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## Investigating the Logistics Coopetition in Macroeconomic Perspective - Comparative Analysis of V4 Countries

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Blanka Tundys<sup>1</sup>, Piotr Niedzielski<sup>2</sup>

**Abstract:**

**Purpose:** The article aims to show that by using objective indicators of economic sectors, it is possible to create fields of common strategic action based on the principles of coopetition, which have so far been used only at the level of enterprises. Expanding the perspective of the use of the concept of co-opetition not only contributes to the development of science but also shows from a practical point of view that in the field of economically or politically connected economies it is possible to compete and co-operate at the same time.

**Design/Methodology/Approach:** Basing on the previously developed LPI and other selected micro- and macroeconomic indicators of selected economies, using the methods of descriptive statistics, the areas of potential cooperation and competition of national economies in the field of logistics and their possible effects are developed and presented.

**Findings:** The novelty of the considerations is the application of the macroeconomic approach, which has not been used so far in coopetition. And focus on proving that simultaneous cooperation and competition in different areas of logistic efficiency of a group of countries can bring win-win effects for each of them. The novelty of the considerations is the implementation of the concept of co-opetition on the level of the whole economy, using it to examine areas of logistic efficiency and to indicate the potential benefits of using this strategy.

**Practical Implications:** The advantage of using the LPI indicator in the deliberations is to indicate that with its help it is possible to determine the areas of coopetition of individual groups of countries. Such an approach can contribute to strengthening the cooperation between different links in supply chains, creating and proposing new chain strategies that are more efficient and create greater value and competitiveness.

**Originality/value:** The originality of the considerations is an attempt to grasp and justify the possibility of using the concept of coopetition in the context of entire economies, not just enterprises or supply chains, and the search for cooperation and competition in these fields. A research gap has been found in the literature, as this context has not been considered so far, and by using an objective measure of logistics performance it has been shown that when comparing economic sectors it is possible to go beyond just enterprises and focus on national economies.

**Keywords:** Logistics coopetition, V4 countries, coopetition, macroeconomic perspective, LPI index.

**JEL classification:** Q11, Q13, C44.

**Paper Type:** Research study.

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<sup>1</sup>Management Institute, University of Szczecin, Poland, e-mail: [blanka.tundys@usz.edu.pl](mailto:blanka.tundys@usz.edu.pl);

<sup>2</sup>Management Institute, University of Szczecin, Poland, e-mail: [piotr.niedzielski@usz.edu.pl](mailto:piotr.niedzielski@usz.edu.pl);

## **1. Introduction**

The phenomenon of co-opetition has been discussed in the literature and economic practice since the 1990s. The first to define it was by Nalebuff and Brandenburger (1996), indicating that it is the simultaneous competition and cooperation between enterprises that until then were the only competitors. The concept of co-opetition is considered a neologism that comes from the combination of the words "cooperation" and "competition" denoting at the same time a hybrid behaviour involving both indicated activities simultaneously between decision makers. In this aspect, competitors act together on different levels to achieve mutual benefits (Hafezalkotob, 2017).

Companies or economies as collaborators can be sources of innovation (Ahuja, 1996), knowledge (Ghobadi and Ambra, 2011) and a firm's competitive advantage can be based on unique and harmonious collaborative relationships with successful co-opetitors (Afuah, 2000). Undertaking joint activities in knowledge search, research and development, new technologies while competing for market share and knowledge exploitation is referred to as co-opetition (IRMA, 2014). It can be considered in relation to individuals as well as countries and economies.

The characterisation of co-opetition by the varying intensity of certain inter-organisational dynamics has contributed not only to distinguish different types of relationships in this field but also to its inclusion as part of business models. The concept of co-opetition is most often used and applied in the study of relations between individual economic units, which at the same time in different areas can compete and co-operate with each other.

Therefore far, the phenomenon has been considered as an element of inter-organisational cooperation, possibly in the context of flows and opportunities to achieve positive effects within supply chains. So far, the opportunities offered by co-opetition have not been considered in the context of seeking benefits for entire economies, creating sectoral competitive advantages. Such an approach may be a guideline for conducting economic policy, exploiting the potential of individual sectors, and establishing cooperation to obtain win-win benefits.

