology – research journal*. 2018, 12(3), 210–215, DOI: 10.12913/22998624/94963.
- [2] Cernicky L., Kalasova A.: The application of telematic technologies in Slovakia – the possibility of improving road safety in the Slovak republic. *Scientific Journal of Silesian University of Technology. Series Transport*. 2015, 86, 7–11.
- [3] Chen Z.: Research on Accounting Intelligence System Modelling of Financial Performance Evaluation. *Security and communication networks*. 2021, 2021(1), 1–9, DOI: 10.1155/2021/5550382.
- [4] Čulik K., Kalašová A.: The impact of carpooling on the economy and road safety. *Management Perspective for Transport Telematics*. 2018, 897, 85–100, DOI: 10.1007/978-3-319-97955-7_6.
- [5] David A., Sosedova J., Putz L.M., Jolic N., Kavran Z.: European automated container terminal. *Communications*. 2014, 16(2), 41–45.
- [6] Dvorak Z., Rehak, D., David A., Cekerevac Z.: Qualitative approach to environmental risk assessment in transport. *International Journal of Environmental Research and Public Health*. 2020, 17(15), 5494. DOI: 10.3390/ijerph17155494.
- [7] Gnap J., Jagelčák J., Marienka P., Frančák M., Kostrzewski M.: Application of MEMS Sensors for Evaluation of the Dynamics for Cargo Securing on Road Vehicles. *Sensors*. 2021, 21(8), 2881, DOI: 10.3390/s21082881.
- [8] Gnap, J., Senko Š., Kostrzewski M., Brídžiková M., Czódörövá R., Říha Z.: Research on the Relationship between Transport Infrastructure and Performance in Rail and Road Freight Transport—A Case Study of Japan and Selected European Countries. *Sustainability*. 2021, 13, 6654, DOI: 10.3390/su13126654.
- [9] Han Z., Zhu Z., Zhao S., Dai W.: Research on nonlinear forecast and influencing factors of foreign trade export based on support vector neural network. *Neural computing & applications*. 2022, 34(4), 2611–2622, DOI: 10.1007/s00521-021-05900-3.
- [10] Harantova V., Hajnik A., Kalasova A.: Comparison of the flow rate and speed of vehicles on a representative road section before and after the implementation of measures in connection with COVID-19. *Sustainability (Switzerland)*, 2020, 12(17), 7216, DOI: 10.3390/su12177216.
- [11] Harkava V., Pylypenko O., Haisha O., Aramyan A., Kairov V.: Modeling and trends of road transport development in eastern european countries. *Laplace em Revista*. 2021, 7, 285–292, DOI: 10.24115/S2446-6220202171724p.285-292.
- [12] Hlatka M., Stopka O., Stopkova M.: Proposal of Innovative Flooring Options for Marine Containers. *NASE MORE*. 2018, 65(4), 174–179, DOI: 10.17818/NM/2018/45I.2.
- [13] Holubka S., Ovchar P.: Financial aspects of national automobile transport development. *Financial and Credit Activity Problems of Theory and Practice*, 2018, 1, 95–103, DOI: 10.18371/fcaptop.v1i24.128339.

- [14] <https://ec.europa.eu/eurostat/web/international-trade-in-goods/data/database> [accessed on 24.3.2022].
- [15] <https://database.tapa-global.org/map/index> [accessed on 28.2.2022].
- [16] <https://www.google.com/maps/dir/Barcelona,+%C5%A0panielsko/Dunkerque,+Franc%C3%BAzsko/@46.1306322,-0.951151,6z/data=!4m14!4m13!1m5!1m1!1s0x12a49816718e30e5:0x44b0fb3d-4f47660a!2m2!1d2.168568!2d41.3873974!1m5!1m1!1s0x47dc8b6dd9ff20b9:0x40af13e81646d-a0!2m2!1d2.3767763!2d51.0343684!3e0> [accessed on 24.3.2022].
- [17] <https://www.weblex.fr/weblex-actualite/transport-entreprise-etrangere> [accessed on 24.3.2022].
- [18] <https://www.atmb.com/en/our-offers/mont-blanc-tunnel-cost-and-subscription/heavy-goods-vehicles-etc> [accessed on 24.3.2022].
- [19] Jagelcak J., Kiktova M., Zamecnik J.: Potential for Intermodal Transport of Chemical Goods in Slovakia. MATEC Web of Conferences. 2017, 134, DOI: 10.1051/mateconf/201713400021.
