OLD AND CURRENT LOGISTICS MANAGEMENT IN AZERBAIJAN AND ECONOMIC BENEFITS OF INTERNATIONAL LOGISTIC MANAGEMENT IN AZERBAIJAN

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ABSTRACT

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Master's Program in Logistics Management

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The article is devoted to the past and present state of the logistics sector in Azerbaijan and the prospects for its development. In this context, the article assesses the role of logistics in the development of the country's economy as a director of the non-oil sector. It should be noted that the geographical position of Azerbaijan allows it to regularly increase the volume of trade. The development of trade depends on the development of the logistics sector. According to the statistics of the State Statistics Committee of Azerbaijan in the transport sector, the dynamics of freight and passenger traffic in the country have been analyzed over the past eight years using the text of railway. However, in the case of gasoline, gasoline can only be one of the most important economic drivers of economic change. In Azerbaijan, the agreement is since there is no need to divide goods using the latest technology. It is important to ensure the integrity of the country. Statistics of Azerbaijan government of the Committee for Development of the Statistics Sector. analysis. The economic

situation in Azerbaijan will be limited by the role of the member states, and the role of the corridor will be reduced. Azerbaijan will also be able to divide the corridor. It was very important to ensure that the countries of the Republic of Azerbaijan were able to share the economic situation in the European Union and that they had a high level of public health. To summarize summarizing statements, you can use the large scale and then use it. The Republic of Azerbaijan is one of the most important countries in the economic development of the improving region.

Keywords: Logistics, Azerbaijan, supply chain.

ÖZET

AZERBAYCAN'DA ESKİ VE GÜNCEL LOJİSTİK YÖNETİMİ VE AZERBAYCAN'DA ULUSLARARASI LOJİSTİK YÖNETİMİNİN EKONOMİK FAYDALARI

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Tez Danışmanı: Prof. Dr. Muhittin Hakan DEMİR

Ocak, 2022

Makale, Azerbaycan'daki lojistik sektörünün geçmiş ve şimdiki durumuna ve gelişme beklentilerine ayrılmıştır. Bu bağlamda makale, petrol dışı sektörün yöneticisi olarak ülke ekonomisinin gelişmesinde lojistiğin rolünü değerlendirmektedir. Azerbaycan'ın coğrafi konumunun ticaret hacmini düzenli olarak artırmasına izin verdiği belirtilmelidir. Ticaretin gelişmesi lojistik sektörünün gelişmesine bağlıdır. Azerbaycan Devlet İstatistik Komitesi'nin ulaştırma sektöründeki istatistiklerine göre, ülkedeki yük ve yolcu trafiğinin dinamikleri, demiryolu metni kullanılarak son sekiz yılda analiz edildi. Bununla birlikte, benzin söz konusu olduğunda, benzin ekonomik değişimin en önemli ekonomik itici güçlerinden sadece biri olabilir. Azerbaycan'da anlaşma, en son teknolojiyi kullanarak malları bölmeye gerek olmadığı için. Ülkenin bütünlüğünü sağlamak önemlidir. İstatistik Sektörünü Geliştirme Komitesi Azerbaycan hükümetinin istatistikleri. analiz. Azerbaycan'daki ekonomik durum üye devletlerin rolü ile

sınırlandırılacak ve koridorun rolü azaltılacaktır. Azerbaycan da koridoru bölebilecek. Azerbaycan Cumhuriyeti ülkelerinin Avrupa Birliği'ndeki ekonomik durumu paylaşabilmelerini ve yüksek düzeyde halk sağlığına sahip olmalarını sağlamak çok önemliydi. Özetleme ifadelerini özetlemek için büyük ölçeği kullanabilir ve ardından kullanabilirsiniz. Azerbaycan Cumhuriyeti, gelişen bölgenin ekonomik kalkınmasında en önemli ülkelerden biridir.

Anahtar Kelimeler: Lojistik, Azerbaycan, tedarik zinciri.

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TRACECA	-	Transport Corridor Europe-Caucasus-Asia
NSTC	-	North-South Transport Corridor
NAR	-	Nakhchivan Autonomous Republic
ADY	-	Azerbaijan Railways
ADXDC	-	Azerbaijan State Caspian Sea Ship
BTTL	-	Baku Sea Trade Port
XDG	-	Caspian Shipping
BBDTL	-	Baku International Maritime Trade Port
GHIX	-	Ship Movement Management Service
DNŞ	-	State Oil Company
ZMASC	-	Transkaucasian Civil Aviation Corporation
BTB	-	Baku-Tbilisi-Baku
AMAG	-	Azerbaijan Civil Aviation Day
BTY	-	Baku Freight Terminal
BHNA	-	International Air Transport Association
AZAL	-	Azerbaijan Airlines
BQTN	-	Baku-Grozny-Tikhoretsk-Novorossiysk pipeline
BTC	-	Baku-Tbilisi-Ceyhan pipeline
AADT	-	The Annual Average Daily Traffic
ADB	-	Asian Development Bank
OECD	-	The Organization for Economic Co-operation and Development
EWTC	-	East West Transport Corridor
SCP	-	South Caucasus Natural Gas (SCP)
TGI	-	Turkey, Greece, and Italy
IGC	-	Intergovernmental Comission
IDB	-	Islamic Development Bank
LPI	-	Logistics Performance Index
ICAO	-	International Civil Aviation Organization

CHAPTER 1: INTRODUCTION

Transport connects Azerbaijan with its neighbors Russia, Georgia, and Iran. Azerbaijan is a country with a narrow Armenian population in Turkey and the Nakhchivan Autonomous Republic, which is separated from a separate Turkish route and has links with Turkey. Likewise, the vision of Lee Kuan Yew, one of the first prime ministers of the twentieth century, transformed the small city-state of Singapore from a relatively underdeveloped former colonial settlement to a modern and competitive economy and a major distribution center in the southeast. The relevance of research. The main economic goal of Azerbaijan is to improve infrastructure, ensure the passage of logistics and transport operations throughout the country while changing the political and economic factors in the region, and make the most of its geographical position in the face of high economic competition. and the whole world.

The level of study of the subject. Much of the work of scientists includes basic principles of logistics and general provisions on the assessment and management of logistics. Determining the location of geologically important assets to be produced, determining, and determining the level of retention to be detected, choosing an advertising department, answering traffic questions, establishing distribution channels, and monitoring the consistency of supply-demand - these are the tasks of manufacturing. network experts.

Several experts have examined the specific features of the development of the logistics sector. Consequently, the efficiency and reliability of the logistics system affects economic productivity which is the most important determinant of economic performance. Therefore, logistics industry is the artery and the basic industry of the national economic development in the world. Its development level is one of the important marks to evaluate the level of state modernization and comprehensive national strength (Hindawi, 2018).

The purpose and objectives of the study. The main purpose of this study is to analyze the common challenges faced by logistics and the best practices that it can use to enable them to test established international logistics in developed countries. This article contains informative research of existing letters on a topic of interest using a library research approach. The investigation is based on data collected from

academic diaries, reports on international business behavior and national strategy, and other important and duly recognized sources.

The logistics sector appears as the most important development factor in sustainable main- tenance of the regional development (Karayun, Aydin and Gulmez, 2012)

Subject and subject of research. The subject of the research is the management of international logistics and its economic benefits for Azerbaijan. The theoretical and methodological basis of the subject is the research of domestic and foreign scientists in the field of logistics management.

Research methods. Modern methodological tools are used: a systematic approach, SWOT analysis, economic analysis, statistical analysis, methods of comparative and expert assessment, modeling, forecasts, etc.

Research database. This article contains informative research of existing letters on a topic of interest using a library research approach. The investigation is based on data collected from academic diaries, reports on international business behavior and national strategy, and other important and duly recognized sources.

Limitations of the study. Little economic and statistical data on logistics management.

The scientific and practical significance of the results. The results of this research can be used in the context of management practice for making operational and strategic decisions in public and private organizations, as well as in newly created companies in Azerbaijan.

While Dubai and Singapore undoubtedly benefit from their coastal locations and the transit trade created by shipping, their leaders see these cities as big economic gains because without them they would be very different today. Sheikh Rashid's trips to Dubai and Prime Minister Lee's to Singapore teach a lesson to all national leaders and countries that are trying to leave an indelible mark on the world: you must have a vision for the future. Unlike the largest ports in the world, the famous trading cities in the Caspian basin have historically been land-based centers. Ancient merchants traveled along the Silk Road between Europe and Asia for months or even years, and the central cities of the Caspian region served as important regional logistics and distribution centers. There were several caravans where people and cultures met and mixed, each exchanging goods and ideas. These shopping centers are connected to other regional centers and metropolitan areas by a wide network of corridors in Eurasia and the Middle East. The Silk Road corridors have been a source of

prosperity for many countries of Central Eurasia for centuries. Central Eurasia is poised to regain its former reputation as a land hub between Europe and Asia. By 2040, a tourist will have the opportunity to get to Baku by express from Istanbul on the same day; On the last route in Tbilisi, it's time to take a free tour by bus. He continues his journey on a high-speed ferry to Turkmenbashi, from where another high-speed train will take him to Urumqi, China. The entire Central Asian region will be covered by an integrated infrastructure of roads, railways, airports, and logistics centers that will transport goods and passengers between Europe and Asia. But such a future is a difficult question for many countries of Central Eurasia. The political, economic, and social crises caused by the collapse of the Soviet Union overcame the relatively short history of independence of these states. In 2012, they celebrated the twentieth anniversary of the fall of Soviet power. Memories of wars, unresolved conflicts, economic hardships, and uprisings still haunt a generation old enough to remember the days of communist control. Fortunately, while some serious problems persist, the worst is over. The countries of Central Europe are in a phase of development when they must complete their political and economic transformation and choose the path that will lead them to the ranks of the prosperous developed countries.

1.1 Stages og Logitics Management

Table 1. Stages of Logistics Management (Karayun, Aydin and Gulmez, 2012)

Physical distribution	Manufacturing support	Supply support
Customer Service Delivery Process	Process of planning, programming and supporting production activities	Material and product acquisition process from outside supply sources
Activities Required for Physical Distribution	Activities related to manufacturing support	Activities required by procurement functions
Accepting Orders	Main production schedule planning	Quality safety
Order Processing	Supporting intra-ware goods movements	Storage

Availability of Stocks	Carrying in the production process	Observing and acceptance
Storage Movements	Separation of parts and implementation of the process in this context	Moving into management
Transportation for the operation and operation within the Distribution Channel	Responsibilities	Order Placement
Basic obligations included	Storage of inventories at manufacturing sites	İnterviews
Pricing	Flexibility for postponement and geographic coordination between physical distribution and manufacturing	Finding a supply source
Incentive Support		Needs Planning
Customer service		Responsibilities
Delivery		Determine the limits of the supply source; make aggregation continuous
Returning Goods		Performing guidance research for new sources of supply
Marketing planning and coordination in areas such as maintaining the product life curve		Coordination with supply resources
The main objective of the Physical Distribution is to provide the desired level of customer service		Purpose of Supply Function

strategically in the context of low total cost and generate revenue		
		Identify appropriate procurement at cost and support manufacturing or re-sales organizations

As shown in Table 1, logistics management consists of three main stages. At the first stage, physical order is maintained. The physical distribution phase begins with the order acceptance phase. After receiving orders, orders are processed and warehouse management is carried out in warehouses and warehouses. The key points to consider during this phase are proper design and supply management, customer service, delivery stages and pricing. The second step in logistics management is the production support process, which is to determine the raw materials and materials that will be required in the production process. Transport, production master plan and support of warehouse distribution in the production process is one of the main levels of logistics management. Ensuring the necessary coordination between manufacturing and physical distribution is one of the main tasks of logistics management. Purchasing is the process of outsourcing raw materials and goods. In this context, public procurement covers a wide range of activities from quality control to safety processes, inspections and acceptance. Factors to consider in the procurement process include defining the characteristics and boundaries of sources of supply, finding new sources of supply, and establishing long-term and systematic relationships with existing sources of supply

.

1.2 The Importance of Logistics Management

When evaluating the principles of the logistics system, it turns out that these are mainly strategic movements of goods, storage facilities and material requirements. Logistics strategies play an important role in business development, meeting customer expectations, reducing inventory, reducing

production processes and the supply chain. In this context, it can be said about the importance of logistics management for organizations.

• Required for all organizations.

• High price; has a significant share in the turnover.

• Influences the success of the spouse and society

• Has a long-term strategic impact on the success of the organization.

• Establishes long term business relationships with suppliers.

• Promotes customer satisfaction by building relationships with them.

• The time of purchase is important in terms of reliability and customer expectations.

• Provides a high level of benefits in terms of business strategy implementation.

• Supports business growth

1.3 The relationship of logistics on business functions

This is closely related to the business functions of logistics. Although the concept of logistics is defined as a military concept, it has become an important area for business management. Especially after the 1949s, logistic operations, which take a systems approach in companies, play an important role as part of corporate governance. For example, the production system, which is one of the main functions of the company, is evaluated along with the logistics system. As a result of logistics operations, raw materials and other materials required to manufacture a product must be delivered to the company. In addition, logistics operations such as storing and processing these resources, processing manufactured products, and securing production are also performed. Before the systems approach, the importance of this function was not well understood, since the logistics activities were performed by separate functions. for example, control of raw materials and materials; Production planning and control under the responsibility of the purchasing department, production department or a separate materials management group; management and control of regional suppliers and manufacturers in the area of production responsibility; He was in charge of marketing organization. This led to production inefficiencies, for example due to production confusion. Since the systematic approach is valid for the company as a whole, logistics is considered as a mandatory

subsystem of this system. In this context, logistics is a unit closely related to all commercial functions such as production and marketing. For example, the activities of the logistics department are very important for the production of products that will rapidly expand in the market.

1.3.1. The relationship between logistics and production functions

In today's increasingly competitive economy, there is a close relationship between logistics and manufacturing. Companies need to efficiently and efficiently carry out their logistics operations to reduce the cost of production processes. Logistic operations are used in all production processes. For example, sugar beets, which are used as raw materials in confectionery, are transported from the field to the factory by trucks and tractors. In this case, all logistics operations must be carried out quickly and accurately. Logistics and production functions are directly related to activities that create material, cash and information flows in commercial activities that interact and complement each other. In this context, logistics and operations management is an important part of operational process management. Thus, this function is concerned with the transport, storage, and transportation of goods from warehouses to factories, as well as to factories and shopping centers for shipment and dispatch. The logistics and production management activities include day-to-day operations, and the second activity complements other operations. For example, for the production, commissioning and subsequent production of raw materials and semi-finished products from suppliers of logistics operations. As logistics and production management add value to products in different areas, in a sense, depending on these two functions, supply chain materials and raw materials are transformed into a value chain through production and marketing. In this context, the production function in the firm increases the cost of using the product. The logistics function increases the cost and service life of the product. Manufacturing activities focus on manufacturing processes and processes. In addition to converting raw materials and stocks during the manufacturing process, logistics also focuses on delivering the product to the user at the end of the production process. Depending on global competition and processes related to production and logistics processes, price, price, technology, quality, and price. Logistics and production activities have become a chain of interrelated activities. In this context, the production sub-functions are

more related to the processes within the company and the corresponding logistics processes. Logical subfunctions participate in transactions for internal and external suppliers and customers.

1.4 Logistics sector in the world

The logistics sector plays an important role in the growth of countries. The scale of the industry is difficult to gauge, and the global logistics market in 2006 was estimated to be $ 4 trillion. The logistics sector should become one of the fastest-growing sectors with annual growth of 8-9%. In Europe, 14% in North America and 20% in Asia. The leading countries in the field of logistics are the USA, Great Britain, Japan, the Netherlands, Germany, France, Hungary, and Bulgaria. More than 49% of the global logistics market outside the US and Europe, such as Hong Kong and Dubai, is aiming to become a logistics base shortly. The future regions will be Asia Pacific, Eastern Europe, Russia, and the Middle East. The development of logistics and global transport quickly gained importance in the world and Azerbaijan. There are many closely related disciplines in the analysis of the logistics sector, and due to the structure of the services sector, it is impossible to obtain real and clear statistical information. The total cost of transportation is $ 65 billion. Sea transport accounts for 80% of world trade. Shipping companies lost $ 7.2 billion due to the economic crisis. In the first 22 years from 2009 to 2014, the total value of the auto industry in the United States was $ 3 trillion. Overland transport carries 7 billion tons of materials per year. The modern economy prefers 85% of land transport shorter than 140 km. Land transport in Eastern Europe is growing. In 2015, the global logistics market exceeded $ 4 trillion, with logistics accounting for at least 24% of the value of every dollar in the world. The EU market is around 589 billion euros. Changes to these reports are listed in Table 2.

Table 2. World Transportation Changes (Source: Esri, 2017)

Years	World Transportation Rates	Change
2008	10,86	-

2009	9,56	-12%
2010	10,82	13%
2011	11,54	7%
2012	11,83	3%
2013	12,19	3%
2014	12,58	3%
2015	12,88	3%
2016	13,18	4%
2017	13,55	3%

Geographic regions that will grow in the logistics market and appear in important years; Asia Pacific, Latin America, Africa, the Middle East, and Eastern Europe. From the point of view of our country, Turkey should be the place where our logistics sector is located, which has a significant market share, and where its strategic position is at the crossroads of three continents. Historical changes in the logistics industry are shown in Figure 1 (Ballou, 2006).

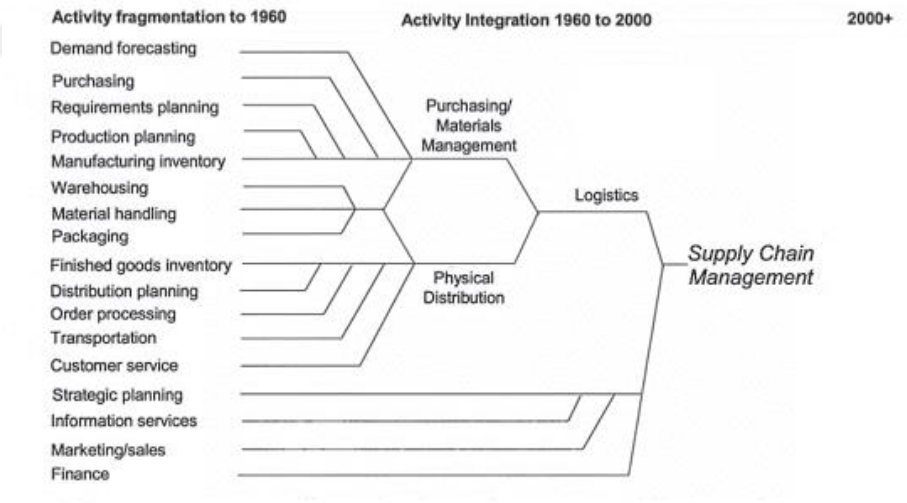


Figure 1. Evolution of Logistics (Source: Statista, 2020)

1.5. Logistics in Europe

World freight traffic reached 10.86 billion tons in 2008 and 13.18 billion tons in 2016. The approximate amount for 2017 is 13.55 billion tons. 3.7% of freight traffic

in the EU is inland waterways, 11.2% by rail, 37.8% by sea, 37.8% by trucks, and 47.3% by trucks. These costs are projected to increase by 50% by 2050. EU freight traffic is projected to increase by 4% in 2030 and 80% in 2050. Passenger transport will also grow slightly less than freight (34% in 2030, 51% in 2050). This situation is expected to lead to congestion, especially in cities. The estimated cost of congestion in 2050 is € 200 billion. The need for EU infrastructure in the period 2010-2030 is 1.5 trillion euros.

1.5.1. Dynamic logistics market in Europe

Germany is the tallest country in Europe with 25 logistics clusters (logistics zones). The remaining 8 divisions are located in the UK. This is followed by France (7), Spain (6), the Netherlands (6), and Poland (6). With 3.51 € / m2, it is the cheapest logistics zone with basic rent in Poland. The primary profitability of the Polish logistics cluster in the third quarter was 7.08%. Companies in Switzerland must pay the highest logistics rent in Europe. The initial rent is € 10.71 / m2 and the average rental price is € 7.68 / m2. The Greater London Cluster around Heathrow remains the most expensive logistics hub in Europe. The original rent was € 15.75 / m2 and the initial net profit was 4.00%. The cheapest is in Katowice, Poland, and the base rent is 3.10 € / m2. Investments in logistics facilities in Oulu, Finland are of particular interest. The net primary rate of return is 9.25%, which is the highest in Europe. The average return in the Netherlands is 5.10%. This is seen in the region, as the yield ranges from 4.75% to 5.75%. The most expensive are North Brabant, Tilburg and Eindhoven. Net primary income was 4.75% in both positions.

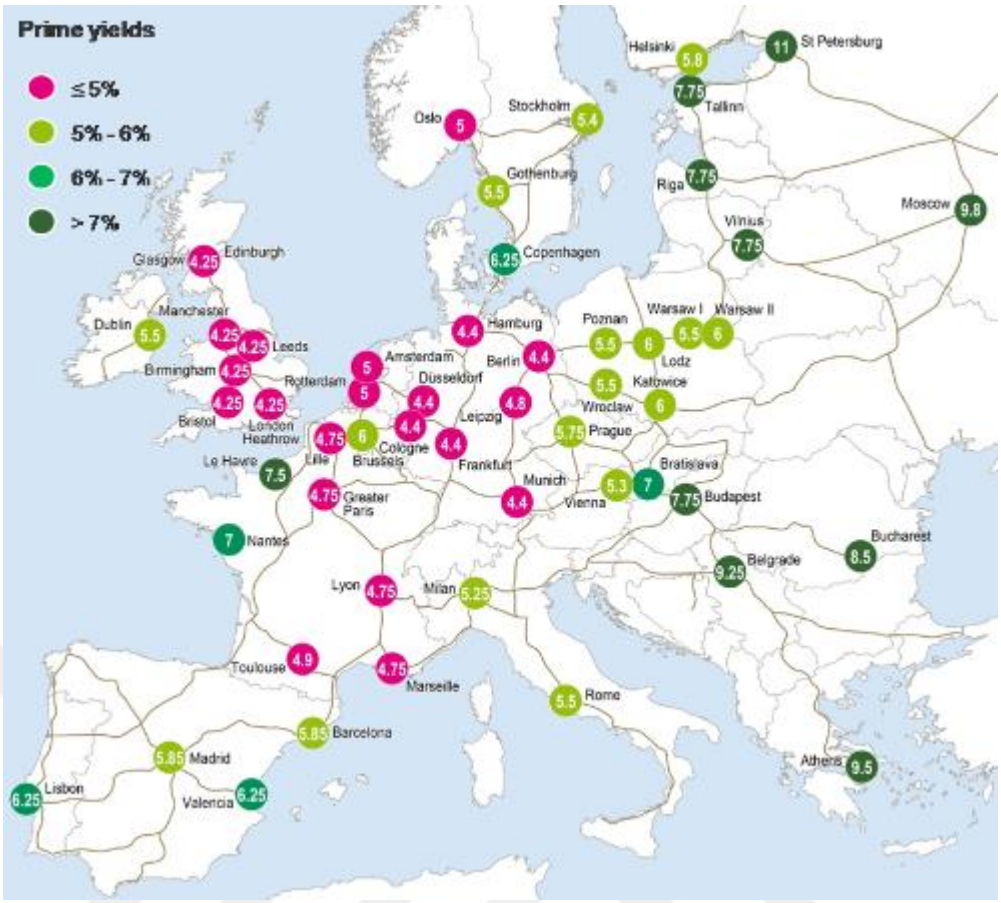
1.5.2. Logistic map of Europe

The global economic recovery strengthens the European logistics market. Technology and Consumption E-commerce supports the demand for modern and urban logistics equipment. Urbanization requires simultaneous intelligent logistics

solutions and urban storage space. With an average return of 6.1% in Europe, logistics offers much higher returns than other industries.

Table 3. Logistics transaction volume per country in EUR million, H1 2018 (Source: BNP Paribas Real Estate, 2018)

United Kingdom	3,633.5
Germany	3,060.0
France	1,692.6
Denmark	1,500.0
Switzerland	1,476.0
Netherlands	988.2
Norway	480.0
Sweden	382.5
Poland	315.3
Finland	260.0
Spain	300.0
Italy	395.5
Czech Republic	104.9
Belgium	45.0
Austria	30.1
Portugal	42.0



Map 1. Prime Yield in 2018

Determination of primary income is carried out for premium field positions for quality real estate. For a tenant in the rental market, the property must be 99% blue, which is the usual lease term for the original property on the market. The profit should be expressed as the investor's net profit with the average investment cost and the expected purchase price.

1.4.1. Logistics in Germany

However, economic, and structural reasons suggest that income growth over the next few years will be relatively modest. Structurally weak trade, the only slow recovery in Europe, and the reluctance of large consumer groups in Germany to invest indicate a slowdown in future growth. The logistics sector will continue to focus on government regulation; This is especially true for the large transport sector. Many German logistics companies can reduce competitive pressure by offering their customers innovative and personalized services. Over time, the logistics company is

increasingly integrated into the customer value chain. This will allow you to increase your margins and leverage your growth potential. The role of logistics companies is to increase the digitalization of their services and adapt their manufacturing processes to automate manufacturing processes. This requires significant investment in process equipment or personnel training.

Table 1. Rate of Prime yields and prime rent in Germany (Source: Statista, 2021)

Germany	Prime yields, %	Prime rent €/ sqm/ month
Berlin	4.70	5.60
Bremen	5.50	4.25
Regensburg	5.75	5.00
Dresden	6.00	4.20
Duisburg	5.00	4.30
Dusseldorf	4.70	5.25
Erfurt	6.00	3.90
Hamburg	4.65	5.80
Hanover	5.75	4.50
Koblenz	6.50	4.15
Cologne	4.70	5.15
Leipzig	5.75	4.25
Magdeburg	6.25	3.45
Kassel	5.75	4.30
Munich	4.50	6.80
Munster	6.00	4.50
Nuremburg	5.75	5.00
Freiburg	6.00	4.85
Dortmund	5.25	4.50
Frankfurt	4.60	6.30
Karlsruhe	5.50	5.45
Saarbrucken	6.25	3.70
Augsburg	6.25	4.50
Stuttgart	4.65	6.50

Wurzburg	6.25	4.40

1.4.1 Logistics in Netherland

The logistics market in the Netherlands depends on the economic situation in the country, and economic growth over the years has led to an increase in consumer spending and an increase in trade flows. The main trend that will most affect the logistics industry in the coming years is the rise of automation, robotics and online shopping, in-depth data analysis, and product tracking and tracing. An important factor contributing to the significant growth of the logistics sector in the Netherlands is the constructive partnership between trade unions, government, and companies. In addition, the Dutch government aimed to promote trade development, simplify regulations, and stimulate competition in the Dutch market in the coming years to support the development of logistics markets. The logistics market in the Netherlands will continue as it is ideally suited including basic infrastructure, trained workforce and position on the continent, tax and customs advantages, and excellent ports and airports. The exchange uses the latest technologies including augmented reality, virtual reality, warehouse management, and more. Through the widespread use of big data analytics and other new technologies, the operational efficiency of companies will contribute to the overall growth of logistics in the country. E-commerce in the Netherlands is growing at double digits, which has a significant impact on cold stores. Despite the logistics market record in 2017, the absorption of 1.1 million square meters was recorded in 2018. This is like the same period in 2013 and 2014. Approximately 25% of retail services were provided through logistics services, 55% through third-party logistics service providers, and 8% through purchased food logistics products. Just five years ago, food logistics was a relatively small industry, but consumption has more than doubled in the past five years. Looking at the development of this industry, Savills expects this industry to continue to grow. Demand was highest in the three provinces with the largest reserves: North Brabant, South Holland, and Limburg. While these three regions accounted for 53% of total consumption in 2015, they reached 6% in 2017. In addition, North Holland has a high utilization rate, which is almost a record for the province in 2017.

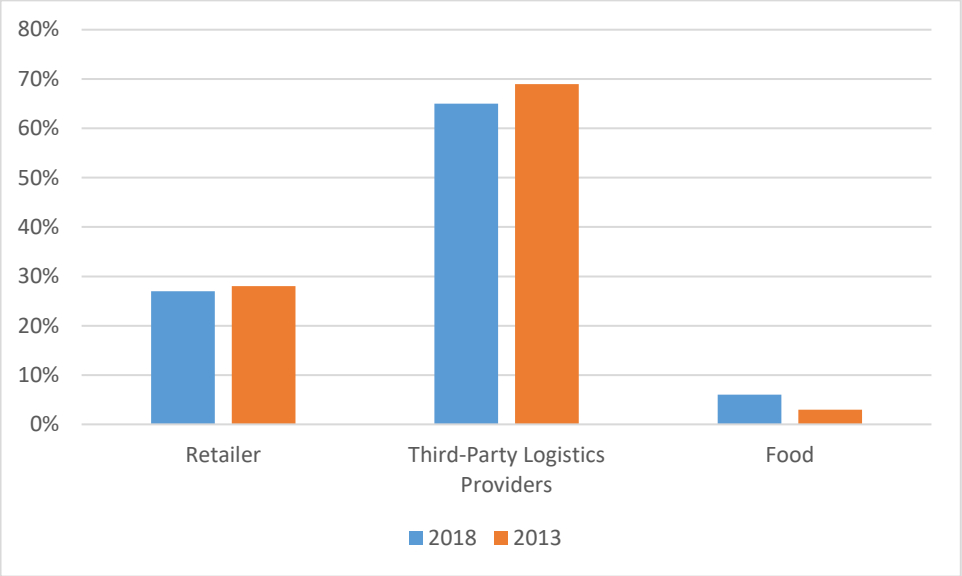


Figure 1. Take-up of food logistics more than doubled in the past five years (Source: Mckinsey Company. 2021)

Table 2. Rate of Prime yields and prime rent in Netherlands (Source: Statista, 2020, Statista, 2021)

Netherland	Prime yields,%	Prime rent €/ sqm/ month
Utrecht	5.00	5.42
Arnhem	5.50	4.16
Nijmegen	5.50	4.50
Tilburg	4.75	4.42
Eindhoven	4.75	4.59
Venlo	4.75	3.83
Venray	5.00	3.58
Amsterdam Schiphol	4.90	7.08
Port of Amsterdam	5.00	5.42
Rotterdam-Maasvlakte	5.00	4.16
Rotterdam-Distriport	4.90	5.52

1.5 Logistics in USA

The US shipping and logistics industry is very competitive. It is possible to facilitate the movement of goods by participants, be they drivers, managers, or owners. Depending on the company, they offer some international and national services, and some only operate in North America. In both cases, when they buy imported goods, they sell them to consumers. The US transportation and logistics industry require a large pool of skilled labor to be successful. However, the potential for success is high. For example, in 2012 alone, US spending in this sector exceeded $ 1.3 trillion, or 8.5% of GDP. The convergence of producers and consumers using different modes of transport constitutes a highly integrated supply chain. To ensure effective customer service, national and multinational companies offer specialized transportation and logistics services that ensure timely delivery of products and do not pose a hazard to the end-user. Ground transportation is an important part of American logistics and is widely used for domestic and ground transportation. In 2017, the tanker industry recorded good sales growth. In 2017, real gross domestic product and tanker shipments increased by 2.3%. The volume of trucks in 2017 increased by 3.7%. Faster than shipping every month in 2017.