Competing does not always have to mean hostility, such solutions should be found to make the co-opetition an element of cooperation, collaboration, and competition at the macroeconomic level. In a broader sense, it can be a fundamental determinant of value creation, high-quality service provision, and the shaping of the competitiveness of entire sectors of the economy.

Modern economies must be innovative and competitive. This is possible, among other things, thanks to the development of logistics infrastructure and a high level of provided logistics services. Therefore, the following considerations analyse the possibilities of using the potential of co-opetition based on the logistics performance

indicator - LPI and analyses of its measures in the context of comparisons of V4 countries - the Visegrad group. Competitiveness of economies assessed by efficiency and productivity depends on potential resources, infrastructure and implementation of modern business models and supporting economic policy directions. The approach is innovative and novel, contributing to the development of the discipline and science because until now the concept of coopetition has not been used to such an extent in the search for opportunities to cooperate and compete at the level of the economy.

## **2. Aim Thesis and Research Questions**

The aim is to examine whether the phenomenon of coopetition can be used at the level of national economies, in the context of examining individual sectors and comparing their reliable results. As an example, we will use a synthetic measure of the logistical performance of economies called the Logistics Performance Index - LPI, which is measured using data from individual national economies. So, given the economic, political, and geographical links, is it possible to co-operate and compete at the same time? Can the LPI be an indicator showing in which direction and in which areas countries, for example, V4, can cooperate and compete at the same time? Can the practical implementation of the principles of co-opetition, especially in times of crisis, become a panacea for the logistical weaknesses of individual countries at the macro level? Is such a model of action, an element integrating and tightening cooperation in the field of international trade between cooperating states?

The thesis of the study is as follows: The analysis of the LPI index, the feature of which is the measurement of the logistics sector in macroeconomic terms, allows us to look for areas of cooperation and competition in economically and politically connected countries. This means that the level, scope, and area of cooperation can support the level of competitiveness of economically, politically, or institutionally linked countries.

There is no doubt that cities, regions, economies of different countries, as well as organisations in macro-economic systems of individual countries, including logistical macro-systems, compete and cooperate with each other. It therefore seems pertinent to ask the question and examine whether elements such as the LPI can serve as decision support elements for cooperation or competition, whether the logistical potential of individual countries/regions can be an element of coopetition or only serve as a comparative element? Can cross-border cooperation and logistical ties be an element of coopetition? Will they influence the level of LPI or is it independent of the economic activities undertaken?

## **3. Methodology**

Basing on the previously developed LPI and other selected micro- and macroeconomic indicators of the selected economies, an analysis in V4 countries

was developed. The methods of descriptive statistics were used for this purpose. The result is the development and presentation of areas of potential cooperation and competition of V4 countries in the field of logistics and their possible effects. The starting point was the analysis of the literature on coopetition and usefulness of the LPI index in research. Coopetition has so far only been studied in the context of inter-organisational linkages, possibly in the supply chain.

The authors put forward a bold thesis, indicating that we can also talk about coopetition at the macroeconomic level. Statistical analysis and inference process were used to confirm the thesis and research questions. The novelty and scientific value is the identification and proposal of applying the potential of co-opetition at the macroeconomic level and determining its value and potential using the LPI index.

## **4. Literature Review**

### **4.1 Coopetition in Macroeconomic Terms**

The concept of coopetition was introduced in the 1990s as a combination of two concepts: cooperation and competition. Despite a steady increase in research in this area, it remains fragmented and limited (Yadav *et al.*, 2022). Based on the literature survey, it should also be pointed out that a comprehensive and critical review of past and current research is missing in the literature (Gast *et al.*, 2015).

Etymologically, coopetition combines the terms, cooperation and competition. Using game theory and examples from business practice, it was justified that achieving satisfaction from business activities, including profit and increased competitiveness, does not have to take place exclusively in a win-lose relationship, but successfully in a win-win formula (Tundys, 2011).

