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COMPARATIVE ANALYSIS OF THE T1 TRANSIT PROCEDURE AND TIR SYSTEM: INSTITUTIONAL AND COST EFFICIENCY PERSPECTIVES FROM AZERBAIJAN

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Resume

The role and effectiveness of the T1 customs procedure in international transit transportation were examined in this study. It analyzes the legal framework, operational mechanism, and impact of the T1 procedure on logistics processes, while comparing its characteristics with the TIR system within the Common Transit (CT) framework. The findings demonstrate that the T1 procedure enhances customs control, reduces transit time and logistics costs, and strengthens risk management. Furthermore, the implementation of the New Computerised Transit System (NCTS) improves the transparency, traceability, and operational efficiency of transit operations, thereby facilitating regional trade integration. However, the geographical scope of the T1 procedure remains limited to the European Union (EU) and European Free Trade Association (EFTA) countries, restricting its wider application in global transit transport.

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1 Introduction

International trade constitutes a fundamental pillar of the modern global economy, playing a crucial role in strengthening economic interdependence among countries. In this context, the efficiency of freight transportation largely depends on the proper design and effective implementation of customs procedures. Transit transportation, defined as the movement of goods under customs supervision across national borders, ensures the continuity, predictability, and stability of international trade flows [1-2]. The ongoing standardization and digitalization of transit procedures further enhance logistics performance by reducing operational costs and shortening delivery times [3-5]. Within this framework, the T1 document represents a key customs instrument. Operating under the Common Transit (CT) system, it facilitates the secure and controlled movement of goods across the European Union and EFTA territories [4, 6]. The T1 procedure

ensures that goods remain under continuous customs supervision throughout the entire transit process, while also providing customs authorities with essential data for monitoring and control purposes [1-2]. Beyond its regulatory function, the system significantly contributes to improving logistical efficiency, reducing administrative and transportation costs, and increasing operational flexibility for transport operators [7-8]. When compared to the TIR system, the T1 procedure is generally regarded as a more regionally efficient and administratively flexible alternative for transit operations.

Comparative studies indicate that the Common Transit system provides advantages in customs integration, electronic data exchange, and risk management mechanisms [6, 8]. In this research was investigated the role of the T1 document in international transit, focusing on its operational mechanisms and its impact on logistics performance, cost reduction, and trade facilitation [9-10].

2 Historical development and legal basis of the T1 procedure

The TIR system is not considered as a fully universal mechanism for all the transit operations; therefore, many carriers and logistics operators have increasingly searched for alternative transit solutions [8, 11]. The need for an alternative transit regime within Europe emerged in 1968 following the adoption of the Common Customs Tariff in the European Economic Community (EEC) and the progressive harmonization of customs legislation among Member States [1, 6]. The establishment of a unified customs framework and the enlargement of the European integration area contributed to the signing of the Common Transit Convention and the Single Administrative Document Convention in 1987. On this legal basis, the Common Transit (CT) procedure was officially developed and later implemented across the European Union and EFTA (European Free Trade Association) countries, including Switzerland, Liechtenstein, Norway, and Iceland [1, 6].

In subsequent years, the Common Transit system expanded significantly and was joined by several European and neighboring countries, including the Czech Republic, Slovakia, Hungary, Poland, Bulgaria, Romania, Turkey, Ukraine, Slovenia, Lithuania, Latvia, and Estonia [6]. As of 2025, the geographical scope of the CT system has continued to broaden due to increasing regional economic integration and trade facilitation initiatives [4, 6].

The CT procedure is divided into two principal regimes: external transit and internal transit. External transit applies to goods entering the European Union from the third countries and governs their transportation within or through EU/EFTA territories under customs supervision. In such cases, the T1 document is issued for international transit operations [1, 6]. Internal transit, referred to as the T2 procedure, applies to goods originating within the EU that are transported between Member States or through EFTA territories while maintaining their customs status [1].

Transit operations under the CT procedure are permitted only when an appropriate financial guarantee is submitted to the customs office of departure. This guarantee is provided by the principal responsible for the transport operation and may take the form of a cash deposit or a bank guarantee [1]. In the case of non-compliance with customs regulations, the principal bears full responsibility for customs duties, taxes, and other financial liabilities. If goods transported under the T1 procedure fail to arrive at the designated customs office, the principal remains liable for all customs obligations associated with the shipment [1-2].

The main customs document used within the CT system is the Single Administrative Document (SAD), which serves as the standard customs declaration form for import, export, and transit operations across EU/EFTA territories [1, 6]. The principal or an authorized

customs representative is responsible for declaring the goods and ensuring their proper delivery to the customs office of destination. The SAD contains multiple copies intended for export control, import clearance, transit monitoring, and statistical purposes [6].

In practical application, the T1 transit declaration is completed by the principal or customs agent using specific copies of the SAD form at the customs office of departure. Separate copies are used for the office of departure, the office of destination, return confirmation procedures, and customs statistics [4, 6].

The T1 procedure is widely regarded as an effective alternative to the TIR Convention guarantee mechanism. Although both systems pursue similar objectives in facilitating international transit operations, the primary distinction lies in their guarantee structures. Under the TIR system, the guarantee is provided through an international guaranteeing association coordinated by the IRU, whereas under the T1 procedure, transport operators may directly cooperate with customs representatives or use national guarantee systems operating within EU/EFTA territories [2, 8].