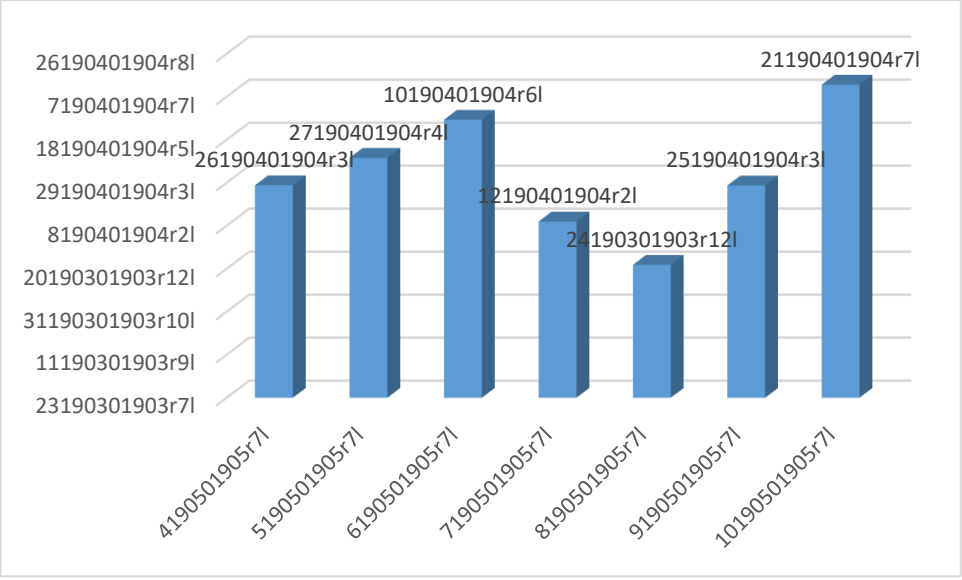


Figure 2. Value of USA exports to all destination from 2012 to 2018 (in billion USA dollars) (Source: OEC world, 2020)

1.5.1 Rail Freight in USA

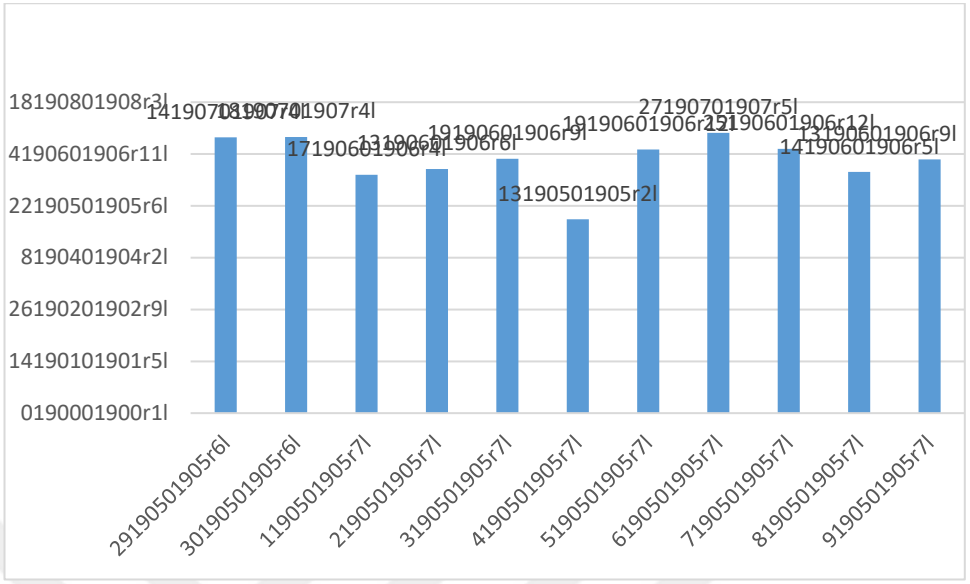


Figure 3. Rail freight changing trends in USA (Source: Alibech Mireles, 2019)

1.6 Logistics in Asia

The logistics industry has deteriorated significantly over the last decade. Automation and new technologies are more efficient than ever to improve logistics efficiency. In answering this question, the industry quickly and strategically adapted to the era of change. Asia remains the fastest growing region in the world and its participation in the global value chain is constantly increasing. The "Strategic Plan for the Development of Logistics and Trade in the Republic of Azerbaijan" (Strategic Plan) has been developed as an integral part of initiatives to create a competitive, diversified, inclusive and sustainable economy. This strategic plan outlines the short, medium, and long-term prospects for the economic development of logistics and trade in Azerbaijan until 2020, 2025 and 2025. Priorities have been selected to achieve these goals and objectives in this area. As a result of these measures, the real GDP of the Republic of Azerbaijan will increase by 605 million manat in 2020, creating 18.9 thousand new jobs in the country. The implementation of the planned activities is expected to require 3 billion 160 million manat from public and private sources. Thanks to these measures, many projects in Azerbaijan are planned to be

completed by 2020. These include the Baku port complex, the Baku-Tbilisi-Kars railway, and the Astara railway (Iran). These projects will increase the number of full-time employees in Azerbaijan to 6,700 by 2020. The share of freight transport in total services exports in Azerbaijan has been around 10% in recent years. However, in some countries this figure ranges from 8% to 52%. International transport in Azerbaijan is mainly by rail. While the volume of import and export transactions for these consignments is high, the volume of goods in transit transported to an intermediate point before delivery to the destination is relatively small. (Alibech Mireles, 2020).

1.6.1 The essence of the ASEAN logistics industry

The ASEAN region has received a lot of attention from the global logistics community. Some of these reasons are:

Strong economic growth

The region is home to over 600 million people and is the third-largest country in the world after India and China. The population is larger than North America and the European Union. In addition, the GDP growth forecast for the next decade will be 4.9% per annum - a good indicator for enviable economic growth these days.

Demographic profile

Demographics of Youth ASEAN continues to attract multinational companies to invest in the region. The population participating in the ASEAN study is 65% of the total population, reaching 45 million over the next ten years.

Growing middle class

The ASEAN middle-income group is expected to grow by 10.9% between 2012 and 2023. Approximately 84.4% of households belong to the group that earns 10-15 thousand dollars a year. By 2023, most of this group is expected to be transferred to a group with an annual income of between $ 15,000 and $ 50,000.

ASEAN is estimated to grow 130 percent by 2023 to reach $ 4.999 billion. The expansion in trade will be driven mainly by increased demand for goods and services in China. Expand the consumer base that supports the development of trade in the region.

The recent crystallization of the ASEAN Economic Community in 2015 and other free trade agreements now view them as a single market and manufacturing base that allows them to produce and supply more goods. In addition, ASEAN has led to an increasingly transparent ASEAN regulatory framework for trade.

Maritime network

Given the geographic location of ASEAN countries, quality delivery methods are essential to ensure an efficient supply chain. Changing global shipping requires large and developed ports.

The quality of the port between ASEAN-7 is ideal for obtaining the largest quantity of products in Singapore. While ports in Indonesia and Vietnam are growing, ports in Malaysia and Thailand are not excluded. According to the ASEAN Master Plan for Connectivity, 21 ports will be built in Indonesia serving 2,100 equivalent units.

Land and rail transport

Several ASEAN countries are located on the maritime archipelago. However, railways and roads are still important. Currently, the planned investment in the ASEAN rail network is the US $ 200 billion (as of 2013).

In 2016 (from 2016) ASEAN is expected to support future investment demand in water, electricity, railways, roads, and other infrastructure, which will reach $ 60 billion in 2016.

Air Transport

ASEAN Joint Investment Plan - We have invested $ 34 billion in air transport (since 2013). In addition, the clear skies policy excludes tariffs and allows airlines to operate freely in the ASEAN market. This has resulted in an increase in the number of low-cost carriers in the private sector: 101,000 technicians and 95,000 pilots by 2034.

1.6.2 Reasons for the expansion of the ASEAN logistics sector

ASEAN has seen a growing middle class with increasing purchasing power. This will increase the demand for logistics, as consumers often demand more, better, and diversified products and services. Factors that will increase the growth potential of logistics players:

Low outsourcing costs.

China's shift to domestic consumption forced it to leave ASEAN, a supplier of low-cost manufacturing processes.

ASEAN Supply Chain Efficiency. Researching and developing weaknesses, know-how, and skilled human capital have resulted in an inadequate ASEAN supply chain and logistics infrastructure.

Complex request for third-party logistics (3PL)

Third-party logistics providers (3PLs) provide innovative solutions to logistics problems. The creation of an increasing number of brands in the region has created a demand for professional logistics providers to ensure a fast and secure shopping process. The most active and promising players in the region are Panalpina, Toll, Sino trans, UPS International, FedEx, and Yamato Transport.

1.6.3 Logistics sector in China

The total value of goods transported by the logistics industry rose to $ 359.9 trillion in the first 11 months, according to the National Development and Reform Commission. The overall annual growth was 6.7 percent. The growth rate increased by 0.1 points compared to the first ten months. Logistics spending increased by $ 11.9 trillion. The first 11 months and 8.6% per annum. The logistics efficiency index in November increased by 55.9 percent, in October - by 1.4 points. More than 50% of the readings increased from the previous month, while the next number decreased. The sector's strong performance is reflected in the fact that the Chinese economy, which grew 6.7 percent in the first three quarters of the year, continues to grow, surpassing the government's annual growth target of 6.5 percent.

1.6.4 Logistics sector in Singapore

The World Bank has listed Singapore as the # 1 logistics hub among 155 countries in the logistics index. The Port of Singapore as a global business center and its knowledge and experience in international shipping and handling of its strategic location in the heart of Southeast Asia have contributed to this position.

As already mentioned, there are also many international transport corridors that give impetus to the sustainable and diversified development of the Azerbaijani economy

and turn the country into an inter-regional transit hub, and they are also very important. These corridors can be explained as follows.

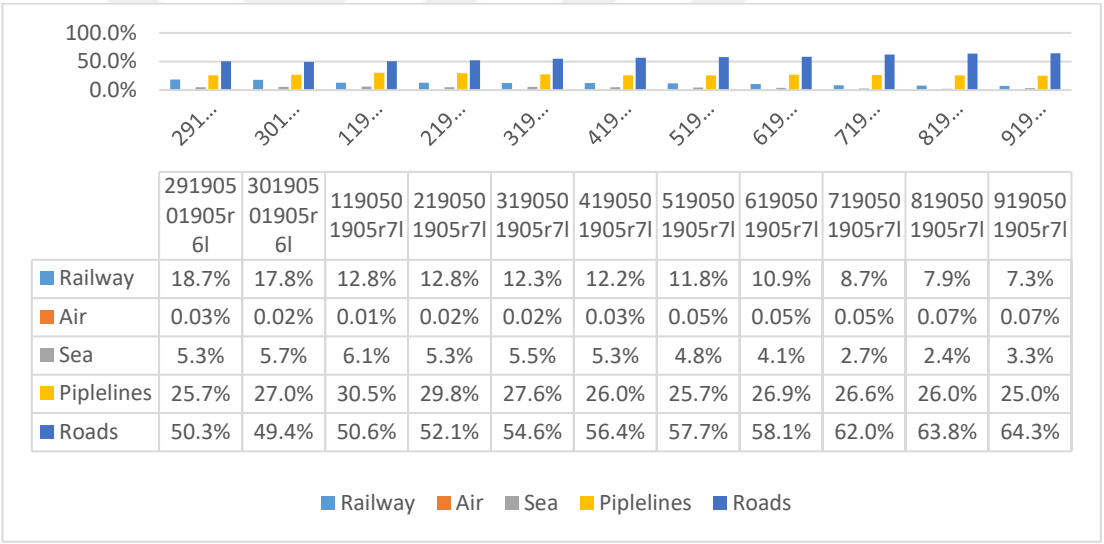
Southwestern transport corridor. Route: India - Persian Gulf - Iran - Azerbaijan - Georgia - Ukraine - Europe. This corridor is intended for the transport of goods between the European Union and India. The corridor from Iran, Azerbaijan, Georgia, and Ukraine will reduce the time losses when transporting goods from India to Europe and back. According to preliminary estimates, freight transport along this corridor will be ready in 7 days. The Transportation Corridor South-West - Delivery time for an alternative route is 35-37 days (ADY EXPRESS, 2017). In 2009, Singapore had more than 6,000 logistics companies, more than 190,000 people, and 11% of the industry contributed to Singapore's GDP growth. Singapore was the second-largest container port in 2010, accounting for 25 million TEU. The port of Singapore is connected to 599 ports in 142 countries by 142 shipping lines. In addition, Singapore's Changi Airport operates more than 5,000 flights to 199 cities in 50 countries and ranks 9th in the world with 3 million tons of cargo handled in 2010. Singapore has become the logistics and supply chain of choice for leaders. Industries such as aerospace, biomedicine, electronics, and telecommunications. Singapore currently owns 22 of the 23 largest logistics companies in the world. Agility includes companies such as DHL, FedEx, TNT, UPS, Nippon Express, NYK Logistics, and Toll Logistics. The world's leading logistics players prioritize logistics and supply chain management with excellent infrastructure and a wide range of excellent global connections for leading manufacturers in Singapore, Avaya, Diageo, Dell, Hewlett Packard, Infineon, LVMH. , Novartis, ON Semiconductor, Panasonic, and Siemens Medical Instruments. He also recognized that customs and trade practices are highly effective in importing and exporting, allowing companies to obtain permits/certifications / approvals for their products more efficiently. Knowledge management efficiency is documented through platforms such as Trade Net, which offers a one-stop platform that simplifies all documentation, saves time, reduces costs, and increases productivity. Trade Net allows investors and carriers to apply for and obtain a business permit from the inspection body, to perform 35 inspections, imports, and exports.

1.6.5 Logistics Industry in India

Therefore, it should have been until 201-190. The country's logistics sector will be 125 billion dollars, an increase of 160 billion dollars, which is 9% more than last year. Industry growth would be supported by a breakthrough in manufacturing, retail, fast-growing consumer goods, and e-commerce. The development of logistics infrastructures, such as special cargo corridors, logistics parks, free trade zones, and container loading stations, is expected to increase the effectiveness of the CARE monitoring report. Currently, the transport sector accounts for more than 85% of the logistics sector. Over the next few years, this proportion should remain high. The remaining 23% depreciated from stocks. Employment in the sector is busy and employs 20 million people. Logistics costs have a significant impact on exports. It is expected that the decrease in logistics costs by 11% would increase exports by 6-7%. Steep logistics costs compared with other countries in India were worrying. The cost of logistics in the country as a percentage of gross domestic product is 12-13%. This figure varies from 11% to 12% for the BRIC countries and from 7% to 8% for developing countries. The US spends 10% of its gross domestic product in the logistics sector, while Germany is more competitive with 7%. Credit Rating Agency stated that the high logistics costs in India might be due to the lack of effective intermodal and multimodal traditional systems. Reducing logistics costs as a share in a gross domestic product, taxing goods and services, investing in road infrastructure, developing inland waterways, and coastal transport and freight traffic. The Indian logistics industry is currently in a very fragmented and unorganized state. Given many unorganized players in the industry, scattered and organized players make up about 7% of the total market share. Over the past decade, more and more investments have been in the consumer and logistics sectors, including a wide range of industries such as retail, automotive, telecommunications, pharmaceuticals, and heavy industry. In addition, the logistics sector is faced with such problems as lack of materials and transport infrastructure, fragmented storage, many regulatory and political institutions, the constant movement of goods between modes, and a minimum of integrated IT infrastructure. Focus on new technologies, improved investments, skills, bottlenecks, intermodal transportation, automation, a single licensing system, and industry development processes.

CHAPTER 2: LOGISTICS SECTOR IN AZERBAIJAN

In addition to strategic road transport betwen Azerbaijan, Central Asia, and Europe, Azerbaijan has 23,000 km of roads and highways that play an important role in the transport infrastructure in the Caucasus. Approximately 5,000 km of this network consists of 1,685 km of international public roads and 15,000 km of local minor roads. The share of roads in the total volume of freight traffic in the country has remained at 48% since 2006 (Figure 2.1). In 2016, 250 million tons of cargo were transported, of which 65% were transported by road. Transport corridor in 2009, the volume of passenger and freight traffic by the road along the Europe-Caucasus-Asia route amounted to USD 145 million. Of these, $ 500 million was directed to the state budget in 2008, and $ 100 million - to passenger transportation.



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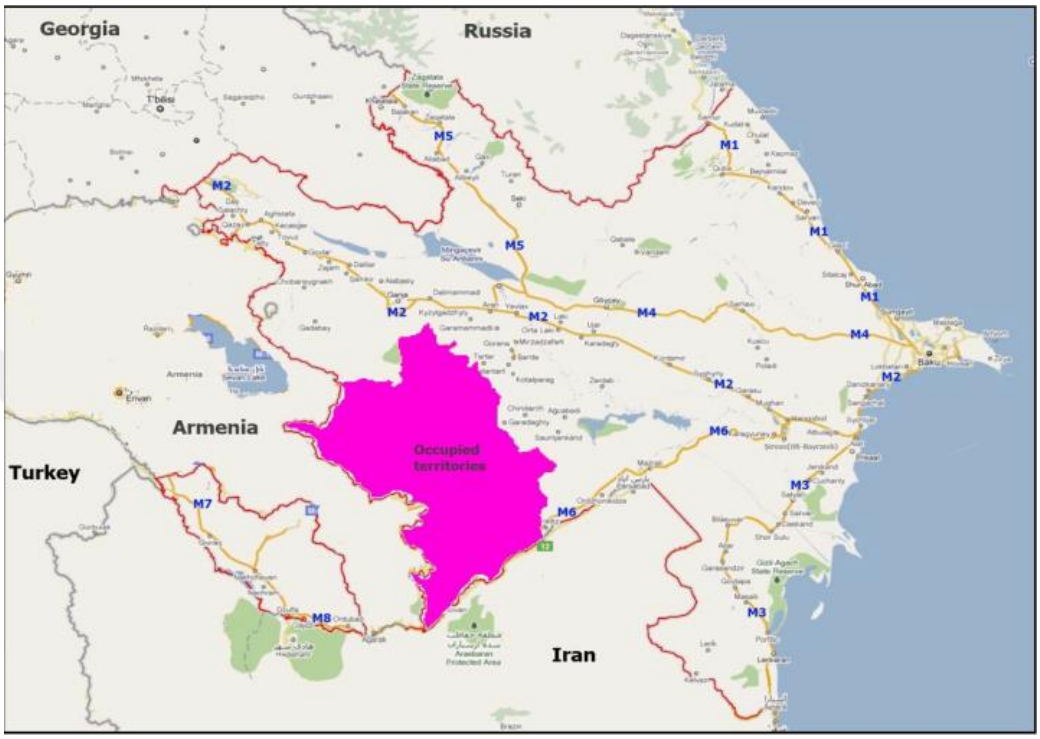
Railway	18.7%	17.8%	12.8%	12.8%	12.3%	12.2%	11.8%	10.9%	8.7%	7.9%	7.3%
Air	0.03%	0.02%	0.01%	0.02%	0.02%	0.03%	0.05%	0.05%	0.05%	0.07%	0.07%
Sea	5.3%	5.7%	6.1%	5.3%	5.5%	5.3%	4.8%	4.1%	2.7%	2.4%	3.3%
Piplelines	25.7%	27.0%	30.5%	29.8%	27.6%	26.0%	25.7%	26.9%	26.6%	26.0%	25.0%
Roads	50.3%	49.4%	50.6%	52.1%	54.6%	56.4%	57.7%	58.1%	62.0%	63.8%	64.3%

Figure 4. Distribution of Cargo Shipments in Azerbaijan by Transport Mode (2007-2017) (in %) *(*State Statistics Committee of Azerbaijan - data includes total cargo transported in transport and non-transport sectors).

State roads are highways that run along east-west and north-south corridors. Transport connects Azerbaijan with its neighbors Russia, Georgia, and Iran. Azerbaijan is a country with a narrow Armenian population in Turkey and the Nakhchivan Autonomous Republic, which is separated from a separate Turkish route and has links with Turkey. The Armenian-Azerbaijani conflict and relations between Azerbaijan and Armenia and Armenia of the Nakhchivan Autonomous Republic are

currently suspended. Iran can only be reached from the south along the road to the Nakhchivan Autonomous Republic. Azerbaijan, which occupies Azerbaijan, has about 4,500 km of roads and highways and 240 km of railways in Azerbaijan. Most of these roads are inaccessible.



Map 2. Main road networks of Azerbaijan (M1-M8) *(*State Statistics Committee of Azerbaijan - data includes total cargo transported in transport and non-transport sectors).

2.1 Azerbaijan Railway Transportation

The foundation of the railway in Azerbaijan was laid in 1878, and the construction was completed on January 20, 1880. The Baku-Sabunchu-Surakhani railway is only 20 km away. Since this historical period, Azerbaijan has developed following the needs of railway transport. At present, the total length of trunk roads is 2,910.1 km, the length of sections is 2,079.3 km and 802.3 km. Electricity accounts for 1241.4 km or 59.7% of the total length of roads and 40.3% with 837.9 km of relays. Equipped with an automatic alarm for 1527.7 km. First, it rose sharply in 1847 due to an increase in oil production, mainly due to the abolition of the trading system in the early 1970s. In a situation where oil production is growing, there is a real picture of

the future transportation of oil. Pumping oil from the main oil fields (Sabunchu, Surakhani, and Balakhansky) to oil refineries in Baku and from the Caspian Sea to the Caspian Sea was a very primitive and caravan route, and the number of wooden barrels and barrels reached 10 thousand.

The goals for the period after 2025 are the establishment of a logistics center at Heydar Aliyev International Airport and a strong logistics and shopping center located in the new Baku International Sea Trade Port complex in Alyat, as well as a free trade zone.

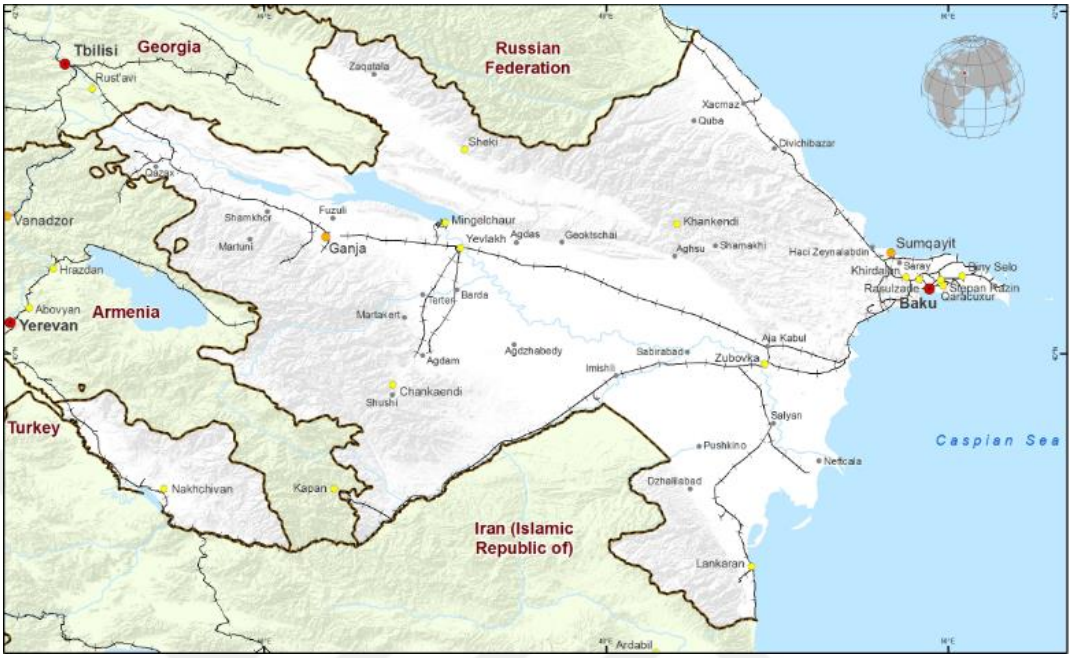
To achieve its strategic goals, the Azerbaijani government has set the following goals: To increase transit trade by region: 40 percent in Central Asia and Montenegro.

navigation; 25 percent to Central Asia and Europe; 3 percent to China and Europe; 40% on the Russia-Iran route; Purchase of 25% of shares in Iran and on the Black Sea route:

- Introduction of systems for monitoring the implementation and completion of projects;
- organization of free trade activities, including logistics and port services;
- Creation of 5-6 logistics and sales centers in Azerbaijan (four to be completed by 2020). The direct impact of logistics and shopping centers should account for 20 percent of total regional logistics and business interactions;
- 5% increase in net air transport revenue.

This method was relatively expensive and became a major obstacle to the development of the oil trade in the future. The oil industry in Baku was more interested in laying railways and pipelines for more profit. Therefore, it can be said without exaggeration that the main reason for the construction of railways in Baku and Azerbaijan is the oil problem and Baku industrial processing. The Committee of Minister's applicants made various statements regarding the construction of railways between oil refineries and gas processing plants. In the end, urgent needs pay off. On June 16, 1878, at a meeting of the Committee of Ministers, King II. With the participation of Alexander, a project for the construction of a railway in the area was approved. The railway will receive 25.2 tons of the Poti-Tbilisi railway. The group is responsible for the construction of the lines six months a year. It was built by the civil engineer Krubets. Shortly, materials and equipment for construction will be sent

to Baku. In December 1878, Krubetsin wrote that the city government needed more landfills in the Black City.



Map 3. Main railway network of Azerbaijan

The development of the transport system is of great importance for the Republic of Azerbaijan. Our country is geographically located in the Caucasus. This situation has led to the emergence of many projects aimed at increasing the transit potential of the Caspian states. Soon, Azerbaijan became the main transit country for transport and rail transport in Azerbaijan, and the Azerbaijan Railway Company CJSC established a new division, ADY Express. ADY Express serves Internet operators and wholesale customers to increase traffic in our country, especially transit. ADY Express strives to provide convenient logistics conditions and a transparent environment and also provides integrated rail transportation for all sectors of the Caspian, Black Sea, Europe, Persian Gulf, Central Asia, and the Far East. The company's main goal is to increase transport costs between Asia and Europe and the Persian Gulf, Russia and Europe, allowing customers to revive the historic Silk Road by providing cost-effective, affordable, and reliable logistics solutions.

2.2 Road transport of Azerbaijan

The length of public roads in Azerbaijan is 24,981 km. The track is 191 km long and is suitable for driving in all 4 directions. The total road density in the country is 288 km / 1,000 km2.

Roads, cargo, and intergovernmental passengers; The Baku-Alat-Gens-Gazakh-Georgia border is 503 km, the Russia-Iran, and Baku-Astar border. For a long time, the section of Azerbaijan with the illegal corridor of Azerbaijan was 521 km. Automobile transport in Azerbaijan has been completely privatized. Transportation of people and goods is carried out mainly by companies and the private sector. According to 2006 estimates, about 70% of Azerbaijan's roads and highways are in poor condition and require urgent repair. Since then, the State Program for the Restructuring and Development of Azerbaijan's State Highway Network has developed a plan to meet these urgent needs. Reconstruction of the state road and road network consists of two phases: Phase 1 and Phase 2. Under this program, Azerbaijan will repair and build more than 10,000 km of new roads by 2014. local roads are included. More than 5,500 km of roads and highways have been improved as a result of increased government and international investment in infrastructure projects. Approximately 07 km of these roads and highways are of national and international importance. Of these, 459 km are financed from the state budget, 345 km - by international organizations. At present, the construction and restoration of a motorway with a length of 870 km continue, of which 750 km are international loans. International motorways, as well as east-west and north-south axes, will be completed by the end of 2011 following international standards.

Map 2 below shows the duration of the main trips to Azerbaijan and the parts that still need rehabilitation. On the border between Azerbaijan and Iran, from the border between Azerbaijan and Russia, 53% of the roads on the NSTC need renovation. Baku Licking Construction and construction of the NSTC in the northern part of Baku from Baku was completed in 2011, and in 2011 the transport length was reduced to 10 km. ASTTO Astara (Iranian Construction) - The modernization of the South Azerbaijan route from Iran, which began in 2006, was completed in 2013. The M3 is a rectangular motorway connecting Iran and Azerbaijan roads east and west of the 503 km M2 motorway. K M2. Average daily traffic map 4 clearly shows the

importance of the road network in Azerbaijan for transit traffic. The Asian Development Bank (Azerbaijan) is an active part of the CAREC corridor. will provide loans for border modernization.