In terms of coopetition, complementors should be added to the standard participants of economic activities (company, suppliers, competitor, and customer), as an additional link that, with the action of repeated interactions, can compete and be cooperative at the same time, and these so combined actions should bring profits to all participants. This means that it is necessary to identify and define the areas of co-opetition in which these links will create added value. It can therefore become a solution to support the management of opposing areas to find areas of co-operation among competitors.

Coopetition can become a new tool for the search for strategic advantage, a new field for data extraction, for the implementation and creation of new theories, and thus for the acquisition of knowledge, which can become an element of new added value with significant benefits for all participating parties. In understanding the concept, it should be pointed out that it is an incomplete congruence of interests and goals, a change of perspective from a purely competitive and cooperative to a

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coopetitive one (Dagnino and Padula, 2002).

It can also be referred to as a global perspective (coopetition with global rivals, with foreign governments, within a multinational enterprise). As a loosely connected system in which actors maintain some interdependence without losing their organisational distinctiveness; the dominance of competition or cooperation in a coopetitive relationship (Luo, 2004; Luo, 2007). The definitions can be transferred to economies, and the assumptions of multinational enterprise cooperation can be referred to as national economies. Not referring to individual links, but comparing, for example, sectors of the economy.

Analysing various definitions of co-opetition, the authors propose to broaden the definition and not to refer only to enterprises, but to move to the level of national economies. This means that co-opetition is simultaneous competition as well as co-operation in terms of whole national economies and/or individual economic sectors. Participants at this level can, through economic or political ties, fulfil common goals, creating systemic solutions that can be adapted to varying degrees to national economies. It is necessary to highlight those elements that can be subject to cooperation and to point to those that indicate a strong competitive position and that will constitute an advantage for a given national economy.

There is no doubt that there is an asymmetry of resources within the co-opetition activities undertaken, which may result from structural differences, position in the co-opetition network, level of advantage and scope of co-operation, as well as leading at the same time to the identification of the diversity of competitive activities of the coopetitors. It is not about the absence of competition in the new approach, but about taking joint actions that will bring about a win-win effect for the cooperating economies, but also highlight the competitive opportunities and competitive advantages of the units concerned. The dynamics of interdependence between economies provides opportunities to interweave benefits and maximise them in different fields at different times. It can be an element of value creation. Coopetition allows complementary resources to be used more efficiently (Bengtsson *et al.*, 2016).

The success of coopetition is influenced by the presence of both complementary and substitutional factors between the actors. Co-operation is easier if there are more complementary elements. Such solutions have long been used in supply chain management, where the next logistical task depends on the next link. The different partners are linked and the main goal is to ensure the highest possible satisfaction of the final customer with the completed task or service. This can therefore be transferred to the field not only to the supply chain but also to global economies that are interlinked in some way. When considering the issue of co-opetition, it should be taken into account that a given economy, like individual entities, can cooperate with another economy (a group of economies) and at the same time compete with another (different) economy (group of economies).

A strong competitive position of one economy in a given area encourages other entities to establish, maintain and develop cooperative relations with the given entity. Co-operation should strengthen the position of co-operating entities vis-à-vis their competitors, in this case, other national economies not linked by, for example, economic or political ties. In many cases, competition has a negative effect, among other things by accentuating the differences between regions, so it is worth looking for solutions in individual sectors where economies can be supported. Cooperation should facilitate synergy effects to achieve, among other things, multiplier effects.

The most important benefits include mutual learning, stimulating innovation and supporting solutions where benefits can be achieved, including specialisation (synergy), access to resources, strengthening the position of the economy vis-à-vis competitors not included in the coopetition arrangement, taking full advantage of market opportunities, expanding the scale of operations or access to new markets (Bigliardi *et al.*, 2011; Park *et al.*, 2014).

Competition is not an easy strategy to implement. It carries many risks and its dynamics and often incomplete understanding of areas of cooperation and competition can lead to tensions, opportunistic behaviour and loss of some knowledge or advantage (Raza-Ullah, 2020). There are many cognitive dilemmas whose understanding and resolution can contribute to its success, even more so on an economy-wide basis.

