Mapping the Flow of Theft Endangered Goods in EU

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ABSTRACT

Every country in world has opportunities for different type of productions and this leads compensation. According to this, International Trade has become very important in all countries worldwide for ages; it helps the developing of the country and contributes more convenient area for the citizens. It is because nations have to live with trading. In this manner, many agreements are signed to get efficient merchandising because international trade contains many risks like intervention, political, non-acceptance, credit, war and also uncontrollable events. European Union can be considered as an agreement since its fundamental principal is free movement of people and goods.

Increasing of movement of these goods around the European Union is seen as “easy pickings” by crime groups and nowadays society is facing with this criminal behavior. That motivation causes many problems for supply chain and logistics. Transportation systems are being tried to adjust as more secured while opportunity to thefts attacks to goods are rising.

The complexity of this problem is tried to be solved by good reporting of incidents, pointing out the hot spots or the hot products which are related to EU. It is obvious that there is lack of good reporting or coordinating.

According to this thesis a lot of work can be done in order to get brief look for the theft endangered goods which are on road and dangerous zones for theft attacks at EU. This thesis will map out specific countries, cities and positions that are particularly exposed to theft attacks. (For example, Schiphol Airport is chosen as the hottest spot and its hottest products are electronic and music devices while many reports and statistical works are being observed.)
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You may say that I'm a dreamer
But I'm not the only one
I hope someday you'll join us
and the world will live as one

John Lennon
1. INTRODUCTION

This thesis analyses the risk of theft attacks on goods which are carried inside the European Union borderlines. The introduction chapter of the thesis consists of 5 parts; background, problem, purpose, goal and limitations.

1.1. Background
After the end of the World War Two, European Union was built up to bring peace, stability and prosperity to Europe (The European Commission, 1995). Fundamental principal of EU is free movement of people and goods, resulting the growth of European economy and this is because new business opportunities are provided across the whole of Europe. Organized crime groups also have seized that same business opportunities. The increasing movement of these goods around the European Union is seen as ‘easy pickings’ by crime groups and these are becoming source of income or budget for other criminal activities like drug dealing. The biggest part of cargo transport takes place on the roads in the EU; hence road freight transport has a big influence on European economy. It is because of that protections of highways have become essential (Europol, 2009). Even if it is important, now there is no bright picture for the future. Europol specifies that Lorries and trucks have become more and more a target in recent years.

1.2. Problem
Nowadays, Theft of cargo is a big working area for organized international criminal groups. It has a big negative effect on the economic development of both the European Union and the member states. Unfortunately, counter-theft programs, policies and budgets are at very low levels. It is clear that there is a need of more actions to fight with this problem and current actions are not strong enough to cope with it (Prummel & Engel, 2007).

1.3. Purpose
The purpose of the thesis is to analyze and construct a map of goods in the EU which are subjected to theft attacks. It is known as difficult while considering reporting issues but also there are still some data’s and reports which are including information about theft attacks to cargo trucks and it can be helpful to achieve it.

1.4. Goal
Cargo goods can be more secured if this research is used.
2) THEORETICAL FRAME OF REFERENCE

2.1. International Trade
Global economy has practiced a great increase in the international transportation of factors and
merchandises with rapid growth of international trade and factor flows more than output. This
leads in to globalization of the world and it can be considered as consumption of services, goods,
brand names and also knowledge are becoming more and more world-wide.

According to Adam Smith (1776), absolute advantage is the basic principle for trade between two
nations. When one nation has an absolute advantage in the production of one good over than
another and has an absolute advantage regarding to another product which is produced by that
other nation, they can gain both by focusing on the production of good of its absolute advantage
and replacing part of its output with the other nation which has absolute disadvantage in that
good. Through that course of actions, resources are developed in the most efficient way and the
output of both products will rise. That increasing can be analyzed in the gains from specialization
in production and it is divided through trade by those two nations. Since, they are producing
much more commodity than they need and exchanging some of it for the other commodity which
they have not absolute advantage on it, their economies rise. Total output and the benefit of all
individuals are maximized. This is called free trade by Adam Smith (1937) and today, it becomes
difficult because there are too many restrictions on the free flow of international trade. These
limitations on trade are always rationalized in terms of nationwide benefit. Defenders of trade
restrictions are very few and they are from industries which are damaged by imports. As a result,
these limitations are profitable for the few, although it costs too much for the many who have to
pay more for challenging domestic goods.

Also, Ricardo (1817) mentioned in the law of comparative advantage that even though one nation
has an absolute disadvantage with respect to other nation in the production of both goods, there is
still base for mutually beneficial trade. Main ideas for comparative advantage are producing and
exporting the commodity which is the best of choice in other words which its absolute
disadvantage is smaller and importing the commodity which its absolute disadvantage is greater.
This law based on a number of assumptions:

- There are only two nations and two commodities with free trade.
- Each nation has perfect mobility of labor but there is immobility between two nations.
- There is no transportation cost or technical change and constant costs of production.
- The labor theory of value

Marx (1867) mentioned that, the value or price of a commodity is mostly related to the amount of
labor who going into the production of the commodity, in the labor theory of value. The amount
of labor can be vary for the production of the commodities and production of most commodities
may include substitution between labor, capital and also other factors (Salvatore, 2001).
Hence that assumption, which was used by Ricardo, is not acceptable. The law of comparative advantage was revised by Haberler (1936) with the basis on the opportunity cost theory. According to that theory; “The cost of a commodity is the amount of a second commodity that must be given up release just enough resources to produce one additional unit of the first commodity” (Salvatore, 2001). The opportunity cost of a good is equal to the associated price of that good and is given by the slope of the production possibility frontier which is a curve that illustrates the alternative combinations of the two products that a nation can produce by fully utilizing all of its resources with the best technology available on it. Opportunity costs are varying among the nations even if they are constant in each nation and this leads to international trade.