2.3 Sea transport in Azerbaijan

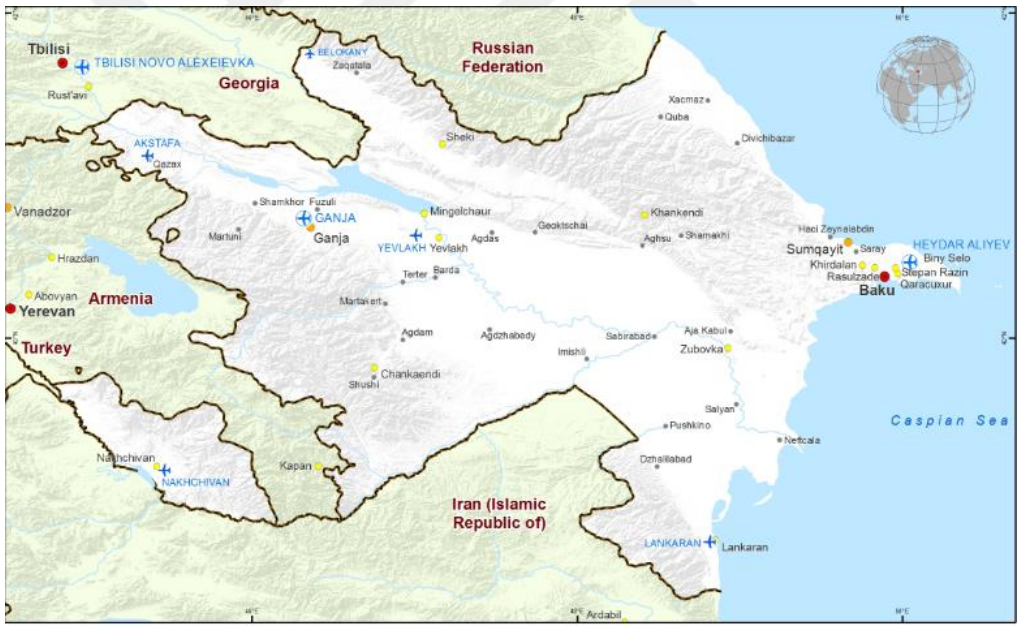
Water transport is the cheapest form of transport. Baku is the largest part of the Caspian Sea, from which all sea routes of Azerbaijan begin. From Baku, you can go to Astrakhan, Makhachkala in Central Asia, to the Iranian port of Anzali. Azerbaijan Caspian → Volga River → Volga-Don Canal → Don River → Azov Sea may hit the world ocean. Azerbaijani ships can go to the World Ocean along the Volga-Don Canal, Volga-Baltic Canal, and Baltic-White Canal. Between Baku-Turkmenbashi, Baku-Aktau, and Baku-Bekdash, a railway ferry connects the two banks within 11 hours. Oil is transported in the reservoirs of the Caspian Sea. In winter, the north of the Caspian Sea froze over and the Baku-Astrakhan road was blocked. Many ships plying this route deliver cargo to the ports of the Black and Mediterranean Seas and bring important currency to the Azerbaijani budget. The Caspian ship of the Azerbaijan state and the sea trade port of Baku play a special role in the water transport of Azerbaijan. The official date of the creation of the Caspian Fleet is May 21, 1858. Joint Stock Company "Caucasus and Mercury" was created by the decision of the Senate of Russia. In 1992, the Caspian Shipping Company was one of the 17 shipping companies of the US Navy. After the collapse of the USSR, the Soviet fleet captured seven of the 15 Soviet republics. This heritage in the Caspian Sea belonged only to Azerbaijan. The fleet consists of 71 transport ships and one piece of baggage. A total of 375 thousand tons, including 36 tankers, tankers, 7 ships, 2 universal RO-RO, 26 dry cargo ships. A fleet of 23 shipping companies operates in the merchant and commercial fleet in the Black and Mediterranean Sea, while the rest of the vessels operate in the Caspian basin. Transport plays an important role in the Europe-Caucasus-Asia transport corridor on the Caspian Sea. We currently transport trucks, trucks, and passengers on ferries and tankers. The Caspian Fleet is the most powerful navy in the Caspian Sea. The European corridor stretches from the Chinese port of Lianyungang to the Austrian capital Vienna. Approximately 11-12 thousand. km. Cars are transported by different types of transport.

Map 4. Main Seaways network

2.4 Azerbaijan Air Transportation

After Azerbaijan first became acquainted with aviation, it took 15 years for the new type of air transport to receive official status in the region: in 1923, the Transcaucasian Civil Aviation Administration was created. Its founders are Mugan Melioration Construction, Khazar Primorsky, and Azneft. ZAKARIA is designed for aircraft, aircraft operation, express transport, and mail transport. The Baku-Tbilisi-Baku aircraft were used in Junkers in April 1923, and two years later an airport was built in Kashtad and a civil airport was established. In 1926, the regular operation of the Mineralnye Vody-Grozny-Makhachkala-Baku-Yevlakh-Tbilisi route began. On June 2, 1938, the first air group was formed in Azerbaijan. This date was announced in 2006 as the Day of Civil Aviation of the Republic of Azerbaijan. II. After the outbreak of World War II, the airline faced many military challenges. The history of civil aviation in Azerbaijan dates back to the 1970-1980s. During this period, Ganja, Yevlakh, Naftalan, Nakhchivan, Zagatala, Lankaran, Agdam, Agstafa, and Sheki were equipped with an artificial strip. They received the Yak-40. Currently, 11

regions are connected to the Baku Air region. The construction of a cargo terminal in Baku, completed in March 2005, made Baku a landing site for trucks from west to east and north to south. In the same year, Baku Cargo Terminal became a member of the International Air Transport Association (IATA) and joined the World Partnership Program of the Council of the International Union. Azerbaijan Airlines is a part of Azerbaijan Hava Yollary. The headquarters of the company is located in Baku. Heydar Aliyev International Airport is located 20 km northeast of Baku. Azerbaijan Airlines carries passengers to Europe, the CIS countries, the Middle East, and Asia. Since 2014, the new Boeing division has operated long-haul flights to North America and Southeast Asia. Azerbaijan Airlines, the national air carrier of Azerbaijan, is the leader of the International Air Transport Association (IATA) and the leader of the CIS. Azerbaijan Airlines is one of the leaders in the region and the CIS countries in terms of the number of new airlines.



Map 5. Azerbaijan Airports

2.5 Azerbaijan Pipeline

Thanks to oil and natural gas, pipeline transport in Azerbaijan has improved significantly. Efficient transportation of oil within the country and abroad requires the development of oil pipelines throughout the year. For the first time in the

Absheron region, the pipeline was built as a result of oil production in the country. The total length of the gas pipeline is over 1,499 km. 70% of the gas pipeline is concentrated in the Absheron economic zone. Shirvan, Baku, Shirvan-Dashgil, Dubendi-Boyuk-Bereg-Dubendi-Kesel, Dubendi-Surakhany-Boyuk-Shari, Dashgil-Sagachal-Keshle, Buzovna-Sabunku, Binegedi-Kesle were considered important and worked intensively in the pipeline. At the beginning of the 10th century, the Baku-Batumi gas pipeline with a length of 799 km was put into operation. About gas production in the Czech Republic, the second phase of the gas pipeline development will be created. In general, natural gas production makes it possible to divide the development of the gas pipeline into four stages: the first stage is the laying of new gas pipelines in connection with the development of gas fields on the Absheron Peninsula. The second stage is the development of a new gas pipeline in connection with the commissioning of gas fields in the Kura-Araz regions, including Absheron. The third stage is characterized by the development of old gas pipelines and the laying of new gas pipelines in connection with the gasification of Azerbaijan. The fourth stage is the construction of an international gas pipeline. The first stage - the 50s and 60s; second 60s - 70s; third 1970-1985; The fourth stage covers 1985-2000. Analysis of the total number of gas pipelines showed that gas pipelines in the Czech Republic rank first - 15.2%, second - 33.8%, third - 35.7%, fourth - 15.3%. Pipeline transport from the Absheron economic zone is different from the historical parts of the country or other centralizations. 14% of all gas pipelines in the country are concentrated here. At the same time, the construction of large economic pipelines from this economic zone began. The DRS Kori and Orkanikidze stations were commissioned in 1931, their length is 12.6 km, and their diameter is 400 mm. On October 19, 1995, two gas pipelines were laid in the Caspian Sea, through which Azerbaijani oil was delivered to the world market. The first is the northern road. The total length of the Baku-Grozny-Tikhoretsk-Novorossiysk (BQTN) pipeline in Azerbaijan is 1,346 km (230 km). On October 23, 1996, the first oil was pumped through this pipeline. The second gas pipeline is the western one. Azerbaijan passes along this line with a length of 917 km and 479 km. The line was put into operation on April 16, 2000. The Baku-Supsa pipeline transports 15 million tons of oil to Western countries annually. At the same time, the opening of the Baku-Tbilisi-Ceyhan oil pipeline laid the foundation for the Azerbaijani oil market to enter the

world market in 2006. About 50 million tons of oil are produced annually. The total length of the gas pipeline across the country is 5,000 km.

2.6 Liberalization of Azerbaijan Logistics Sector

In its simplest form, Euro-Atlantic integration is the joining of post-socialist countries to NATO and the EU. Washington is a process of stabilization, democratization, and alliance building. The 1989 process in Southeast Europe, Central, and Eastern Europe is considered a continuation of earlier integration. For example, this trend is likely to end with the addition of Georgia and Azerbaijan to the list. Azerbaijan plays the role of a bridge between Europe and Asia and has great transit opportunities. It is an east-west and north-south route, passing through the western and eastern countries of Azerbaijan and returning from north to south to the junction of major logistics centers and major trade routes. Recently, several large infrastructure projects have been implemented in the transport sector of Azerbaijan. Construction of the Baku International Port, the most modern airports and roads of international importance, east-west and north-south transport corridors in the direction of the railway line are being reconstructed. These projects have made a significant contribution to the expansion of the country's foreign economic relations. The advantage of Azerbaijan's geostrategic position, which is an advantage especially as a business center and beneficial not only for the development of the logistics sector but also for its strong logistics capabilities, is the opportunity to benefit from its advantageous location. Concerning the logistics industry in Azerbaijan, we can use the basics: a local truck can transport goods between Asia and Europe, and Asian logistics centers can support a European production network. Agriculture is another area that Azerbaijan can develop as a long-term engine of the economy. Currently, only 6% of GDP, with the development of the transport and logistics chain, industry, and production can develop significantly. In addition, Azerbaijan is supporting the Georgian government on the KTB section of the KTB railroad and the Georgian Kars-Tbilisi-Baku rail system to create an investment of US $ 2,000,000,000 to support a concessional loan of US $ 199 million. After the construction of the railway and the sea from Turkey, KTB will create a railway line between Azerbaijan and Turkey. Most of the existing parts will replace the US $

2,000,000,000 rail restructuring program, the purchase of a new AC electrification system, a new signaling system, new locomotives, and new wagons. The liberalization of the logistics sector makes Azerbaijan a key transit point between the two continents due to its difficult strategic position. These strategies are critical to achieving economic progress, but they are also expensive and complex. This will have a positive or negative impact on 3 main stakeholder groups. These include logistics service providers, contingent exporters, logistics services, and then importers working in the logistics sector. The logistics sector is a sector with significant growth potential, but due to recent government policies, long-term investment in the logistics sector is minimal. For example, a 4% tax and 18% VAT will increase the cost of a European truck to $ 100,000. As a result, most of the international shipping companies are located in Azerbaijan. However, there are few local transport companies and more than 49 small truck owners. If liberalized, access to the area will be much easier than the initial cost of the trucks. In the country of Azerbaijan, which will increase the competitiveness of the logistics sector, 127 out of 149 people are involved in logistics. Liberalization would be disadvantageous as it could reduce the market share of transport companies; However, with judicious use of the first proposal, they can partially eliminate these disadvantages. The lack of infrastructure is also a disadvantage for newcomers, and the lack of the previous liberalization means the truck is less dangerous, but in the long run, the government will invest in roads and liberalization around the world. Policies to acquire this risk will mitigate this risk.

The liberalization of the logistics sector will undoubtedly affect the government. The oil and gas industry is the main industry in which Azerbaijan has a competitive edge and accounts for a significant portion of the country's gross domestic product. However, Azerbaijan cannot interfere with world oil and gas prices; At the same time, the dependence of the economy on these natural resources was noted (inflation in the country increased, which led to a significant increase in the local currency, the recent drop in oil prices led to a double devaluation of the Azerbaijani manat). Therefore, the development of an irreplaceable sector and diversification of the economy is one of the tasks that require urgent solutions. If the government never announces liberalization, the negative trade balance on imports could reduce investment and risks in the country. This is Azerbaijan's comparative disadvantage for most companies in the hands of the non-profit oil industry, and it is trying to

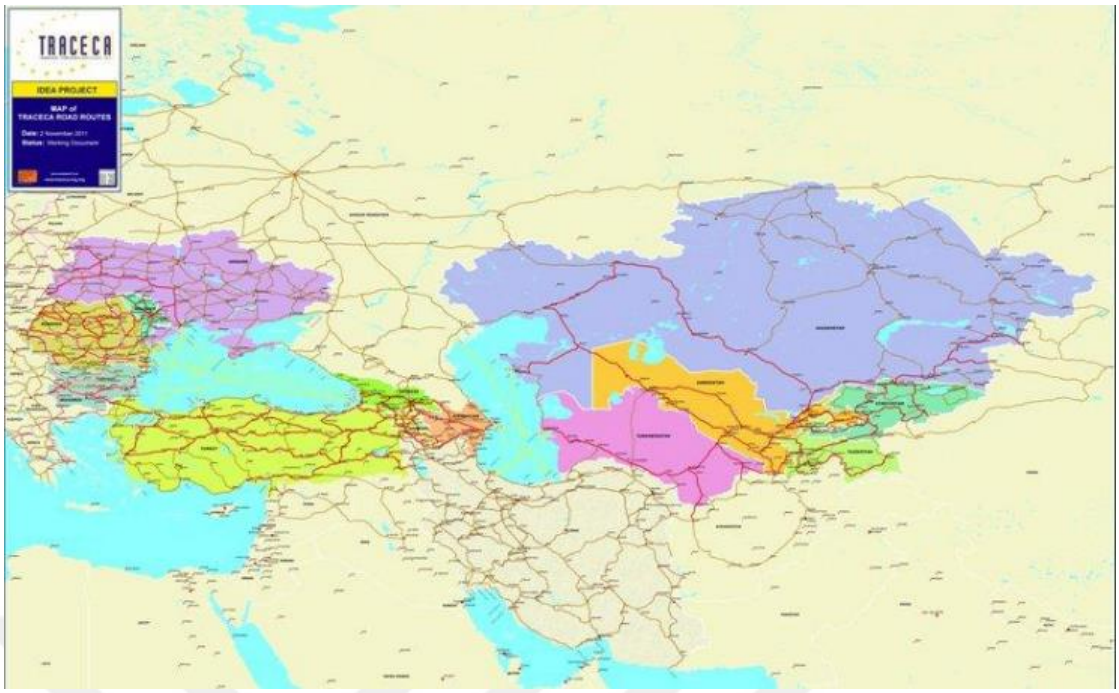
liberalize trade in areas associated with foreign producers, which immediately gives a comparative advantage. Another disadvantage of liberalization may be the export of economic resources from the country. The logistics sector is a particularly important service sector for all national economies, so a return to local liberalization may be particularly important. In this context, globalization underscores the need and importance of liberalizing logistics services. Thanks to globalization, a large number of perishable and degradable products can be produced worldwide. In this context, time spent on halogens is a decisive factor for exporters, importers, and logistics service providers. The application of the product can determine whether the product will be released for the export market. Even with access to foreign markets, time can affect trade. Current research shows that a 10% increase over time reduces the size of binaries by 5-8%. If the product is perishable and has a short shelf life and/or is required for timely production, the period will be longer. In addition, perishable food must be safe and marketable. In this way, it is possible to gradually free up areas that help diversify the economy, including logistics. The best policy step is to increase the share of gross domestic product in the oil sector through short-term conditional subsidies from the current government to local producers. Governments can promote completely free trade in the sector, provide competitive advantages in certain areas, or provide adequate protection once the sector matures. In the short term, liberalization of the logistics sector will also increase government spending. Inadequate infrastructure, especially on roads and railways. As mentioned above, liberalization of the logistics sector will increase the number of transport companies and lead to an increase in tax and customs revenues for the state. Exporters and importers of logistics services will benefit from greater liberalization in this sector as export and import costs can be reduced and more options can be chosen. Given the current situation, the long-term effect of liberalizing the logistics sector in Azerbaijan could benefit the country's economy. Commitment to liberalizing the intralogistics sector will bring the necessary benefits through the following policy options: Compliance with market entry commitments. Securing bilateral or multilateral access to suppliers from other countries is an important tool for liberalizing the sector in a country. Liberalization through “go-to-market” commitments may require the transformation of more foreign suppliers at a lower cost, but will inevitably lead to a reduction in the number of local suppliers. In addition, the dual nature of this policy option must be emphasized; Thus, both domestic and foreign suppliers can benefit

from liberalization. Internal competition policy. To avoid a sudden decline in the number of local logistics service providers, the government must support them in various ways, for example by supporting short-term subsidies and national contracts, and informal competition. It can also include mergers, alliances, and collaboration agreements between supply chain and/or service companies. Sheni simplifies trade control systems and rules: Azerbaijan must be vigilant and remain competitive, but the government must regulate laws to make the country trade-friendly and constantly strive to attract investment in transit infrastructure. Increasing the transparency and competitiveness of the logistics system in Azerbaijan. Trade-in goods and various state control bodies regulate services in Azerbaijan and are regulated by laws of various ministries and ministries. These include the Ministry of Economic Development, Ministry of Agriculture, Ministry of Health, State Secretary of the Customs Commission, Committee on Transport Statistics, Ministry of Environment and Natural Resources, and Tax Assessment. Due to a lack of transparency in government oversight and regulation, an extensive network of trade and regulatory regimes complicates doing business in Azerbaijan. Economic cooperation and development may include Azerbaijani formalities covered by the Trade Facilitation Indicators published on November 6, 2013, interagency cooperation, Community formalities, costs, and expenses. TFI improves the investment climate in Azerbaijan. In the case of national borders, consider measures that may affect the provision of logistics services, especially if there is a security threat at national borders and the provision of these services must be assessed in a global context. Transport: Adopt a comprehensive transport infrastructure strategy. Despite reforms such as drafting new business laws and regulations, regulating business practices, and modernizing tariffs, Azerbaijan has lacked an integrated and autonomous transport infrastructure strategy in recent years. By approving one of these, you can get a higher return on your initial investment to ensure seamless integration of air/cargo/rail/sea and multimodal cargo equipment, logistics centers, and special equipment, which will positively impact your investment. the climate in the country. Support the development of small and medium-sized enterprises, especially those related to agriculture, supply chain services, transport, and logistics: further develop the country's logistics capacity and provide logistics services for local/cross-border transport. This will protect the market for local logistics providers involved in international transport, expand the market for national and international logistics

companies, expand the international freight market, and reduce the impact of transport. Strengthen competition and national logistics capacity. Development of a national curriculum on sustainable logistics development in Sheni, Azerbaijan, because the current state of knowledge about major international organizations and documents seems insufficient, and the application of the global 3PL concept is insufficient.

2.7 Eurasian Transport Corridors

The European, Caucasian, and Asian Transport Corridors are an international intermodal initiative under the auspices of the EU. In May 1993, a historic conference was held in Brussels between the three countries of the South Caucasus and five countries of Central Asia. The permanent secretariat of the TRACECA committee was created under the Intergovernmental Commission and in Baku. The original signatories consisted of twelve countries: Armenia, Azerbaijan, Bulgaria, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Romania, Tajikistan, Turkey, Ukraine, and Uzbekistan. The 13th member, the Islamic Republic of Iran, joined TRACECA in 2009 and Lithuania became an observer. In the TRACECA segment, rail and sea transport costs account for 63% and 79% of the country's total rail and sea transport. in 2010. International traffic, including transit, amounted to 15.5 million tons, more than 10 million tons of crude oil and oil products. In 2011, the transportation of petroleum products by rail and from east to west, in general, accounted for 49% of total transportation costs. Azerbaijan, Georgia, and Turkey form a sub-region combining Western integration. These dynamics are reflected in the development of infrastructure networks consisting of an east-west transport corridor, energy supply pipelines, highways, railways, and physical connections that physically link them more closely to Europe. The development and representation of these ties lead to better management and broadening of relationships with Western institutions.



Map 6. TRACECA

2.7.1 Truck Transit via TRACECA

Freight transport is the most widely used type of cargo in TRACECA and promises to be very beneficial for Azerbaijan. Unfortunately, none of the large Azerbaijani fleets of Euro 3 and higher class, and currently most of the transit vehicles between Turkey and Azerbaijan, were lost in Europe / Central Asia. This is described in more detail below for several reasons. This chapter also discusses two main transport routes from Western Europe: the southern and northern routes from Russia, Turkey, and Georgia..

2.7.2 TRACECA and rail transport

The second main mode of transport on the TRACECA route is rail. In the South Caucasus, two TRACECA lines are connecting Europe, the Caucasus, Central Asia, and China: the Baku-Tbilisi-Batumi railway line and the Baku-Tbilisi-Poti railway line. The line between Azerbaijan, Armenia and Turkey, Armenia and Turkey no longer exists and does not depend on the functioning of the railway network to

Europe in the western part of the old and Black Sea ferry network Baku-Tbilisi-Batumi / Poti. Romania and Bulgaria) and a network of eastern Kazakhstanis and Turkmens. Since 2012, the Kars-Akhalkalaki railway will connect Georgia and Turkey with Europe. The TRACECA railway network runs through southeastern Turkey. It will also have access to Mediterranean ports. Together, these railways make up 7000 km of railroad between Europe and Asia. The long Georgian border between Azerbaijan and Georgia is one of the main TRACECA railway junctions and major railway crossings to Europe, the largest railway transport in Azerbaijan. According to the official data of the Azerbaijan Railway, in 2010 ADY transported over 18 million tons of cargo to Boyuk-Kesik. Approximately 93% of costs (10.1 million tons) are oil and oil products, which is 5.5 million tons. transit oil. Manufacturing costs are divided into import and translation. 7.2% or 66% of Boyuk Kerik's total capacity was exported by rail, i.e. 3.7 million tons or 34%. In 2017, TRACECA railways accounted for 87% of ADY transit traffic. An analysis of existing and potential alternative rail links between Istanbul and Dosik (on the Kazakhstan-China border) shows that the shortest rail link is through Turkmenistan and Uzbekistan (Table 1).

The length of railways in Azerbaijan has decreased from 2792 to 2481 km from 2010 to 2017.

The total mileage increased from 2079 km to 2132 km. Electric roads have been reduced from 1251 km to 1224 km. The length of unused roads has been reduced from 1251 km to 1224 km. Considering the price of a ticket, the railway is still the most popular mode of transport in the world. A 100-speed train lags far behind airplanes in terms of comfort. Railway transport in Azerbaijan in the maximum period (1975) could carry 24 million passengers. In 1990, this number increased to 11.2 million.

6.3 million. A year later, there was a two-fold decrease. Between 1996 and 2009, these numbers fluctuated between 3 and 4 million passengers. In 2017, the result was 2.3 million. The main reason for the decline in the use of railway transport in Azerbaijan in recent years is the lack of comfortable and fast trains. Another reason is the increase in passenger traffic. Since 2006, the period of operation of trains in the country began. The problem of passenger safety in rail transport has reached its highest level since 2015. The speed of old trains is 40-50 km/h, which does not allow

passengers to use these trains. Trains with speeds up to 50 kilometers per hour are not enough for the 21st century. In developed countries, this speed is 300-400 km/h.

New railways are needed for the movement of modern and high-speed trains in Azerbaijan. Many require direct investment in their construction. However, the state can no longer assume this responsibility for objective reasons. On the other hand, there is the problem of profitability. Azerbaijan is not such a big country. The longest railway line in the country is the Baku-Great Rezka railway, its length is 503 km. With all these billions of dollars of investment going into building a high-speed rail system, the question is: what should be the optimal ticket price? Because at least the cost of maintaining this system should pay off .

The second and third-longest railways, which are not used due to the territorial conflict with Azerbaijan, pass through Armenia. In the event of a conflict between Armenia and Azerbaijan, which must be resolved immediately, both countries have great potential, since Turkey has two Mediterranean routes - the shortest route and Iran - Iraq, and the government provides alternative access points to Syria if necessary. Completion of the planned Kazakh train from Bain to Shankar could be the shortest Kazakh TRACECA route. This extension of the railroad will shorten the distance between Dostyko and Aktau by 485 km, and the delivery time by 10-11 hours. The design capacity of the Beineu-Shalkar section is estimated at 12 million tons per year. The government of Kazakhstan planned to build this railway in 2016-2020.

Table 3. Alternative Transport Routes from Istanbul (Turkey) to Dostik (Kazakhstan-China Border)

Route	Distance/km
Istanbul - Kars - Akhalkalaki - Tbilisi - Baku - Caspian Sea (ferry) - Turkmenbashi - Ashgabat - Tashkent - Almaty - Dostik	6023
Istanbul - Kars - Akhalkalaki - Tbilisi - Baku - Caspian Sea (ferry) - Turkmenbashi - Ashgabat - Tashkent - Almaty - Dostik	8046
Istanbul - Kars - Dogukapi - Masis - Yervan - Barkhundarly - Baku - Caspian Sea (ferry) - Turkmenbashi - Ashgabat - Tashkent - Almaty - Dostik *	5469
Istanbul - Kars - Dogukapi - Masis - Nakhchivan - Julfa - Baku -	4587

Caspian Sea (ferry) - Turkmenbashi - Ashgabat - Tashkent - Almaty - Dostik *	
Istanbul - Lake Van (ferry) - Kapikoy - Tehran - Mashhad - Seraks - Tashkent - Almaty - Dostik	7345
Istanbul - Lake Van (by rail) - Kapykey - Tehran - Mashhad - Seraks - Tashkent - Almaty - Dostik **	8954

* Currently, these routes cannot be used to cross Armenia from Armenia or Azerbaijan occupied by Armenia. There is no connection between Armenia and Azerbaijan because of the Nagorno-Karabakh conflict.

** This route requires the construction of a railway 259 km north of Lake Van.

After the Cold War, the newly independent Caucasian states of Azerbaijan and Georgia used their transport and energy infrastructure to remain in a state of emergency. All existing infrastructure is located on the northern and southeastern axis of the Czech Republic and is oriented towards the center of the former Soviet center of Moscow. In the early 1990s, the Turkish government introduced a new concept for the development of an east-west corridor for transporting energy and other goods. The New Silk Road, many of which were important during the Soviet era, aims to strengthen regional sovereignty using important Caspian energy resources and potential Eurasian trade networks. Participation and cooperation of the former Soviet republics in Western integration.

To understand the impact of the EWTC on integration, you must first familiarize yourself with the corridor designs. While the EWTC is comprised of various large and small infrastructure projects ranging from power grids to asphalt roads, this article will focus on four main corridor projects: the Baku-Supsa Rannaya pipeline and the Baku-Tbilisi-Ceyhan (BTC) pipeline). South Caucasus Gas Pipeline (SCP) and Baku-Tbilisi-Kars Gas Pipeline (BTK). However, the overall impact of Western integration on the broader transport corridor should not be overlooked.

2.7.3 Baku-Supsa pipeline "Early fat"

The first incarnation of the east-west transmission line in the region occurred in the late 19th century when British and French oil companies began operations in and

around Baku as part of the Russian Empire. The main western port, which sends the source to the Absheron Peninsula, is Batumi on the Black Sea coast of Georgia. Likewise, when the Caspian energy potential was realized in the 1990s, the Baku-Sups pipeline became the first east-west export route for "early oil production or limited oil reserves from Azerbaijan's offshore fields." Built-in 1999 from the port of Supsa, a port on Georgia's Black Sea coast, the pipeline consists of the Soviet Baku-Supsa oil pipeline, which was partially refurbished by BTC before the transitional measure was completed. Azerbaijan, Georgia, and Turkey an important first steps towards creating a common corridor for government revenues.

2.7.4 Baku-Tbilisi-Ceyhan pipeline

The Baku-Tbilisi-Ceyhan gas pipeline, which is considered the cornerstone of the EWTC's development, is the first infrastructure project connecting the Caspian and Mediterranean Seas. The forbidden port of Ceyhan, on Turkey's southeastern coast, from Russia, Iran, and Armenia to Baku in Georgia, claims it duly separated the BTC from the longest pipeline in Turkey. From here, Caspian oil is shipped by tankers to Western markets. The route, which is the source of many conflicts, was finally adopted in November 1999 and Ceyhan reached its first oil in May 2006. The completion of the BTC construction has led to the fact that the number of tankers on the Bosporus has decreased and increased by 350 years per year. oil production. Development of Ceyhan as an energy export center.

