

Future Potential of Trans-Caspian Corridor: Review

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Abstract: *Background:* The Middle Corridor, a transport route from Asia to Europe that also facilitates major energy projects through the Caspian Sea and its surrounding countries, has gained even more attention after the intensification of the conflict in Ukraine in 2022. *Methods:* On the basis of major scientific papers on the topic, foreign policy addresses from *The Diplomat* and studies by the *United Nations and Asian Development Bank Institute*, a framework with five aspects was created. In addition, two interviews with sector stakeholders were conducted to apply the framework and determine the relevance of the route to Finnish and Estonian economies. *Results:* A multifaceted overview of the current economic, political, and infrastructural state of the Trans-Caspian trade route is given. The practical value of the article lies in creating a framework for evaluating the route for related economies and testing this out for the Finnish and Estonian economies. *Conclusions:* Despite the challenges, there are enormous opportunities in this logistics route, especially with the restrictions facing Russia due to western bloc sanctions. Finland and Estonia, however, are suffering under the effects of war in Ukraine and the related sanctions, which has hindered the capacity to further enhance development projects.

Keywords: Middle Corridor; Caspian Sea transport; railways; Belt and Road Initiative; transportation infrastructure; Estonia; Finland



Citation: Palu, R.; Hilmola, O.-P. Future Potential of Trans-Caspian Corridor: Review. *Logistics* **2023**, *7*, 39. <https://doi.org/10.3390/logistics7030039>

Academic Editor: Robert Handfield

Received: 14 April 2023

Revised: 5 June 2023

Accepted: 6 June 2023

Published: 5 July 2023



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1. Introduction and Background

The Caspian Sea is the largest inland water body in the world [1], located between Asia and Europe, bordered by the Caucasus Mountains from the west and by the huge steppe of Central Asia from the east [2]. There are five countries—Kazakhstan, Russia, Azerbaijan, Iran, and Turkmenistan—in Asia and Europe that share the Caspian Sea’s coastline [1]. In addition, the Caspian Sea flows in Armenia, but also the eastern part of Georgia, as well as the western part of Uzbekistan, and the northeastern part of Turkey [1].

The Trans-Caspian International Transport Route, also called the Caspian Sea Corridor and the Middle Corridor (see Figure 1), in short, the TITR “comes from Southeast Asia and China, runs through Kazakhstan, the Caspian Sea, Azerbaijan, Georgia to European countries” [3]. As Kenderdine and Bucsky [4] elegantly put it, the TITR “is a multilateral institutional development linking the containerized rail freight transport networks of the People’s Republic of China (PRC) and the European Union through the economies of Central Asia, the Caucasus, Turkey, and Eastern Europe” and thus forming an alternative transport corridor to the one passing Russia. This rather demanding and new route in the region has typically been operating within freight and trade more in the north–south axis rather than east–west [5]. However, in the previous decade, the trade grew enormously with China and supported the development of the latter freight axis [6].

The TITR is part of the “Belt and Road” (B&R) or Belt and Road Initiative (BRI), formerly known as the One Belt One Road Initiative (OBOR) of the People’s Republic of China (PRC; see Figure 1 for details). The term involves the land-based “Silk Road Economic Belt”, but also the seafaring “21st Century Maritime Silk Road” [7], and is a strategic effort

to connect Asia with Europe and Africa through land and sea with the aim of improving the regional integration and stimulating economic growth through increased trade [8].