Despite the fact that two nations are identical in every aspect, there is still a base for trade which is conjointly beneficial on economies of scale. Nowadays each nation specializes in the production of one commodity and this leads to a large portion of international trade which is made by the exchanging of these differentiated products (Salvatore, 2001).

As mentioned above, international trade is very important (and big) for the country economy so also there will be big consequences while trade actions are being held. Third party effects can be considered as risk for international trade and it leads to many problems to the countries.

### 2.2. Risk and Risk Types in International Trade

Occupational Health & Safety Advisory Services (2007) defines risk as the product of the probability of a hazard resulting in an adverse event, times the severity of the event. Hansson (2002) identifies five different explanations for the word risk;

1. *An unwanted event which may or may not occur.*
2. *The cause of an unwanted event which may or may not occur.*
3. *The probability of an unwanted event which may or may not occur.*
4. *The statistical expectation value of unwanted events which may or may not occur.*
5. *The fact that a decision is made under conditions of known probabilities.*

Companies doing business across international borders face many of the same risks as would normally be evident in strictly domestic transactions. For example,

- Buyer insolvency (purchaser cannot pay)
- Non-acceptance (buyer rejects goods as different from the agreed upon specifications)
- Credit risk (allowing the buyer to take possession of goods prior to payment)
- Regulatory risk (e.g., a change in rules that prevents the transaction)
- Intervention (governmental action to prevent a transaction being completed)
- Political risk (change in leadership interfering with transactions or prices)
- War and other uncontrollable events.
Theft attacks to cargo goods are contained in the last type, war and other uncontrollable events. Style of these attacks can be listed as (which are mostly occurring):

- Hijackings
- Convincing the truck driver
- Robberies from warehouses

### 2.3. Transportation Systems

Observing the transport from a system perspective, Lumsden (1998) mentioned that three different levels of infrastructure, resources and material build the logistics (Ekwall, 2009-a). These three different levels are connected together to make up the transport system. Links and nodes are contents of logistics system. Nodes can be explained as geographically fixed points, such as terminals and plants, whereas the links are the tools which are connecting the nodes, i.e. the modes of conveyance. In that case, observing the different levels of the system can be done by finding the flow of material. Trucks, trains, airplanes and ships are flow of resources which are used for material flow. These items need roads, harbors, airports and terminals which are called infrastructures. In order to get a working transport system, there is a need of two more flows which can be explained as information and capital. All at once, these five elements are the needs for logistics fulfillment (Ekwall, 2009-b).

The purpose of the cargo thief is to remove goods from flow by means of attacking the carriage of resources or the infrastructure which it uses. As the resources and the infrastructure remain in certain situation, this builds a theft opportunity. This is the reason for potential cargo thief attacks to goods which are on flow (Ekwall, 2009-b).

### 2.4. Criminal Behavior

Shoplifting/theft behavior is out of criminal motivation and come from a belief system which accepts stealing items which are valuable for them to change with cash. This motivation is mostly related to monetary. These kinds of persons are pre-mediated in their actions and can be considered as remorseless for their behavior. The criminal justice system controls that kind of human nature, who steals because of criminal motivation (Hayashi, 2010).

According to Jones (2005) analysis, Criminal behavior influences from genes and the environment. To wholly comprehend this, one ought to first recognize how criminal behavior is defined. Social and legal institutions, not in biology characterize laws in our society (Morley & Hall, 2003). Hence determining what represents criminal behavior can covering a broad variety of actions and because of this, researchers are likely to focus on the wider perspective of antisocial behavior. Morley & Hall (2003) who examined the genetic influences on criminal behavior, states that three different ways to define antisocial behavior. First is associating it with criminality and delinquency, which both involve appealing in criminal actions. Criminality can lead to take into custody, conviction, or imprisonment for adults, while delinquency is related to juvenile committing illegal actions (Rhee & Waldman, 2002).
Information can be composed by means of court and criminal records, as well as investigations about characteristics of the criminal to examine the influences that were present. Secondly, they give advice to persons to identify antisocial behavior is through criteria used to analyze definite personality disorders. Particularly, they indicate those personality disorders, like Antisocial Personality Disorder, which is linked with bigger risk in illegal motion. The last measure for examining antisocial behavior is by investigating personality behaviors that may be leading in the criminal behavior of persons. Aggressiveness and impulsivity can be the most investigated traits (Morley & Hall, 2003).

2.5. Hot Products
Ekwall (2010) cited that, this term is related to shrinkage management which its aim is to indicate a particular item or product as hot. Hot products are in danger of theft attacks and it is because there is a need of more attention in surveillance (Beck, 2003; Sherman et al., 1989). Clarke (1999) identified hot products as CRAVED: concealable, removable, available, valuable, enjoyable, and disposable. Generally, recognition of hot products is made by assumptions and opinions, but rarely by firmly derived data (Beck, 2003).

2.6. Hot Spots
Crime is not extending evenly across maps. It bunch in various areas and is missing in others. Public utilize this understanding in their daily actions. They keep away from some areas and look for other places. Their selections of districts, schools, stores, lanes, and leisure are made moderately by the understanding that their possibilities of being an injured party are larger in some of these areas than in others. In some places citizens lock their cars and secure properties. In other places they do not. Along some streets community walk quickly and view forthcoming outsiders with suspicion. But on the other streets they carelessly walk and greeting the next attractive individual they may meet up, and inform others to assembly the similar selections in the similar areas.