Compared to the TIR system, the T1 procedure offers several operational advantages. It does not require separate international guarantee fees or association membership contributions, which may reduce transportation costs and administrative burdens for carriers [7-8, 12]. In addition, the absence of strict limitations on the number of unloading or delivery points per vehicle increases operational flexibility, particularly for consolidated cargo transportation and multimodal logistics operations [8].

Overall, the CT/T1 procedure is considered as more advantageous than the TIR system in several operational and administrative aspects, particularly within the European transit environment [8]. Nevertheless, certain limitations remain. The geographical scope of the T1 procedure is restricted primarily to EU and EFTA territories, while the transit through third countries may still require additional guarantees under alternative systems, such as TIR [1-2]. Furthermore, unlike the globally recognized TIR mechanism, the CT system remains predominantly regional in nature and is mainly limited to the European customs area [6, 11].

3 Literature review

International trade facilitation and customs transit systems have been extensively analyzed in the academic literature as key determinants of global logistics performance and international trade efficiency. Empirical studies demonstrate that improvements in customs procedures, logistics infrastructure, and regulatory harmonization significantly enhance trade flows while reducing transaction and transportation costs between countries [9, 13-14].

A substantial body of research highlights the

important role of international organizations such as the World Trade Organization (WTO) and the World Customs Organization (WCO) in establishing global standards for trade facilitation and customs modernization. In particular, the WTO Trade Facilitation Agreement (TFA) and the WCO Revised Kyoto Convention are widely recognized as foundational legal instruments for simplifying customs procedures, improving transparency, and harmonizing border control mechanisms [2, 15]. These international frameworks provide the institutional basis for development of modern transit systems and digital customs environments [2].

Within this context, the Logistics Performance Index (LPI) and related World Bank studies indicate that countries possessing more efficient customs systems and advanced logistics infrastructure achieve higher levels of international competitiveness and trade integration [10, 16-17]. Reports published by the OECD further confirm that trade facilitation measures contribute directly to reducing border delays, increasing supply chain reliability, and improving the efficiency of international logistics corridors [5, 18].

The Common Transit (CT) system and the T1 procedure represent important regional customs instruments within the European transit environment. According to European Commission reports, the implementation of the New Computerised Transit System (NCTS) has significantly improved the transparency, efficiency, and risk management capacity of transit operations within EU and EFTA territories [4]. Furthermore, the Union Customs Code established a harmonized legal framework that strengthened customs cooperation and standardized transit procedures across Member States [1].

Comparative studies examining the T1 (CT) and TIR systems indicate that, while the TIR system provides a globally recognized guarantee mechanism suitable for long-distance international transport, the T1 procedure demonstrates greater operational efficiency within integrated regional markets such as the European Union due to its digital infrastructure and harmonized customs regime [2, 8]. Reports issued by UNECE confirm that the TIR system remains particularly important for international transit operations extending beyond the EU customs territory and involving multiple third countries [6, 19].

Digitalization has emerged as one of the main drivers of efficiency in customs transit systems. Research demonstrates that electronic declarations, automated customs procedures, real-time data exchange, and risk-based control mechanisms substantially improve customs performance while reducing administrative burdens and transit delays [2, 4, 20]. In this regard, the implementation of the NCTS is considered a major institutional innovation within the broader process of European customs modernization [4].

Regional integration initiatives, such as the Middle Corridor and Eurasian transport networks, have further

increased the strategic importance of efficient transit systems. Studies published by the OECD emphasize that improvements in corridor performance, logistics infrastructure, and customs coordination are essential for strengthening trade connectivity between Europe and Asia [5, 21].

From a theoretical perspective, transport geography and logistics management studies underline the importance of inland connectivity, port regionalization, and supply chain coordination in improving the international trade efficiency [22-23]. In parallel, customs modernization has become increasingly associated with supply chain security, institutional reforms, and integrated logistics governance [2, 8].

Finally, comparative analyses of international transit systems suggest that the effectiveness of customs procedures depends primarily on three interrelated factors: legal harmonization, digital infrastructure, and geographical coverage [4, 8, 24]. While the T1/CT system demonstrates the high operational efficiency within the EU/EFTA region, the TIR system remains more appropriate for global-scale transit operations extending beyond the European customs area [2, 6]. This dual structure reflects the coexistence of regional and global transit governance models in the contemporary international trade and logistics system.

4 Research methodology

In this study was employed a qualitative research design based on document analysis, comparative policy analysis, and descriptive statistical analysis to evaluate the role of the T1 transit procedure in facilitating international trade and export operations. Qualitative document analysis is widely recognized as an appropriate methodological approach for examining customs regulations, institutional frameworks, and trade facilitation policies because it enables the systematic interpretation of official documents, legal instruments, and policy reports [1, 10]. In logistics and customs research, this approach is frequently used to evaluate institutional mechanisms where direct experimental or survey-based data are unavailable [8].