2.7.5 South Caucasus gas pipeline (Baku-Tbilisi-Erzurum)

Although BTC is the most famous EWTC project, with gas expansion it could become the most important pipeline in the South Caucasus. Caspian oil is strategically important for the West as it opens up oil reserves for export from Russia or Iran. At least, in theory, it is marketed globally and is in good condition. On the other hand, natural gas is often mixed with gas pipelines - and the physical origins of suppliers in the consumer sector are coming to an end, mainly due to its sensitivity to geopolitical issues in Eurasia. Turkey Gas Pipeline SCP construction at the BTC began in Baku in 2004, and the first Caspian gas was purchased from Erzurum in

June 2007. The last two events have increased the strategic importance of SCP. On July 26, 2007, the government will end its work in Turkey, Greece, and Italy in 2012. Turkey and Greece-Italy (TGI), which signed a natural gas pipeline agreement signed between the governments of Azerbaijan, will continue their journey starting with SCP. ... Georgia and Turkey signed the Adriatic Sea, Greece and Azerbaijan, Azerbaijan, Greece, and then on August 2, the European Export Report on the Western European Gas Network, followed by the European Export Report under the Western Consensus, and both countries studied energy projects we cooperate on production and development ... TGI, Azerbaijan, Georgia and Turkey support the further integration of EWTC transit into Western Europe through infrastructure development, one of the key elements physically connected to Western Europe.

2.7.6. Baku-Tbilisi-Kars railway

The fourth largest EWTC project was first proposed in Turkey in 1993, but in May 2005 Azerbaijan, Baku, Georgia, and Turkey officially accepted the Tbilisi-Kars project. Under this project, the Akhylkelek railway from Baku to Georgia will be reconstructed in Tbilisi, Georgia, with the participation of Turkey, and a new Kars building will be built on the border with Turkey and the Akhylkelek railway network. The 98-kilometer section of the Akhalkalaki-Kars railroad, east-west corridor, lacks a link on the shortest route from Shanghai to London to Eurasia.

The BTK project is also very important for the sub-region. Much of the EWTC project envisions some form of Western funding for the United States and Armenia to strengthen regional cooperation between Georgia and Turkey, Azerbaijan, and the European Gateway to address issues related to Western funds. The proceeds from the sale of energy to Azerbaijan through the BTC pipeline provided Azerbaijan with a $ 200 million loan to build a new Georgian region in Georgia. Despite limited participation, the US and EU have said they support the project. The railways are expected to deliver the goods as soon as possible for the construction of a railway tunnel that will lead to a European pipeline under the Bosporus in Turkey. The development of petroleum products and a potentially important source of income could even lead to a reduction in regional cooperation in the West.

Map 7. Baku-Tbilisi-Kars Railroad

2.8 The North-South Transport Corridor (NSTC)

Azerbaijan is located at the crossroads of several corridors. The Northwest Transport Corridor is an ancient road that has connected South Asia with Northern Europe for centuries. This route was used by European, Russian, Indian, and other foreign traders. In the seventeenth and early eighteenth centuries, Indian traders were the dominant participants in the north-south trade. During the Safavid dynasty, the number of Indian merchants scattered throughout the empire ranged from 10,000 to 20,000. At the end of the century, about 200 Indian merchants lived on the outskirts of Shemakha, the main trade center of Azerbaijan. The city has been buying Indian silk from Azerbaijan since 1703 and bought 20 Indian caravans in Baku. These traders played an important role in the management of trade between Russia and Southeast Asia in the modern countries of Azerbaijan and Iran. Today, the Mughal Caravanserai, a commercial legacy between northern and southern India, once operated in the heart of the old city of Baku.

The historical cities of Azerbaijan have become the "communication center" of the region, exporting various products along the north-south axis. Silk, oil, salt, fish, horse, jewelry, and natural dyes are some of the main products that Azerbaijan exports to Europe, India, the Middle East, and Central Asia. This product was transported by land and sea. Records show that in 1639 a group of Indian traders left

Astrakhan for Derbent and Shamakhi with Russian goods such as animal furs, furs, leather, canvas, copper, and caviar. Chamakh products were usually shipped from India via Afghanistan to modern caravans or the port of Bandar Abbas in the Persian Gulf, and from India to the port of Surat. The agreement on the creation of a modern international North-South transport corridor was first signed in 1999 in Russia, Iran, and India. Signed in St. Petersburg. Armenia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Belarus, Oman, Syria, and Bulgaria have joined the agreement with Azerbaijan. Azerbaijan officially joined the project in September 2004. The National Science and Technology Center was originally designed to use the ports of Russia and Iran on the Caspian Sea from Russia to Iran using the ports of Anzali and Amirabad, especially the ports of Astrakhan and Ola. on South. Added two alternative routes when new bidders join the contract. The National Science and Technology Center currently has three alternative transportation routes. The first and original route started in Helsinki, Finland. From the Caspian Sea to St. From St. Petersburg to the Caspian Sea, from the Caspian Sea to Anzali and Amirabad, and from Novoshekhra to the ports to the National Science and Technology Center in Astrakhan and Ola. The route from Iran continues to Iran from the ports of Abbas and Chabahar Bay to Bender Bay. You can move from Pakistan to Iran, but this option is unlikely to be used in the short term. The second or western road of the National Science and Technology Center intersects with Azerbaijan on the western coast of the Caspian Sea and leads to Iran and India. Potentially this is St. Petersburg. This is St. This is the fastest and shortest route connecting St. Petersburg and Helsinki with Bandar Abbas by road and rail. However, there is no railway connection between Azerbaijan and Iran, which we will discuss in detail later. The third Eastern National Science and Technology Center is moving along the eastern coast of the Caspian Sea from Russia, Kazakhstan, and Turkmenistan to Iran and India. The route is currently under construction, but the rail link between Kazakhstan, Turkmenistan, and Iran has not been completed.

East-west transport corridor. Route: China - Kazakhstan - Caspian Sea - Azerbaijan - Georgia - Turkey and / or Black Sea - Europe. The Central Corridor or Trans-Caspian International Transport Route (TMKM) serves to increase freight traffic from China to Turkey and EU countries. The administration and development of the transport corridor is provided by the members of the Consortium. The consortium includes China Railways in China, KTZh Express in Kazakhstan, Caspian Shipping

Company, Azerbaijan Railways Express in Azerbaijan, Transcaucasia Terminal Companies in Georgia. Nomad Express trains running along this corridor deliver goods from China to Europe in approximately 10-12 days. This is one of the main advantages of the transport corridor. The cargo is transported to Europe in two aisles. One passes through the Georgian ports of Poti and Batumi and the other passes through the Baku-Tbilisi-Kars railway, which became operational on 30 October. Following the launch of the Baku-Tbilisi-Kars project, the cost of transporting the medium corridor will be significantly reduced, which contributes to a more efficient increase in transit supplies. Three alternative routes are intermodal using different types of cargo. For example, a container loaded from Mumbai, India will also arrive at the port of Bandar Abbas, where it will be transported by train or truck to Iranian ports on the Caspian Sea. Upon arrival, the names Astrakhan and Ola will be shipped across the Caspian Sea to a Russian port. The container is loaded by train or truck and transported to its destination. In the absence of railways, communication between Azerbaijan and Iran, container traffic through Azerbaijan is transferred to the railway line and sent to Russia / Northern Europe, after which the city can be delivered to Astara, only by rail. This is an expensive option and is currently not available. From Bandar Abbas to Baku about 10 days and about $ 2900. Currently, the annual container traffic between Europe, the Middle East, and South Asia is estimated at 3.5 million TEU. The National Science and Technology Center and some of these markets have conquered Iran, the South Caucasus / Caspian / Central Asia, and Russia. For this reason, the National Science and Technology Center should include reliable, fast, and economical intermodal land transport, especially in the Russian / Northern Europe and India / South Asia markets, and transport should be a bridge. Russia is one of the founders and is ready to pave the way for Iran and India along the route on which the successful integration and harmonization of the country's transport networks depend. Experts from the Bombay National Science and Technology Center from Northern Europe / Russia said they would cut delivery times to 17-19 days, which is a prerequisite for the traditional Suez Canal and the Mediterranean. In 2007, the International Union of Railways conducted a model study through the National Science and Technology Center of Azerbaijan to prepare a feasibility study for construction in the West. In this study, experts noted that the location of the Azerbaijan-Iran-Delhi railway section, the timing of deliveries from India to Helsinki, and the duration of the proposed measures are in line with the

NSTC. According to these figures, a container takes 6-12 hours from Delhi to Helsinki and Mumbai. Sacred. St. Petersburg will take approximately 19 hours 19 hours. The crowd is much shorter than the Suez Canal and the Alternative Mediterranean Route. However, its main disadvantage - from 17 days to 24 hours to 6 days - is that it limits NTSC transit terminals at the intersection and takes 19 hours, or 40% of the total scheduled transit time. In addition, delivery time is only a small fraction of the shipping cost, and shipping cost is often more important than shipping time.

Table 4. Distance and transit times by rail from Delhi, India to Helsinki, Finland using the North South Transport Corridor via Azerbaijan (Source: The Pollarconnection, 2021).

Rail Section by Country	Time	Share(%)	Distance (km)	Share(%)
Finish Section	0d 04	2%	254	2%
Russian Section	2d 07	16%	3,456	33%
Azerbaijan Section	0d 20h	5%	612	7%
Iranian Section	3d 15h	12%	1,758	19%
Indian Section	3d 01h	10%	1,490	15%
Railway Carriage (Total)	8d 02h	43%	7,309	80%
Terminal And Border Crossing	8d 17h	35%	0	0%
Sea Transport	2d 20h	19%	1,986	19%
TOTAL	20d 19h	99%	9.983	99%

Rail transport can be more environmentally friendly than other modes of transport, but it is also more expensive. Railway operators in Azerbaijan, Russia, and Iran do not take special measures to reduce tariffs, and railways over 5,000 km are expensive if they do not create additional incentives for carriers to use this route. The NSTC must work together to develop a coordinated approach to reducing rail tariffs and streamlining customs procedures, especially if the NSTC is to become a competitive corridor capable of attracting large cargo from India to Europe and Asia. It crosses the Bander-Abbas border and quickly reaches St. Petersburg. Departures to St.

Petersburg. They should view the National Science and Technology Center as a single supply chain and not as separate parts of the national rail networks.

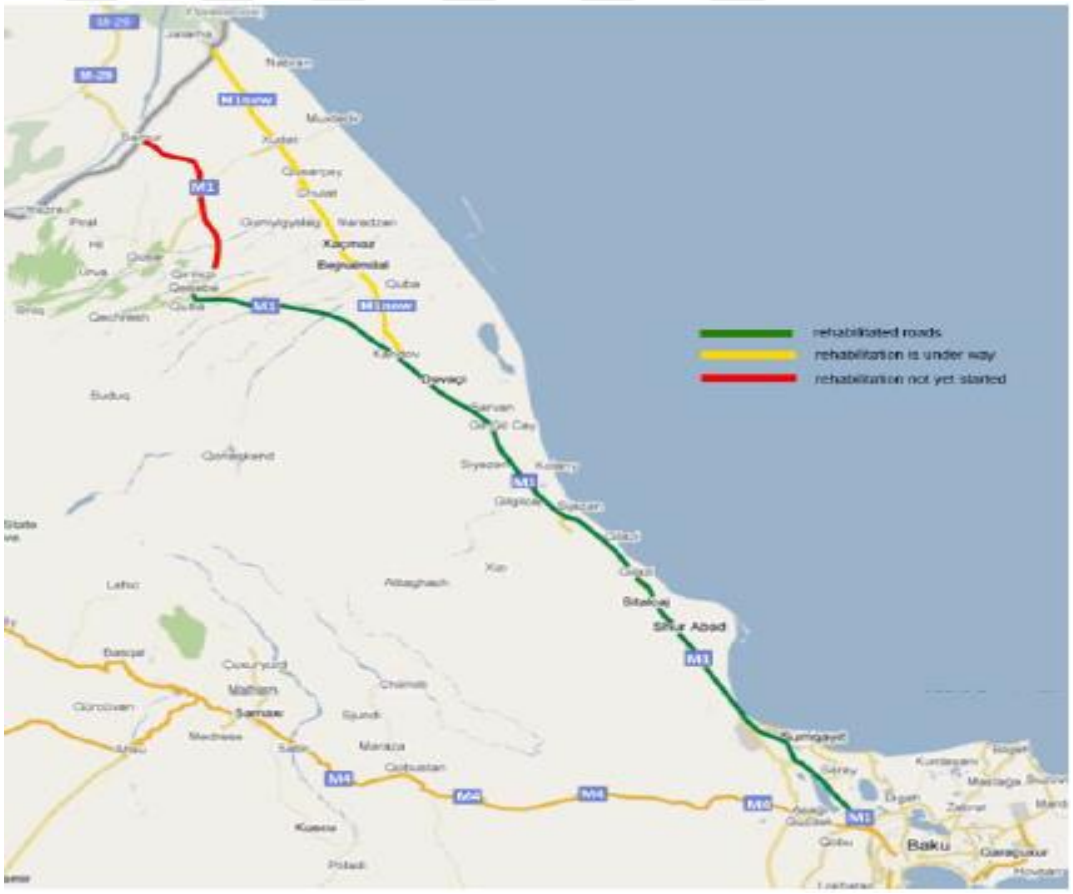
2.9 NTSC Western Route

Azerbaijan is the main bridge between Russia and Iran on the way to the Western National Science and Technology Center. This route connects the rail and road networks of Russia, Azerbaijan, and Iran along the western coast of the Caspian Sea. It is the shortest and potentially fastest corridor compared to the other two NSTC routes.

2.9.1 West NTSC Route: Highway

In 2010, a section of a modern highway was opened in Azerbaijan, connecting Baku and Samur with the Azerbaijani-Russian border. The total length of the Baku-Samur section (M1 road) is 208 km, not 56 km. This four-lane paved road is also a new extension of the M1 Leasing Highway, which shortens the distance between Baku and Azerbaijan. In addition, the construction of the Baku Ring Road was completed in 2010, and transit trucks and trucks were able to move from north to south without entering the city. Work continues on the Southern Automobile Corridor, which is 243 km between Alat and Astar (M3). In 2005 and 2006, the Asian Development Bank (ADB) conducted a series of studies, including a feasibility study and technical assessment. 221 km of the Alat-Astara road will be modernized and the construction will be jointly financed by the Azerbaijani government and international organizations. On the Azerbaijani-Iranian border, when the entire Azerbaijani-Russian border is completed, the NSTC will comply with international standards and provide quick and convenient passage through the entire Azerbaijani section. On the western route of the National Science and Technology Center of Azerbaijan, there are two main border crossings and a customs point: Samur in the north and Astara in the south. Currently, the Liking border crossing is most widely used for rail transport, but it will soon be connected to the M1 road in Baku (Map 5). Bus and freight traffic at the Astara and Samur border points has increased significantly in recent years. The Iranian-Astera border is currently the largest and largest in terms of

road freight transport. In 2009, this threshold increased the weight and volume of trucks that were crossing the main east and west Red Bridge. In 2011, more than 65,000 trucks crossed the Azerbaijani-Iranian border and transported 2.3 million tons of cargo. About 23% of this cargo is in transit. On the other hand, more than 75,000 trucks crossed the Azerbaijani-Georgian border, carrying 645,000 tons of cargo, of which only 12%. More than 39,000 trucks crossed the border between Azerbaijan and Russia and transported 710,000 tons of cargo, including 33% of transit traffic. The volume of traffic at the Astara border point was 700,000 tons, the total cargo turnover was 54%, followed by more than 44,500 trucks, followed by transit and export. Approximately 325 thousand tons of transported goods are in transit, 215 thousand tons. Most of the cargo handled on the northern wing of the samurai is exported, while the rest is in transit and imported.



Map 8. M1 Road (From Samur/Yalama, Azerbaijan-Russia Border, to Baku)

The NSTC western route is not used as indicated in the transit traffic statistics for the Sable and Primary nodes. The main reasons for this are high transport costs, delays at

borders, national restrictions on the number of trucks entering the country, and general problems for carriers when traveling through Azerbaijan-Africa and across the Azerbaijan-Iran and Azerbaijan border. Logistic services available at border crossings further exacerbate existing problems during the transition period. Based on these considerations, after the construction of the north-south highway connecting the Samurai and Astara-Baku, he needs to develop his strategy to become the most reliable, economical, comfortable, and fastest trans-Azerbaijani highway NSTC.

Map 9. M3 Road (From Baku to Astara, Azerbaijan- Iran Border)

2.9.2 The western NSTC route: Railways

Azerbaijan delivered over 3 million tons of cargo from Iran and the Middle East from the Soviet Union. Located on the Azerbaijani-Iranian border of the Azerbaijan Nakhchivan Autonomous Republic (NAR), Julia was the main logistics center of the

region and the largest center of the National Science and Technology Center. Julia, who daily transports about 150 trains and about 269 thousand tons of cargo to Iran. Soviet cars and containers moved in the vicinity of Iran and were transferred from the Azerbaijani-Iranian border in the same city, from the border of Julfa to the border of Azerbaijan and Iran, to the city of Julian in Azerbaijan. Irish logistics companies distribute more goods and provide more transit in Iran. For the Soviet railways to reach zero in the NAR, they had to cross a small section of Armenia. During the war between Armenia and Azerbaijan in the 1990s, this branch line was destroyed and can no longer be used to transport goods from north to south. It also meant the occupation by the Armenians of a part of southwestern Azerbaijan. Azerbaijan lost 240 km of its national railway network, including 132 km of the railway line along the Iranian border. Today, all occupied territories are occupied, the tunnels are closed. Although rebuilding part of the Baku-Armenia-Julfa railway line is relatively straightforward in practice, the fate of the railway or its remnants depends on the resolution of the conflict between Nagorno-Karabakh and Armenia, and Azerbaijan. Julfinskaya's extensive railway network is important for Azerbaijan after the separation of rail transport, as the country has shrunk significantly. The total volume of rail traffic in Russia, Azerbaijan, Turkey, and Iran amounted to 32.3 million tons in 2007, 26.1 million tons in 2009, and 21.4 million tons in the first eight months of 2010. The share of freight traffic with Russia in Azerbaijan is about 20%; Iran 17 percent. According to the official statistics of ADI, the total volume of freight traffic on the NSTC in Azerbaijan in 2009 was approximately 6.9 million, and in 2010, the total volume of ADY rail traffic was 3.7 million tons (92% of imports), which is 24% of the total. volume. 8% transit) and 859.6 thousand tons (95% export, 4% transit) were exported. Transit traffic from Iran or Iran was ignored. Due to the lack of rail links between Azerbaijan and Iran, most of the Russian rail traffic to Iran is carried out by rail through Azerbaijan rather than across the Caspian Sea. With 3.8 million tons of cargo, including 596 thousand tons. Transit traffic from Iran or Iran was ignored. Most of Russia's rail traffic to Iran, rather than the Caspian Sea, is carried out by rail through Azerbaijan due to the lack of rail links between Azerbaijan and Iran. Discussions about connecting the Azerbaijani-Iranian railway with Astara began in the 1990s, but the political and geopolitical views of the 1990s showed that Russia and Iran supported the development of the National Science and Technology Center along the Caspian Sea, and Azerbaijan did participate in this. orbit. By mid-

1999, the parties realized that the rail link between Azerbaijan and Iran was the key to the shortest and most convenient alternative to all NSTC routes. Experts believe the NSTC Western Railway is the best choice for long-term Eurasian rail transport, especially between Northern Europe and South Asia. The annual volume of rail traffic through Azerbaijan reached 9 million tons in 2014 and is estimated at 19 million tons in 2029. Qazvin-Rasht-Astara delivery times are expected to be 49% and 29% shorter than alternative routes. From Helsinki to Azerbaijan, the Western NSTC railway ends 8 km from Azerbaijan and Iran, then continues to Iran in Qazvin and continues to Bandar Abbas in the Persian Gulf. It is 279 km along Qazvin-Rasht-Astara in Astara, 195 km between Qazvin and Rasht in Iran, and 254 km between Rasht and Astara. The remaining 7 km will be built between Azerbaijan, Astara, Azerbaijan, and Iran.

2.10 The Eastern NSTC Routes

The National Science and Technology Center is located on the eastern coast of the Eastern Caspian Sea, in Kazakhstan, Turkmenistan, and Iran. Like the western route of the National Science and Technology Center, the Soviet railroad linking Kazakhstan to Iran, Uzbekistan, and Turkmenistan have a long journey ahead. It is not recommended to transport goods by rail to the north due to frequent problems at border crossings in Central Asian countries. In 2007, Kazakhstan, Turkmenistan, and Iran offered to establish a rail link with Kyzkaya-Bereket-Etrek (Turkmenistan) and Gorgan (Iran), which would pass through Uzbek (Kazakhstan) on the eastern coast of the Caspian Sea. It will be 600-700 km shorter than its Soviet counterpart. The total length of the proposed railway line is 951 km (146 km in Kazakhstan, 723 km in Turkmenistan, and 82 km in Iran). The railway opened in December 2011.

In March 2010, the Turkmen Iranian company Pars Energy began construction of large efficient stations and railways on the 257-kilometer border with Turkey. The construction of this section is financed by a long-term loan provided by the Iranian Development Bank (IDB) and Pars Energy. The total cost of this segment, including the locomotive to be built at Etrek station, will amount to $ 696 million. Bereket and 466 km north of the Turkmenistan-Kazakhstan border, the Turkmen Railway was

built by the Ministry of Transport. The cost of railways in Kazakhstan and Iran is $ 430 million and $ 185 million, respectively.

The Gorgan railway connects the main road with Bandar Abbas. The Iranian government recently gave the green light to a project for a new railway linking Gorgan to Mashhad (east) and directly to the port of Chabahar. Last year, a 1,350 km railway project was launched, connecting Mashhad and Chabahar. The Mashhad Gorgan Foundation was approved in December 2010.

Compared to the NSTC rail routes in the west and east, the eastern NSTC route from Iran to Turkmenistan and the Qazvin-Rasht-Astara railroad plan represent a unique project. Currently, the two rail lines do not compete directly as they serve different markets. On the other hand, the Uzen-Bereket-Gorgan railway can compete with the centers of the National Science and Technology Center from the Caspian Sea to China to the Persian Gulf and from Russian ports to Iran. Azerbaijan's central strategy depends on the efficient use of the East-West and MGTC corridors. Therefore, Baku should contribute to the construction of a railway linking Astara (Azerbaijan) and Rasht (Iran), as Europe will rely on an intermodal supply chain in the north and south of India.

2.11 World Bank Logistics Performance Index (LPI): Azerbaijan

Logistics efficiency index. According to the World Bank Development Indicators from officially recognized sources, the overall indicator in 2017 (1 = low = 4 = high) was 2.36. Azerbaijan ranks 124th in the world.

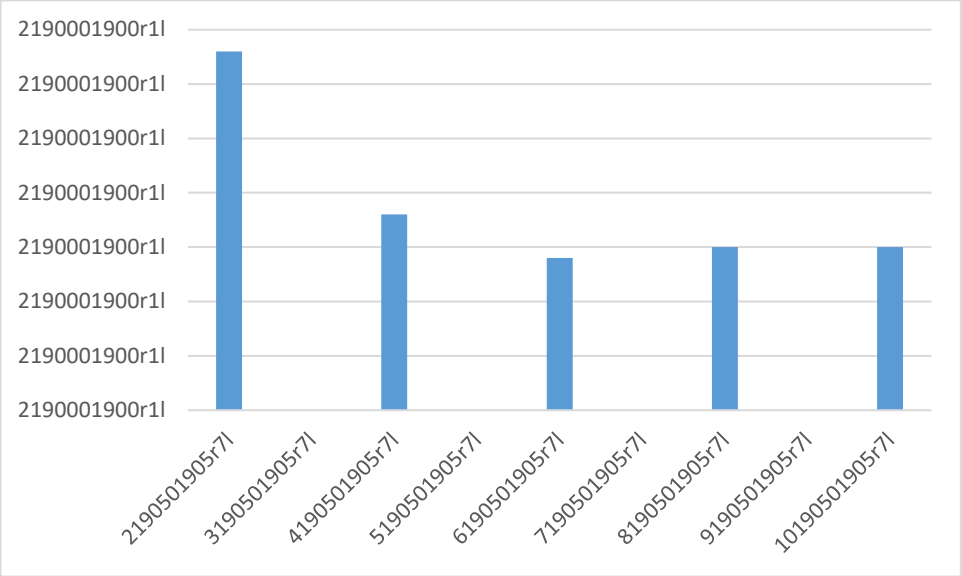


Figure 5. Rate of Azerbaijan Logistics Performance Index (Source: CEIC, 2014)

2.11.1 Azerbaijan Private Sector

"Distance to the border". According to data compiled by the World Bank to determine development indicators from officially recognized resources, 70.19 reports were received from the Azerbaijani border in 2016 (0 = 100 lowest = limit). Threshold Distance is the distance between the economy and 2004, which is the best in all countries and all Doing Business reports. The distance limit is displayed from 0 to 100, where 0 represents the smallest degree. For example, a score of 85 in 2013 means that economies in all countries are getting 30 percent better over time. In 2013, 90 points indicate an improvement in the state of the economy.

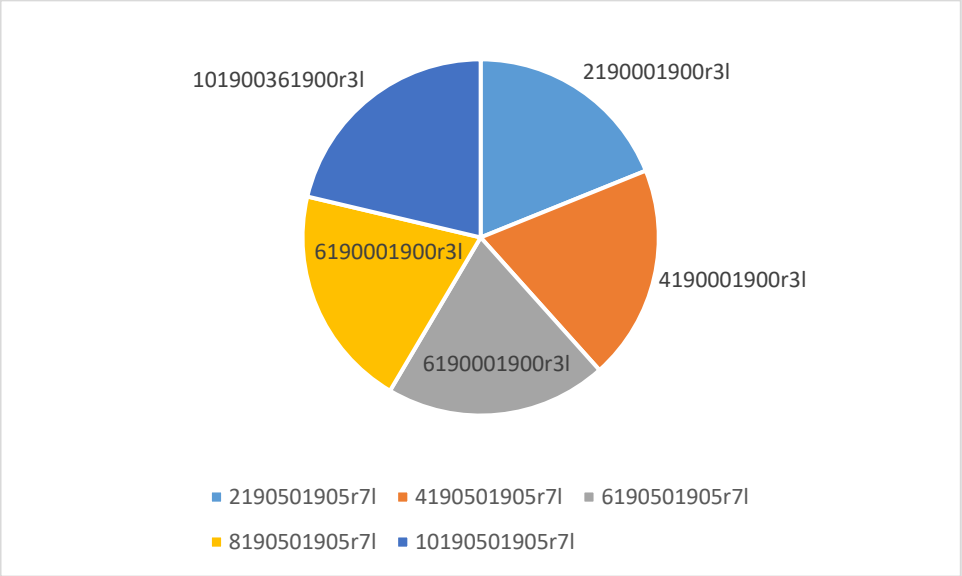


Figure 6. Distance to Frontier Score *(*Source: Statista, 2019)

Commercial data register. The level of trade data disclosure in Azerbaijan (0 = less than 9 disclosures = more information) was 9, which is in line with the officially recognized development indicators of the World Bank. The issue index measures the level of investor protection through the disclosure of private and financial information. Index from 0 to 9, higher values indicate additional information.

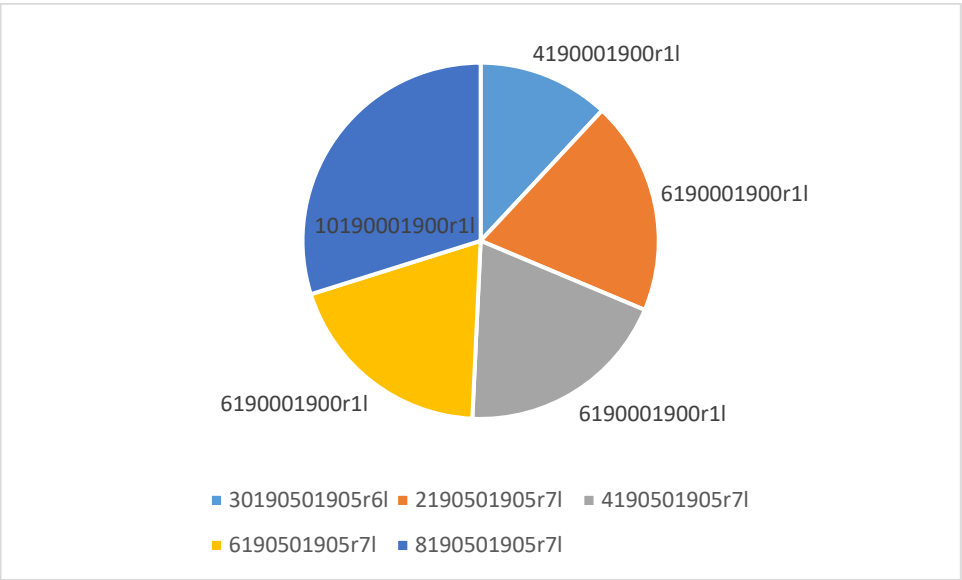


Figure 7. Business extent of disclosure index (Source: Statista, 2019)

New workload: In 2016, a new level of employment reached 1,037 people, in line with the officially recognized World Bank development indicators in Azerbaijan. Several registered companies of new limited companies registered in the calendar.