Some might argue that this expression only demonstrates that people are irrationally afraid of some places but not of furthers. This may frequently be correct, but in reality people are not similarly frightened of all places proposes that their identification for crime is not regularly spread. People might be wrong about the risks of some places, but they are not incorrect that their danger of being a injured party of the crime is not geologically steady.

Furthermore hot spot is considered as dangerous zones where theft attacks are likely to be happened. The general understanding is that a hot spot is an region that has a greater than average number of criminal or disorder events, or an area where people have a higher than average risk of victimization and these places are identified by gathering data’s from reports which are including incidents(Gonzales, Schofield, Hart, 2005).
3) METHODOLOGY

This thesis was prepared by relevant literature reviews and studies of risks on theft endangered goods in EU. Results were gained by both theoretical and empirical works. Reports from European Parliament and the European Police Office were used to get statistical findings. These findings helped to develop an understanding of the theft risks at cargo goods and how they relate to countries of EU. In addition, theories of science were used to identify risk issue on transportation of goods in EU.

There are two types of data collection, primary data and secondary data. Primary data is collected by the person who conducts an examination for specific subject. This can be made by interviews, questionnaires. This type of data provides more controlled and detailed information (Eriksson & Wiedersheim-Paul, 1997). Secondary data is taken from another person who has gathered it before. Articles, literature reviews and reports can be considered as secondary data (Bergman & Klefsjö, 2003). This market analysis was prepared with reviews of literature and official reports. Hence, it is related to information’s which are secondary data.

First and foremost it is important to lay a foundation about the risk concept we are about to discuss. This will be done by a literature search, presented in the theory part of the thesis. The goal was to clearly define the connections between supply chain risk management, international trade, and criminal behavior. In order to get a basic idea of the flow of theft endangered goods, reports and statistical studies were reviewed. Library resources were used to get knowledge on these aspects. Searching process started with entering keywords (cargo risk, international trade, theft attacks, theft behavior, etc.) to system. Then usable articles, journals or books were chosen and their abstracts were read. After this process, parts, which were explaining the subjects of thesis, were taken and used in report.

The reliability of the research relates to comparing the available resource. The information about the theft attacks to cargo goods with regarding to country-base was limited and also there was no data for some countries. It is important to check information with respect to another while researching. All reports are official and it was known that where it came from and how it was collected. Europol and FreightWatch could be considered as data sources with respect to that comparison manner. At this point, it can be easily said as information’s about theft attacks to endangered cargo products are same with regarding to different reports.
4) EMPIRICAL FINDINGS

4.1. General View
In this chapter, there are statistical workings on EU which are about theft attacks on cargo goods. European Union has 27 member countries (The European Commission, 1995). According to Freight Watch report (2010), the United Kingdom, the Netherlands, France and Germany are the countries where most (approximately 80 to 90%) cargo theft attacks have been recorded in the continent at 2009. These rates are related to frequency of reporting than actual volume of theft when compared to the rest of the continent. Also, cargo theft activity is experienced at high rates on the rest of the continent. The traditional cargo theft “hot spots” of Europe are UK, Germany, France and the Netherlands but also Spain and Austria have become hot spots while their concerning for cargo security increase. European corridor has the highest level of cargo theft than any content and risk profiles are varying by country and region in. Generally police impersonators, hijackings, robberies and other aggressive tactics occur in nearly all these member countries as a cargo theft activity.

In the next page, there is a map of international cargo risk in EU (Europol, 2009). At this study which was made in 2007, countries are colored in different colors with respect to their risk level. The lowest risk level is seen in Norway as it is colored by green but it is not related to that market analysis because they are not the member of European Union even if they are participating in Schengen Agreement (Europa, 1995). Hence, it is understood as there is no country at lowest risk level in the union. Guarded risk level is observed at Portugal, Switzerland, Sweden, Finland and Slovenia but also Switzerland is not the member of the union rather they are included in Schengen Area. Luxemburg, Czech Republic, Germany, Austria, Ireland, Denmark, Hungary, Croatia, Bulgaria, Estonia, Latvia, Lithuania, Greece and Turkey is at elevated risk level as they are colored in yellow but also Turkey and Croatia are not on consideration as they are not member countries. Ukraine, Belarus, Spain, France, Belgium, Slovakia and Serbia are mentioned at high risk level although Ukraine, Belarus and Serbia are not included in the list of EU. Lastly, severe risk level is occurred in Italy, United Kingdom, Poland, Romania, Sardinia and Bosnia and Herzegovina but only Italy, United Kingdom, Poland and Romania are under consideration as they are member of the union.

This risk map is very useful to see whole picture of EU while generating an idea of incidents where they occur frequently. However it gives classified information to make comparisons, it has not accuracy because of insufficient reporting. It is a thought that real risk level of the east part is higher than there as it is mentioned.
International Cargo Risk Map (2007)

(Cited from Europol, 2009)
Following data’s are collected from the reports of TruckPol, Europol, and FreightWatch.