- [20] Kravchenko P., Oleshchenko E.: Mechanisms of functional properties formation of traffic safety systems. Transportation research Procedia. 2017, 20, 367–372, DOI: 10.1016/j.trpro.2017.01.051.
- [21] Laimos P., Chronopoulos M., Laimou C.H.: White paper route risk assessment methodology [online]. 2020. Available from: <https://docplayer.net/196079896-White-paper-route-risk-assessment-methodology-securing-your-mobility-document-date-march-2020-address-information.html> [accessed on 24.3.2022].
- [22] Laioua A., Papadimitriou E., Yannisa G., Milotti A.: Road safety data and information availability and priorities in South-East European regions. Transportation Research Procedia. 2017, 25, 3703–3714, DOI: 10.1016/j.trpro.2017.05.221.
- [23] Macioszek E., Staniek M., Sierpiński G.: Analysis of trends in development of freight transport logistics using the example of Silesian Province (Poland) – a case study. Transportation Research Procedia. 2017, 27, 388–395, DOI: 10.1016/j.trpro.2017.12.026.
- [24] Mbiydzennyuy G.: Impact assessments of intelligent transport system performance in a freight transport corridor. IET Intelligent Transport Systems. 2018, 12(9), 1071–1081, DOI: 10.1049/iet-its.2018.5307.
- [25] Mlepo A.T.: Attacks on road-freight transporters: a threat to trade participation for landlocked countries in Southern Africa. Journal of Transportation Security. 2022, 1–18, DOI: 10.1007/s12198-021-00242-6.
- [26] Ondruš J., Dicová J.: Potential of prediction quantification and trends in transport requirements as tool of transport management and development. Transport and Telecommunication Journal. 2013, 14(4), 316–324.
- [27] Ondruš J., Gogola M., Čulik K., Kampf R., Bartuška L.: Speedometer reliability in regard to road traffic sustainability. Open Engineering. 2021, 11(1), 1059–1068, DOI: 10.1515/eng-2021-0101.
- [28] Plotnikov A., Kravchenko P., Kotikov J.: Classification investigations of traffic management schemes having conflict loading at the signal-controlled road junctions. Transportation Research Procedia. 2017, 20, 511–515, DOI: 10.1016/j.trpro.2017.01.083.
- [29] Poliak M., Poliakova A.: Relation of social legislation in road transport on driver's work quality. Communications in Computer and Information Science. In: Tools of Transport Telematics TST. Springer, 2015, 531, 300–310, DOI: 10.1007/978-3-319-24577-5_30.
- [30] Pugachev I., Kulikov Y., Yarmolinsky A.: Current trends in development of the transport infrastructure of large cities of the Far East, Russia. Transportation Research Procedia. 2018, 36, 622–626, DOI: 10.1016/j.trpro.2018.12.144.
- [31] Regmi M.B., Hanaoka S.: Assessment of intermodal transport corridors: Cases from North-East and Central Asia. Research in Transportation Business & Management. 2012, 5, 27–37, DOI: 10.1016/j.rtbm.2012.11.002.
- [32] Rievaj V., Faith P., David, A.: Measurement by a cylinder test stand and tyre rolling resistance. Transport. 2006, 21(1), 25–28, DOI: 10.1080/16484142.2006.9638036.

-
- [33] Říha Z., Dočkalíková I.: Economic aspect of combined transport. *Open Engineering*. 2021, 11(1), 994–999, DOI: 10.1515/eng-2021-0095.
- [34] Santa E.D.D., Mussi C.C.: Performance in road freight transportation: Capabilities and limitations of the use of information and communication technology (ICT). *Revista Eletronica de Estrategia e Negocios*. 2016, 9(3), 215–247, DOI: 10.19177/reen.v9e32016215-247.
- [35] Stojanović D.: Road freight transport outsourcing trend in Europe—what do we really know about it? *Transportation research Procedia*. 2017, 25, 772–793, DOI: 10.1016/j.trpro.2017.05.457.
- [36] Tengler J., Kolarovszki P., Kolarovszka, Z.: Identification and localization of transport units for selected company. *Procedia Engineering*. 2017, 178, 491–500, DOI: 10.1016/j.proeng.2017.01.092.
- [37] The internal company data.
- [38] Urciuoli L., Sternberg H., Ekwall D., Nyquist C.: Exploring security effects on transport performance. *International Journal of Shipping and Transport Logistics*. 2013, 5(3), 303–321, DOI: 10.1504/IJSTL.2013.054192.