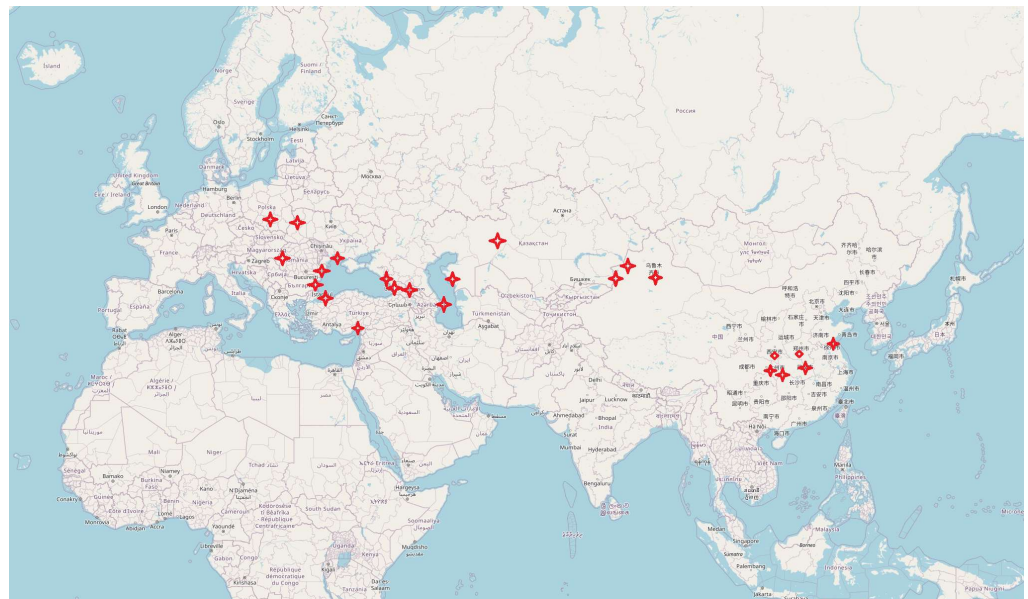


Figure 1. Key nodes of the Trans-Caspian Transport Route. Source: OpenStreetMap contributors. (2023) OpenStreetMap. Retrieved from <https://www.openstreetmap.org/> (accessed on 22 May 2023).

The current review builds upon the existing literature by drafting an overview of the economic, political and infrastructural aspects of the Trans-Caspian trade route, which can be used to closely study the route's impact on countries and regions benefiting from the route. An initial assessment on the route's impact on Finland's and Estonia's connections was conducted, where, in addition to applying the framework created during the study, two interviews were conducted to juxtapose the scientific and practical views for the purposes of a holistic view.

The article is dedicated to finding answers to the following questions:

1. What is the state of the Trans-Caspian transport route, taking into account the economic, political and infrastructural aspects?
2. What would be the potential of the Trans-Caspian transport route for Finland and Estonia within the framework of its economic, political and infrastructural aspects?

The current review addresses a research gap by suggesting a framework for studying the economic, political and infrastructural aspects of a logistics route using the example of the Trans-Caspian corridor. The framework is applied in practice through research interviews with sector stakeholders to map the potential of the Trans-Caspian transport route for Finland and Estonia. The output of the article can be used to inform policy making on supply chain resilience in the aforementioned countries.

The article holds a structure, where Section 1 (Introduction and Background) section includes Section 1.1 (Legal Context) and Section 1.2 (Importance). The introduction is followed by Section 2 (Materials and Methods), and Section 3 (Results). The results section comprises Section 3.1 (Characteristics of the Route), Section 3.2 (Policies and Trade), Section 3.3 (Alliances), Section 3.4 (Infrastructure) and Section 3.5 (Challenges), which are five aspects that make up a framework for analyzing the state of the route. Section 4 (Implications and Conclusions) includes Section 4.1 (Implications to Finnish and Estonian Economies) and Section 4.2 (Further Research).

1.1. Legal Context

Five littoral states of the Caspian Sea signed the “Convention on the Legal Status of the Caspian Sea” on 12 August 2018, after 20 years of talks [9]. The Caspian Sea is to be treated as a subject of a “special legal status” not as a sea or lake according to the contract [9,10]. Although leaving some of the issues touched upon during the negotiations unsettled, the treaty confirms the conditions that enable new energy projects, including underwater gas and oil pipelines, to be planned and executed on a bilateral basis on the agreement with the state the infrastructure or facility would cross, although the details of the project should be communicated to the other parties of the convention [10,11]. Compliance with the international environmental standards and requirements is a prerequisite of laying trunk submarine pipelines on the bed of the Caspian Sea (Article 14) [11].

According to Article 5 of the convention, “*The water area of the Caspian Sea shall be divided into internal waters, territorial waters, fishery zones and the common maritime space*” [11], all five countries have an up to 15-nautical-mile-wide area of territorial waters (Article 7) adjacent to a 10-nautical-mile-wide area of exclusive fishery zone on the Caspian Sea [10,11]. It is common to have territory that is unaffected by territorial waters and fishing rights, where non-signatory states may not deploy armed forces and which is used for peaceful purposes (Article 3) [11]. Two major powers around the Caspian Sea, Iran and Russia, had to make considerable compromises, but whether the other littoral states will be able to take full advantage of the opportunities made available to them by the treaty—more than 4 years later—remains an unanswered question.

1.2. Importance

The main benefit of the treaty for the Western world would be facilitating the development of significant energy projects such as the Trans-Caspian Gas Pipeline (TCP), which has the capacity to transport around 30 billion cubic meters of Turkmen gas per year across the Caspian Sea to Azerbaijan and then into Europe’s gas pipelines, which would enable the EU to strengthen its energy security [9]. This volume of gas would be especially helpful now since supply chains from Russia are cut off by the Western world.