4.2. France

Over the past five years there is a big increase in violent cargo theft in France. Northern France is the main area for theft attacks because of its location which is used for shipping items from United Kingdom into Central and Eastern Europe (Appendix D). According to the Eurowatch’s 2009 report, France seems like one of the dangerous countries in Western Europe while reports of rampant theft activity are observing. Paris and also Southern France close to the Spanish border are the important regions because of the highest volume of thefts. The common incidents occur during a truck is in transit or at truck stop (77%). Eurowatch’s 2009 report also indicated that there are many theft attacks at warehouses (15%) in France but this trend has not increased during the last year. According to the reports, common theft activities in France can be classified as:

- A cigarette load hijacked by fake police officers
- Trucks being robbed while the driver sleeps inside
- Raids against manufacturing and distribution facilities

Suspects, who are using this particular modus operandi, are mainly originated from Eastern Europe (mostly Romanians). They are using “scout cars” to avoid police controls and stolen goods are transported into Romania (there is no specific hot product). Also 3% of theft activities are made by groups who are originated from France or Northern Africa, in most cases. According to studies, theft attacks to goods are commonly happened at Lyon, Bordeaux, Marseilles and 150 km diameter around Paris. Observations showed that especially the A1, A4, A10, A6, A7 and A9 motorways are targets for criminals.

4.3 The Netherlands

Reports showed that Netherlands is the top one of Europe according to cargo theft losses per GDP (approximately €300,000,000) and also it can be considered as the hottest spot of the union (Appendix B). Although they have been making strategic plans to create a more secure network, it has been hard to reduce it in the last years. Highways in the Netherlands are considered as dangerous even if the center for cargo theft is Schiphol Airport in the country. Armed hijackings and burglaries were reported in the airport and there is six times increase of incidents (while considering 98 attacks in 2005) nearby the airport. According to reports Amsterdam, Breda, Tilburg, Utrecht and Venlo can be considered as hot spots. The most target items in the past years are electronic and music devices, computers and audio equipment, followed by domestic products, clothing/shoes, cosmetics, alcohol and textiles. Parked/staged trailers, warehouse burglaries, hijackings, and jump-ups are the most general M.O. `s for cargo theft in the Netherlands. Other interesting thing is that there is an increase of theft activity at holiday seasons like other European countries.
4.4. United Kingdom
In the United Kingdom, society attaches big importance on cargo theft. It is because there is a lot of information about problem in contrast to other European countries (Appendix C). Crimes of freight have been recorded effectively by the police, law enforcement agencies and other organizations like TruckPol which is the establishment of Home Office and Association (ACPO). That organization provide security dealings in the truck or warehouse theft events to the police. This process grants 17 percent decrease (which is the biggest decline regarding to other European countries) on incidents in some regions at the end of 2008. North Sea Freight Intelligent Transport Solutions (NS FRITS) stated that 40,000 cargo thefts occurred every year which means the lost of £500,000,000 for the UK each year. Cities of England like Birmingham, Kent, the Midlands, Derby, Coventry, Leicester and Wolverhampton are the main hot spots of the country. Also Glasgow and Edinburg are high risk cities while considering the whole island. Mostly, hijackings and thefts from trucks are rising in UK even if warehouse attacks decrease. The Naval Criminal Investigate Service (NCIS) states that two kinds of gangs are found which steal products. First one is organized theft gangs, their targets are computers, computer parts, and other high-value electronic goods. Opportunistic criminals (the thief who steal whatever it finds) are composing the second group. Their target is parked trucks, they tear trailer’s coat sides while the driver falls in sleep. Reports showed that different products, such as electrical goods, flat screen televisions, clothing, shoes and cosmetics can be considered as hot products for that group. International Road Transport (IRU) proclaimed that there are 56,000 to 70,000 trucks which are on the road in the absence of safe area to park during night hours.

4.5. Germany
According to reports, Germany deals with increased number of theft attacks over the past years. This can be seen from increasing in numbers of reports which are about theft and also from a definite increase in cargo attacks. Germany faces with same M.O.’s with the United Kingdom, France, and the Netherlands. Electronic devices, food/clothing products, alcohol & tobacco products, building materials and raw material have been seen as hot products of Germany. According to research from reports, there is no specific information about hot spots but it is known that there are several attempts or attacks to target truck near Wurzburg.

4.6 Spain
Cargo theft is increasing in Spain as other European Countries. Cargo theft attack percentages increased as 87.5 percent between years 2008-2009. Regarding to other European countries, Criminals in Spain are willing to take greater risks to steal cargo goods. Reports showed that Madrid, Toledo, Barcelona, Malaga, Cadiz, Alicante, Valencia and Zaragoza are hot spots. In 2009, warehouse robberies increased located in Madrid, Castile La Mancha, and Leon (Appendix D). The largest part of these warehouses consisted of machinery and equipment which are used by small family businesses. Tobacco products and electronic products (including video cameras,
digital cameras, and memory cards, music devices such as MP3 players, plasma televisions and cell phones) can be considered as targets for theft attacks. Unidad Central Operativa de la Guardia Civil also mentioned that organized gangs recovered at least 100,000 Euros from stolen goods; the greater part of which were electronic products. Generally, they steal those products by acting like police officers.

4.7. Italy
As cargo theft is not old in Italy, theft attacks have increased over the past few years. Unfortunately there are no specific reports about situation in Italy but it is known that there are several attacks to trucks around Milan. An example of incident in May 2009, seven pallets were stolen which contained mobile phones. When trucks arrived to warehouse, officers saw that cargo was missing and there was no lock or seal broken. According to that situation, officials found that there is a highly advanced gang of cargo thieves who could pass up detection by the driver and avoid destruction of lock and seal.