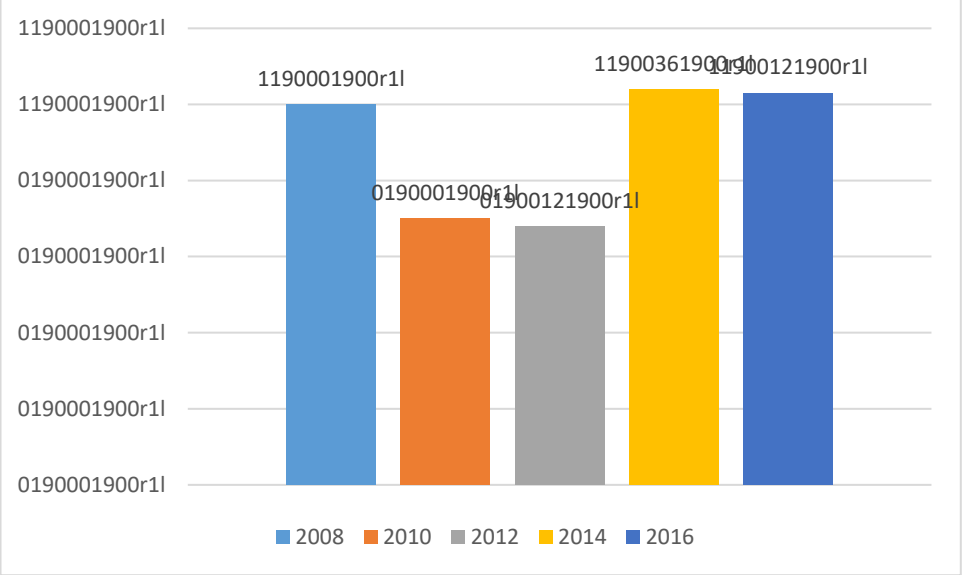


Figure 9. New Business Density Score (Source: Statista, 2019)

Trade: the value of imports. After the development of development indicators compiled from officially recognized sources, the cost of imports to Azerbaijan in 2016 was recorded in 423 reports of the World Bank. This indicator calculates the cost of importing standard cargo by the sea - from the port of destination to the port where it is delivered to the cargo warehouse - in US dollars per container. Local carriers, shippers, customs agents, port authorities, and banks provide information on the cost of each import transaction.

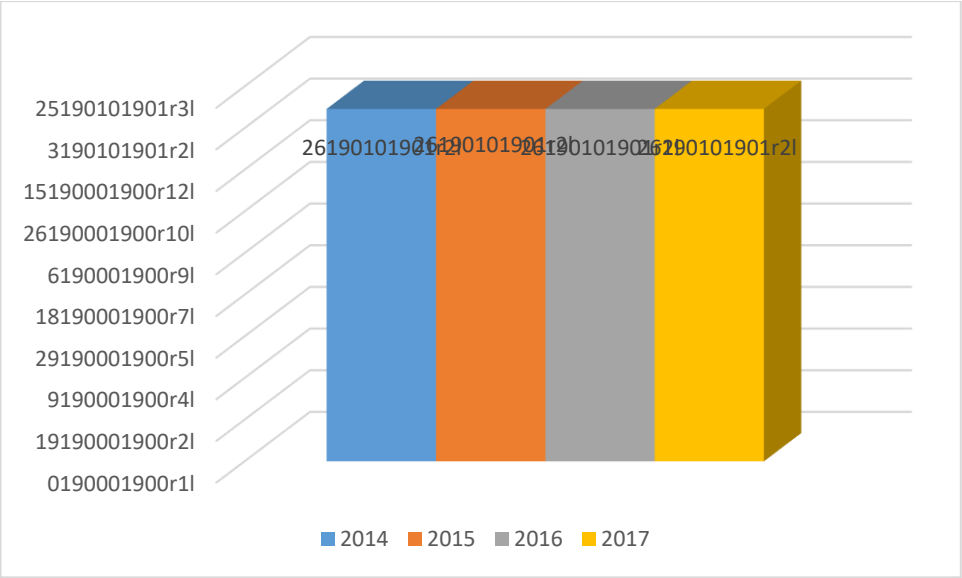


Figure 8. Cost to Import (Source: Statista, 2019)

Export value. In 2016, it was formally formed in Azerbaijan based on data compiled by the World Bank based on export performance indicators, export and compliance levels, monitoring that for some time tracked 214 borders and costs of regulating the economy, as well as other regulatory requirements. The ship passes the required piece of land well, as well as the duration and cost of trading on its territory. Segment time and cost, customs clearance, and other government control procedures include time and cost.

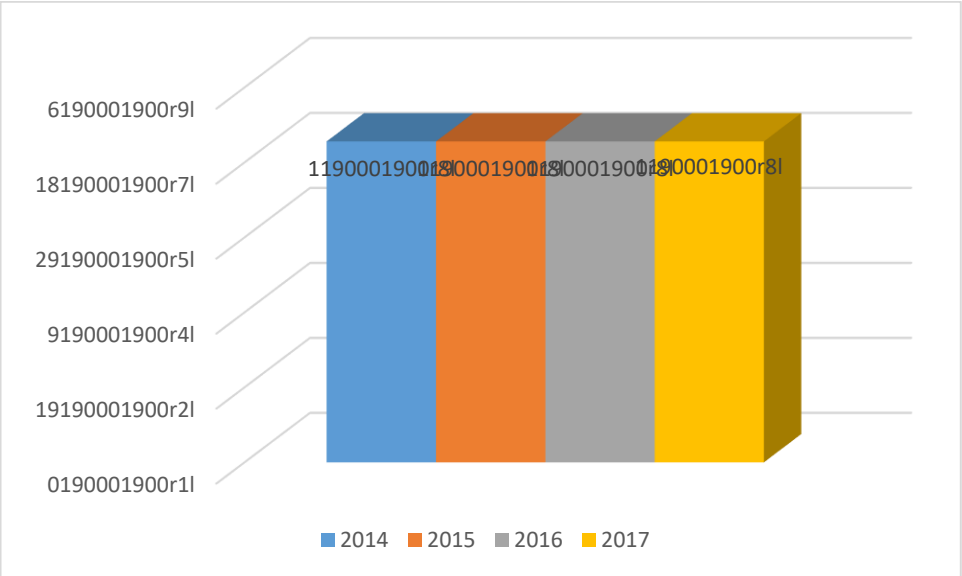


Figure 9. Cost to Export (Source: Statista, 2019)

CHAPTER 3: TRANSPORTATION OF DANGEROUS GOODS OF AZERBAIJAN

3.1 Critical Issues in Azerbaijan Transport System

Thus, Azerbaijan is characterized by a critical transport system. The following factors:

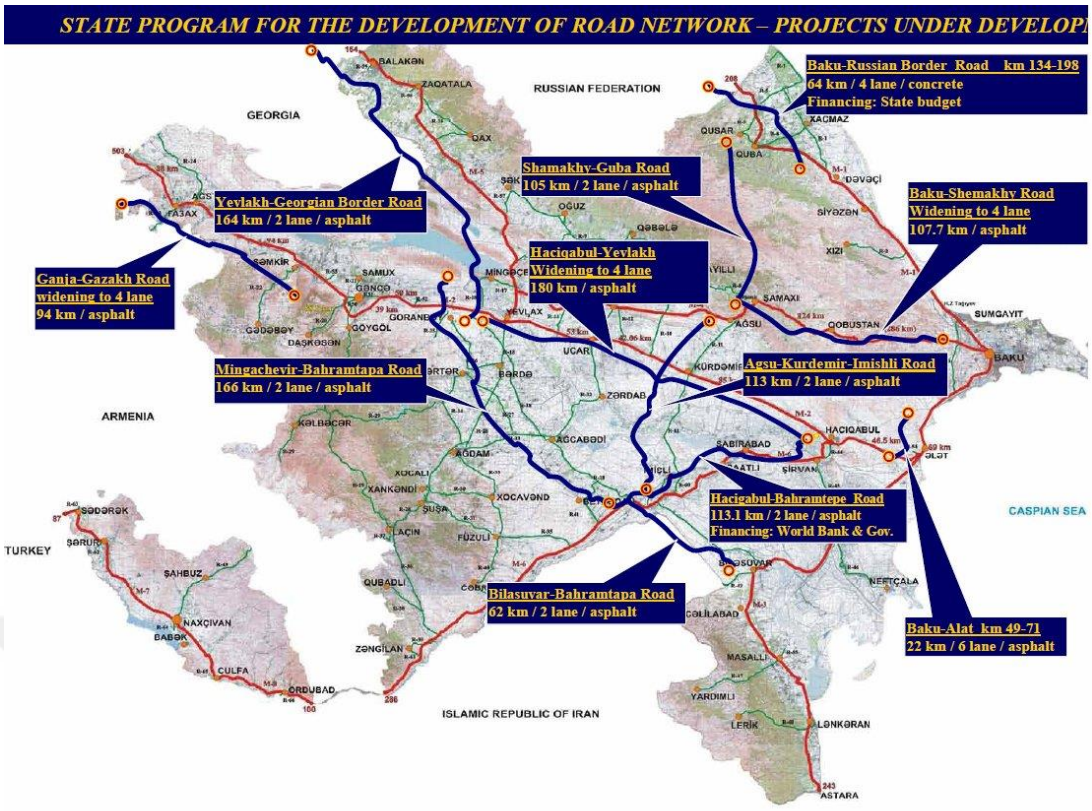
· The technical infrastructure of the road infrastructure is critical (61% of the roads are in poor condition).

· Bad technique on the railroad

· Heavy vehicle weight is one of the main reasons for quick side chamfering and axle damage.

· Smaller port

To optimize the transport system, it is necessary to improve road, rail, and port systems and distribute infrastructure between terminals or logistics platforms. Logistics platforms should facilitate the delivery of goods for various processes (order management, labeling, packaging, etc.). The disadvantages of the network infrastructure are the inability to integrate between different modes of transport. To solve this problem, the Regional Steering Committee must approve regional goods and logistics plans. The main reason for the lack of a good road in Azerbaijan is the lack of sufficient financial support from the Ministry of Transport of Azerbaijan. Hence, there may be a shortage of quality products and a lack of personal support.



Map 10. Azerbaijan Highways (Source: Skycraper city, 2011)

On this map, you can see the Silk Road and the main roads connected with Azerbaijan, show the length of these roads and how much money you make. Due to inaccuracies and differentiation of the state transport policy, there was a significant decrease in the market share of railway transport. In recent years, it has not been possible to define enough railways, it has not been possible to properly adjust the physical and geometric standards of existing railways, and most importantly, the day-to-day intervention of political power has made the management structure and competence of companies unwieldy. ... can be used to adapt to market events. New routes must be added to the railways, they must be completely modernized, and the speed and standards of developed countries must be achieved starting with important routes. When improving the existing railway infrastructure, it is necessary to implement priority areas to ensure the functioning of the system. It is necessary to optimize costs by minimizing rail, sea, and road transport. This problem is the same all over the world. Heavy vehicles pose a great danger to bridges. Bridges in Azerbaijan are often damaged by traffic. Using roads and bridges to solve this

problem will reduce this problem due to the weight of the vehicle. There is only one port in Azerbaijan. This is a small amount. Since Azerbaijan occupies most of the Caspian Sea, the number of transport ports will increase. For example, opening the port of Khachmaz in Azerbaijan next to Russia will ease and reduce transport costs. It is also close to Azerbaijan, Turkmenistan, and Iran. Lankaran has a good geographical position.

3.2 Rules for the international carriage of dangerous goods by road

To reduce the weight of dangerous goods, it is necessary to develop and develop modern complex transportation of dangerous goods. In this context, the United Nations developed special rules and regulations in 1954 and established a group of experts to present rules and regulations concerning the transport of dangerous goods. In the case of the export of dangerous goods to other countries, the procedures of the Basel Convention must be followed or carried out only by authorized national authorities after written notification of export, import and transit following international legislation on cross-border transport. All EU countries are parties to the European Convention on the International Carriage of Dangerous Goods by Road . ADR applies to the international carriage of dangerous goods by road and does not generally differ from local regulations. Following this agreement, multilateral agreements can be concluded on certain issues agreed by the parties. Classification of dangerous goods transported on the roads of the Republic of Azerbaijan dated August 25, 1994, and other provisions ensuring the safe transportation of certain types and categories of dangerous goods following the requirements approved by the State Committee for Mining Supervision of the Republic. manufacturer (s) of Azerbaijan. or by the recipient state, non-state actors, and legal entities.

Law of the Republic of Azerbaijan on the carriage of dangerous goods, as well as on the carriage of dangerous goods by road and rail. According to the law, vehicles carrying dangerous goods are marked with orange and warning signs. Containers for hazardous substances must be appropriately marked to warn other road users. The main requirement for the transport of dangerous goods is a permit issued by the Ministry of Transport and Communications of the Republic of Azerbaijan at the request of the company or the person who made them. In addition to the agreement,

you must receive and send the following documents: send the document to the sender (ADR); written instructions for the transport of dangerous goods; Professional competence of the ADR dangerous goods driver. Despite the approval of the Ministry of Transport and Communications, the Ministry of the Interior is requesting additional permits for explosives of class 1, depending on the type of substance; Obtaining permission from the Ministry of Health for the transportation of infectious material for 6 and 6 years; and Class 7 radiation safety approval for the transport of radioactive material. A crew of five or more vehicles with hazardous, radioactive, and highly toxic substances must be provided with an accompanying vehicle located at the carrier by the responsible authority to inform the participants about the danger and avoid a collision. If the width of the transverse light is less than its width, the front of the gallery should be shifted slightly to the left about the accompanying cars. Dangerous goods must not contain persons other than vehicles, drivers, driver assistants, or others who can cause a fire or explosion. Smoking is prohibited while wearing these materials.

When transporting solid particles with liquid radioactive material, they must be carried using a sufficiently strong loop on a belt attached to a stationary device. Top-opening containers are easy to fill. However, these containers should be protected from the rain with a tarp. The driver must behave carefully and following the rules of the road, the speed of the vehicle must not exceed 80% of the maximum speed, depending on the type of road; Non-toxic dangerous goods with a speed of over 60 km / h. The driver must not remain outside the delivery area until the dangerous goods have been delivered. In the event of an accident or fire, the inspector should inform the authorized driver as soon as possible if the driver himself is aware of the incident. When transporting national vehicles by minibus, especially when transporting dangerous goods, as well as in vehicles, trailers, trailers, make sure that they do not comply with the legislation near the vehicle. In a vehicle carrying dangerous goods, it is necessary to identify the two vehicles carrying the dangerous goods and the identification number of the dangerous goods. If some vehicles are used for the transport of dangerous goods in vehicles, they must be marked with dangerous goods.

3.3 Rules for the international carriage of dangerous goods by sea

These rules define the relevant safety requirements for the transportation of dangerous goods by sea following the legislation of the Republic of Azerbaijan. This guidance does not apply to the transport of dangerous goods and substances (except for potentially toxic and explosive substances and materials) in limited quantities, as well as the transport of substances and substances listed in section 9.2 for hazardous purposes.

Dangerous goods, lids, posters, signs, non-hazardous goods or packed in containers, the correct name of the goods in containers must be documented by visible and legible containers in containers. up to three months in seawater. This data must be selected and read. When choosing appropriate markings, warning signs, the durability of the materials used, and the front of the containers should be considered.

Dangerous goods must be loaded correctly and safely following their specifications. Incompatible costs must be eliminated. Explosives (other than ammunition) that can pose a serious hazard should be stored in a safe and closed area. These explosives must be outside the explosives. To minimize the risk of fire or explosion, you must use and maintain electrical equipment and cables in all explosive containers. If necessary, take precautions against explosion or fire when handling emergency fluids or gas cylinders. Self-damaging or unconscious substances should not be transported without taking the necessary measures to minimize the possibility of a sudden fire.

3.3.1 Requirements for ships carrying dangerous goods

Systems, structures, and requirements for vessel maintenance and storage should comply with the requirements for the type of vessel, as well as the type of cargo and the degree of danger. Cargo tanks must be equipped with a fixed automatic system approved by the fire alarm registrar. In systems based on the principles of climate control, measures must be taken to prevent airflow or to mix residential or office space. In the warehouse where the controller is installed (in the field), the test mass will have an indication that it should be released into the atmosphere after the test (analysis).

3.4 Rules for the international transport of hazardous substances

Following the Law of the Republic of Azerbaijan "Transport Day" and other legislative acts of the International Civil Aviation Organization (ICAO), following the Law of the Republic of Azerbaijan "On Aviation", following the Chicago Convention, Safety requirements are established for the transport of dangerous goods by air.

Appropriate training certificates for airlines, airlines, airports, and airline crews, as well as airline personnel in the transportation, loading, unloading, and storage of dangerous goods on board, increase the level of knowledge following the requirements of technical safety regulations. According to the standards, the Civil Aviation Department of the Republic of Azerbaijan must be approved in the prescribed manner.

Responsibilities of persons involved in the transportation, unloading, loading, and storage of dangerous goods:

· Comply with the requirements of technical and regulatory documents that determine the rules of work, rules of accidents and accidents at hazardous facilities.

· Medical examinations and examinations are carried out following the legislation.

In the event of an accident or an accident at a potentially dangerous facility, stop the work provided for by the legislation of the Republic of Azerbaijan, immediately inform the administration or other employees involved in the accident or emergency.

In any case, the cargo will be transported:

· Flammable or explosive substances within 48 hours at 75 ° C.

· Ammonia explosives and salts.

· Explosives containing a mixture of phosphorus trichloride.

· Solid explosives are extremely sensitive to mechanical shock.

· Explosive liquids are classified as less susceptible to mechanical shock.

· Any substance that releases heat and gas into the air under hazardous conditions under normal conditions.

· Flammable radioactive liquids.

Experiments have shown that high-velocity solid particles and organic peroxides should be packaged as they can explode according to the explosion classification. Transportation of dangerous goods, aircraft, customers, and citizens to their

destination is accepted by agreement. In this case, the consignor and consignee must have a special permit to work with dangerous goods. After the submission of an agreement on the storage, loading, unloading, and transportation of dangerous goods by civil aviation organizations involved in the transport of dangerous goods, a copy of the special permit issued by the road safety inspector must be issued.

3.5 International rules for the transport of dangerous goods by rail

These rules determine the conditions for the carriage of dangerous goods in the Republic of Azerbaijan following the legislation of the Republic of Azerbaijan on highways. Carriers (recipients), legal entities and individuals, service and transport companies are obliged to comply with these rules and regulations of technical safety. Transport of dangerous goods between the Contracting Parties. An international agreement on the carriage of goods, the carriage of dangerous goods by international railways, and special conditions for the carriage of dangerous goods between countries, other than the railroad, and storage of dangerous goods must be carried out following the requirements of the Committee. For rail freight.

3.5.1. Rules for the safe transport of dangerous goods by rail

(a) assembly, manufacture, and repair of locomotives, wagons, tanks, reception, transport, and railway trains.
(b) preparation of dangerous goods for transportation.
(c) the suitability of containers and packaging for the transport of dangerous goods.
(d) organization of highways and industrial railway transport.
d) creates general conditions for the safe transportation of dangerous goods.
The purpose of these regulations is to protect human life and health, protect hazardous materials, and protect the environment and property. The rules for refueling dangerous goods, the choice of vehicles, the technical and commercial determination of their suitability for these purposes, as well as the placement of goods in wagons must comply with the rules of the Azerbaijan Railways. transportation of dangerous goods. goods and other regulatory documents. Special vehicles, separate from trucks or lorries, can be used to transport dangerous goods by

private vehicles. For the transport of dangerous goods, transport companies can use special containers that meet the standards and requirements of the technical safety of this product. The design and construction of special vehicles and containers for the transport of dangerous goods must comply with technical safety standards and requirements and ensure the safety of goods and vehicles. After the leak of toxic and caustic substances washing and disposal of vehicles led by station chief technical representatives of security agencies and hygiene in railway transport with the buyer responsible for the disposal of wastewater. After exhaustion and neutralization, the buyer responsible for cleaning the car must issue a special station certificate representing the technical and sanitary inspection during the removal, washing, and removal of people, animals, tenders, food, and other things. Products. This link is stored at the station. If detergent and standard detergent are not available, the station will not be accepted. Technical inspection and determination of the serviceability of the carrier's wagons, working bodies, wheelsets, shuttle buses, tracks, brakes, and pushing equipment are carried out by the railway carrier at the station. The consignor's warehouses, premises, and equipment are suitable for the carriage of dangerous goods in writing or using the consignor's registered telephone numbers. Before loading a tanker or tank container, the supplier must issue a certificate, including fasteners and equipment, to the station and the cargo warehouse or container personnel when renting the property. In VU-14, the number of the certificate is issued by the vehicle personnel, and the consignor must indicate the word "yes", the fasteners and equipment must be in good condition and meet the requirements set out in the fourth column of the certificate.

3.6 Customs regimes of transportation of dangerous goods in Azerbaijan

Prevent leakage, fire, dangerous goods, or other disasters related to dangerous goods and their physical and chemical properties, as well as import and import of dangerous goods into Azerbaijan following the ADR agreement. In other words, preventing, managing, and transporting dangerous goods means preventing, transporting, or transporting vehicles or vehicles, as well as other persons or other persons, transporting dangerous goods, direct or indirect contact with the environment or property. When importing dangerous goods into the Republic of

Azerbaijan, the transport document must be accompanied by a transport document in cooperation with the Ministry of Internal Affairs (ADR). Approved by the authorities for certain hazardous materials. The transport or packaging of dangerous goods, vehicles, or goods must be marked with the appropriate international safety signs at the beginning of this section. The heads of the internal and border customs authorities must inform the responsible persons about the customs terminals.

3.7 Accidents when handling dangerous goods

Accidents during the transport of dangerous goods can seriously damage the environment and human life. That is why he constantly tries to minimize emergencies. Transportation of dangerous goods is the largest accident in the world. Some accidents are listed below.

3.7.1 Sea Accidents

Table 5. Ship Accidents in the world

Year	Name of the ship	Event type
2003 r.	nautical elegance	Fire
2006 year	Hyundai assets	Fire / explosion
2007 year	Zim Haifa	Fire / explosion
2006 year	Kota Pakhlavan	Steam version
2006 year	Horizon Creator	Release of toxic fumes
2006 year	Hanjin London	emission of harmful substances steam
2006 year	Bermuda	sulfuric acid landfill

2006 year	Fuji star	Chloroacetic acid release
2006 year	MOL Renaissance	Fire
2007 year	APL Chile	Leaks are mainly caused by ethylenediamine.
2007 year	CMA-CGM Fidelio	Small explosion in a container
2007 year	OOCL Keelung	spill

I analyzed all the events that I showed here from different sources and analyzed where they are. And all sources are listed in the table. Excessive vessel movement and force-related accidents such as collisions and contact can damage containers or containers as shown in the simplified sequence of events. Damage to the container from an accident or excessive waves can result in water entering the cargo hold, damaged packaging, or reacting with hazardous materials. For other types of goods or in other areas, such as building a house, a fire can spread at a dangerous cost. HMIRS and MAIB have found that in some cases hazardous products will be thrown away accidentally. All this led to unfavorable weather conditions that led to heavy traffic, which most of all contributed to the release of hazardous substances. in the period 1998-2008 Two broadcasts were recorded, 2% of all events. Due to the excessive number of shipments in the HMIRS database. Resource Use and Other Literature IMO has identified several cases, including hazardous events after other major accident types, and has provided concrete examples of how to improve the simplified sequence of events shown in Figure 10. The example shown in Figure 10 is an example of the Norwegian version of Ever. ... The battleship is also good. In 1999, it seemed to me that this effect was the cause of a dangerous goods fire. In 1997, MSC Carl was crushed and flooded due to body damage that caused problems with the loss of radioactive material.

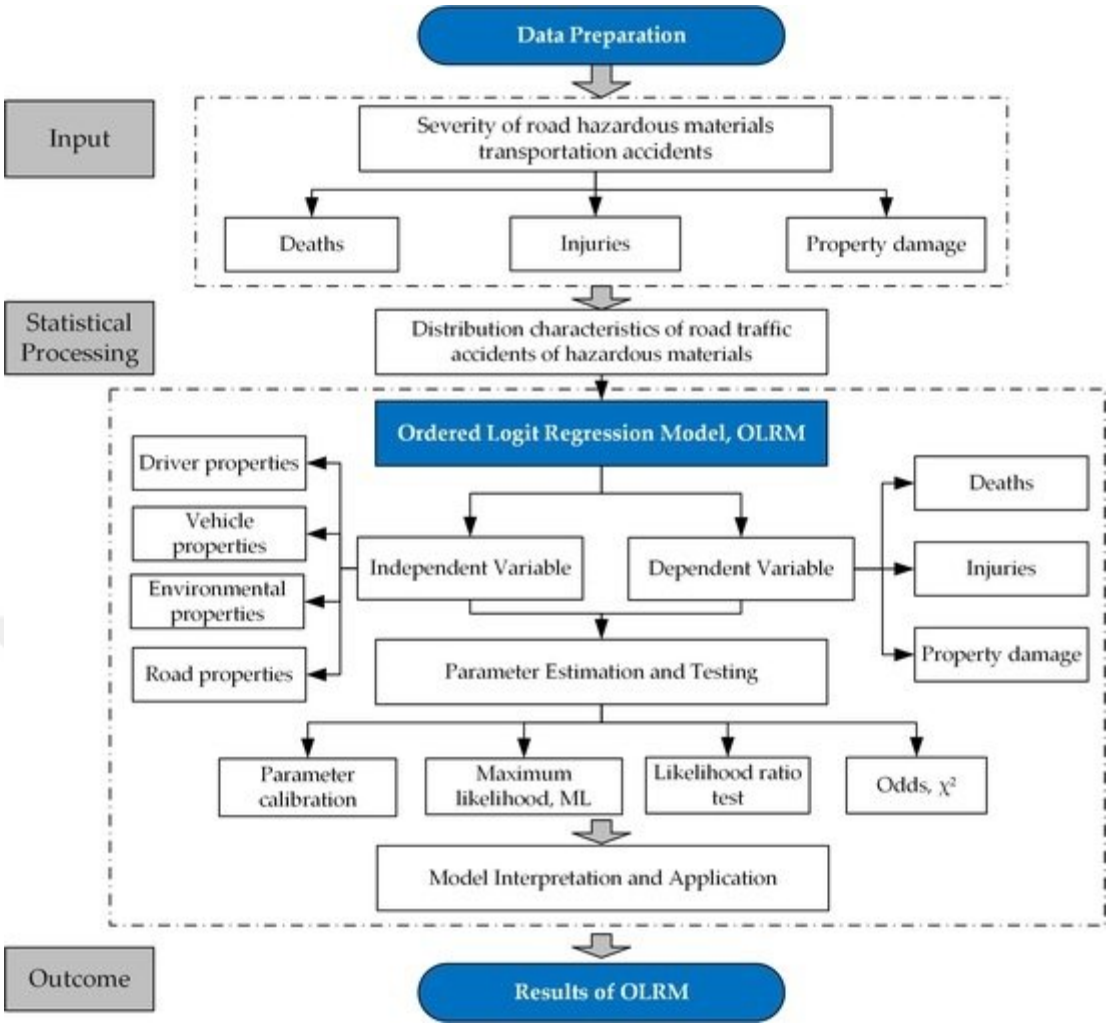


Figure 14. Simple sequence of events followed by another primary type of accident after the release of hazardous materials. (Source: Statista, 2010).

The biggest accident in Azerbaijan happened on October 22, 2002. Mercury-2, which came from the Caspian Sea in Azerbaijan, sank in the Caspian Sea. Most of the 2,100 tons of oil on board reached the Caspian Sea. This situation has worsened the ecological balance. Oil reservoirs that remain closed on a ship could cause serious environmental problems in the future. The main cause of the accident was a strong wind in the Caspian Sea. The wind blew towards the rear of the ship and the front of the ship exploded. Before leaving, the ship was in Aktau, Kazakhstan, where the weather was fine, but all ships were told that the weather would be worse. But ignoring and separating the captain is a serious problem. Nine of the 42 crew members were rescued. There is information about others. The disaster occurred about 130 km from Baku, where the Caspian Sea belongs to Azerbaijan. As a result,

the accident became the largest accident in Azerbaijan and is still ongoing due to oil. In this accident, the captain had no experience other than natural forgiveness, and the cause of the accident was the ship's internal maintenance.

3.7.1 Road Accidents

Table 6. Road accidents

Year	City
June 25, 2017	Bahawalpur
July 11, 1978	Alfaki
September 24, 1990	Bangkok
May 20, 1998	Barkoon
May 29, 1999	Tauern

On June 25, 2017, we learned that more than 100 people were killed and many more injured in a tanker crash in Bahawalpur, Pakistan. Authorities said 26 people were seriously injured and unable to escape in the crash that was approaching Bahawalpur, and 148 people were killed.

An accident is expected when the vehicle loses control of the tire. Large numbers of people from the surrounding villages stood to pull the oil out of the tank, and the tank burned down in the fire. Eyewitnesses claim that one of the villagers, who came to get oil, lit a cigarette. Due to great efforts, 6 firefighters and 12 motorcycles fell into disrepair. An estimated 25,000-liter oil tanker proceeded from Karachi to Lahore. Accidents often happen because the roads are very bad, and if these roads are not ready, the state does nothing, such situations are repeated. July 11, 1978: This accident occurred during a tank explosion in the Los Al Fakes area. As a result of the accident, more than 200 people were killed and 300 were injured. They say that because of the boiler, the car turned and crashed into the wall, and the tank exploded. The accident was caused by non-observance of traffic rules, overloading the driver with an unusable tank (instead of paying for the A-7, the driver was ordered to use the old coastal road N-340. September 24, 1990: September 24, 1990. caused massive explosions and fires in 38 warehouse buildings in 24 hours 90 people were

killed, 121 injured and 43 vehicles destroyed. May 20, 1998: On May 20, 1998, a 20-ton sodium cyanide vehicle hit the Barskoon River, which is used by residents for irrigation and drinking, flows into Lake Issyk-Kul, one of the main tourist attractions. KG sodium cyanide was discharged directly into the river. It is located 8 km above the village of Barskoon. The problems are caused by the leakage of cyanide. Ecological risks caused serious confusion among the population, and the Kyrgyz authorities immediately report the bankruptcy of this company. May 29, 1999: Truck crashed into the Tauern tunnel, 50 injured because of burns in a car tunnel in Austria. Since 2005, there have been 11 serious accidents in China (10 million / 50 yuan, more than 50 injured, or more than 50 million yuan). The largest of these is a methane explosive machine in the Jinji Yanou Highway Tunnel, which killed 31 people on March 1, 2014.