The whole TITR corridor serves as an alternative route from Asia to Europe to the one crossing Russia, which partly overlaps with the Caucasus corridor [10], whose benefit and risks as a secure transit corridor for gas and oil have already been identified decades ago [12].

Transport routes alternative to the ones crossing Russia have become even more important after the intensification of conflict in Ukraine at the end of February 2022. The package of sanctions on Russia, implemented on 25 February 2023, is already 10th one [13] and does not include a total ban of rail transport through Russia, as was proposed by some of the countries, i.e., Estonia [14] during the discussions that took place in 2022.

Kazakhstan, as a central country of the Caspian Sea Treaty, TITR and BRI in the region, has been intensifying diplomatic talks and encouraging other Asian countries to use the Trans-Caspian international corridor, as was done by the Kazakh PM Smailov at China’s Boao Forum for Asia in April 2022 [15].

2. Materials and Methods

The current research builds upon major scientific papers on the topic, and as the academic research does not address political and administrative developments, foreign policy addresses from *The Diplomat* and studies by *United Nations and Asian Development Bank Institute* are also reviewed.

The literature search was concluded via the PRIMO database [16], accessed through LUT University in Finland during the period of October and November 2022, involving all major and ranked academic publishers using the following keywords in the following order: “Trans-Caspian logistics”, “Belt and Road Caspian”, “OBOR Central Asia”. The keyword “TITR” did not give any results.

Altogether, a total of around 40 articles and books were closely screened. The choice of the articles discussed here was based on their relation to the overall political and economic setup related to the Trans-Caspian international transport route. Articles dealing with individual projects and/or countries were disregarded as the authors of this research aimed for a certain degree of generalization. As the geopolitical situation changed drastically after Russia's invasion of Ukraine in February 2022, the newest available sources were included.

Through a literature review, the authors identified five key economic, political and infrastructural aspects of the Trans-Caspian trade route and synthesized them into a framework that cannot only be used to systematically study the Trans-Caspian trade route itself but can also be applied to other similar contexts. Similar aspects of the route were studied in interviews with two transport sector professionals, one from Estonia and one from Finland; thus, the output of the literature review was put used to research two specific countries. The interviewees were transport sector professionals who had decades-long relationships to planning global trade routes for their countries. The selection of interviewees was made among public and private sector stakeholders based on global reach of work duties. As both countries are small (Estonia ca. 1.33 million and Finland ca. 5.54 million people), only 2–3 people who met the requirements were identified from both countries, among which one private sector representative and one public sector representative were selected. They were invited to express their practical views on the Trans-Caspian trade route. The interviews followed the framework proposed in the current paper. Both interviews were transcribed and anonymized for the purposes of the current work.

Consequently, in addition to the academic research that was continuously checked against the practical knowledge of the authors, gained through projects dedicated to supporting the Kazakhstan and Georgian maritime-related organizations to increase their profile in international transport, these two interviews worked as additional proof for the framework.

Justification of the Inclusion of the Articles

The main sources regarding the Trans-Caspian International Transport Route discussed here involve: (1) “The Trans-Caspian Corridor: Kazakhstan’s Silk Road?” by Wilder and Auyezova (2022) [13]; (2) “What Will Russia’s Invasion of Ukraine Mean for China’s Belt and Road?” by Forough (2022) [17]; (3) “Potholes and Bumps Along the Silk Road Economic Belt in Central Asia” by Li-Chen and Aminjonov (2020) [18]; (4) “Is Transportation Infrastructure Important to the One Belt One Road (OBOR) Initiative? Empirical Evidence from the Selected Asian Countries” by Yii et al. (2018) [19]; and (5) “Petropolitics and Pipeline Diplomacy in Central Asia: Can India Afford to Wait in the Wings?” by Pradhan (2019) [20].

These five articles cover a variety of key topics related to the Trans-Caspian logistics corridor involving politics (1, 2, 3), infrastructure (4), financing and geoeconomics (2, 3), effects of the Ukraine war (2), and a wider perspective than only China and its BRI (5). Three articles were published in *The Diplomat* journal (1, 2, 3), one in *India Quarterly: A Journal of International Affairs* (5), and one in *Sustainability* (4).

In addition to the five articles above, a study titled “Progress update on the operational capacity of the Trans-Caspian and Almaty-Istanbul Corridors” by the United Nations Economic and Social Council (2022) [21] and another study titled “Middle Corridor—Policy Development and Trade Potential of the Trans-Caspian International Transport Route” by Kenderdine and Bucsky (2021) [4] published by the Asian Development Bank Institute were examined.