4.8. Sweden
Ekwall (2010) found that most of theft attacks occurred on the main roads during the night time in Sweden. Official Swedish criminal statistics states that target of the freight related crimes are mostly to unprotected lorries and trailers by 81 percent (Nilsson & Rosberg, 2009). Establishment of the endangered theft goods is difficult because customer demand is not stable in Sweden. Hence, types of goods which are on transport are varying (Ekwall, 2009-b).

4.9. Other EU Countries
According to reviews of reports it is found that there is no specification for the other member countries. For example, there is no report found about Poland and Romania however they are indicated as risk level of severe (Europol, 2009). It is only known that most of theft attacks are made on vehicles which are carrying less than 3.5 tones in Poland at 1999 (ECMC, 2001). Also Czech Republic, Bulgaria, Hungary, Greece, Estonia, Latvia, Lithuania and Austria are at risk level of elevated but there is no classification which was made about hot spots and hot products. Only data’s of Estonia and Greece give little information, conference proceedings mentioned that main hot spot in Estonia is clothes after miscellaneous products in the country at 1999 and main type of the theft attacks is hi-jacking. Greece reported that their hot spots are cigarettes and electronic devices after miscellaneous products which are the hottest spots (ECMC, 2001). These assumptions were made from total lost statistics. Norway and Finland are known at low risk level hence there is no information found about hot products and hot spots. Portugal and Slovenia are at guarded risk level but no data found which are describing the specification of each country. It can be said as totally 8 members of the union make clear reports about their cargo theft situation and it is understood as union still has not paid enough attention to theft attacks which are occurred on their roads.
5. DISCUSSION

Characteristics of theft attacks according to cargo goods in the European Union are based on hijackings or robberies while truck is at park. Under this consideration, it can be said that there is not enough protection. This can be as a result of the lack of reporting. This thesis focuses on the market analysis of the area and points out the hot spots of the EU. Even if the aim is that, it is difficult to finalize an exact situation in the region. Hence, there will be some ideas and discussions which can have positive effects to protect endangered theft goods;

- Obviously definite value of the stolen products is not known and this leads to a big problem. This contributes to a lack of data and it is because of national governments; they do not give enough priority to fight this problem while it is compared with counter-terrorism actions (Prummel & Engel, 2007). Ekwall’s study (2010) which is attached on appendix G, can be considered as confirmation of that condition. According to that chart, it is clearly seen that Poland and Romania are at highest risk level as the Netherlands and United Kingdom but there is no report found which is about theft attacks to endangered goods.

- Under this circumstance, exchanging of information is important. It means that there is a need of allowance for searching of data in other appropriate records mutually. It can be developed by signing the Prüm Treaty which is “a multinational treaty on cross border police cooperation between Belgium, Germany, Spain, France, Luxemburg, the Netherlands and Austria that was concluded on 27 May 2005” (Appendix F).

- Information leakage is also critical factor for theft attacks. It is found that thieves have had intelligence ahead of time what cargo truck to attack. That important information may be leaked from the headquarters of the company so that it can be prevented by some methods as;

  - Track record evaluation (hiring classified employees, planners, drivers, etc.)
  - Waiting period (training new employees before taking them to job)
  - Classifying information (hiding the freight info from driver or planner)

- According to Appendix B, it is easily seen which roads are at high risk level of theft attacks while it is being prepared regarding to volume of paths. Truck movement per day is basic principle to identify it. Reliability of this map is also proved by another map, cargo theft locations in France (Appendix G). Red dots at this map point out incidents which are occurred on France roads. While this is being considered, it is easily seen that red dots are on red paths which are drawn on map of hot spots (Appendix B).

- Mostly, theft attacks happen in spring and autumn periods. During the last year, May is the month when the most incidents occurred (Appendix E). Related to Truckpol survey, there is a need of greater attention for theft endangered goods on March, April, May, October but it is still hard to manage programs related to that survey as long as incidents occurs for every month
The most affected market segment is non-electronic consumer goods by 19% (Appendix A) even if the most popular category of stolen goods/items in the past quarter was electronics (Appendix E). Also tobacco products are the most theft endangered goods according to reports. In that point, it is hard to say that stolen goods are also affecting their market segment. According to Prummel&Engel (2007) study, which is composed of questionaries and interviews with stakeholders, tobacco market is not affected from the lost property.

The other study of Prummel&Engel (2007) is about total number of incidents per region (Appendix D). Main problem in reporting is exactly seen there because the biggest number of incidents mentioned in “other” part which is 895 between years 2003-2006. These 58% parts of incidents are not classified as Greater London, Ile de France or Madrid. According to that source, Greater London is the hottest region with 133 incidents but it is share in total 9%.

According to Ekwall (2010) study, Bulgaria risk rating is 23 because their total reported major thefts in 2002 is not available hence it is still difficult to rank European Countries in their risk level. Also Romania is ranked as 20 but it is seen that in the region there are at least 5,000 trucks passing per day (Appendix B). The amount of trucks per day is mirror to incidents because it is known that thieves are on work at these areas.

Appendix C is also grouping the member countries which are based on the risk level and contra-theft activities. Romania and Bulgaria are at medium risk level but their contra-theft activities are unknown. Germany and France is at high risk level but their contra-theft activities are at low level. Therefore, this table indicates that high risk level countries are not paying enough attention to stop theft attacks. Finland and Estonia are hard workers of member countries even if their risk levels are low.