3.7.2 Railway accident

Table 7. Railway's accidents

Year	City
January 14, 2011	Kijfhoek
November 8, 2010	Bialystok

January 14, 2011: Accident with 65,000 kg of ethanol on the Kiifhoek railway in Zweindrecht, the Netherlands. For the unknown cause of the accident, a significant amount of ethanol is released into the environment. People were forced to leave their homes and damage the environment. November 8, 2010, Two freight train crashes led to a massive explosion and fire in Bialystok in northeastern Poland. The accident occurred when the train, which was carrying a flammable liquid, collided with the opposite side. Only 33 out of 33 oil storage facilities burned down and exploded. Two drivers were injured. Railway accidents are the most dangerous for the environment and human life. In the world of rail transport, accidents occur mainly in Asian countries. India has experienced a major train disaster that kills more than 100 people every year. No action is being taken, new technologies are not being used, and the railways are in poor condition.

3.8. Modern state of logistics and its most developed branches in Azerbaijan

The current New Silk Road, passing through many old routes, passes through Eurasia with various transport corridors and routes. Eurasia has been traversed by various rail and street corridors that have been commissioned by various global associations including UNECE, UNESCAP, CAREC TOP, and IRU. Each pass is important, and each legitimacy is top-down control. However, this report will be limited to an analysis of the main east-west corridor (eg European Transport Corridor, Caucasus, Asia (TRACECA)) and north-south corridor over Azerbaijan.

The Transport Corridor Europe, Caucasus, and Asia Program (TRACECA) is a universal multipurpose transport activity carried out by the EU. It comes from the meeting of the three countries of the South Caucasus and the five countries of Central Asia in Brussels in May 1993. The program received further impetus with the adoption of the "Basic multilateral agreement on international transport for the development of the Europe-Caucasus-Asia corridor". took place at the registered summit in Baku in September 1998. The participating countries created the Intergovernmental Commission on Agreements (IGC), and the TRACECA Permanent Secretariat is in Baku. The original signatories included twelve countries: Armenia, Azerbaijan, Bulgaria, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Romania, Tajikistan, Turkey, Ukraine, and Uzbekistan. The 13th party, the Islamic Republic of Iran, joined TRACECA in 2009 and Lithuania was an external observer.

This was confirmed by Azerbaijan on March 4, 2011. This is important because the TRACECA course includes multipurpose road, rail, and sea transport, especially in the region where Azerbaijanis live. Successful coordination between the Black and Caspian countries and between different modes of transport is essential to transform TRACECA into a fast, cost-effective, and reliable multimodal transport corridor. This understanding is the first step on this path.

In 2007, exchanges between TRACECA member states reached USD 41 billion, and consolidated exchanges with the EU - USD 290 billion. However, there was practically no freight traffic from the hall between Europe and China. Most of TRACECA's purchases go through the Azerbaijan-Georgia section, which is the busiest segment of the waiting room. Until now, TRACECA in any case can

rightfully be called "OILCECA" ("Europe, Oil Corridor, Caucasus, Asia"), because almost 70% of the cargo transported in this way is oil and oil products. As a result, the implementation of TRACECA depends, among other things, on the expansion and improvement of the types of goods imported/sent between the member states in the medium term, and between the EU and China in the long term. Of course, there is cost and consistency, especially when it comes to transporting oil. There are long delays on this route due to storage/unloading obligations, slum intersections, normal freedom of movement, police checkpoints, and lines. The route passes through different peoples, which means through the different border and traditional checkpoints. Thus, there is a chain of trust over time. In many ways, this interdependence is a positive achievement, especially for the landlocked countries of the region. Either way, this coexistence can become an obstacle if the systems, needs, and transport approaches of neighboring states are not synchronized. This problem requires additional "supervision" not only over the national and regional TRACECA divisions but also over the entire inventory network from Europe to the Caucasus and from Central Asia to China. ADB's latest analysis of six CAREC halls in Eurasia shows that CAREC Corridor 2, which begins in the Mediterranean and stretches through Azerbaijan to China's Xinjiang province, is one of the most volatile. In the absence of delays, street traffic at this crossing has a medium-high normal speed (40.5-49.4 km / h). However, the delay in the visit will reduce the normal speed to 19.3-16.1 km / h; Therefore, the transportation time is unpredictable. The time spent on storing and unloading cargo results in a loss of more than 12 hours per 500 kilometers. In addition, CAREC Corridor 2 is one of the most daunting examples of rail routes with normal speeds ranging from 3 to 9 km / h, depending on route length and season. These problems then need to be appropriately addressed and expanded to increase the productivity and competence of the TRACECA corridor. The Azerbaijan Automobile Fund includes 29 thousand kilometers of roads, more than 2,100 kilometers of railways, 3 global air terminals, and several provincial air terminals. Baku International Airport is the largest air terminal in the region, and the port of Baku is the largest port on the Caspian Sea. All branches of the automotive industry in Azerbaijan are developing rapidly.

The oil and gas engine should evolve rapidly over the next few years, as the big oil companies will. The 1 million barrels per day limit of the newly built Baku-Tbilisi-

Ceyhan gas pipeline is now approaching the limit. The legislator installs new pipes and increases the limits of existing pipes.

Since the mid-1990s, shipping has typically grown by almost 20% per year. In the next 5 years, Azerbaijan will significantly expand its navy and agree to build another port and shipyard in Alat. With his ships, he linked 27 additional licenses for sailing inland Russian canals with the Black Sea (Volga-Don) and the Baltic Sea (Baltic Volga). In July 2008, another Caspian ship "Karabach" was replenished with an army with an increased cargo transportation limit.

In total, aviation has received more than $ 200 million lately. Baku International Airport is a modern air terminal complex equipped to service the largest passenger and cargo aircraft. Azerbaijan is one of the few countries of this size with four local carriers: Azerbaijan Airlines (AZAL), Turan, Imair, and Silk Road.

Rail transport is also thriving, largely thanks to the growing volumes of oil transported around the country. Azerbaijan is modernizing its existing streets and railways to satisfy its desire to become a major tourist destination and a major player in coordinating interprofessional exchanges. Fund, the capital. These revenues will stimulate the development of non-oil regions, especially agriculture, which employs 41% of the population and which accounts for 7% of total national production (GDP). Although at first glance the volume of imports is usually equal to the volume of tariffs, the current traffic flow in the country has all the signs of regulation. However, movement is very unstable, especially when it comes to using the equipment. Azerbaijan imports are much more than it sends, except oil and oil products. Its activities as a tourist country further exacerbate significant inequality as its transport schemes are influenced by imports - by sending examples of neighbors passing through their vehicle system. Most of Azerbaijan's inbound operations consist of equipment and parts used in oil and gas exploration and production, as well as equipment, development materials, household appliances, and consumer goods. They usually travel east from Turkey, via Georgia, or south from the Russian Federation. Vehicles and wagons used for inbound shipments (for example, carrying large volumes of equipment and oil) are often very specific and unsuitable for outbound shipments such as gardening goods. For example, transit channels laid by Sumitomo for British Petroleum (BP) in Japan are delivered to the port of Nakhodka

in Siberia, then stacked on certain wagons and delivered to Baku via the Russian Federation. All these cars that arrived in Nakhodka are not returned. In addition, oil - a significant fee and freight - upon arrival in Azerbaijan from Georgian ports are packed into tankers, where it is impossible to load other cargo. The World Bank's Restructuring Advisory Services, January 2007, and Revitalizing Railways - Marketing Report provide examples of this highly unilateral move:

On a typical day, five freight trains (approximately 280 wagons) run on each track at the Russian border station of Salama. The share of cars going south is about double that going north.

At the border station of Georgia Boyuk-Kesik, 17 freight trains (approximately 850 wagons) run on each working line of each line. The proportion of cars loaded in the west is eight times higher than in the east.

Azerbaijan's 29,000 kilometers deliberately provide important and reliable routes for its neighbors. The highways of Azerbaijan provide efficient communication between the Caspian and Black Seas, as well as between the Russian Federation and Iran. The main interstate traffic flow in the world is the north-south route to the region through the Russian slums of Samur, Baku, and Astara, as well as the east-west boulevard connecting Baku with the Georgian slums through Alat, Ganja, and Gazakh. ... Iranian border. Both roads are about 500 km long. The joint annual plan clearly shows the importance of Azerbaijan's road system for road traffic. ADB, aware of major travel efforts, will soon provide Azerbaijan with an advance to rehabilitate part of the M2 route from Gaza to the outer regions of Georgia, which is an active part of the CAREC corridor.

Trucks transport most of the domestic and world cargo in Azerbaijan. International routes include Baku-Bandar-Abbas, Baku-Poti, Baku-Moscow, and Baku-Istanbul. High level of one-way traffic, import traffic significantly exceeds tariff. This volume is also reflected in the freight prices. In this model, shipping the shipowner from Bandar Abbas to Baku costs $ 2,800-3,000, and the delivery of a section from Baku to Bandar Abbas costs about $ 1,000, which is about 33% of arrivals. pay. There is very little local transport industry. The absolute number of domestic trucks is estimated at less than 1000. The Azerbaijan International Road Carriers Association

(ABADA) has 50 carriers serving a total of 600 trucks. 12 of them are small traders who own only a few trucks. Leading local road transport organizations:

- World transport with 53 trucks;

- Army with 50 trucks;

- Vanderwal - Baku with 32 trucks;

- Caspian transport with 30 trucks.

Thus, most of the cargo in Azerbaijan is transported by unregistered trucks. Trucks are from most Turks, followed by trucks from Russia, Ukraine, Belarus, and Iran. The biggest challenge for the local transportation industry is the overhaul of old equipment. A significant part of the merchant fleet is made up of old Russian KamAZ trucks marked with EURO 2 and below. These trucks exude thick, dark smoke wherever they go and are banned in EU countries. Considering the usual commitment of 5%, 18% duty, in addition to group assistance fees, another European-made truck with modest parts in Azerbaijan costs about $ 200,000. These costs are disproportionately high for most local organizations and funding is difficult. Truck rental, common in many countries, is not the best choice in Azerbaijan. As in many countries (such as the United States [USA]), rental companies hate tax breaks that can be used to lower rent. The high cost of the loan and the short lease terms (3 years in most cases) result in limited monthly rental payments. ABADA calls on the Azerbaijani government to take measures to promote freight traffic.

Since Azerbaijan is surrounded by land, air transport occupies an important place in the structure of passenger and freight traffic. The air block is one of the largest in the CAREC region. It currently has three global airports in Baku, Ganji, and Nakhchivan, as well as four local carriers (AZAL, Silk Road, Imari, and Turan). Cargo transportation in Baku is also served by several major world carriers, including Lufthansa and British Airways. The massive, fully-cargo universal Cargolux aircraft, which is closely associated with Silkway, covers Baku on the Luxembourg-Baku-Shanghai route. The Baku Cargo Terminal, adjacent to the Baku International Airport, is one of the largest cargo terminals in the CIS. It is a class A multimodal transport hub, built-in 2005. It includes Silk Way Airlines, Imari Air Company, Eurasia Air Services, Lufthansa Cargo, and Panalpina. Azerbaijan is also

served by many third-party telecom operators everywhere. While Dubai and Kuwait are increasingly busy with tourism, Baku International Airport provides unlimited access to Iraq and Afghanistan. Cargolux regularly uses Baku to transport goods to the two countries. In addition, Baku is used by airlines to operate in neighboring Azerbaijan, Uzbekistan, the Kyrgyz Republic, Kazakhstan, Turkmenistan, and Tajikistan, for example, to transport the main components of the oil industry to Western Kazakhstan.

3.9. Logistic projects implemented in Azerbaijan and their influence to country's economy

Azerbaijan's 25,000 km of highways and boulevards are in the middle of the TRACECA Pass Road base and provide a vital route between Central Asia and Europe. About 4,577 km of this residential system are the larger national streets; of which 1,915 km are designated as public roads and 14,222 km are smaller nearby streets. Since 2000, the supply of highways for the country's total capacity has remained projected at about half. In 2010, 222 million tons of cargo were transported, of which 52% (116 million) - along the streets and interstate highways. Passenger and freight traffic through TRACECA contributed $ 480 million to government spending in 2010; Of these, $ 144 million were for street transportation and about $ 77 million for passengers. Freight traffic in the Azerbaijani segment of TRACECA has increased by 78% since 2000, with the usual growth of 6% per year. In 2010, 51.7 million tons of products were transported along the TRACECA East-West route in Azerbaijan: 21.7 million tons by road (42%), 20.6 million tons by rail (40%), and 9.4 million tons. million tons (18%) across the ocean. This contributed over $ 400 million to the government spending plan and accounted for 23% of the country's total freight traffic in 2010. 33% of TRACECA freight traffic was tourism products, primarily oil and oil products from Kazakhstan and Turkmenistan. ... government revenues from trucks in 2010 amounted to 151 million dollars or 37% of the total transport costs of TRACECA.

Although TRACECA is a global corridor and road transport is the main mode of shopping within TRACECA, most of the goods transported on the streets of Azerbaijan were transported locally. Official customs information indicates that 3

million tons of cargo (out of a total of 21.7 million) delivered along the TRACECA route in 2010 will be transported by trucks outside Azerbaijan and Georgia24. Likewise, most of the East to West travelers in 2010 were local travelers. The total number of TRACECA passengers is 223 million, of which 219 million are by road (98%), 4 million by rail (2%), and 12,000 by sea (0.01%). The total salary of the TRACECA government for freight and passenger transportation was approximately $ 403 million, and for individuals - $ 77 million. The second real mode of transport in TRACECA is rail. In the South Caucasus, two TRACECA railway lines are connecting Europe, the Caucasus, Central Asia, and China: the Baku-Tbilisi-Batumi railway section and the Baku-Tbilisi-Poti railway section. The railway union between Azerbaijan and Armenia to Turkey will never exist again, and the line between Armenia and Turkey is old and does not work. The Baku-Tbilisi-Batumi / Poti railway is linked to European rail systems in the west through the Black Sea Railways Administration (Romania, Bulgaria, and Ukraine) and to the rail systems of Kazakhstan and Turkmenistan in the east. From 2012, the Kars-Akhalkalaki railway will connect Georgia and Turkey, and the TRACECA railway system will be expanded by road through Turkey to South-Eastern Europe. It will also anchor in Turkish Mediterranean ports. Together, these railways will form part of the 7,000 km rail link between Europe and Asia. The Baku-Kars-Akhalkalaki railway initiative will eliminate the missing link in rail transport between Europe and Asia and create another Eurasian railway corridor stretching from China to Europe via Azerbaijan, Georgia, and Turkey. In addition, the completion of this major railroad by mid-2013 will be used to support local shopping and tourism through TRACECA. Upon completion, the railways will temporarily handle 2 to 5 million tons of cargo and up to 20 million tons of cargo and 3 million passengers per year by 2034. In 2010, freight traffic transported by rail and sea through the Azerbaijani part of the TRACECA system accounted for 73% and 80% of the country's total rail and sea traffic. In all cases, 70% of the 20.6 million tons of TRACECA rail freight traffic was covered by international traffic carried out by Azerbaijan Railways (transport department), while the remaining 30% was covered by national rail transport and other goods carried by private administrators. (Not the transport part). Universal freight transportation, including road transport, accounted for 14.4 million tonnes of the automotive component, of which more than 10 million tonnes were crude oil and petroleum products. As a result, oil and goods transported by rail to the east-west

breakpoint accounted for 53% of all TRACECA rail freight traffic in 2010. The Boyuk Kesik border crossing between Azerbaijan and Georgia is one of the main TRACECA railway crossings. and Azerbaijan's key railway to Europe with the highest throughput. According to ADY's official information, in 2010 ADY transported about 13 million tons of cargo, of which 10.9 million tons were used at the Boyuk Kesik railway crossing. Approximately 93% (10.1 million tons) of the total cost of the heart are oil products and oil products, of which 6.6 million tons are tourist oils. Incoming traffic is divided into imports (1 million tons or 51%) and travel (979,300 tons or 49%). Railway transport accounted for 7.2 million tons, or 66% of the absolute freight turnover of Boyuk Kesik, and in terms of tariffs - 3.7 million tons, or 34%. In general, rail transportation through the Azerbaijani segment of TRACECA accounted for 87% of the absolute volume of tourism products transported by ADY in 2010. In September 1998, the World Congress on the Development of the Great Silk Road was held in Baku. Activities of the People's Leader Heydar Aliyev. The leaders of 9 countries (Azerbaijan, Turkey, Georgia, Ukraine, Moldova, Romania, Bulgaria, Uzbekistan, and Kyrgyzstan), as well as agents of 13 world associations and extraordinary government officials from 32 countries, were kidnapped. The meeting ended with the signing of the Basic Multilateral Agreement on International Transport for the Development of the Europe-Caucasus-Asia Corridor within the EU TRACECA Program and the adoption of the Baku Declaration.

The agreement to create the current Universal North-South Transport Corridor (NSTC) was first registered between Russia, Iran, and India in St. Petersburg in 2000. Azerbaijan, Armenia, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkey, Ukraine, Belarus, Oman joined the mutual understanding, Syria, and Bulgaria (as witnesses). Azerbaijan officially joined the initiative in September 2005. The NSTC's unique route included the use of Russian and Iranian ports in the Caspian Sea as it crossed from Russia to Iran, notably the ports of Astrakhan and Ola in the north and Anzali and Amirabad in the south. When new people entered the relationship, two optional earth courses were included. There are currently three optional transport courses available at NSTC. The first and unique route starts in Helsinki, Finland, and ends in St. Petersburg and the Russian Caspian ports of Astrakhan and Ola are the NSTC Focus course. Caspian Sea (mostly Anzali and Amirabad, but also Nowshahr). From Iran, the route leads to India via the Iranian Gulf of Bandar Abbas (FEZ Shahid

Rajai) and the Iranian ports of Chabahar. There is also a possible land route from Iran to India via Pakistan, but this option is unlikely to be used for the time being. The second or western route of the NSTC runs along the west coast of the Caspian Sea, crosses Azerbaijan, and heads to Iran and India. Holy. It is probably the fastest and most limited land route connecting St. Petersburg and Helsinki with Bandar Abbas by road and rail. However, there is no rail link between Azerbaijan and Iran (Kazvin-Rasht-Astara section), which will be discussed in more detail later. The third, eastern, optional NSTC course runs along the east coast of the Caspian Sea from Russia, Kazakhstan, and Turkmenistan to Iran and India (with possible expansion to Afghanistan and Pakistan). Recently, this course did not have a rail link between Kazakhstan, Turkmenistan, and Iran, which was completed in 2011. Following the provisions of the basic multilateral agreement, elections were held in favor of the establishment of a permanent secretariat of the TRACECA intergovernmental commission. The Permanent Secretariat Base Camp was opened on 21 February 2001. In addition to restoring the remarkable Great Silk Road, Azerbaijan has done significant work in identifying key areas for improvement. Azerbaijan is a direct participant in the Silk Road economic belt initiated by China. During President Ilham Aliyev's state visit to China in December 2015, an agreement was signed between the Government of the Republic of Azerbaijan and the Government of the People's Republic of China on the joint approval of the establishment of the Silk Road economic belt. It was approved on 30 October 2017. The Baku-Tbilisi-Kars railway was designed to restore the Great Silk Road by connecting the trans-European and trans-Asian railway systems. On 7 February 2007, the coordination of the development of the Baku-Tbilisi-Kars railway in the Georgian city of Tbilisi with the activities of the President of the Republic of Azerbaijan Ilham Aliyev was recorded. In November of the same year, remarkable railway maintenance was carried out in Maranda, Georgia. In July 2008, a suburban part of the Kars-Georgia railway was put into operation in Kars. 504 km of the 850 km long railway pass through the Azerbaijani region. The 263 km section passes through Georgia and the 79 km section passes through Turkey. Baku-Tbilisi-Kars shortens travel time between China and Europe, making the ocean journey twice as fast. By adding strength and security, the railway should have an annual cargo limit of 5 million tonnes at the bottom. At this stage, the limit will also reach 17 million tons and later - much more. The development of the project along the famous Great

Silk Road increases its attractiveness for local people and provides easy access to European and world markets, as well as to Central Asian countries - Turkmenistan, Kazakhstan, Uzbekistan, Kyrgyzstan, and Tajikistan. Afghanistan. ... involves key work in building exchange relationships as well as in developing and integrating their economies. One of the main points of interest of the Baku-Tbilisi-Kars project is that Azerbaijan has a direct railway connection with Turkey via Georgia. It thus contributes to strengthening relations between the two states. Another preferred aspect is that the company is expanding to the Nakhchivan Autonomous Republic. It is planned to build another railway from Kars to Nakhchivan, which will remove the Armenian barricade in the autonomous republic and guarantee transport autonomy. The free trade zone led by President Ilham Aliyev, including the Baku International Maritime Trade Zone, built-in Alat, in the Baku region of Montenegro, will play an important role in transforming Azerbaijan into a universal vehicle. Centre. The Free Trade Zone will make a significant contribution to the development of the neighborhood and the worldwide recognition of the “Made in Azerbaijan” brand, as well as assume a major role in universal freight transport and coordination chains in Europe and Asia. ... The free trade zone is intended to serve a market of 130 million people in total and to cover parts of the South Caucasus, Central Asia, Russia, and Turkey.

According to the "General Plan for the Development of Logistics and Trade in the Republic of Azerbaijan", Azerbaijan plays a functional role in the creation of the North-South transport corridor. This turns the country into a key transport and coordination hub at the junction of two cross-border crossings in the central point of Eurasia. The north-south transport corridor connects India, Pakistan, Iran, Azerbaijan, Russia, and northern Europe.

Azerbaijan is an important state on the mainland planet along with Russia and Iran, and this geographic area is the key to fostering local tripartite participation.

The work on the creation of the Azerbaijani part of the North-South transport corridor has just entered its final phase. Most of the corridor stretching from the Azerbaijani-Russian suburbs to the Azerbaijani-Iranian border is fully operational. Azerbaijan also participates in financing the construction of the Astara-Rasht-Gazvin railway in Iran. Azerbaijan plans to provide Iran with an advance of $ 500 million for the development and logistics of the Astara-Rasht railway. According to key guides,

by 2020 Azerbaijan will expand the volume of tourist purchases in the region and receive related offers:

- 40 percent on the Central Asia - Black Sea route;
- 25 percent at the Central Asian and European exchange rates;
- 3 percent of the course in China and Europe;
- 40 percent at the exchange rate of Russia and Iran;
- 25 percent for Iran and the Black Sea.

It is planned to unite the North-South and Baku-Tbilisi-Kars transport halls. Azerbaijan is a functional member of both companies. This will benefit China, Kazakhstan, Central Asian countries, Azerbaijan, Georgia, Turkey, and Europe.

The path of turning Azerbaijan into a global transport hub continues in the following directions:

- Development of financial, exchange, transport, and strategic relations between the regions of Europe, the Black Sea, the Caucasus, the Caspian, and Central Asia;
- Development of the most limited multimodal overland crossings between China and the EU;
- creation of a North-South transport corridor;
- admiration for road freight as a feature of the Great Silk Road;
- moving from Azerbaijan to a much more attractive focal point in the region, with extensive improvements in settlement and exchange databases and administrative updates;
- Digitization of the Great Silk Road through the digital transport network of Azerbaijan and TASIM enterprises;

coordination of relations between different directions of transport;

- simplified procedures for payment of international and national transport and road charges;

multimodal transport associations, etc. improvement of planned exercise programs related to.

Azerbaijan has been a center of exchange between Asia and Europe for centuries as the Silk Road passes through Azerbaijan. Today, with an increase in trade flow between Europe and Asia, Azerbaijan is becoming a transport and logistics center at the crossroads of Eurasia. Azerbaijan hosts the TRACECA Europe-Caucasus-Asia transport corridor, a global program to create a transport corridor from Europe to

Asia through the Caucasus. It includes the European Union and 14 countries of Eastern Europe, the Caucasus, and Central Asia. Its permanent secretariat is located in Baku, Azerbaijan. It is not surprising that Azerbaijan has a program, as the East-West Trans-Caspian Corridor is considered the shortest link between China and Europe in both size and time. The normal length of the waiting room is 4,200 km, and the estimated travel time is 12 to 14 days, which allows carriers to achieve 70% efficiency compared to traditional sea transport. Meanwhile, this course increases the chances for the growing economy of Central Asia to enter European markets. In addition, Azerbaijan is currently working with its accomplices to create a faster transport corridor from south to north. Hypothetically, with the help of two halls, Azerbaijan will be able to draw out another shift with a volume of about 230 million tons. According to the strategic plan for the development of logistics and trade, Azerbaijan will become a vital global logistics center by 2025. This will require special attention to the basics of transport, coordination, and exchange. The forecast for the development of these sections by 2020 exceeds 3 billion manats. Significant recommendations were made to update vehicle frameworks in line with EU standards. 10185 km of modified and rehabilitated streets and roads; The Baku-Tbilisi-Kars railway line connecting the Trans-European and Trans-Asian railways; The new international Baku port for sea trade with a large cargo volume of 10-11.5 million and a limit of 50,000 TEU (which will be expanded to a huge cargo volume of 21-25 million and 1 million TEU); Heydar Aliyev's new terminal and new cargo terminal at Baku International Airport with its quality management status and critical passenger restrictions. Also, Azerbaijan is investing resources in the construction of mass housing in key markets. This type of headquarters was established in Aktau, Kazakhstan, to bring Azerbaijani goods to the Central Asian market. The legislation of Azerbaijan has identified an urgent need for the further development of the country's tourism potential. The Freight Transport Logistics Council of the Republic of Azerbaijan was established in 2015 to increase the aggressiveness and adequacy of the corridors passing through its territory, including additional flows to these corridors, to improve the quality of transportation, reduce transportation time and reduce transportation costs. ...

In January-March this year, the country's exports amounted to $ 4.5 billion, which is $ 1.1 billion, which is 34% more than in the same period last year. Exports in the non-oil sector during this period amounted to $ 415 million, which is $ 59 million, or

16.5%, more compared to the same period last year. In the first quarter of this year, exports of the non-oil sector are as follows:

- Russia, USD 115 million (an increase of 17% compared to the same period last year);
- Turkey, 99 million US dollars (2% more than in the same period last year);
- Georgia - $ 50 million (58% more than in the same period last year);

Switzerland, $ 33.7 million

- Italy, $ 12.7 million (an increase of 74% over the same period last year).

In March 2019, exports to the non-oil sector amounted to $ 133.7 million (Turkey ($ 35.7 million), Russia ($ 33.3 million), and Georgia ($ 13.2 million)). The main export pipeline was Baku-Tbilisi-Ceyhan. “Azerbaijani oil is transported from the Caspian Sea to the Turkish port of Ceyhan, and from there to European markets through the Mediterranean Sea. The BTC gas pipeline was processed from the second quarter of 2003 to April 2005. The pipeline is 1,768 km long. Tube 46-42 - 34 inches. The pipeline's permeability limit is one million barrels for several days. The BTC pipeline includes eight pumping stations: two in Azerbaijan (including Sangachal), two in Georgia, and four in Turkey. Three filling stations with a washing machine (one in Azerbaijan, two of which fill the BTC pipeline, were opened on May 6, 2005, and oil was transported by this line and the main oil tanker was shipped on June 4, 2006. The number of reserves in Ceyhan is 7. The total stacking limit is 600,000 to 2 million barrels Azeri-Chirag-Derin Su-Guneshli (ACG) and Shah Deniz condensate are transported via the Baku-Tbilisi-Ceyhan (BTC) pipeline through Azerbaijan, Georgia, and Turkey, connecting Sangachal. the terminal on the coast of the Caspian Sea, In addition, oil from Turkmenistan continues to be transported by pipeline, and we have continued to transport certain volumes of crude Tengiz oil from Kazakhstan via the BTC pipeline since October 2013. The pipeline, which was closed in June 2006, was developed by the Baku-Tbilisi Ceyhan (BTC Co) BP The pipeline is 1,768 km long: 443 km in Azerbaijan, 249 km in Georgia, and 1,076 km in Turkey. BOTAŞ International Limited (BIL) operates in Turkey. Most of the territory of Azerbaijan and Turkey is home to 42 reptiles. In Georgia, the pipeline is 46 inches long. In the final part of the descent to the Ceyhan naval terminal in Turkey, the width of the pipeline was reduced to 34 reptiles. From March 2006 to March 2009, the production limit is one million barrels per day. Since March 2009, it has been increased to 1.2 million barrels per day by drag reduction specialists

(DRA). On August 11, 2014, BTC estimated that 2 billion barrels of oil were stored at the Ceyhan terminal in Turkey. The BTC pipeline passes through 13 regions of Azerbaijan: Karadag, Absheron, Hajigabul, Agsu, Kurdemir, Ujar, Agendas, Yevlakh, Goranboy, Samukh, Shamkir, Tovuz, Agstafa; In Georgia, it is 7 and in Turkey 9. In 2018, BTC spent about $ 116 million on operating consumption and about $ 41 million on capital utilization. At the end of 2018, in June 2006, a total of about 3.12 billion barrels (about 417 million tons) of oil were transported via the 1,768 km BTC pipeline, loaded into 4,085 tankers, and delivered to world markets. During the year, BTC sold about 255 million barrels (about 34 million tons) of oil accumulated on 327 tankers in Ceyhan. The BTC pipeline currently transports almost crude oil from ACG and condensate from the Shah Deniz field in Azerbaijan. BTC also continues to transport various volumes of oil and condensate, including from Turkmenistan, Russia, and Kazakhstan.