The study relied exclusively on the secondary data obtained from internationally recognized organizations and official government institutions. The principal sources include publications of the European Commission, UNECE, OECD, World Bank, the State Customs Committee of the Republic of Azerbaijan, and the State Statistical Committee of Azerbaijan. These sources provide verified information on the legal framework of the Common Transit (CT) system, operational characteristics of the T1 procedure, customs modernization, trade facilitation measures, logistics performance, and Azerbaijan's export and transport statistics [4, 16].

To examine the institutional characteristics of

the T1 procedure, in this research was applied the comparative policy analysis. Comparative analysis is widely used in transport and logistics studies to identify similarities and differences between customs transit systems operating under different legal and organizational frameworks [8]. In this study, the T1 procedure operating within the Common Transit system was compared to the TIR system in terms of customs guarantees, administrative requirements, geographical coverage, operational flexibility, digitalization, and logistics efficiency. This comparison allows for the identification of the operational advantages and limitations of both transit mechanisms under different transport conditions.

The empirical component of the study is based on descriptive statistical analysis. Official statistical data covering the period 2020-2025 were collected to analyze the dynamics of Azerbaijan's exports, the geographical distribution of exports, the development of non-oil exports, and the role of road transport in export logistics [16]. Descriptive statistical techniques, including trend analysis, percentage analysis, and comparative assessment, were employed to identify changes in export structure and transport performance over time.

Furthermore, in the study was conducted a comparative cost analysis of the T1 procedure and the TIR Carnet using official tariff and guarantee information available through the Common Transit System and related customs authorities [4, 6]. The analysis examined how guarantee requirements, insurance premiums, and administrative costs vary according to the invoice value of transported goods. Based on these comparisons, in the study was evaluated the economic suitability of the T1 procedure for different cargo value categories and identifies the approximate threshold at which the TIR system becomes a more cost-efficient alternative.

It should be noted that the primary data collection methods, such as surveys, interviews, or field experiments, were not employed in this research. Therefore, the findings should be interpreted as an institutional and comparative assessment based on verified secondary sources rather than as evidence of direct causal relationships between the implementation of the T1 procedure and export growth. Instead, the analysis' aim was to explain how the institutional characteristics of the T1 procedure-including customs harmonization, electronic transit management, and flexible guarantee mechanisms-may contribute to improving logistics efficiency and facilitating international trade within the Common Transit area [1, 4].

The combination of document analysis, comparative policy analysis, descriptive statistical analysis, and comparative cost assessment provides a comprehensive methodological framework for evaluating the effectiveness of the T1 transit procedure from legal, institutional, operational, and economic perspectives. This mixed qualitative-descriptive approach has been

widely adopted in previous studies examining customs modernization, trade facilitation, and international logistics performance [1, 8].

4.1 Analysis of the role and effectiveness of the T1 document in international transit

The efficiency of customs procedures in international transit transportation is widely recognized as one of the principal determinants of overall logistics chain performance and trade competitiveness [9, 13]. Within this context, the T1 procedure, operating under the framework of the Common Transit (CT) system, serves as an important institutional mechanism ensuring the secure, rapid, and cost-efficient movement of goods under customs supervision across EU and EFTA territories [1, 6]. The effectiveness of the T1 document may be evaluated through several criteria, including optimization of customs control procedures, reduction of transit time, management of financial risks, lowering of administrative costs, and enhancement of operational flexibility [2, 8]. Empirical and institutional studies indicate that the T1 procedure demonstrates the high efficiency among regional transit systems across most of these dimensions [2, 8].

One of the primary advantages of the T1 procedure is the standardization and legal harmonization of customs processes. The unified customs framework implemented within the European Union and EFTA countries, strengthens cooperation and mutual trust among customs authorities while minimizing redundant inspections during transit operations [1, 6]. This harmonized system facilitates the uninterrupted movement of goods, reduces delays at border crossing points, and contributes to the continuity and reliability of international logistics chains. Furthermore, the implementation of electronic customs systems and digital transit declarations significantly increases procedural transparency and reduces dependence on manual administrative processes [4, 6].

The positive impact of the T1 procedure is also evident in terms of transit time reduction and logistics cost optimization. Electronic data exchange systems, automated customs processing, and pre-declaration mechanisms substantially reduce waiting times at border crossings, thereby decreasing vehicle idle time and fuel consumption [2, 4]. As a result, transportation operators benefit from the lower operational expenses and improved delivery time predictability, which contributes to higher logistics efficiency and customer reliability [9, 13].

An additional advantage of the T1 procedure is its flexible guarantee mechanism, which enables customs duties and taxes to remain suspended throughout the transit operation until the goods reach the customs office of destination [1-2]. The financial responsibility assigned to the principal enhances the efficiency of customs

administration while reducing administrative burdens for transport operators participating in the Common Transit system [1, 8].

From a risk management perspective, the T1 procedure is closely aligned with modern customs control principles and risk-based supervision mechanisms. The assignment of financial responsibility to the principal reduces fiscal risks for customs administrations and ensures more effective enforcement in cases of transit irregularities or customs violations [1-2, 25]. In addition, differentiated risk assessment procedures enable customs authorities to accelerate the clearance of low-risk consignments while concentrating inspections on high-risk shipments [1-2].