Homicide index of Greece and Germany are quite same which are 0.98 and 0.88 respectively (Ekwall, 2010). It can be said as their crime dangers are likely to be same but while we are comparing their total reported thefts or robberies, it is found that Germany has much more incidents than Greece. It can be because of the differences in population of each country but also it may be because of lack of reporting in Greece.
6. CONCLUSION
One of the fundamental principal for the foundation of the European Union is the free movement of goods. This convenient situation causes cargo crimes which are on road. Hence, there is a need of synchronized approach both public and private bodies across the EU. That research has realized that there is no clear coordination or approach to handle that problem.

Today’s world, criminal motivation is raising day by day and that monetary behavior accepts stealing items which are valuable for them to change with cash. At that point cargo theft is an international problem touching clients and businesses alike because that covetous motivation prefers to steal bulky. In today's worldwide financial system, raw materials manufacturing and sourcing often arises in one part of the world, while the completed product is warehoused and consumed in another. Cargo can be stolen at any point in between, compromising product integrity and accessibility. According to this, incidents, which have been reported, seems like insufficient to point out a clear map but still giving enough knowledge to understand hot spots and hot products. Holland, United Kingdom, Italy and Romania are the hottest spots around the EU however there is no clear evidence to claim that, all because it is hard to find reports for every member country. East part of the EU can be considered as the most dangerous place and it is known that most of the theft attacks to cargo goods occur there. Tobacco products and electrical devices are main targets of thieves but also it is interesting that tobacco market does not affect from it.

Most of the reports show that, theft attacks to cargo goods are made by organized crime groups. Nowadays, European Union members want to solve that problem but they are not as organized as these groups. Reporting of incidents is being made by each member but at this point, it has to be shared with other member countries as to make an organized defense. This can be the possible solution to get a good mapping the flow of endangered goods in EU.

7. FUTURE RESEARCH
During the research it was seen that there are too many sources hence it was hard to choose useful ones. Regarding to this, it is found that there is no clear report which is including information of every member countries in European Union. At this point, it can be prepared a report which analyses every aspect of cargo theft in the EU. The Transported Asset Protection Association (TAPA) can be helpful for preparing this. Related to that report, it will be good to develop software which addresses dangerous zones for endangered theft goods in EU. There is a need of interviews and field researches to handle this software and it can be easy with working coordinately with European officials. Also, it is found that attacks are made from different groups hence there is a need of observation of these groups separately to clarify the problem.
8. REFERENCES


Appendix A - Affected Market Segments
(Prummel & Engel, 2007)

<table>
<thead>
<tr>
<th>Product Category/Market Segment</th>
<th>Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-electronic consumer goods</td>
<td>19</td>
</tr>
<tr>
<td>Consumer electronics</td>
<td>16</td>
</tr>
<tr>
<td>Laptops &amp; PDA’s</td>
<td>15</td>
</tr>
<tr>
<td>Unspecified</td>
<td>10</td>
</tr>
<tr>
<td>Various IT</td>
<td>9</td>
</tr>
<tr>
<td>Desktop, Server, Networking</td>
<td>9</td>
</tr>
<tr>
<td>Display (monitor)</td>
<td>5</td>
</tr>
<tr>
<td>Mobile Phone</td>
<td>5</td>
</tr>
<tr>
<td>Peripheral (hardware)</td>
<td>4</td>
</tr>
<tr>
<td>CPU</td>
<td>2</td>
</tr>
<tr>
<td>Supplies</td>
<td>2</td>
</tr>
<tr>
<td>Memory, Ram</td>
<td>1</td>
</tr>
<tr>
<td>Clothing and Footwear</td>
<td>1</td>
</tr>
<tr>
<td>HDD, Storage</td>
<td>1</td>
</tr>
<tr>
<td>Food and Beverage</td>
<td>1</td>
</tr>
<tr>
<td>Cash/Bullion</td>
<td>0</td>
</tr>
<tr>
<td>Pharmaceutical &amp; Medial Products</td>
<td>0</td>
</tr>
<tr>
<td>Tobacco Products</td>
<td>0</td>
</tr>
<tr>
<td>Total (%)</td>
<td>100</td>
</tr>
<tr>
<td>Total Absolute</td>
<td>1530</td>
</tr>
</tbody>
</table>

Source: IIS-database; years: 2003-2006: stakeholder questionnaire, interviews
Appendix B - Main hot spots and number of truck movements per day (trips) in the Member States
(Prummel & Engel, 2007)
Appendix C-Grouping of Member States based on the risk level and contra-theft activities
(Prummel & Engel, 2007)

Table 1.1 Grouping of Member States based on the risk level and contra-theft activities

<table>
<thead>
<tr>
<th>Contra-theft activities</th>
<th>Risk Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>High</td>
<td>Estonia, Finland</td>
</tr>
<tr>
<td>Medium</td>
<td>Czech Republic, Lithuania</td>
</tr>
<tr>
<td>Low</td>
<td>Latvia, Luxemburg, Spain</td>
</tr>
<tr>
<td>Unknown</td>
<td>Cyprus, Greece, Ireland, Malta, Slovenia</td>
</tr>
</tbody>
</table>

Source: NEA
Appendix D-Total number of incidents per region (with Loss Value Graduation)
(Prummel & Engel, 2007)