The Trans Anatolian Gas Pipeline (TANAP) is a gas pipeline in Turkey. It is the nodal point of the Southern Gas Corridor, which will connect the massive Shah Deniz gas field in Azerbaijan with Europe via the South Caucasus, TANAP, and the Trans-Adriatic Pipeline. The pipeline is of key importance for both Azerbaijan and Turkey. This allows the main tariffs for Azeri gas to Europe for Turkey. It also strengthens Turkey's work as a regional hub of vitality. Construction of the 1,841 km pipeline began in March 2015 and began in June 2018. The target was announced at the Third Black Sea Energy and Economic Forum, held in Istanbul on November 17 and 50, 2011. On December 26, 2011, a Memorandum of Understanding was signed with Azerbaijan and a consortium for the production and operation of the pipeline was formed. In the spring of 2012, a private financial practice began operating on the road. On June 26, 2012, President of Azerbaijan Ilham Aliyev and then Prime Minister of Turkey Recep Tayyip Erdogan agreed to conclude an intergovernmental agreement on the pipeline in preparation. Mutual understanding was also noted by Minister of Industry and Energy of Azerbaijan Natig Aliyev and Minister of Energy and Natural Resources of Turkey Taner Yildiz. Natig Aliyev and Taner Yildiz, President of SOCAR Rovnag Abdullayev and Deputy General Director of BOTASH Mehmet Konyuk drew attention to the basic agreement between BOTASH and SOCAR on statutory issues. The understanding of the host side was noted by Yildiz and Abdullayev. On March 17, 2015, Erdogan and Aliyev met with Georgian President Giorgi Margvelashvili in Kars in eastern Turkey to formally determine the

structure of the pipeline and signal the start of work. TANAP was launched at Eskisehir Blower Evaluation Station on June 12, 2018. Turkish President Erdogan, Azerbaijani President Aliyev, Ukrainian President Petro Poroshenko, Serbian President Alexander Vucic and Bulgarian leader Boyko Borisov, as well as the Turkish politician and his joint property, the head of SOCAR Abdullayev, took office. Berat Albayrak and BP CEO Bob Dudley. On November 21, 2018, the Trans-Anatolian Gas Pipeline (TANAP) and the Trans-Adran Gas Pipeline (TAP) were interconnected along the banks of the Merch River in the Turkish-Greek suburbs. By connecting the two pipelines, Azerbaijani oil gas from the Shah Deniz-2 field can be transported to Italy via Azerbaijan, Georgia, Turkey, Greece, Albania, and the Adriatic Sea. The cost of the pipeline is $ 8.5 billion. The $ 800 million grant was approved by the International Bank for Reconstruction and Development. The pipeline's limit is 16 billion cubic meters (570 billion cubic feet) of gasoline per year in the first phase and will then be expanded to 23 billion cubic meters (810 billion cubic feet) by 2023, 31 billion cubic meters (1.1 trillion cubic feet). legs). Its capabilities will be expanded with parallel drives and blowers, as evidenced by the expansion of the available consumables. The pipeline will include a 56 "(1400 mm) funnel to Eskisehir and a 48" (1200 mm) pipe from that point forward. The maximum pipeline height is 2,700 meters above mean sea level. The pipeline will start from the Sangachal terminal, and the existing South Caucasus Pipeline (SCP) will be developed in Azerbaijan. From its destination in Erzurum, SCPx will be transported to Eskisehir, where it will deliver 6 billion cubic meters of gas suitable for Turkish buyers. From the Turkish-Greek border, it passes through Greece, Albania and ends in Italy. The exact course of the pipeline is not clear. In any case, it was announced that one line from Turkey would go to Greece and the other to Bulgaria. It will be connected to the Trans-Adriatic Gas Pipeline. In March 2015, the Turkish government announced that a branch from Greece to Hungary via Macedonia and Serbia was not being considered. TANAP was developed by SOCAR. SGC owns 58% of the shares in the project. Turkish pipeline manager BOTAŞ claimed 30%, and on March 13, 2015, BP earned 13%. The headquarters of the venture capital company TANAP is located in the Netherlands. Initially, 80% of the shares belonged to Azerbaijan, the rest - to Turkey. The Turkish stake was split between the Turkish mining company TPAO (15%) and the Turkish pipeline manager BOTAŞ (5%). There was an alternative to universal organizations from the

Shah Deniz consortium (BP, Statoil, and Total) - getting up to 29% in TANAP. However, only BP implemented this option in December 2013. Then the Turkish government decided that only BOTAŞ would have a share (20%) in TANAP. In May 2014, the Turkish pipeline manager received another 10%. Under the agreement with SOCAR, the company will own 51% of the shares and conduct business. The remaining 7% were associated with many private Turkish institutions, but this did not happen.

The railway network of Azerbaijan has more than 2100 km of rails, of which 828 km are biconvex and 1270 km are perforated. It is limited to AR, an administrative unit that performs the functions of both the railway dispatcher and the railway dispatcher. Rail freight is delivered in two wagons and one compartment. Every year, 26.5 million tons of cargo and more than 4.5 million passengers are transported by rail. Crude oil and petroleum products account for about 54% of AR's freight traffic, while mining materials, metals, and metal products, and grain account for 23%, 9%, and 5% of tonnage. AR is quite unstable. From the shores of the Caspian Sea in the west to the outskirts of Georgia, oil tankers are deteriorating. As a result, wagons carrying organized imports (for example, equipment, metal products, and grain) are returned to Azerbaijan without additional loading due to low tariffs. Except for oil and oil products transported mainly by tankers to the Georgian port of Batumi, in 2005 Azerbaijan sold 5,656,420 tons of imported goods and 919,424 tons of goods, which is more than a few figures. times higher than in the previous image. The Russian government is also working with Azerbaijan and Iran to establish a north-south rail link between the Russian Federation and Iran. This will require:

- Iran will build another 300 km line from Tabriz to the slums on the Iranian side, or a rail link from Tehran via Bandar Anzali to the slums on the Iranian side;
- Azerbaijan will develop a 7-kilometer route from Astara on the Azerbaijani side to its environs.

Russian Railways provide specialized and construction support to Iran and Azerbaijan in this regard. When the project is completed, the reconstruction of the $ 1.5 billion railroads, the new KTB railway, and the new rail link between the Russian Federation and Azerbaijan and Iran will strengthen AR's core rail operations in Central Asia. The Baku-Tbilisi-Kars (BTK) or Baku-Tbilisi-Akhalkalaki-Kars (BTK) railway was commissioned on October 30, 2017. It is an overland rail agreement that will directly connect Azerbaijan, Georgia, and Turkey. The project

was originally planned to be completed by 2010. The Baku-Tbilisi-Kars is expected to complete the construction of a vehicle fleet connecting Azerbaijan with Turkey (and along these lines from Central Asia and China to Europe) by rail (eventually). It traveled from Korea to Istanbul via China, Kazakhstan, Azerbaijan, and Georgia in just 15 days - much less than an ocean voyage.) The line is expected to carry a huge annual volume of 6.5 million tons. up to 17 million tons. In January 2005, a multilateral interconnection agreement was signed between the three countries. Due to a lack of subsidies, this initiative has now largely been abandoned. However, after the commissioning of the Baku-Tbilisi-Ceyhan gas pipeline in May 2005, the presidents of Azerbaijan, Georgia, and Turkey announced the possibility of building a railway between the three countries. In Georgia, Azerbaijan is providing Georgia with a $ 200 million loan with a 25-year repayment period and an annual loan fee of 1%. Georgia's state agency Marabda-Karsi Railroad LLC and Azerbaijan have just reached a concessional pre-financing agreement. Azerbaijan also allocated an additional $ 575 million to the Georgian government at the rate of 5% per annum. In September 2007, the State Oil Fund of Azerbaijan allocated the first tranche of this loan for $ 50 million. The European Union and the US refused to fund or move the line, in part due to pressure from the US Congress, believing the line was designed to bypass Armenia rather than support the rehabilitation of the Kars-Gyumri-Tbilisi railway. From Armenian archives such as ARMENPAC in Washington or the Armenian National Committee in America. Then the EU "welcomed the new rail corridor." In February 2007, Tbilisi, Azerbaijan, Georgia, and Turkey signed a trilateral agreement to dispatch the railway construction in the same year. On November 21, 2007, Azerbaijani leaders Lham Aliyev, Georgia Mikhail Saakashvili, and Turkey (Abdullah Gul) presented a project to build a railway at the Maranda junction south of Tbilisi, and in July 2008 Turkey began laying trunk lines from Kars.

In November 2014, Turkish Transport Minister Lutfi Elvan announced that 83% of the project was completed. Depending on the size, the railway line will be equipped to carry 17 million tons of cargo and about three million passengers by 2030. According to the Minister of Economy and Sustainable Development of Georgia Giorgi Kvirikashvili and the Minister of Transport of Azerbaijan Ziya Mammadov, on January 30, 2015, the main test train continued on the new (Georgian) section of the Akhalkalaki-Kartsakhi line. ... According to Kvirikashvili, "the 180 km railway,

which is completed, is in the stage of real development, and every effort will be made to complete the work on the Baku-Tbilisi-Kars route by the end of 2015". “The Georgian press says that the administration will not start indefinitely until 2016. On February 19, 2016, the fifth trilateral meeting of the distant clergy of Azerbaijan (Elmar Mamedyarov), Georgia (Mikhail Janelidze), and Turkey (Mevlut Cavusoglu) was held in Georgia. The Baku-Tbilisi-Kars Chamber of Special Purpose has decided to build a new border crossing between Georgia and Turkey at Kartsakhi-Kyldyr, where the company is considered "unusual" and known for its importance to the region. Announced that the railway will be put into operation. Service after the end of the shooting., Official duties Tajikistan and Turkmenistan. participants of the ceremony. The service was reported by third-party Azerbaijani and Georgian priests on September 27, following a main hearing organized by a tourist train from Tbilisi to Akhalkalaki. Speaking at the opening, President of Azerbaijan Ilham Aliyev said: “The Baku-Tbilisi-Kars railway. This is extremely important for business development and generally beneficial cooperation. Provincial cooperatives - Azerbaijan, Georgia, and Turkey - will reliably meet and support each other. Such a monster is spreading as the Baku-Tbilisi-Kars railway further strengthens our solidarity and friendship. The European Union respected the opening of the Baku-Tbilisi-Kars railway and mentioned it as an important precaution for transport links with Turkey, Azerbaijan, Georgia, and Central Asia through the European Union. The rail corridor will provide a better system, create a new business environment and increase the nature of fares, the statement said. Another goal is to maintain a stable trade turnover of the railways. I believe among the peoples lying on the opposite shores of Azerbaijan, Turkey, Georgia, and the Caspian Sea. The goals include building a solid foundation for the port and transporting oil and petroleum products to world markets. A total of 105 km (65 mi) of new lines were laid between Kars and Akhalkalaki, 76 km in Turkey, and 29 km in Georgia. The modern Akhalkalaki-Maranda and Tbilisi-Baku railway lines have been extended to a total length of 826 km (513 miles) and will probably carry 1 million passengers and 6.5 million tons of cargo in the first phase. ... By this time, this limit will reach 3 million passengers and more than 15 million tons of cargo. Georgia and Azerbaijan use the Russian 1520 mm (4 and 11 27-32 inches) width and the existing section of the railway line (Akhalkalaki-Tbilisi-Baku) will not change. New routes such as the Georgian region (Georgian: and the new Turkish section from Kartsakhi to Kars) from Akhalkalaki to

the Kartsakhi suburban station have passed the standard test used in Turkey. Therefore, the line includes an emergency stop for Akhalkalaki, which requires a regular check of factors either changing the chassis or reloading the cargo. The passenger cars requested by Stadler in Azerbaijan in 2014 (see below) will be equipped with DB AG / RAFIL V-type running wheelsets to compensate for size differences from 1520 mm to 1435 mm (standard size). In June 2018, Stadler in Bussnang signed an agreement with the Georgian company Marabda-Kartsakhi-Railway LCC on the transfer of a new office (30 m extraordinary opening) to be opened in Akhalkalaki. In June 2014, Azerbaijan Railways announced the signing of a contract with the Swiss company Stadler Rail AG for the supply of 3 trains with a rolling stock with ten carriages in the amount of 120 million Swiss francs (115 million euros). It will be delivered between mid-2016 and mid-2017, but the organization said in October 2018 that a basic set of ten vehicles would be delivered in the first quarter of 2019. An invaluable area, the port of New Alat, is a transport hub connecting the west. (Turkey and the EU), the south (Iran and India), and Russia in the north). It is located in the regions of Azerbaijan and will create its network as an efficient hub, thereby increasing the volume of the processed load. Likewise, the new port area connects with existing highways and railways and connects the port to the hinterland. There are three world railway routes in Azerbaijan, all of them are united in Ayat:

- In the North-West through Baku to Russia;
- In the west through Georgia to the Black Sea and Turkish coasts;
- Southern and suburban Iran.

The new port will have equipment for servicing vessels with a length of 150-160 meters and a carrying capacity of 10,000 tons, as well as all types of vessels serving the Caspian Sea. The zone allows expanding several offices in isolation for different parts of the cargo (railway, general cargo, carrier, and weight) while increasing the turnover. Phase 1 of the new port of Alat includes a shipping terminal, general cargo procurement, Ro-Ro division, administrative division, railways, various management structures, traditional warehouse areas, open storage facilities, warehouses, storage areas. , rail and street access to plots, Ro-Ro boarding, tourist administration building, large elevator platform, and truck improvement area. The task schedule for the first stage is divided into three stages. The first stage - the ferry (railway) terminal - was completed in September 2014; Phase 2 - Ro-Ro Dock - will end in

2016; and other vacancies in 2017. 60% of the total work in the first phase has just been completed. The length of the bed is as follows:

- cargo platform - 650 m (4 compartments);
- Dock Ro-Ro - 300 m (1 section);
- Stand - 450 m (various semi-finished products).

All sites along the Caspian Sea have been excavated up to 7 meters.

All transportation by rail between Azerbaijan and Europe or Central Asia (to China and the rest of Asia) is carried out through this ferry (rail) terminal. If the compartments are currently being transported to their final destination in the rail phase (without unloading and stowing on an intermediate vessel), they are legally moved to the rail stage and use the ferry port at the new port. If they are evacuated from the station and placed on an already assigned vessel for detention, they are sent to the old port in the center of Baku. After the completion of the first phase, all these multipurpose works will be carried out in the new Baku port of Alat. During the implementation of the first phase, the total volume of the new port of Alat will also be controlled as 40,000-50,000 TEU with a total useful cargo and cargo space of 10-11.5 million tons.

The development of the new port is associated with the expansion of potential cargo flows and the pace of development of various business sectors. Therefore, the choice of when to start developing the second and third phases will depend on the available workload. Typically, these additional steps will follow an organizational model such as PPP (or BOT), and a closed meeting is likely to facilitate the development and operation of these extensions.

- Stage 1: 10-11.5 million tons of general cargo 40,000-50,000 TEU;
- Stage 2: 17 million tons of general cargo with a volume of 150,000 TEU;
- Stage 3: 21-25 million tons of general cargo up to 1 million TEU. (Mr. Eugene Xi, Operations Director of Baku Port. New Baku International Sea Trade Port in Alat, August 2017, Baku - Azerbaijan). The new port will have a well-thought-out organization of ownership, control, and supervision of the working structures of the terminal. This will make it possible to skillfully use the property to achieve and maintain a constantly abnormal state of efficiency of the cargo port, which will lead to rapid transportation of goods. It will be equipped with the latest technology in the field of reconnaissance and emergency stops to prevent attempts to cross the port border. Likewise, access control systems will be used to ensure a high level of

security and reliability, as well as to ensure work and resources in slums and border areas.

The truck center will deliver road transport customers to the new port of Alat. Truck work areas will include a hotel lounge, truck wash and corner store for truck support, a transport station, and multiple offices to ensure that the needs of truck transport are met and truck drivers have a good rest. to reliably and adequately fulfill the obligations assumed.

This new learning area of tradition includes redesigned systems and the latest inspection innovations that reduce the need for storage and unloading at ship docks.

The new port plans to achieve green port status through various efficiency improvements to reduce carbon emissions and will have a program to reduce waste from port operations through reuse, reuse, and tillage. It will focus on authorizing the management, processing, and transfer of all unnecessary funds arising from the activity. Appropriate waste treatment plans and equipment will be provided at the port. Green spaces will be created north and west of the port, along the coast, and around the substation. These zones will focus on improving the soil and controlling the surrounding microclimate, which will have an increasingly positive impact on the normal semi-desert environment. The water from the tops will be used to create and water these tastefully decorated scenes. A positive financial impact has been achieved, including an increase in the number of vacancies, especially in ports and related coordination activities.

Currently, about 80% of cargo has been transported and 20% is anchored (for example, fuel, building materials, agricultural products, etc.). This division of relations is likely to change with the emergence of a free zone in the United Arab Emirates, which is considered the Jebel Ali (Kafza) Free Zone. Thus, the port of Baku will become a remarkable hub of Central Eurasia within a broader, one-stop logistics organization that serves both European and Asian markets and also connects Europe and Asia. In particular, the port of Baku will develop and become a significant community of berths, berths, and distributions, providing a wide range of other significant business benefits in the South Caucasus, Central Asia, Iran, southern Russia, and the South Caucasus. Turkey. ... There are countless people to whom respect can be conveyed, including logistics management. They are usually divided into two classifications:

- General logistics services including containers, folding and unloading, dismantling, unloading, dosing, docking and circulation;

- Value-added logistics (VAL) including repackaging, conditioning, assembly, quality control, testing, terminal trimming, automatic decorating, grain accumulation and disinfection, newspaper print placement, storage and handling, and collection of clothes in the compartment. General respect included maintenance, equipment rental and rental, office cleaning, breakdowns, welfare, security management, workplace and data management, and various types of correspondence. VAL applications are especially important as manufacturers strive to meet customer needs for specific, high-quality products. New players in this area of management, coordination of third-party suppliers, operational management of the creation chain (assembly, quality control, customization, merging, etc.). (Counting and reusing fixes). The free zone will have a great place to participate in this special agreement. It will be linked to other Caspian ports through major maritime associations through the new Baku port at Alat, and will also provide multipurpose street and rail transport, zeppelin from Alat to Georgia, Iran, Turkey, Russia, and Southeast Europe, and cargo management. from Baku International Airport. ... Traffic in the free zone will increase the traffic load. Most of this cargo will be transported by carriers using various universal modes of transport.

CHAPTER 4: DANGEROUS GOODS

4.1 Dangerous goods definition

Hazardous substance: Given the natural state or situation in logistic processes, it is a tool for ensuring public safety and order, possible threats to public life and health and important public goods, people and other living beings, as well as risks to the health and safety of others. creatures. serious damage to the environment. In the event of accidental release of hazardous substances or for other reasons, people do not present a sudden and immediate danger to the environment. However, the air is polluted by the environment - water and soil. A serious hazard to the human, animal, and environmental health. Hazardous substances that enter the environment primarily pollute soil, water, and air. Then they begin to negatively affect people's lives. People who breathe air, consume vegetables, fruits, and other nutrients, join the human food chain and begin to negatively affect people's lives due to the harmful substances they contain. Certain rules have been introduced to prevent and reduce the risks associated with the transport of dangerous goods from one place to another. However, the purpose of these regulations is to ensure the safety of all logistics operations involving dangerous goods. Consequently, these rules are managed proactively. These regulations include several measures and regulations aimed at minimizing the risks associated with the release of hazardous substances.

4.2 Inclusion of dangerous goods

Accidents involving hazardous materials can be compared to breaking an egg. If it is impossible to save an egg after a fracture, it is impossible to correct or compensate for the negative consequences of the accident with the hazardous material. For this reason, the parties are obliged to take all necessary measures for their safety when storing dangerous goods.

The danger of dangerous goods is associated with their classification properties. However, the classification according to the entry falls into the following four categories:

(a) Individual entries, eg UN No. 1090 ACETONE, are shown in full.

(b) The type of registration, eg UN No. 1133 GLUE, is a special group with the same characteristics, but its components may differ.

(c) "NOS Special Positions" means the opposite. UN 1987 ALCOHOLS BEECH. A special chemical or technical materials and materials.

d) General registers, a very general classification based on certain characteristics, eg UN 1993 LIQUID HANDLING, NOS. Hazardous substances are divided into 9 main groups. There are 13 classes of hazardous substances in the subgroup. It is listed below. Explosives of class 1 also have 6 subclasses and 13 access groups.

Table 8. Classification of Dangerous Goods (Source: Statista, 2017)

Class 1	Explosives and objects
Class 2	Gases
Class 3	flammable liquids
Class 4.1	Flammable solids, self-reactive substances, polymerizers
Class 4.2	Substances liable to spontaneous combustion
Class 4.3	Substances that emit flammable gases in contact with water
Class 5.1	Oxidants
Class 5.2	Organic peroxides
Class 6.1	toxic substances
Class 6.2	infectious agents
Class 7	radioactive material
Class 8	abrasive substances
Class 9	Various dangerous substances and objects

4.2.1 Class 1- Explosive Substances

A solid or liquid substance capable of acting on the environment at a specified temperature, pressure or velocity at a specified temperature, pressure or velocity, or capable of producing gas at a specified temperature, pressure or velocity, which may cause a non-explosive spontaneous reaction in the presence of heat, light, gas, sound or smoke, or combinations or mixtures thereof. and much more. These substances can be converted from solid or liquid to gas in the event of explosions. They can change this by releasing a lot of energy suddenly. The invention of explosives is often credited to the ancient Chinese. The first gunpowder invented by the Chinese is incomparable to modern military and commercial explosives, which can move at speeds of up to thousands of meters per second, creating pressure waves and creating tens of thousands of tons of pressure per square centimeter. The first of the UN hazard classes is one of the most obvious and immediate threats; Explosives.

Explosives are divided into several units. The first is the separation of explosive and explosive parts. Explosives have been described above. The explosive part is simple; one or more explosives. The rest of the class differences are slightly more complex.

It is created considering how something or an object behaves in real life and consists of six subclasses. Consequently, all explosive packaging must contain not only Class 1 but also the Subdivision to which it belongs.

Care must be taken to restrict the transport of explosives. The UN has developed classifications and restrictions on this topic. This A, B, C, D, E, F, G, H, J, K, L, N, and S. He conducted logistic operations using various explosives. For example, it is prohibited to transport Class 1 materials together with other dangerous goods. Loading and/or storage must comply with the general prohibition on loading during transport and/or storage of explosives. Another problem with the use of explosives is that explosives contain their oxygen source, so combustible materials will not ignite or explode even underwater. The safe storage, handling, and transportation of explosives are very important.

Explosives of class 1 are divided into subgroups:

1.1 - substances of mass destruction

1.2 - Ingredients and substances with a crunchy effect

1.3 - Low running costs and residues

1.4 - Explosives

1.5 - substances with low sensitivity

1.6 - substances with very low sensitivity

4.2.2 Class 2 – Gases

All gases are compressed during the logistic process (e.g., during storage and transport), which saves space and creates potential risk. If this pressure, which is created without compression, is suddenly released, it can create a large force that will cause the same pressure and danger as in class 1.

Table 9. Boiling points of some gases (Source: Engineering toolbox, 2020).

Oxygen	Nitrogen	Helium	Carbon Dioxide	Propane	Chlorine
—184°C	—259°C	—180°C	—74.4°C	—39.3°C	—29.8°C

- The gradual release of gas due to the explosion hazard causes suffocation. Storage and transportation should be done outdoors. Gas leaks can cause severe temperature changes (especially for liquefied gases) and can harm people. They can also degrade other substances during storage. Below are some of the types of gases used in logistics operations.
- compressed gases. Example: UN number 1072 Oxygen, compressed.
- liquefied gases. Example: UN No. 1072 Oxygen, compressed, UN No. 1979 propane, UN No. 1011 Butane, UN No. 1017 Chlorine.
- frozen liquefied gases. Example: UN 1977 Nitrogen, frozen, liquid.
- Dissolved gases. Example: UN number 1001 Acetylene, dissolved.
- Packaging for compressed gas cylinders and small sizes. Example: UN 1950 Aerosols and UN 2037 Small gas cylinders.
- Gas under pressure. Example UN 2857 Refrigerators.
- Gases under pressure due to some special regulations. Example: UN number Example Gas 3167, unpressurized, flammable.
- Also empty containers. Example: empty bottles and empty bottles.

4.2.3 Class 3 - Flammable liquids

According to the UN, the most common hazard classes in the world are flammable liquids. Flammable liquids include petroleum products, paints, and adhesives used as fuels, paints, and solvents. As seen below, the amount of flammable liquids is important when transporting to the 26 EU countries.

A product will be classified in Class 4 if it meets the following conditions:

• Liquid

• Withstands pressures up to three bars in closed containers.

• The ignition temperature does not exceed 50 ° C.

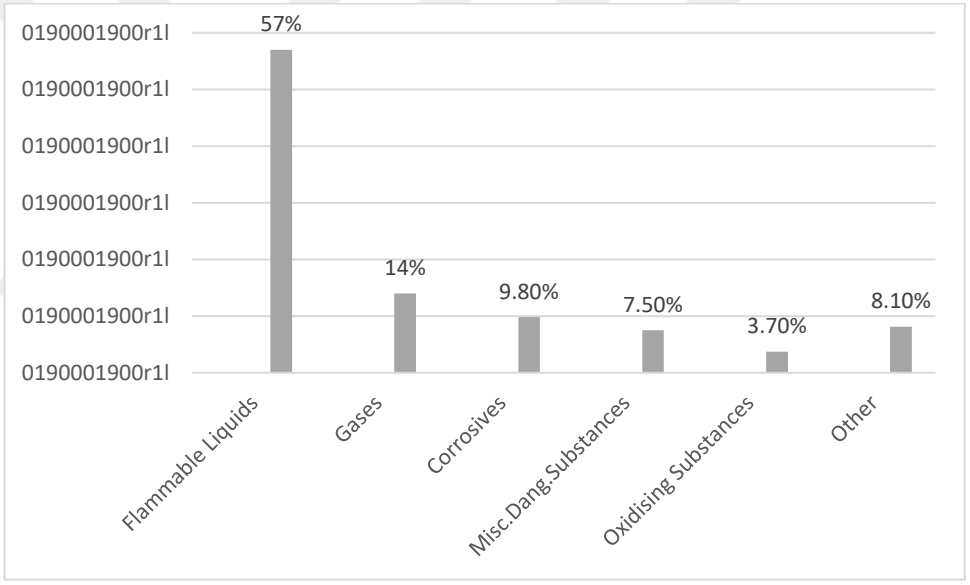


Figure 10. Transportation dangerous goods and flammable liquids in UE in 2014 (Source: EUR-LEX, 2015)

Flammable liquids are distributed as follows:

• Classification code F: flammable liquid, (less hazardous.

• Classification code F1: flammable liquids with a flashpoint below or below 60 ° C.

• Classification code F2: flammable liquids with a flashpoint above 60 ° C.

• Classification code FT: flammable and toxic.

• Classification code FT1: flammable liquids and toxic substances.

• Classification code FT2: pesticides (agricultural chemicals)

• Classification code FC: flammable liquids and corrosive substances.

• FTC classification code: flammable liquids, toxic and corrosive.

• Classification code D: explosives

The hazard rating of flammable liquids from packing groups (GHG) can be determined as follows:

• PG I = very dangerous substances

• PG II = low hazardous substances

• PG III = less hazardous substance

Table 10. Packing group for flammable liquids in accordance with ADR

Packaging Group	Flash Point	Initial Boiling Point
I	--	≤35°C
II	<23°C	>35°C
III	≥23°C≤60°C	>35°C

All flammable liquids produce vapors that are heavier than air and therefore displace air, especially in low and/or confined spaces. Therefore, drowning is always the second possible danger. Transport of flammable materials/storage of flammable materials must take place in an open area and sufficient ventilation space must be provided. In addition to asphyxiation, many flammable liquids also present certain toxic hazards such as ingestion and/or inhalation of vapors, thinning of skin tissue, and toxic effects such as eczema. Fire hazard: Class 3 substances can ignite in case of an explosion. When they reach their flashpoint, they give off a lot of smoke. Ignition sources, sparks, hot surfaces, flames, etc. The weld bead may contain an electrostatic charge. Flashpoint describes the lowest temperature of a liquid when a certain amount of combustible vapor is generated and the air in the liquid forms a flammable mixture. It is important to note that vapors of flammable liquids are usually heavier than air. When there is no wind, they fall into the lower zones. Since these substances take a long time to disappear, they are more likely to burn out. The risk of the explosion of flammable liquids is always high.

Electrostatic charge: When moving rapidly, solids, liquids, and gases can be charged with static electricity. Under suitable conditions, they can cause electrostatic discharge. A source of ignition is electrostatic sparks. Because before direct or

electrostatic discharge, a person has no sense organs capable of detecting electrical charges. Examples of electrostatic charges: Walking shoes can be charged while walking. This is especially dangerous when traveling in areas with explosive mixtures. Oil and other well-filled petroleum products must not be transported in removable containers. Contact of clothing with these containers can cause a fire. Dangerous situations can arise if sufficient conditions are created in the pipeline for the passage of liquid. Dangerous terrain or contaminated areas can usually be prevented or eliminated by restricting the flow. When sprayed, the liquid consists of droplets of different sizes. Small droplets are usually charged with a negative current and large one with a positive current. The transfer and discharge of conductive materials such as metal can cause electrostatic discharge. Loads Electrostatic charges can be prevented by grounding.