Operational flexibility constitutes another important advantage of the T1 procedure. The absence of strict limitations regarding the number of unloading or delivery points per vehicle increases efficiency in consolidated cargo transportation, multimodal operations, and partial shipment logistics [8]. Consequently, the T1 system functions not only as a customs control instrument but as an effective logistics optimization mechanism, as well, supporting modern supply chain management [7-8].

Nevertheless, the T1 procedure also possesses certain limitations. The most significant constraint relates to its geographical scope, which remains primarily limited to EU and EFTA territories [1, 6]. When the transit operations involve third countries outside the Common Transit framework, additional guarantee systems and customs procedures may be required, potentially increasing administrative complexity and affecting operational continuity [6, 11].

The analysis demonstrates that the T1 procedure represents a highly efficient institutional mechanism for international transit operations within the EU/EFTA region [1, 6]. Through the acceleration of customs procedures, reduction of logistics costs, improvement of risk management mechanisms, and enhancement of operational flexibility, the T1 system provides an effective regional solution for modern international transit transportation and trade facilitation [5, 8].

4.2 Selection of the optimal transit document based on invoice value of goods

In international road transport operations, selecting the appropriate customs transit document depends on several economic and operational factors, including the invoice value of the goods, customs territory coverage, guarantee requirements, and the geographical scope of the transport operation [2, 6, 8].

The TIR Carnet remains one of the most widely used international customs transit documents under the framework of the TIR Convention [2, 6]. The cost of the TIR Carnet generally depends on the number of sheets included in the carnet. For example, a 6-sheet TIR Carnet costs approximately 100 \$, while a 16-sheet carnet costs

around 185 \$. These values may vary according to the daily exchange rate between the Swiss franc and the Azerbaijani manat determined by the Central Bank of the Republic of Azerbaijan. The TIR system also operates through an international guarantee chain that secures customs duties and taxes throughout the transit operation [2, 6].

By contrast, the T1 transit procedure, which is applied within the Common Transit system, follows a different guarantee structure. Under this procedure, customs duties and taxes applicable to goods originating from non-EU countries remain suspended throughout transit and become payable only after the goods arrive at the customs office of destination [1]. The T1 declaration simultaneously serves as both a transit declaration and a financial guarantee instrument covering the potential customs liabilities [1, 6].

Unlike the TIR system, the T1 procedure does not require participation in the international TIR guarantee chain. Instead, financial responsibility is assumed by the principal under the Common Transit framework, providing greater flexibility in guarantee management and reducing certain administrative costs associated with regional transit operations [1-2, 8]. In addition, electronic declaration processing and harmonized customs procedures improve the administrative efficiency, shorten border-crossing times, and enhance transparency throughout the transit process [2, 4].

The choice between the TIR Carnet and the T1 procedure therefore depends primarily on the characteristics of the transport operation. For transit movements extending beyond the geographical scope of the Common Transit area, particularly those involving multiple non-member countries, the TIR system generally offers broader international applicability under a globally recognized legal framework [2, 6]. Conversely, for transport operations conducted entirely within the Common Transit territory, the T1 procedure provides greater administrative flexibility, simplified customs formalities, and potentially lower overall operational costs [1, 8].

The invoice value of the goods also plays an important role in selecting the most appropriate transit document. Since the financial guarantee under the T1 procedure is directly related to the customs duties and taxes potentially payable on the transported goods, higher-value consignments may require correspondingly larger guarantees. In contrast, the cost of the TIR Carnet depends primarily on the type and number of carnet sheets rather than on the commercial value of the cargo. Consequently, the economic efficiency of each procedure varies according to shipment value, customs liability, transport route, and guarantee requirements.

The selection of the optimal transit document should be based on a comprehensive assessment of shipment characteristics, customs obligations, geographical coverage, and operational requirements, rather than on a single cost criterion. Such an approach enables

transport operators to optimize customs compliance, minimize logistics costs, and improve the efficiency of international transit operations.

4.3 Comparative analysis of T1 transit document costs based on cargo invoice value

Analysis of T1 transit document tariffs shows that for every additional USD 5,000 of cargo value, a guarantee of approximately USD 932 is required. Specifically, when the invoice value of goods ranges from USD 29,500 to USD 100,000, an additional USD 932 guarantee is applied for each incremental USD 5,000 of cargo value, while insurance premiums increase by approximately USD 2-5 at each step.

For the cargo valued between USD 100,000 and USD 200,000, the guarantee amount increases to approximately USD 1,863 for each additional USD 10,000 of cargo value. Similarly, for goods valued between USD 200,000 and USD 300,000, the guarantee increases to approximately USD 2,795 per additional USD 15,000, while for shipments valued between USD 300,000 and USD 490,000, the guarantee reaches approximately USD 3,726 per additional USD 20,000. Insurance premiums also increase progressively, generally rising by USD 5-10 for each additional USD 5,000-10,000 of cargo value and by approximately USD 10-15 for higher value intervals.

Based on the comparative analysis of the presented data, it can be observed that the applicability of the T1 transit document and the TIR Carnet is directly linked to the invoice value of goods.