3. Results

A study titled “Progress update on the operational capacity of the Trans-Caspian and Almaty-Istanbul Corridors” [21] by the United Nations Economic and Social Council conducted for the Economic Commission for Europe was introduced in the Inland Transport Committee on 5–7 September 2022 in Geneva. The work on the topic will continue for “an additional informal document with a twofold purpose: i. To compile full and up-to-date datasets

for all of countries on both corridors; and ii. To prepare a set of visual materials, in the form of maps, charts and diagrams, showcasing the potential of both transport corridors” [21]. The study gives an overall framework of the importance of the topic, indicating that despite the Europe–Asia trade imbalance of USD 486 billion, the USD 3.1 trillion trade volume between Asia and Europe is at its peak. Trade has been continuously growing, giving China the first position in EU imports and being the third largest export partner. The trade imbalance is over USD 400 billion (EU export to China USD 280 and import ca USD 700 billion), which has a remarkable economic effect on the cost of the transportation, since returning empty wagons constitutes an additional cost [21].

Statistical evidence shows that container volumes have systematically risen since 2015 on the Middle Corridor passing Georgia (Table 1) [21]. Additionally, the figure for the first five months of 2022 is higher than the same figure for the year before due to or despite the war situation. As the UN report [21] also concludes, the route brings advantages to the economies on the corridor and showing that this link is reliable opens the possibility of comparison with the maritime alternative. Although, it is worth mentioning that the Northern Corridor served 1.46 million twenty-foot equivalent units (TEUs) in 2021 [21], and this corridor most probably grew in 2022 as well (despite the Ukrainian war and all the sanctions between west and Russia, [22]). In newspapers, it has been estimated that the TITR handled a volume of 33,600 TEU containers in 2022 [23].

Table 1. Container transport between China and Europe through Middle Corridor (TEU).

Year	Volume (TEU)
2015	42
2016	132
2017	190
2018	1320
2019	2764
2020	3029
2021	9023
2021/5 months	3766
2022/5 months	4534

Source: Georgian railways, 2022 cited in the United Nations Economic and Social Council, 2022 [21].

While the current trade volumes on the Georgian section of the Middle Corridor are only up to around 10,000 TEUs, the railway capacity is much higher. The railway capacity of each country is summed up in the table below (Table 2). Please refer to Section 4.1 for the sector professionals’ estimations on the passing trade volume.

Table 2. Overview of the railway capacity of the Trans-Caspian Corridor countries.

No	Country	Railway Standard	Throughput Capacity	Railway Network Length
1	Kazakhstan	1520 mm	240,000 TEU (Altynkol-Aktau line)	16,000 km
2	Azerbaijan	1520 mm	20 freight trains/day	4285 km
3	Georgia	1520 mm	27 million tons	1443 km
4	Turkey	1435 mm	90,000 TEU (Jambaz-Istanbul line)	13,022 km
5	Uzbekistan	1520 mm	N/A	4733 km
6	Turkmenistan	1520 mm	N/A	3840 km
7	Iran	1435 mm	N/A	1299 km
8	Ukraine	1520 mm	N/A	19,800 km

Source: author’s table based on the United Nations Economic and Social Council, 2022 [21].

The contents of the sub-sections that follow are: (1) Characteristics of the route; (2) Policies and trade; (3) Alliances; (4) Infrastructure; and (5) Challenges. These five aspects make up a framework for analyzing the state of the route.

3.1. Characteristics of the Route

The World Bank Logistics Performance Index (LPI) calculates that Turkey is the first in taking account of the following “six dimensions of trade: (1) customs, (2) infrastructure, (3) international shipments, (4) logistics competencies, (5) tracking & tracing, and (6) timeliness” [24], then Iran, Ukraine, Kazakhstan, Uzbekistan, Georgia, and Turkmenistan when taking into account the 2018 data [21], which most likely have changed at least somewhat, taking into account the Ukraine war and the related changes in logistics. Despite the war, the table above remains informative on the railway’s lengths and capacity, also showing the standard on the railway gauge, where Turkey and Iran stand out in relation to the other group that is aligned with the over-Soviet 1520 mm railway gauge.

This trade volume obviously requires fair transport capacities and secure routes both on land and sea, where the Middle Corridor contributes as a land leg between Asia (China) and Europe. Strategic agreements have been concluded [3] in the region with international players, such as the US government and the EU, developing the route. A SWOT analysis on the Trans-Caspian corridor that shows the status of this transportation option can be found in the UN study [21]. Among its strengths, strong governmental commitment ranks first, being seconded by many ongoing initiatives on the international level and infrastructure projects, including investments to ports in Georgia (Poti) and Azerbaijan (Baku) and rail projects in Turkey [21]. Several weaknesses—limited scheduled services for trains and ferries, lack of centralization and/or integration and a variety of uncoordinated initiatives—are identified [19]. The whole picture, including opportunities and threats, is closely related to the developments in and harmonization of the digital domain and in interoperability challenges (gauge width and customs regulations) [21]. Additionally, not to be forgotten, every investment demands financing, which is currently mostly provided by major economic powers, such as the EU, the US and China.