4.2.4 Flammable solids

Solids other than gases and liquids also pose a fire hazard. The essence of this class is that any fire, including a product, is very strong at high temperatures and is difficult to extinguish. Other unwanted risks such as toxic and/or corrosive waste gases may arise. For safety reasons, substances in this class should be treated as other flammable materials and should not be used near sources of ignition. This class consists of 3 subclasses. Let's look at these subclasses.

What are the 9 classes of Dangerous Goods?

These are usually flammable and non-flammable materials. Self-acting substances that break down when heated; This class includes explosives that can be safely removed from water or alcohol. This subclass requires temperature-controlled transport (DGI, 2010).

Class 4.1 substances and equipment are classified as follows:

- Wheel F Flammable solids, no other hazards.
- FO flammable solids, flammable (oxidizing) effect.
- FT flammable solids, toxic.
- Flam FC flammable solids, sodium hydroxide
- Natural explosives sensitive to D, no other hazards.
- DT Sensitive explosives, toxic.

· D SR Spinning materials.
· 1 SR1 Elements not required for temperature control.
· 2 SR 2 Materials required for temperature control

Class 4.2 self-reactive substances

It contains very little self-igniting material at very low temperatures. Functions require closed transport and storage.

Class 4.2 substances and equipment are classified as follows:

· Self-igniting substances are not hazardous to hands,
· Pyrophoric oxidants, 135 Linda S.V. Pyrophoric substances which, in contact with water, form flammable gases.
· Mad ST - self-igniting toxic substances
· SC-SC Pyrophoric Abrasives

Class 4.3: Substances in contact with water. They are known to react quickly with water. Flammable gas generated during the reaction can ignite or explode. Interference is often associated with fire protection techniques; however, it is completely inappropriate for this subcategory. These materials require complete transportation and storage away from moisture. It is known that components in contact with water react quickly with water. Flammable gas generated during the reaction can ignite or explode. Interference is often associated with fire protection techniques; however, this is completely inappropriate for the subcategory. These materials require complete handling and storage away from moisture.

Class 4.3 is one of the most common in transport. However, it contains some hazardous substances.

· W: flammable gaseous substances in contact with water.
· F WF: flammable gases, flammable liquids, in combination with water
· S WS: water-shrinkable, self-heating, and flammable gas-generating substances,
· WO: On contact with water, forms a flammable gas, flammable,
· T WT: flammable gases are toxic in contact with water,
· Ever WC: corrosive substances emitting flammable gas following a water contract,
· FC WFC: Substances in contact with water can give off flammable, corrosive, flammable gases. On contact with substances in water, flammable (explosive) gases

are formed. 4.3. Humidity can emit flammable gases from the door during sparks and cause severe burns! Therefore, care should be taken with the lids of the liquid drums.

4.2.5 Class 5.1 – Oxidizing substances

Fires are caused by oxygen in the atmosphere. This class includes oxidants that promote combustion. These substances can be separated by decomposition and oxygen formation.

For safety reasons, Class 5 substances must not be stored or transported together with other non-combustible materials, even at a distance. These substances are also corrosive. This class has two subclasses. Oxidants are natural substances found in the daily use of substances that benefit from excess oxygen. preservatives, bleaches, disinfectants, herbicides, fertilizers, etc.

Class 5.1 differed in the following parameters:

- O: Substances containing or containing flammable substances (oxidizing agents).
- HOLDER: Flammable (oxidizing) solids may ignite.
- Operating system: flammable solids, self-healing,
- WOW: flammable (oxidizing) solids; Combustible gases may be formed in contact with water.
- TOD OD: Flammable (oxidizing) substances, toxic,
- C OC: Flammable (oxidizing) substances, corrosive,
- TC OTC: Flammable (oxidizing) substances, toxic, corrosive

Class 5.1 substances can aggressively release oxygen. The release of oxygen can be dangerous for two reasons: for example, if these substances are flammable; Wood contact can cause inflammation. An explosion may occur if mixed with other substances.

Since they contain carbon and hydrogen, they contain not only oxygen but also oxidizable synthetic materials. Some insoluble compounds are hazardous to transport. In some cases, check that the transport conditions are particularly low and/or extremely dilute. Reactive organic peroxides have a natural dissolution temperature. At this temperature, a continuous self-heating cycle occurs, which

causes an explosive source or even an airless explosion. This is a very dangerous subclass.

Class 5.2 substances are generally corrosive and/or toxic. These items differ as follows:

P1 (classification code): organic peroxides not requiring temperature control.

P2 (classification code): organic peroxides requiring temperature control. Some substances of Class 5.2 may only be transported under thermoregulation conditions. In the logistics process, temperature control must be controlled by service personnel. In addition, substances of Class 5.2 may be flammable. These substances are dangerous due to their large external weight in very small units due to the high risk of explosion. Peroxides can ignite combustible materials. Skin contact with peroxide can cause serious eye damage.

4.2.6 Class 6.1 - toxic substances

This class has two subclasses. These substances often cause sudden illness or death. From a human perspective, Class 6 substances can enter the body by one or all different routes, including inhalation, absorption, and ingestion. Hygiene is important when carrying these materials.

These are chemical poisons that biochemically affect the extraction. Many of these have secondary hazards such as flammability and/or corrosion.

Elements of class 6.1 are divided into:

- non-toxic substances
- TF: toxic flammable substances
- TS: toxic self-heating solids
- TW: Toxic substances which, on contact with water, form a flammable gas,
- K: Substances causing toxic flammable (oxidative) effects
- TC: Toxic abrasives
- TFC: Toxic Abrasives.

Whether a substance is toxic depends not only on the type of substance but also on the number of people. Some substances are poisonous, corrosive, and/or flammable. for example, "UN 1595, dimethyl sulfate, 6.1 (8), PG1". If the combustion temperature is below 23 ° C, it belongs to class 3, that is, flammable liquids, except for substances that are considered very hazardous, less hazardous, and toxic.

Class 6.2: Infectious substances

Living organisms pose a risk of contamination with infectious substances. Because these substances biologically affect the body. Infectious agents are a broad subclass that includes human and animal carcasses, organisms, vaccines, microorganisms genetically modified with medical residues. The most important property of these substances is the danger of infection. Our body does not have a system for recognizing infectious agents. Therefore, you must be careful when loading, transporting, and unloading these materials! Leaked articles; should be recorded in small numbers.

These items are divided into:

- I1 (classification code): infectious substances are dangerous to humans
- I2 (classification code): infectious substances are only hazardous to animals.
- I3 (classification code): clinical waste
- I4 (classification code): biological agents, category B

The UN divides infectious agents into two categories:

Category A: These substances are infectious, life-threatening, or life-threatening. Fragmentation occurs when an infectious agent leaves the protective membrane and comes into physical contact with humans or animals.

Substances that meet these criteria and are hazardous to infectious agents cause disease in humans and animals. UN No. 2814 and disease-causing animals only. UN number Must be quoted following 2900. Examples: UN 2814: Human infectious substances (Lassa virus, Ebola A, rabies, etc.). Category B: Infectious substances that do not meet the criteria for Category A are included in this definition. UN 3373

Category B hazardous substances are not listed. Samples: This category includes blood or urine samples from people with hepatitis B virus or polio. They are also called "patient samples". Patients with minimal pathogenicity were excluded from the study. This is a "distributed medical sample" or "veterinary sample".

Official transport version UN 3373; The biological substance is classified as B. The disappearance of these substances can cause serious harm to human health. Direct contact with human body fluids is possible. All preventive measures are very important for human health.

4.2.7 Radioactive material

Radioactive substances are substances that release energy in the form of ionizing radiation that affects other substances. Radioactive substances vary and can cause serious harm to live tissue. However, it can also infect inanimate objects. The protection of substances in this class requires technical knowledge. Radiation (no radiation) is low. Heavy metal interior and some special boxes (cavities) may contain radiation. Although this class represents only a small part of the total tonnage of dangerous goods transport, the number of packages is large. They also contain isotopes, smoke detectors, and even indicator lights for medical purposes. Radioactive materials can also be found in lighting fixtures and measuring instruments. There is no organ in the human body for determining radioactivity. In other words, a natural defense mechanism has no chance against radioactive substances. Therefore, it is very important to adhere to the limited values. In the interests of the safety of living things, the use of radioactive materials should be minimized. Specialized training certificates are usually required for the transport of Class 7 dangerous goods.

4.2.8 Abrasive Substances

Corrosive substances are substances that can react chemically with other substances. These substances affect the route of transportation, other costs, other materials around it, and more importantly, human tissue if spilled. The main problem in the

logistics of these items is the limitation of the choice of packaging that will provide effective protection of the abrasive. Today's plastics are suitable for this purpose.

Abrasive materials are classified as follows:

- A: No corrosive substances without secondary risks,
- CF: corrosive substances,
- CS: abrasive self-heating materials,
- CW: Corrosive substances which, in contact with water, form flammable gases,
- CO: corrosive substances (oxidizing)
- CT: corrosive toxic substances,
- CFT: non-corrosive toxic fluids,
- COT: Toxic and corrosive substances (oxidation).

Class 8 substances are not just liquids. Some materials are transported in solid form, in the form of powder and granules. For example, hydrate, potassium, etc. These substances are corrosive due to the sweat of the hands when they are wet, such as when they get into the eyes, respiratory tract, or hands during loading or unloading.

Corrosive effects may also cause a pair of substances of Class 8. In the event of a leak must always be in the presence of universal precautions and protective equipment for substances of Class 8. Because even small drops of acid can cause serious damage to the eyes and skin. Corrosive vapors can cause internal damage to the human body if inhaled.

Dangerous reactions and mixtures: In particular, substances of Class 8 can cause dangerous reactions. Other hazardous substances may be formed. For example, if the baffle is diluted, flammable and explosive hydrogen gas can be generated during the acid reaction. If too much acid collects in the tank, the resulting mixture can be more hazardous than the individual acids used, which increases the aggressiveness, especially towards the tank materials. Acids can also react dangerously when mixed with water. This feature is important when cleaning tanks. If there is acid waste in the tank, very dangerous acid droplets can form. Water can also pose a serious hazard.

4.2.9 Various dangerous substances and objects

The ninth grade added to the eight basic hazard classes of the UN does not meet the criteria that can be assigned to any other class; but it collects substances and parts that are known to be harmful to humans and / or the environment under the roof (group). Although Class 9 does not initially contain as many items as other classes, the list is expanding. There are different approaches to using Class 9 in different national and international regulations.

Protection of substances of this class requires technical knowledge. Radiation (without radiation) is small. The internal cavity in heavy metals and some special cans (space) can work to provide radiation. Although this class represents only a small fraction of the total quantity of hazardous materials transported, the number of packages is large. It is also known that substances and components of this class contain extremely important substances for reactors. They also contain isotopes, smoke detectors, and even light markings for medical purposes. Radioactive materials can also be found in lamps and indicators. In the human body, there are no organs that determine radioactivity. In other words, the natural defense mechanism does not have the ability to resist radioactive substances. Therefore, it is very important to observe the limit values. The use of radioactive substances should be minimized for the safety of living beings. As a rule, a special certificate is required for the transport of hazardous materials of class 7.

4.2.10 Abrasive materials

Corrosive substances are substances that can react chemically with other substances. These substances affect the transport pathway, other substances on the head, around the head, and, more importantly, on human tissue if a leak occurs. The main problem in the logistics of these items is to limit the choice of packaging to ensure effective protection of the abrasive. Modern plastics are suitable for this.

Abrasive materials are classified as follows:

- Answer: No dangerous aggressive substances.
- CF: abrasive
- CS: Abrasive self-heating materials

- CW: Corrosive substances which, in contact with water, form flammable gases,
- CO: corrosive (oxidizing)
- IT: corrosive toxic substances
- CFT: non-corrosive non-toxic liquids
- COT: Toxic substances with a corrosive (oxidative) effect.

Class 8 substances are not just liquids. Some materials are transferred as solid particles such as powders and granules. For example, potassium hydrate, etc. These substances are corrosive when wet, for example when they get into the eyes, respiratory tract, or hands during loading or unloading, or from the sweat of wet hands.

Corrosive effects can also be caused by vapors from class 8 substances. General precautions and protective equipment must always be considered in the event of substance abuse. Substances causing corrosion may inhalation induce natural damage to the human body.

Hazardous reactions and mixtures. Class 8 substances can cause extremely hazardous reactions. Other hazardous materials may be present. For example, if a cell in a room is diluted with acid, flammable and explosive hydrogen gas can be produced. If too much acid accumulates in the waste container, the resulting mixture may be more hazardous than the individual acids used; it increases aggression, especially about the tank inventories. Acids can also be hazardous when mixed with water. This feature is important when cleaning tanks. If there is acid waste in the tank, very dangerous acid droplets can form. Water can also pose a serious hazard.

4.2.11 Various hazardous substances and products

The ninth class, added to the eight main UN hazard classes, does not meet the criteria that can be attributed to any other class; however, it collects under one roof (group) substances and parts that are known to be harmful to individuals or groups. Although class 9 does not initially contain as many elements as other classes, the list is expanding. There are different approaches to using Year 9 in different national and international regulations.

Various hazardous substances and substances are divided into:

- M1: May cause damage by inhalation of fine dust.
- M2: Materials and materials that can release dioxin in the event of a fire.
- M3: Substances capable of giving off flammable vapors.
- M4: lithium batteries.
- M5: Rescue Equipment.
- M6-M8: substances hazardous to the environment.
- M6: liquids for water pollution.
- M7: Water pollution.
- M8: Genetically modified microorganisms and organisms.
- M9-M10: heated substances.
- M9: liquids.
- M10: solids.
- M11: Miscellaneous dangerous goods, not elsewhere classified.

Substances that are not classified in another class and which may be hazardous during transport, and which are not suitable for classification are listed in class 9. There is therefore no serious hazard for substances in this class. Each of the substances in this class has its hazard.

The following label is the transport label for specially heated materials. Dangerous information about content, appearance, symbolism, and color display. eg UN 3258 LIQUID METAL, NOS 9 PG III Risk of fire and burns.

4.3 Packaging group of dangerous goods

Hazardous substances are usually divided into three groups. The packing group is determined by the level of risk associated with the item and determines the precautions to be taken during packing.

Table 11. Dangerous Goods Packing Group

Group I	High hazard
Group II	Medium hazrad
Group III	Low hazard

Explosive substances of the first class, gases of the second class, organic peroxides 5.2, and radioactive substances of the seventh class, dangerous goods are not divided into packing groups. Class 3, flammable liquids, self-igniting substances of category 4.2, flammable gases of class 4, in contact with water, class of flammable properties 5, class of toxic substances 6, class of corrosive substances 8, acidic substances. Packing groups. Class 4.1 flammable solids and nine other hazardous substances are divided into two groups: medium and less hazardous. Infectious substance class 6.2 indicates an average packaging risk.

4.4 Transportation of dangerous goods

Hazardous materials, accidents, quality, and quantity of transported products can cause various physical and chemical effects during handling (heat flux, extreme pressure, toxic, radiological, and corrosive effects, etc.) For this reason, the transport of dangerous goods is regulated within the institutional framework established by national and international law, under the supervision of competent authorities and professional institutions. All modes of transport in the world comply with the law. International legislation indicating the name of the specialized organization and the type of transport is shown in Table 11.

Table 12. Expert Organizations and International Agreements by Type of Transport

Transport Type	Responsible professional organizations	international agreement
Roadway	United Nations Economic Commission for Europe (UNECE)	ADR
Seaway	International Maritime Organization (IMO)	IMDG code
Railway	Central Office for International Transport (OCTI)	DECREASE

Airway	International Civil Aviation Organization (ICAO)	ICAO-TI
Airway	International Air Transport Association (IATA)	DGR
Local Seaway	European agreement concerning the international carriage of hazards along the Rhine route	ADNR-ADN

4.5.1 European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)

In 1957, following the European Convention on the International Carriage of Dangerous Goods, the United Nations must be present in Geneva 1957 to prevent the destruction of people, the environment, property, and other goods. dangerous things, accidents, and insults. and (ADR) (original name Accord européen). ADRs are currently available in 47 countries around the world. Azerbaijan joined the ADR on September 28, 2010.

Purpose of ADR:

- Increased safety in international road transport,
- Regulation on the classification, packaging, labeling, and testing of dangerous goods, including hazardous waste, following its recommendations for the transport of dangerous goods, including hazardous waste, by other modes of transport (sea, air, rail).
- It is about creating conditions for the construction, delivery, and operation of vehicles carrying dangerous goods by road.
- The general features of the ADR Convention are as follows:
- Minimum driving times for driver participation, training programs, and ADR requirements
- Warnings and items for ADR carriage

· Technical characteristics of containers, semi-trailers, containers, and similar containers for the carriage of goods according to ADR

· Delivery of ADR and required documents

· According to ADR, the vehicle owner, driver, and driver,

· Emergency and Emergency Measures and Procedures

·Other equipment and equipment that the driver will and will use,

This agreement regulates the marking and design of technical indicators, vessels and containers. The length of the railways in Azerbaijan decreased from 2792 to 2481 km between 2010 and 2017. The total drive increased from 2079 km to 2132 km. Electric roads have been reduced from 1251 km to 1224 km. The length of unused roads has been reduced from 1251 km to 1224 km. Given the price of the ticket, the railway is still the most popular mode of transport in the world. The train reaching a hundred-speed speed is far behind the planes in terms of comfort. Rail transport in Azerbaijan was able to carry 24 million passengers in a maximum period (1975). In 1990 this number dropped to 11.2 million and in 1995 to 6.3 million. A year later, there was a twofold reduction. Between 1996 and 2009, these numbers fluctuated between 3 and 4 million passengers. In 2017, the result was 2.3 million. The main reason for the decline in the use of rail transport in Azerbaijan in recent years is the absence of comfortable and fast trains. Another reason is the increase in passenger transport. Since 2006, the period of train operation in the country has begun. The problem of passenger safety in rail transport has reached its highest level since 2015. The speed of old trains is 40-50 km / h, which prevents passengers from using these trains. Trains with speeds of up to 50 kilometers per hour are not enough for the 21st century. In developed countries, this speed is 300-400 km / h.

New railways are needed to move modern and high-speed trains in Azerbaijan. Many require direct investment in their construction. However, the state can no longer assume this responsibility for objective reasons. On the other hand, there is the problem of profitability. Azerbaijan is not such a big country. The longest railway line in the country is the Baku-Great-Cut railway and its length is 503 km. If all those billions of dollars of investment go into building a high-speed rail system, then the question arises: What should be the optimal ticket price? Because at least the maintenance costs of this system must be repaid.

Transit freight dominates the ports of Azerbaijan. In 2017, the volume of goods imported and exported by sea accounted for 67.25 percent of the total volume of transit cargo, which was 587 thousand tons, and the volume of transit cargo - 6.8 million tons. The number of shipped goods decreased compared to 2010. So if in 2010 11.7 million tons of cargo was transported, then in 2017 - 8.3 million tons of cargo.

4.5.2 International Maritime Dangerous Goods Act (IMDG)

The International Dangerous Goods Act (IMDG) is a detailed and regularly updated publication of the International Maritime Organization's Subcommittee on Dangerous Goods (IMO).

Assigning a code; The use of safe, uninterrupted, and secure vehicles ensures the safety of coastal shores and coastal areas, as well as the safety of dangerous goods, life, and property.

Bulk packing and packaging of hazardous materials at sea, in the port, supporting the bearing load, unsafe and dangerous loaded place, ports, and logistics centers must be transported and stored on the ship. and events. These hazardous situations must be taken against substances and first aid procedures must be established.

4.5.3 International Air Transport Association (IATA)

The International Air Transport Association (IATA) is an international trade organization that only airlines can join. Following IATA regulations, DGR (Dangerous Goods Regulations). According to these rules; Air transport of dangerous goods applies to all parts of the transport system.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

A set of such problems is known as the Broad Logistics Division — the methods and procedures a country needs to move goods across borders. Forms, laws, geographic features, political and accessible issues remain the basis that characterizes the intensity of state logistics. Information comes from two sources of data: a global survey of logistics professionals in the work environment (eg international carriers and express carriers) who criticize the countries with which they work and exchange; and quantitative information on the fulfillment of key tasks of the supply chain, for example, on the time, costs and procedures for importing and exporting products.

The Republic of Azerbaijan should be recognized as one of the main directions for the development of the non-oil industry, logistics shows that it is a leading force in supporting these areas, as a key tool for connecting various sectors of the economy. Transit goods should be delivered to transport corridors passing through the territory of the state, logistics and exchange centers will be created in the region to effectively use the key geographic location of the state, and the country's attractiveness will increase as the doors are recognized for new businesses. work and qualifications, but also be an important logistics and exchange center in the world. The requirement is to guarantee the aggressiveness of Azerbaijan as a logistics center in the east-west and north-south transport corridors, the time and costs spent on import-export and transit. It is necessary to promote goods, optimize customs strategies and take other important steps in this area, expand road infrastructure along world routes. Hazardous substances are solid, liquid, and gaseous substances that, by their nature, can harm life and people. The development of industrialization overnight increases the use of hazardous materials in this area, so the production and transportation of hazardous materials have increased in recent years. This increase is viewed more closely in light of the risks associated with hazardous substances, and the importance attached to this issue is assessed by many parties such as researchers, businesses, and employees.

Due to the increasing use of dangerous goods, the transportation process is continuous and regular. However, due to the damage, they cause to the environment and people in general, the transport of dangerous goods is a problem that needs to be treated more carefully than with conventional transport. The routes used for the transportation of dangerous goods pass through or near settlements, which requires

more detailed measures than for other modes of transport. The adoption of the necessary security measures cannot be left to the discretion of individuals and the use of advanced technologies in the field of transport. All measures must be regularly and accurately monitored. The transportation of dangerous goods must be improved through silent and advanced handling technologies. Existing problems should not be viewed as a whole, and decisions must be made. Product structure is not the only factor to consider when transporting dangerous goods. In addition, many aspects need to be considered, such as distance, cost, training, and skills of personnel, climatic conditions, vehicle design. In addition, it is not only the danger of hazardous substances during transport but also the treatment, disposal, or storage of waste resulting from the substances used for production.

Dangerous goods can be transported separately by sea, air, rail, and road, or by multiple modes of transport, which we call intermodal transport. Although there is a less dangerous railway in Azerbaijan, most dangerous goods are transported by road. The availability of road transport in terms of time and maneuverability allows institutions to choose this mode of transport. In addition, easy access to many regions by road may be another reason for preference. However, the current danger has increased significantly due to the construction of residential areas around highways and less control in this area. The low cost of transporting dangerous goods by rail and other modes of transport supports the economic position of companies and poses less risk to human health and the environment. However, since the railway infrastructure in Azerbaijan is still insufficient, the lack of access to all regions required by the shipper reduces the demand for this type of transport.

During the transport of dangerous goods, from the loading of the substance to the purchaser, all personnel performing operations such as transport, packaging, loading, and unloading must perform the necessary duties. To avoid potential risks, it is necessary to share knowledge and experience between individuals and institutions. In this respect, institutions using both modes of transport must show great willingness and caution in carrying out their duties. The loader must be responsible for all stages of the movement of the vehicle from the place of loading to the place of unloading and ensure the control of the line. Since the risk is higher in the transport of dangerous goods, institutions must carry out a risk assessment. This assessment provides alternative ways to assess transport standards and carrier flexibility, reduce the risk of accidents and improve safety at all stages of transportation. The most

important task in the transport of dangerous goods falls on the parties carrying out the transport. The company and its employees inevitably receive all the necessary training. All employees of companies that manufacture or transport dangerous goods must be aware of the risks associated with the work being performed. It starts with knowing all the properties of this conscious substance and understanding how to intervene in the event of any danger. For this reason, in addition to the training they receive to obtain the SRC 5 (Certificate of Professional Competence), all company employees must be aware of the concept of dangerous goods. The most basic information should be provided on many subjects, such as classes of substances, possible damage to these substances, causes, and consequences of accidents, national rules and regulations. All police officers working in the bar must carry out their duties with a sense of responsibility.

International regulations for the transport of dangerous goods comply with international standards for content. However, the lack of sufficient infrastructure in our country and the fact that our country is developing economically makes it difficult to comply with the relevant regulatory requirements in our country. For this reason, the parties endowed with government agencies in this area can create a more regular system by adopting the appropriate provisions suitable for our country in terms of the applicability of rules and companies. Regulations, directives, or laws regarding the transport of dangerous goods in our country must be followed more closely to emphasize the importance of risk in this area and to ensure that it is enforced with severe sanctions. But, unfortunately, our country lacks supervision and regulation in this area.

The whole process from the production of dangerous goods to the delivery of goods - from the beginning of risks to the end. The first and most important element of this transport is the assessment of the transport risk that can lead to the death of people as a result of an accident. Having studied most of the world literature, it becomes clear that most of the research in this area is devoted to risk assessment. Unfortunately, the fact that such an important issue is the subject of very little research in our country shows that we are not sufficiently aware of it. In the literature, road transport of dangerous goods has shown less interest in rail transport, which is associated with lower risks and costs. There is generally very little research on this topic in this literature. Most of the research was organized using information obtained from foreign sources. Research is needed in this area so that it can be recommended by

institutions and staff, provided that the transport of dangerous goods is possible primarily through training.

As a result, dangerous goods represent a mode of transport that poses a full risk of damage during transport and must be segregated from normal transport in every area. The most important task here is employers and government agencies. Since dangerous goods are transported in our country, state bodies authorized to transport by road will follow the relevant rules in detail, strengthening the necessary control measures, especially in areas close to residential areas. Companies should take this matter more seriously to avoid the slightest mistake that can arise since the relevant documents or requests should be under the control of the state. Company employees should not be limited to teaching the concept of hazardous substances, but should also raise awareness about things like seminars and conferences. The international rules must be sufficient and detailed to extend this area to the state so that it can apply the international rules following the conditions of our country. Implementing the necessary infrastructure and cost agreements can help improve the adequacy of current demand. Expanding research to the not only government but also academia can help companies in this area by offering different perspectives

SURVEY

Company name	”AZ Logistika and Management Services”	FREIGHT.AZ	LOGIST.az	Autolux Azerbaijan	Haval Azerbaijan	Globalink Logistics	Hikmetoglu transport
Services	International transportation Transportation of dangerous goods Transportation of sewage and industrial water Transportation of heavy loads	Services Shipping by sea Transportation by rail Transportation by road Air transportation Container transportation from Poti Group service Special services	3 PL logistics Value added services Warehouse operations Customs clearance	Automobile sale	Automobile sale	Services Shipping by sea Transportation by rail Transportation by road Air transportation	Value added services

		Transportation of containers from America to Azerbaijan Transit customs service Storage service Cargo tracking Import of cars from South Korea By request Logistics courses Tests and certificates in logistics					
Sectors	Logistics	Logistics	Logistics	Automobile	Automobile	Logistics	Logistics
Are you satisfied from		The sea and air	20% of our	Generally	We are		20% of

logistics services in Azerbaijan?		roads are perfect in Azerbaijan. That's why we prefer international logistics. Domestic logistics does not work well so we earn unsatisfied customers	customers are unsatisfied because of delays	yes, we are happy with the logictic services except truck accidents.	representative of the Haval that has logistics services. But sometimes we also use other company's' services and we are happy with them		our customers are unsatisfied because of delays

Are your customers satisfied from your services?	Most of them yes, but as a company we have sometimes unsatisfied customers because of delays. Delays come from traffics and worse roads.					The sea and air roads are perfect in Azerbaijan. That's why we prefer internationa l logistics. Domestic logistics does not work well so we earn unsatisfied customers	
How do you contact with logistic companies?				We have one logistics		Via the internet	

				company (secret)			
How do customers contact with you?	Customer brings customer Via the internet	Via the internet	Via the social media		Via the internet	Customer brings customer Via the internet	Via the internet
What is the biggest problem? How to solve the problem?	Roads of Azerbaijan. Most of time they are closed because of reparation	Roads	Economy (conditions of Azerbaijan companies are worse because of the crisis	Nowadays in Azerbaijan everyone brings car from abroad. There is a big competition for logistic companies	Too many imported cars	International logistics law of Azerbaijan	Roads of Azerbaijan. Most of time they are closed because of reparatio

				and for us			n
Do you think that there is an industry skills gap in logistics, transportation, and distribution?	Yes	Yes	No	No	No	Yes	no
What percentage of your work relies on standards and regulation?	30	70	50	80	90	10	20
Do you have access to relevant, professional industry training in logistics, transport and distribution?	Yes	Yes	Yes	Yes	Yes	Yes	yes
How important are the following competencies in the logistics, transport, and distribution profession today?							
Broad understanding of the end to end supply chain	Not important	Important	Important	Very important	Very important	Important	Not important

Capacity Planning and Demand Management	Important	Not important	Very important	Very important	Important	Not important	Very important
Order Management	Very important	Very important	Important	Important	Important	Important	Important
Inventory and Warehouse Management	Very important	Not important		Not important	Not important	Important	Important
Transportation Management	Important	Important	Very important	Very important	Important	Important	Very important
Global Logistics	Very important	Important	Very important	Very important	Important	Very important	Very important

Logistics Network Design	Very important	Very important	Important	Not important	Very important	Very important	Very important
Reverse Logistics and Sustainability	Very important	Very important	Important	Important	Not important	Not important	Very important
Dispatching	Very important	Important	Not important	Not important	Important	Not important	Very important
Risk Management	Not important	Very important	Very important	Very important	Important	Important	Important
Security and hazardous	Important	Very important	Not	Very	Very	Important	Not

materials regulations			important	important	important		important
Strategic sourcing and purchasing	Not important	Important	Important	Very important	Very important	Very important	Very important
Locating facilities	Not important	Not important	Not important	Important	Not important	Important	Very important
Supply chain synchronisation	Very important	Very important	Not important	Very important	Very important	Not important	Very important

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