The T1 transit procedure is based on a variable economic model in which the guarantee obligations and service fees increase progressively with the invoice value of cargo [1, 8]. As shown in the data, for low-value shipments, both the guarantee requirement and overall cost of the T1 procedure remain relatively low. However, as cargo value increases, the required guarantee rises significantly, resulting in a higher financial burden and reduced cost efficiency. In particular, for goods approaching or exceeding USD 100,000, the T1 mechanism becomes less economically efficient due to the immobilization of working capital and additional financial costs.

In international road transport, the TIR system is based on a unified customs guarantee principle with a maximum coverage of EUR 100,000 [2, 6]. This feature is considered one of the main advantages of the TIR Carnet. Regardless of the cargo value, the guarantee remains fixed, and carriers can transit through multiple countries without requiring additional national guarantee mechanisms. As a result, administrative procedures are simplified, border crossing times are reduced, and overall logistics efficiency is improved [2].

In practical logistics, the EUR 100,000 threshold (approximately USD 119,000) is considered as a critical

break-even point. Below this level, the T1 procedure may be more cost-effective due to lower service fees and flexible guarantee structures. However, above this threshold, the TIR system becomes more economically and operationally efficient, as it eliminates additional financial burdens and ensures faster transit execution [8].

For example, under the TIR system, a shipment valued at EUR 100,000 is covered by an equivalent guarantee without additional increases. In contrast, under the T1 system, the same shipment may require significantly lower effective guarantee coverage (approximately USD 22,165 in comparative estimates). At the same time, the TIR system does not impose additional guarantees for cargo exceeding EUR 100,000, whereas in the T1 system, guarantees continue to increase with cargo value.

It can be concluded that while the T1 procedure may still provide adequate coverage for high-value shipments, it is associated with higher service-related costs (approximately USD 425 in total estimates). In contrast, the TIR Carnet requires an average fee of approximately USD 103 (or USD 187 for a 16-page carnet), while providing full-value guarantee coverage. Therefore, the TIR system becomes more advantageous when the scale of transport operations and associated risk justify the fixed cost structure [2, 8].

In general, the attractiveness of the T1 system increases for the low-value cargo and low-risk transport routes. Considering that transit risks in European-bound exports are relatively lower, service fees may constitute a significant share of total logistics costs, making the T1 procedure more attractive for certain carriers [8].

On the other hand, access to the TIR system requires formal membership in an international guarantee chain, involving several administrative procedures. In some cases, incomplete documentation or non-compliance with requirements may delay access to the system. In this context, the T1 procedure can be considered a more accessible alternative [2, 6].

4.4 Export and transport structure in the Republic of Azerbaijan

In recent years, the foreign trade turnover of the Republic of Azerbaijan has demonstrated a significant upward trend. Total foreign trade increased from USD 24.472 billion in 2020 to USD 49.423 billion in 2025, representing more than a twofold growth. During the same period, export volumes rose from USD 13.741 billion to USD 25.043 billion, reflecting an increase of approximately 1.82 times.

Moreover, since Georgia joined the Common Transit (CT) system as of 1 February 2025, local carriers can now access this system electronically through authorized customs brokers and digital platforms, further enhancing

its accessibility and operational efficiency [4, 6].

Export performance reached its peak in 2022, when the total exports amounted to USD 38.147 billion. This increase was largely driven by a substantial rise in exports to the European Union, which nearly doubled and reached approximately USD 25 billion in the same

period. When exports are classified by destination regions-European Union (EU), Commonwealth of Independent States (CIS), and other countries-it is observed that the EU accounts for the dominant share of approximately 67.7%, indicating its strategic importance in Azerbaijan's foreign trade structure.

Table 1 Illustrates the estimated cost structure of the T1 procedure and the related guarantee obligations depending on the invoice value of transported goods, [26]

Value of goods, \$	Guarantee amount, \$	Insurance premium, \$
29,500	5,305	105
35,000	6,329	110
40,000	7,261	112
45,000	8,192	115
50,000	9,124	120
55,000	10,055	125
60,000	10,987	130
65,000	11,918	132
70,000	12,850	135
75,000	13,781	137
80,000	14,713	140
85,000	15,644	145
90,000	16,576	148
95,000	17,507	152
100,000	18,439	155
110,000	20,302	160
120,000	22,165	170
130,000	24,028	175
140,000	25,891	185
150,000	27,754	190
160,000	29,617	195
170,000	31,480	205
180,000	33,343	210
190,000	35,206	215
200,000	37,069	225
215,000	39,863	235
230,000	42,658	245
245,000	45,452	255
260,000	48,247	265
275,000	51,041	275
290,000	53,836	285
310,000	57,562	300
330,000	61,288	320
350,000	65,014	330
370,000	68,740	350
390,000	72,466	360
410,000	76,192	370
430,000	79,918	385
450,000	83,644	400
470,000	87,370	415
490,000	91,096	425

In parallel, non-oil exports have also shown strong growth dynamics. Compared to 2020, non-oil exports have nearly doubled, reaching USD 3.6 billion and accounting for 14.5% of total exports, which represents the highest recorded share in the analyzed period. This trend reflects ongoing diversification efforts in the national export structure and a gradual reduction in dependence on the oil and gas sector.