Table 2.9  Total number of incidents per region (with Loss Value Graduation)

| Region                  | Country | Number of Incidents | | Value category 1) | |
|-------------------------|---------|---------------------| | | |
|                         |         | High (above €500 K2) | Medium (between 150 and €500 K) | Low (between 5 and €150 K) | unknown |
| Greater London          | GBR     | 9% (133)            | 22% (14) | 15% (26) | 6% (60) | 13% (33) |
| West Midlands           | GBR     | 7% (100)            | 16% (10) | 3% (5)   | 6% (62) | 9% (23)  |
| Flemish Region          | BEL     | 6% (98)             | 2% (1)   | 5% (8)   | 5% (57) | 13% (32) |
| South East England      | GBR     | 5% (75)             | 14% (9)  | 7% (11)  | 3% (31) | 10% (24) |
| Île-de-France           | FRA     | 4% (58)             | 6% (4)   | 3% (5)   | 4% (44) | 2% (5)   |
| Madrid                  | ESP     | 3% (47)             | 0% (0)   | 2% (3)   | 4% (40) | 2% (4)   |
| North Rhine-Westphalia  | DEU     | 3% (44)             | 3% (2)   | 7% (11)  | 3% (27) | 2% (4)   |
| Lombardy                | ITA     | 3% (42)             | 0% (0)   | 3% (5)   | 3% (32) | 2% (5)   |
| North Brabant           | NLD     | 2% (38)             | 0% (0)   | 3% (5)   | 3% (32) | 0% (1)   |
| other                   |         | 58% (895)           | 37% (23) | 52% (89) | 63% (664) | 47% (119) |
| total (%)               |         | 100%                | 100%     | 100%     | 100      | 100      |
| total (abs)             |         | 1530                | 63       | 168      | 1049     | 250      |

Source: IIS-database; years: 2003-2006: stakeholder questionnaire, interviews

1) Value of the stolen property per occasion.
2) €K = 1000 €
Appendix E-Theft from large good vehicles
(TruckPol, 2010)

The most popular category of stolen goods in the past quarter was Electronics. Whilst in the run up to Christmas we find that televisions are among the most popular items since the start of the year the stolen goods have largely consisted of household appliances including white goods and central heating equipment. Otherwise the stolen goods represent something of a mixed batch ‘Household Goods’ in this case refers to any kind of everyday consumer goods often toiletries, cleaning products or home furnishings.

<table>
<thead>
<tr>
<th>Property Classification</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Electronics/Electrical)</td>
<td>27</td>
</tr>
<tr>
<td>A1 (Computers)</td>
<td>7</td>
</tr>
<tr>
<td>A2 (Mobile Phone)</td>
<td>3</td>
</tr>
<tr>
<td>B (Clothes and Shoes)</td>
<td>23</td>
</tr>
<tr>
<td>C (Food and Beverages)</td>
<td>23</td>
</tr>
<tr>
<td>D (Household Goods)</td>
<td>25</td>
</tr>
<tr>
<td>E (Alcohol)</td>
<td>14</td>
</tr>
<tr>
<td>F (Cigarettes)</td>
<td>19</td>
</tr>
<tr>
<td>G (Miscellaneous)</td>
<td>96</td>
</tr>
<tr>
<td>G1 (Building/Plant/Industrial)</td>
<td>15</td>
</tr>
<tr>
<td>G3 (HAZMAT/Chemicals)</td>
<td>1</td>
</tr>
<tr>
<td>G4 (Fuel)</td>
<td>9</td>
</tr>
<tr>
<td>G5 (metals)</td>
<td>19</td>
</tr>
</tbody>
</table>
Appendix F - Prüm Treaty

Background Information on the Prüm Treaty

Purpose and background
The Prüm Treaty is a multinational Treaty on cross border police cooperation between Belgium, Germany, Spain, France, Luxembourg, The Netherlands and Austria that was concluded on 27 May 2005.

The objective of the Prüm Treaty is to enhance cross border cooperation to fight terrorism, cross-border crime and illegal migration. The treaty aims at improving the exchange of information for the purpose of preventing and prosecuting crime between the participating Member States.

Under the rules established by the Prüm Treaty Member States' law enforcement services will have direct access to Databases in all other Member States.

Information exchange
- Police services may launch a query in the data system of a contracting partner to find out whether it contains data concerning a specific DNA or fingerprint profile, and are automatically informed of the results within a matter of minutes. If a match is found, this information may be obtained by means of a request for mutual legal assistance.
- Under the treaty authorities can identify the owner and access his data and the vehicle data from the vehicle registration databases of the contracting partners.
- Furthermore, the exchange of data concerning potential terrorist perpetrators and hooligans is regulated.
- The Treaty also allows the authorities to exchange information on travelling violent offenders in the course of major events (for example football matches, European Council meetings or other international summits) in order to prevent criminal acts.

Website

European Confederation of Police  www.eurocop-police.org
Background Information on the Prüm Treaty

Operational cooperation beyond information exchange

- Various forms of joint police operations, such as joint patrols, are made possible. These may include the transfer of operational powers upon police officers from one Member State while operating in another.
- Provided that the host state does not stipulate otherwise, seconded officers may carry their national uniform and carry weapons as provided for by the law of the host state.
- Seconded officers may use these weapons in self defence or to protect others. The host state may also permit a use beyond these limits.
- Accountability for the actions of seconded officers rests with the host state.
- In cases of an immediate danger for life or health of persons, police officers from one Member State are allowed to cross the border and to take preliminary measures to contain the danger even without prior consent of the Member State, on whose territory the danger occurs.
- With respect to large scale events and catastrophes the Member States may support each other by seconding personnel and equipment.

Further provisions in the Prüm Treaty concern cooperation for the purpose of joint return operations and the use of so called Air Marshalls.

State of play

At its informal meeting on 15 January 2007 the EU Council Justice and Home Affairs reached a political agreement to incorporate large parts of the Prüm Treaty into the Schengen acquis.