3.2. Policies and Trade

A study by Kenderdine and Bucsky titled “Middle Corridor—Policy Development and Trade Potential of the Trans-Caspian International Transport Route” [4], published by the Asian Development Bank Institute was also examined to widen the background of the research. The study discusses the political institutions and economic geography of the region together with rail freight and infrastructure policies and realities assessing the demand side development for Europe and giving policy recommendations for institutional development. The study concludes that “*Trans-Eurasian and intra-Eurasian rail freight development remains fundamentally policy- and subsidy-driven on the China side, yet dependent on European Union demand-side drivers to create traffic flow volumes*”. It is also understood that the corridor development is voluntary and related governments see great benefits in its development. The study concludes that the China “*supply-side-policy evidence suggests that growth in transcontinental containerized rail transport is politically feasible*” but contrarily claims that “*demand-side factors suggest that trade development potential is largely limited to greater extra regional connectivity from the Middle Corridor economies with little economic rationale for increased China–Europe transcontinental freight flows*”. The study also warns against the differing political cultures and best practices that might hinder the activities of strategic and economic nature of the Western donors in these states. A shortcoming of the study is the fact that it mainly (only) concentrates on China and leaves other growing economies out despite the fact that multilateral relationships with emerging powers would benefit the EU in the future.

Pradhan claims in his article “Petropolitics and Pipeline Diplomacy in Central Asia: Can India Afford to Wait in the Wings?” [20] that the struggle for energy and oil “*has led to aggressive foreign policy formulations and strategic calculations*” by major world powers both in the West and the East, describing the situation as a “New Great Game” that is played “*around petropolitics and pipeline democracy*”. The article is based on the literature on the subject. Energy has pulled more and more attention in the global politics as supply chains have globalized and energy trade imbalance grew sharply from 1956 onwards [25];

thus, the article by Pradhan turns our attention to the key issue—the excavation of energy carriers and their transit—at hand related to the Central Asia region. It is claimed that despite the fact that the resource potential and energy reserves are not as high as the ones in the Middle East/Gulf area, the Central Asian “*region undoubtedly has at least 3 to 4 per cent of global proven reserves of oil and gas*” [20]. In addition to drawing direct attention to the energy issues, the article also focused on other powers—mainly India—having interest in the region despite key actors such as Russia, China, and the US, and the EU being one step ahead.

It has been claimed that the Caspian Basin, along with its littoral states, possess at least 7 per cent of world’s total gas [26]. As Pradhan [20] concisely summarizes, Central Asia has “*remained the hinterland of Kremlin, Beijing has made its presence in the region in a massive way while the United States through its democratic card and human right philosophy was able to influence the region heavily threatening Russian influence in its backyard*”, but only until recently, when, in relation to the Ukraine war, Central Asian countries have started seeking and have found independent ways to make business.

Wilder and Auyezova [15] claim that the Russian military actions in Ukraine have “*drastic consequences*” on global politics, while internationally established sanctions against Russia also affect other countries in the region. Alternatives are sought to the Trans-Russian transport corridor, and the Trans-Caspian corridor finds the most support as its full potential has not yet been reached. Authors recognize the following: (1) Having a corridor connecting Central Asia via the Caucasus through the Black Sea to Europe’s southeast part is not new; and (2) The nations on the corridor are organized through several memberships of different economic and political blocks (CIS, EAEU, Turkic Council, etc.). Georgia is not a member of aforementioned blocks, but it still enjoys close relations with Kazakhstan. The authors claim that the infrastructure—“*with ports on both sides of the Caspian, and a complex system of railways*” is already there, but the corridor “*needs more harmony and cooperation*” between the participating states. Border crossing and tariffs are essential, along with the Armenia–Azerbaijan border issue. Creating the joint venture of TITR is a promising development. Creating this alternative westward corridor is important for the Caspian states’ export diversification [27] and the war offers new opportunities for the region and Kazakhstan in the center.