The data for 2020-2025 indicate that Azerbaijan's export structure is increasingly oriented toward the European market, while non-oil sector development is gradually strengthening its role in the national economy. These structural changes also have direct implications for transport and logistics systems, particularly in relation to transit efficiency and integration into international supply chains.

Table 1 presents the estimated cost structure of the T1 transit procedure according to the invoice value of the transported goods. The results indicate a direct relationship between the value of the goods and both the required guarantee amount and the insurance premium. As the invoice value increases, the guarantee obligations and insurance costs also rise proportionally, reflecting the higher financial risk associated with higher-value shipments.

4.5 Analysis of export growth and transport structure

The increase in export volumes in Azerbaijan has been accompanied by a corresponding growth in transportation activities. Total freight transportation increased from 42.407 million tons in 2000 to 51.283 million tons in 2023, reaching 47.595 million tons in 2025. More than 88% of these transport operations are attributed to pipeline (stationary) transportation,

indicating its dominant role in the country's logistics system.

The road transport of export goods has also shown a steady upward trend. In 2000, road freight exports amounted to 1.395 million tons, while by 2025 this figure had increased to 2.7084 million tons, representing a growth of approximately 94%.

Over the same period, pipeline transportation increased by around 10%, reflecting its relatively stable but less dynamic structure compared to road transport.

The share of the road transport in total exports (excluding pipeline transport) has increased significantly from 34.6% to 47.4%, demonstrating a gradual shift toward more flexible and responsive logistics modes. In value terms, the road transportation accounts for approximately 62.6% of total export operations (excluding pipeline transport), highlighting its strategic importance in Azerbaijan's foreign trade logistics.

Overall, the data indicate that the road transport plays a crucial role in export logistics by enhancing efficiency, flexibility, and international market accessibility.

In Figure 1 shows a bar chart of Azerbaijan's exports by three country groups-CIS, EU, and Others-as percentage shares for the years 2020–2025. The EU's share increased from 49.5% in 2020 to 65.6% in 2022. It then decreased slightly to 64.4% in 2023 and 63.3% in 2024 before increasing again to 67.7% in 2025. In contrast, the share of the Others group decreased steadily from 41.0% in 2020 to 25.3% in 2025.

The CIS had the smallest share during the whole period, decreasing from 9.5% in 2020 to 4.3% in 2022 and then increasing gradually to 7.1% in 2025. Overall, the figure shows that the EU's share of Azerbaijan's exports increased, the share of the Others group decreased, and the CIS maintained a small share throughout the period.

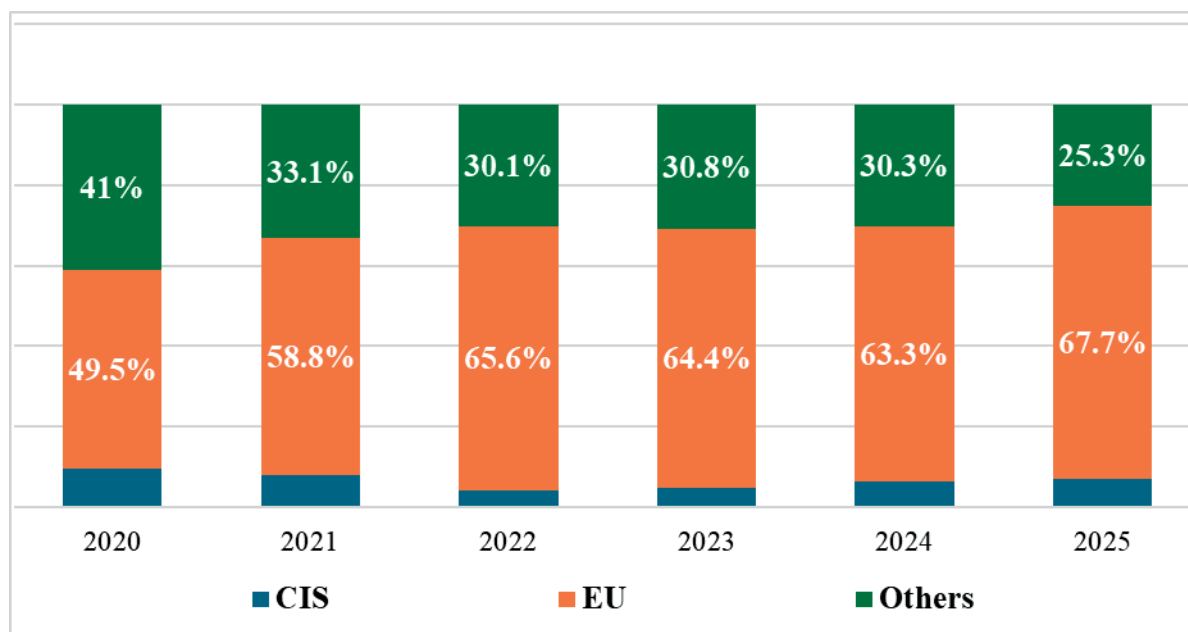


Figure 1. Export of the Republic of Azerbaijan by Country Groups, share (%)