The political agreement reached in the Council in February does not fully cover further provisions of the Prüm Treaty relating to operational cross border police cooperation as well as enhanced cooperation with respect to the use of so called Air Marshalls and joint return operations.

Background to the initiative was the implementation of the so called ‘principle of availability’ established by the Hague Programme with regards to the exchange of law enforcement information. Under the principle of availability data that is accessible to a law enforcement service in one EU Member State should as a general rule also be available to the corresponding law enforcement services in all other EU Member States.
## Appendix G- Official macro statistics on corruption, reported crimes and risk rating in EU

### Table 1: Official macro statistics on corruption, reported crimes and risk rating in EU (Ekwall, 2010)

Column 2 Source: Corruption Perceptions Index 2009 from Transparency international

Columns 3, 4, 5, 6, 7 Sources: United Nations Surveys of Crime Trends and Operations of Criminal Justice Systems

Columns 8, 9 Source: Cargo theft report: Applying the Brakes to Road Cargo Crime in Europe. Europol, The Hague

<table>
<thead>
<tr>
<th>Country</th>
<th>Corruption Index 2009</th>
<th>Total reported crimes 2002 (if not stated per country)</th>
<th>Homicide index 2006 (Rates per 100 000 citizens)</th>
<th>Total reported major thefts 2002 (if not stated per country)</th>
<th>Total reported thefts 2002 (if not stated per country)</th>
<th>Total reported robberies 2002 (if not stated per country)</th>
<th>Country Risk Ranking (1 highest risk)</th>
<th>International Cargo Risk rating 2007 (5 highest)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>7.9</td>
<td>552,411</td>
<td>0.73</td>
<td>5,746</td>
<td>195,015</td>
<td>3,127</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>Belgium</td>
<td>7.1</td>
<td>973,548</td>
<td>n/a</td>
<td>193,504 (1997)</td>
<td>367,840</td>
<td>6,888</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Cyprus</td>
<td>6.6</td>
<td>13,023</td>
<td>1.66</td>
<td>1,948</td>
<td>1,595</td>
<td>38</td>
<td>26</td>
<td>3</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>4.9</td>
<td>372,341</td>
<td>1.33</td>
<td>13,426 (2000)</td>
<td>139,129</td>
<td>5,468</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>Denmark</td>
<td>9.3</td>
<td>491,026</td>
<td>0.53</td>
<td>182,235 (1997)</td>
<td>187,227</td>
<td>3,238</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Finland</td>
<td>8.9</td>
<td>520,194</td>
<td>2.13</td>
<td>393</td>
<td>113,378</td>
<td>2,120</td>
<td>21</td>
<td>2</td>
</tr>
<tr>
<td>Germany</td>
<td>8.0</td>
<td>6,507,394</td>
<td>0.88</td>
<td>n/a</td>
<td>1,499,021</td>
<td>58,867</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Hungary</td>
<td>5.1</td>
<td>420,782</td>
<td>4.409</td>
<td>n/a</td>
<td>3,149,021</td>
<td>58,867</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Italy</td>
<td>4.3</td>
<td>2,231,550</td>
<td>1.06</td>
<td>n/a</td>
<td>1,305,245</td>
<td>40,006</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>Latvia</td>
<td>4.5</td>
<td>49,329</td>
<td>1.27</td>
<td>275</td>
<td>2,664</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Lithuania</td>
<td>4.9</td>
<td>92,646</td>
<td>11,454</td>
<td>n/a</td>
<td>42,209</td>
<td>4,535</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>8.2</td>
<td>26,046</td>
<td>n/a</td>
<td>8,536</td>
<td>429</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Malta</td>
<td>5.2</td>
<td>17,023</td>
<td>0</td>
<td>2,814 (1994)</td>
<td>9,121</td>
<td>33 (1994)</td>
<td>24</td>
<td>3</td>
</tr>
<tr>
<td>Netherlands</td>
<td>8.9</td>
<td>1,422,863</td>
<td>0.97</td>
<td>n/a</td>
<td>7,722,125</td>
<td>21,389</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Poland</td>
<td>5.0</td>
<td>1,404,229</td>
<td>1.28</td>
<td>196</td>
<td>261,255</td>
<td>47,808</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td>Portugal</td>
<td>5.8</td>
<td>218,360</td>
<td>2.15</td>
<td>n/a</td>
<td>147,958</td>
<td>17,362</td>
<td>22</td>
<td>2</td>
</tr>
<tr>
<td>Romania</td>
<td>3.8</td>
<td>312,204</td>
<td>2.03</td>
<td>n/a</td>
<td>72,780</td>
<td>3,025</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Slovakia</td>
<td>4.5</td>
<td>107,373</td>
<td>1.21</td>
<td>155</td>
<td>27,414</td>
<td>1,409</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Slovenia</td>
<td>6.6</td>
<td>81,697</td>
<td>0.60</td>
<td>877</td>
<td>28,484</td>
<td>498</td>
<td>27</td>
<td>2</td>
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<tr>
<td>Sweden</td>
<td>9.2</td>
<td>1,234,784</td>
<td>1.27</td>
<td>n/a</td>
<td>686,674</td>
<td>8,974</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>7.7</td>
<td>England &amp; Wales 5,899,450 Scotland 481,760</td>
<td>England &amp; Wales 984,348 Scotland 2,042</td>
<td>England &amp; Wales 984,348 Scotland 2,042</td>
<td>England &amp; Wales 984,348 Scotland 2,042</td>
<td>England &amp; Wales 984,348 Scotland 2,042</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix H – Locations of cargo theft in France (Europol, 2009)