3.3. Alliances

Forough [17] defines “*geoeconomics*” as the intersection of economy and geography that “*profoundly reconfigured*” the Russian invasion of Ukraine. The value of the article is listing global transport-infrastructure-related development actions such as:

- “China’s Belt and Road Initiative (BRI);
- The European Union’s Global Gateway;
- The U.S.-led Blue Dot Network (BDN);
- The G-7’s Build Back Better World (B3W), Japan’s Quality Infrastructure Investment (QII),
- Russia’s Eurasian Economic Union (EAEU);
- The International North–South Transport Corridor (INSTC) driven by Russia, Iran, and India” [17].

As this [17] is a recent article, published 18 March 2022, the figures might be close to the current reality, claiming that the B&R initiative involves 140 countries despite the fact that it is geographically centered around Afro-Eurasia. During 2022, it was not yet determined whether China was eager to take sides in the Ukrainian conflict, and the author of [17] warned of any “*unintended consequence*” of the Western decoupling with Russia in combination with the joint initiatives of Russia and China. In light of Russian and Chinese presidents’ level talks on March, 2023 [28], this warning may be relevant again.

Forough [17] mentions that the 17 + 1 cooperation platform between 17 CEE countries and China suffered a pushback before the war; the cooling of the Sino-American relations as one of the reasons for this pushback; however, the “*rapid Western-Russian/Belarusian*

decoupling and the destruction of Ukrainian infrastructure practically destroys any short- to medium-term prospects of a robust 17 + 1 platform”, causing problems for China. The author argues that “in the short term, China has to go back to the basics. China-EU connectivity will have to rely more on good old maritime routes, which have proved more resilient than road or rail networks. It is worth remembering that more than 80 percent of global commerce is still conducted via maritime routes. China’s enthusiasm for rail connectivity will have to be seriously curbed for now.” [17]. It is also argued in [17] that in the global “bifurcation” between the West led by the US and East Asia headed by China has to be considered.

3.4. Infrastructure

Yii and his colleagues (Malaysian scholars) bring infrastructure in the center of attention, indicating that the “crucial challenge encountered in OBOR initiative is the different gauge standards from different countries in the development of railway along the Silk Road” [19]. In addition to infrastructure, the article discusses labor, education, trade and implications on the rate of inflation together with OBOR’s importance towards economic growth. The focus in this review is on infrastructure, and other factors influencing economic growth are in the background.

The Yii et al. study [19] focuses on three geographical areas: Central Asia, including Uzbekistan, Tajikistan, Kyrgyz Republic, Turkmenistan and Kazakhstan; ASEAN, including Malaysia, Vietnam, Thailand and Indonesia; East Asia, including China and Mongolia. As the current literature review focuses on the Trans-Caspian route, the discussion mainly focuses on the Central Asia countries.

“The findings reveal that transportation infrastructure possess a positive effect on GDP. Surprisingly, education is negatively related to GDP. With this, policy makers are suggested to encourage OBOR countries to expand and upgrade their system in terms of transportation infrastructure, human capital, culture, and education”. [19]

It is generally acknowledged that the different standards for the railway gauge in the countries the rail network passes through makes it impossible to seamlessly connect railways. Therefore, as the authors of this article also conclude, “the existing transport capacity and service quality are not easily able to meet the requirements of modern freight and passenger transport” [19]. The article discusses some of the countries separately, “For instance, the trading policy in Kyrgyzstan is established with the cheapest and most effective trading between China and Central Asia. However, there is no further planning in the trade liberalization, which leads to disagreement between the two countries.” [19]. This is thus interesting as an insight.

The article introduces relevant theoretical frameworks and notions of former research (salient paradox theory, equilibrium model, incentivizing through transport infrastructure, the macro- and micro-paradox, the Granger causality test, vector error correction model, etc.) [19] to discuss the relevance of infrastructure for the economic advancement of a country. The literature review on the topic is strong, leading to a number of key theories and authors [19].

The authors refer to an Economist article [29], which concurs with R. Palu’s thesis entitled *the Dichotomy of Old and New Cities: Soviet Tallinn and Independent Tallinn*, which emphasizes the role of the governing power in the style of the built environment that is created [30], where major infrastructure projects form a notorious part. Both Palu [30] and article [29] give evidence that democratic countries build their infrastructure slowly, taking into account versatile opinions and interest, but the autocratic ones are able to grow with major leaps as the procedures they undertake, and their impacts and mitigation are not regulated or demanded as much.

The authors of [19] claim that infrastructure investments connected by the OBOR railway contribute positively to GDP growth in these Chinese provinces. On the other hand, the authors discuss that “by adopting the Chongqing–Xinjiang–Europe International Railway, the shipment time for goods was reduced compared to maritime transport route. Thus, the OBOR initiative can lower transport costs and improve the world’s welfare”, which can be disputed as the shipment time does not necessarily show lower transport costs in

comparison to maritime/ rail transport, as the volume effect of maritime transport still outperforms rail.