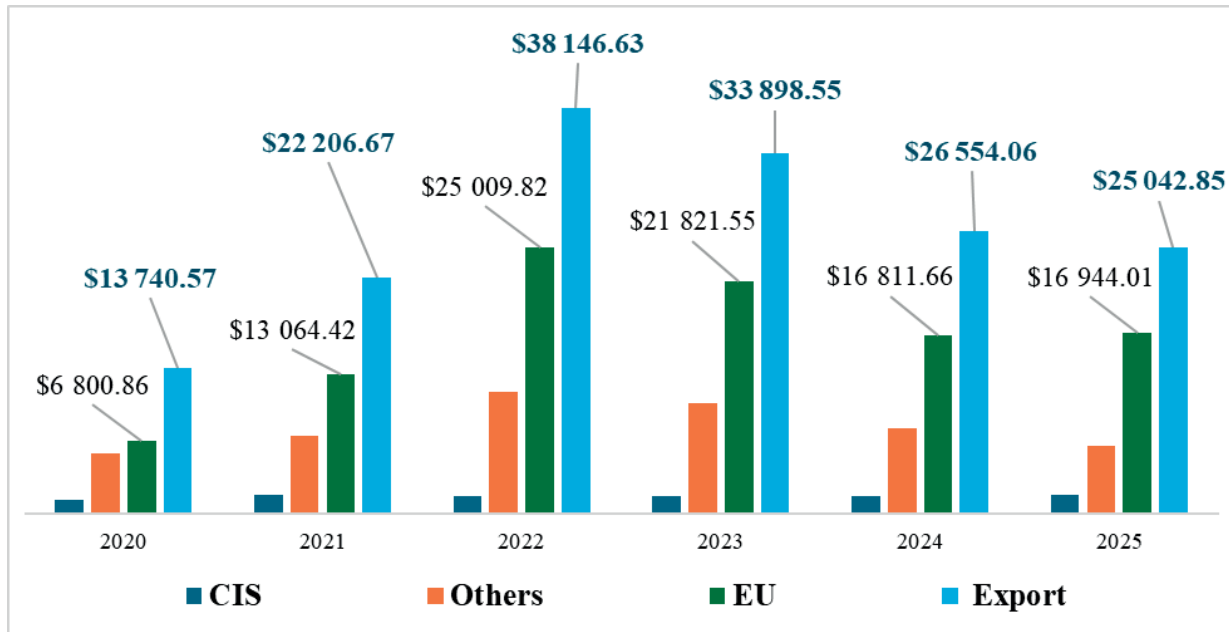


Figure 2 Export of the Republic of Azerbaijan, by Country Groups, billion USD, [27]

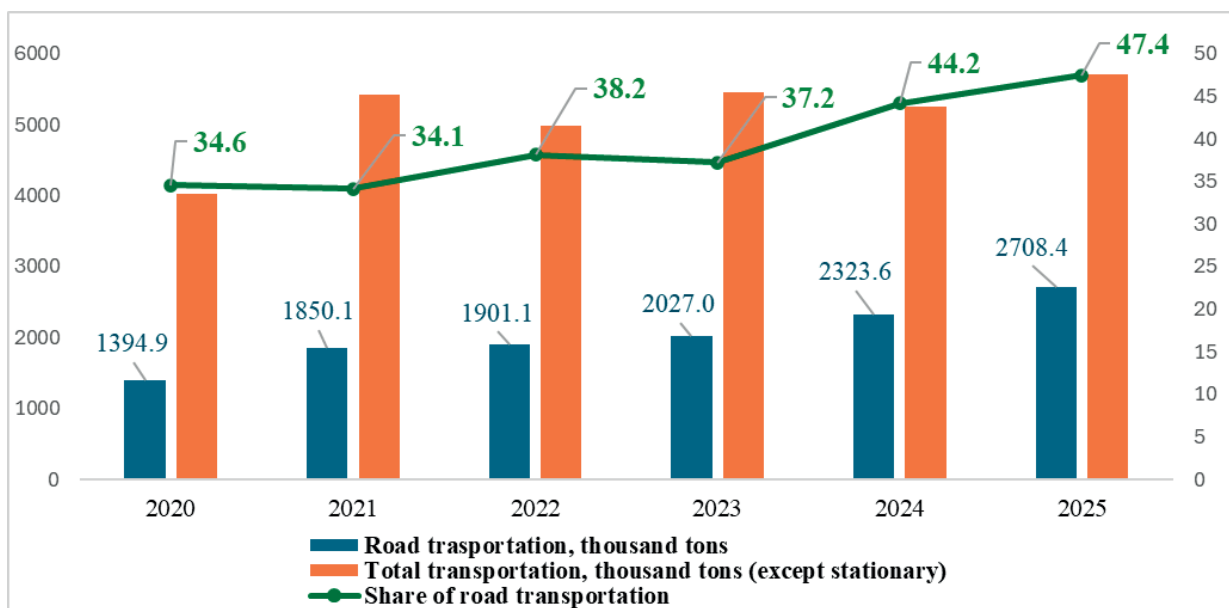


Figure 3 Volume and share of export transportation by road transport, in thousand tons and percentage, [28]

In Figure 2, the export volumes of the same three country groups are presented in absolute value terms, together with total exports. The total exports were at their lowest in 2020, rose steadily to a peak of around \$38.1 billion in 2022, and then gradually declined over 2023–2025 to about \$25 billion by 2025. The EU group showed the most notable growth over this period, rising from \$6.8 billion in 2020 to \$25 billion in 2022, before declining to \$16.9 billion by 2025. The “Others” group grew between 2020 and 2022 and then declined between 2022 and 2025, while the CIS group stayed relatively stable throughout, ranging between \$1.3–1.8 billion. This indicates that 2022 was

a peak year across all groups, followed by a decline in total exports, while the EU’s relative weight continued to grow.