Yii et al. [19] draws several conclusions, some of which confirm existing knowledge, such as the fact that international trade has a positive effect on economic growth, trade openness is derived from the improvement of institutional quality, which in turn has a favorable effect to economic growth, and OBOR brings huge benefits to the global economy by enabling trade, etc. In addition, the bilateral trade framework maintains global competitiveness, promotes the domestic economic structure, reforms the multilateral trade framework, and manages risks [19]. A particularly eloquent result confirms that, currently, there is no relationship between GDP and inflation rate [19].

Although the title of article [19] is misleading, turning attention to infrastructure, but also discussing several other factors influencing economic growth, it is worthwhile familiarizing one's self with the research in the article, as it confirms several concepts related to infrastructure development in relation to B&R.

3.5. Challenges

Li-Chen and Aminjonov [18] discuss corruption in relation to the construction of the China-financed infrastructure development projects. They [18] argue that the Central Asian region is in the center for the B&R projects and it is valuable as it is less vulnerable than sea routes, more dependent on American maritime power, and on the Silk Road Economic Belt's rail routes to the Middle Corridor part in Turkey via Kazakhstan and the Caspian Sea. In addition to the logistics, Central Asia proved to be essential because of its natural resources (minerals and hydrocarbon) and because it claimed that Chinese companies control over 25 per cent of oil production in the Kazakh territory [17], as well as supplies of rare earth and other metals needed for China's high-tech products as capacitors and solar panels [16]. The article also identifies another important aspect of the B&R strategy by China: spreading loan money across the countries the project passes through. The dependence of Chinese trade on the Central Asian countries is emphasized in this quotes that states that it is being "doubled to almost \$40 billion between 2007 and 2018" [17] together with China being the main investor in key sectors, such as infrastructure, industry and energy [18].

What follows is a list of challenges in relation to Silk Road Economic Belt (SREB):

- (1) Lack of transparency and poor governance;
- (2) Sovereign debt;
- (3) Limited contribution to local economies;
- (4) Sinophobia;
- (5) Playing off great power neighbors [18].

Central Asian countries are not bystanders in the process, especially in taking into account the TITR initiative, and as Li-Chen and Aminjonov [18] summarize, "by participating in the SREB, Central Asian states hope to balance the demands of the region's traditional cultural and security hegemon, Russia, against those of its economic hegemon, China". As a recent study by Horn et al. [31] emphasizes, China has set up a global cross-border lending and rescue lending system for the concerns of countries in debt, which, on the one hand, helps those in need, but, on the other hand, may push these countries into further dependency.

4. Implications and Conclusions

The main elements of the current research are as follows: (1) The conclusions are drawn and implications are made on the literature review level, which gives a multifaceted overview of the current economic, political and infrastructural state of the Trans-Caspian trade route; (2) This research draws a framework for similar transport route studies; and (3) This research concludes with the opportunities available for the Finnish and Estonian states.

The origin of the authors of the selected articles is USA (1), Arabic countries (2), the Netherlands (2), the UAE (3), Malaysia (4), and India (5), which also supports the

multifaceted approach on the developments in the Trans-Caspian corridor, as different authors carry out their national or regional approaches, which are also seen as the baseline of these articles. Two general studies used in the literature review—“Progress update on the operational capacity of the Trans-Caspian and Almaty-Istanbul Corridors” by the United Nations Economic and Social Council (2022) and “Middle Corridor—Policy Development and Trade Potential of the Trans-Caspian International Transport Route” [4] published by the Asian Development Bank Institute together give a comprehensive overview of the corridor; the first one, commissioned by the United Nations, gives a more technical overview of the potential of the corridor, while the second one, compiled by the Asian Development Bank Institute, puts more emphasis on the policy aspects and takes a wider view of the situation of the countries related to the Trans-Caspian corridor. Each of the five articles discussed covers one side of this rather complex topic, and together with systematic and statistical data of the international institution’s reports, draws an overall picture of the state of the corridor development.

Despite the differences in approach, a common understanding that all these authors have is that the Trans-Caspian corridor possesses a crucial importance in the Asia–Europe trade. It is also evident from the analysis carried out by the authors of the articles that the corridor is under the interest of both European and Asian scholars. Their common aim is to discuss opening up the Middle Corridor as an alternative to the Northern Corridor and in the future also as an alternative to maritime links.

The authors suggest that multidimensional developments and infrastructure projects need to be in concurrence with the initiatives in the information and communication technology (ICT) field, where, for instance, the Government of Georgia aims towards the inevitable development and integration of information and ICT in the transport and logistics sectors to develop Georgia as a regional transport and logistics hub [32]. This aspect could be evaluated in more depth as this might be a cure for a number of weaknesses and challenges pointed out by the United Nations Economic and Social Council [21].