In Figure 3, combining bar and line charts, three indicators are presented: the volume of goods transported by road, the total transportation volume (excluding stationary/pipeline transport), and the share of road transport in total transportation. The road-transported freight rose steadily from 1,394.9 thousand tons in 2020 to 2,708.4 thousand tons in 2025 - an increase of roughly 94%. Total transportation volume also grew overall, albeit unevenly, from 4,032.6 thousand tons in 2020 to 5,708.6 thousand tons in 2025. The share of the road

transport rose almost continuously, from 34.6% in 2020 to 47.4% in 2025. These figures clearly demonstrate the growing role of road transport, both in absolute volume and in its share of total transportation, confirming the paper's central point about the "strengthening role of road transport".

5 Conclusion and recommendations

In 2025, Azerbaijan's non-oil exports reached their highest level over the last six years, both in terms of value (USD 3.6 billion) and share in total exports (14.5%). The share of the road transport in total exports (excluding stationary transport) reached 47.4% in 2025. In value terms, road transportation (excluding stationary transport) accounted for 62.6% of total exports. These figures indicate the need for further optimization of the regulatory and procedural framework governing transport operations to improve logistics efficiency and facilitate international trade.

The conducted research indicates that the efficiency of international transit transportation is closely associated with the organization of customs procedures, legal harmonization, the level of digitalization, and the effectiveness of financial guarantee mechanisms. In this context, the T1 procedure serves as an important institutional instrument that may facilitate regional transit transport and reduce logistics costs within the framework of the Common Transit (CT) system. The analysis suggests that the T1 document performs effectively in key operational areas, including optimization of customs control, reduction of transit time, improvement of risk management, and enhancement of operational flexibility for carriers.

It is also evident that the legal and technological integration among EU and EFTA countries is a key factor supporting the effective implementation of the T1 procedure. The introduction of electronic transit systems, particularly the New Computerised Transit System (NCTS), has improved information exchange, increased transparency in customs control, and reduced delays at border-crossing points. These developments may improve the predictability of logistics operations and facilitate regional trade flows.

A comparative analysis of the T1 procedure and the TIR system shows that, although both mechanisms aim to ensure secure international transit and effective customs control, their scope of application and functional advantages differ. The TIR system, as a global transit mechanism, is more suitable for long-distance and multi-country transport operations. In contrast, the T1 procedure appears to offer advantages under conditions of regional integration due to lower administrative costs, faster customs clearance, and more flexible logistics arrangements. Accordingly, the T1 and TIR systems should be considered complementary rather than competing mechanisms.

At the same time, the main limitation of the T1 procedure is its geographical scope, which is restricted to EU and EFTA countries. When the transit routes involve third countries, additional guarantee mechanisms are required, increasing operational complexity and reducing procedural continuity. Nevertheless, in the context of the growing importance of regional economic blocs in global trade, the relevance of regional transit systems such as T1 is likely to continue increasing.

Thus, the analysis suggests that the T1 transit document may be more suitable for the international transit of the low- and medium-value goods from a cost-efficiency perspective. For the high-value goods, however, the TIR Carnet appears to be a more appropriate solution due to its fixed and internationally recognized guarantee mechanism. This highlights the importance for carriers and logistics operators of considering cargo value as a key economic criterion when selecting a transit regime.

Due to the complexity of procedures for joining the TIR system, the need to reduce financial risks in cargo transportation, and Georgia's recent accession to the Common Transit (CT) system as of 1 February 2025, carriers exporting goods to Europe have increasingly shown a preference for the T1 procedure as an accessible alternative.

Based on the research findings, several recommendations can be proposed. First, further digitalization of transit procedures and deeper integration of information systems are essential for increasing the efficiency of the T1 mechanism. Expanding electronic document circulation and enabling real-time data exchange may further reduce border-crossing times and administrative burdens.

Second, expanding the geographical scope of the T1 procedure, particularly through the integration of countries involved in the Middle Corridor and East-West transport routes into the CT framework, could facilitate regional trade and support more efficient transit operations. In this regard, strengthening legal harmonization and mutual recognition mechanisms remains essential.

Third, introducing more flexible financial guarantee mechanisms for the small and medium-sized transport operators could increase competition in the transit market and improve the overall quality of logistics services.

Fourth, the development of risk-based customs control systems and the application of advanced analytical technologies may enhance procedural efficiency while maintaining transport security.

In conclusion, the T1 procedure may be regarded as a modern customs instrument that demonstrates considerable potential for improving the efficiency of regional transit operations within the international transit system. Its further development through digital transformation, legal integration, and logistics

optimization may improve the efficiency, security, and predictability of international transit operations and facilitate international trade.

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Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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