The general conclusion drawn from these articles is that despite the challenges, there are enormous opportunities that are still unused in this trade route, especially now, when Russia has largely been removed from the geoeconomic scene. The studies address possible policy alternatives and strategic viewpoints towards the Middle Corridor, but have been stuck for the last few decades in the prevailing Asian narrative which places China as its center, instead of widening the scope to other emerging markets, especially India.

The five characteristics of the route are as follows: (1) Characters of the route; (2) Policies and trade; (3) Alliances; (4) Infrastructure; and (5) Challenges. These characteristics provide a framework for analyzing the state of the route, which can also be applied to other routes.

4.1. Implications to Finnish and Estonian Economies

The interviewees [33,34] (See the interview outline in Appendix A) described the Trans-Caspian transport route as an expected alternative to the route passing through Russia on which the related countries—both, the ones on the route and the ones benefiting from the alternative, including Finland and Estonia—have been working for decades to put the route in use for cargos coming to their countries. The Trans-Caspian corridor emerged as a contra action to the non-approval of the MES plans for European market by the Russian Railways [34]. The Trans-Caspian route is considered a realistic alternative [33,34], although 1.7 times more expensive and ca two times more time consuming to Finland [34], while the Arctic route is expected to be unusable for any meaningful transport for another 100 years [33] or perhaps it will never be usable [34]. The full figures on the actual cargo transported on the route are not publicly available and they vary as it is possible to only use part of the route and to direct cargo through different countries; for example, it is possible to choose Turkey, Romania or Ukraine after departing from Georgia. Sector professional [34] claims that, on the basis of figures distributed in the network, the actual cargo transported through the Trans-Caspian route is four times larger than indicated by

Georgian Railways [21]. Estonia is considered the best hub for North-heading containerized cargo from Asia as it is logistically well located and possesses good connections to Finland and Sweden. Both, Estonian and Finnish transport sectors have had to cope with conditions and sanctions related to the war in Ukraine and adapting to the new conditions has hindered their capacity to further enhance development projects [33,34], despite the fact that Trans-Caspian transport route is potentially key in the Asia–Europe trade for Estonia and Finland.

4.2. Further Research

A more detailed study on Estonia and Finland can be carried out using a similar framework. The same framework of economic, political and infrastructural aspects could be applied to any economy willing to take advantage on this route or any other route. The authors plan to use the same five aspects of the framework—the characteristics of the route, policies and trade, alliances, infrastructure and challenges—to analyze the rail infrastructure project Rail Baltica’s North–South connection, which stretches from Helsinki and up north the Arctic Sea to south Europe through Tallinn, as a possible regional extension of the transport route commencing from Asia.

Author Contributions: Conceptualization, R.P. and O.-P.H.; methodology, R.P.; software, R.P.; validation, R.P. and O.-P.H.; formal analysis, R.P.; investigation, R.P.; resources, R.P. and O.-P.H.; data curation, R.P.; writing—original draft preparation, R.P. and O.-P.H.; writing—review and editing, R.P. and O.-P.H.; visualization, R.P.; supervision, O.-P.H.; project administration, R.P. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Data available from corresponding author by email request.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A Interview Outline

- 1 Global trends
 - 1.1 What are the global, European, regional, or local trends influencing your organization the most in recent years (from 2020 on)?
 - 1.2 Please line up the trends starting from the one that has influenced your organization the most.
 - 1.3 What do think of the Trans-Caspian trade route and Arctic route – if and when would these become feasible competitors to the current transport routes from Asia to Europe?
- 2 Change management
 - 2.1 What are the main processes and tools that your organization has used in coping with the changes on
 - (a) global level
 - (b) European level
 - (c) regional level (Baltic Sea and vicinity)
 - (d) national level
 - (e) organizational level?
 - 2.2 What are the main factors having effect on coping with change?
 - 2.3 Would you need a new and easily usable tool to help you in the change management process?

3 Innovation management

- 3.1 What kind of new technologies or innovations have been introduced to your organization in recent years?
- 3.2 What kind of key new technologies or other innovations have been implemented in your organization from 2020 on?
- 3.3 What is the reason for implementing new technologies?
- 3.4 Do you distinguish between new technologies for business purposes and for other causes (environmental regulations, corporate social responsibility etc)?
- 3.5 How the process of making decisions and acquiring financing for the investments is conducted?
- 3.6 What obstacles have you confronted in executing investments in innovation?

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