Despite different research approaches and perspectives, analysing the advantages and disadvantages and trying to explain the phenomenon of coopetition, there is a consensus that this type of strategy is expected to bring specific benefits to individuals. The complexity of activities and areas of cooperation and competition within coopetition leads to it being one of the most complexes and demanding organisational challenges (Lundgren-Henriksson and Kock, 2016; Tippmann *et al.*, 2018; Gernsheimer *et al.*, 2021). The lack of research and attempts to promote such activities at the level of national economies presents an extremely difficult but interesting research challenge.

As indicated in their bibliometric study on coopetition by Yadawv *et al.* (2022) present knowledge about coopetition remains fragmented, given the importance of the subject (Jámbor, 2018) and is based on selected areas. The most commonly developed and described coopetition activities include, a number of overview, definition and theoretical studies have appeared in the literature (Bouncken *et al.*, 2015; Crick, 2018; Gernsheimer *et al.*, 2021; Gast *et al.*, 2015). Regarding specific areas, publications such as innovation (DellaCorte 2018; Ritala, and Hurmelinna-Laukkanen, 2013; Aghion *et al.*, 2005; Navío-Marco *et al.*, 2019), the impact of coopetition on the organisation's activities (Baruch and Lin, 2012; Pret, and Cogan 2018; Crick, 2018; Watson and McGowan, 2019), whether it relates to knowledge management (Ilvonen and Vuori, 2013; Gast *et al.*, 2019; Czakon. 2009; Chevallier *et al.*, 2016).

Cooperation and competition are observed in relationship networks (intra-network and inter-network) (Wang and Ma, 2015). Cooperation and competition are observed in relationship. We also find such examples of simultaneous collaboration and competition between countries. For example, a few countries cooperate with each other by providing manufacturing resources (and even share technologies – for example, European Countries) to each other but compete to ensure individual GDP growth (Samanta *et al.*, 2022).

In this case the concept of competition and collaboration was termed as co-competition in network analysis (Hu and Zheng, 2014). Neighbouring destinations and countries can simultaneously compete for resources and markets, but also cooperate on marketing activities or infrastructure development (Kylänen and Rusko, 2011). Co-competition between regions or countries can be considered a specific form of co-competition at network level, as it involves multiple stakeholders from different networks and destinations (Nguyen *et al.*, 2022).

#### **4.2 Measuring the Logistical Performance of the Economy – LPI**

By analysing the LPI, a country's position can be assessed and, in the context of considering a group of countries, an analysis can be made from both a cooperative and competitive point of view. The LPI is a measure of the logistical performance of the economy under study. The position occupied by individual countries indicates both their weaknesses and strengths. Indicating the elements of competitive advantage of selected areas of a given economy in the global logistics market.

This indicator determines and defines the logistics potential of a given region, group of countries, or an independent economy. A high level of the indicator may speak of the high efficiency of conducting logistics activities, awareness of the role that the logistics sector plays in the economy, and the use of the logistics potential of a given country. The level of implemented innovations, the efficiency of performed processes, the availability of services and the adequate quality of infrastructure form the basis for the assessment of the logistic potential of the economy, which is reflected in the measurement of logistics efficiency constructed by the World Bank in the form of the LPI indicator.

#### **5. LPI as an Element in Identifying the Areas of Co-competition of Groups of States - An Analysis Using the Example of V4**

It is very important to look for the relationship between the intensity of co-competition and productivity (Raza-Ullah and Kostis, 2020). Therefore, transferring the level of consideration to selected national economies, the LPI can be used for this purpose.

The Visegrad group of countries (V4) was taken into consideration. These countries are characterised by a similar level of economic development, advanced investments in the logistics sector, as well as formal cooperation in various fields. Their strategic

location in the context of logistics flows, on the one hand, allows for competition and on the other hand for cooperation. Formal cooperation provides opportunities to achieve economies of scale and synergies while competing by shaping transport and logistics infrastructure.

The latest available LPI ranking is the data for 2018. Table 1 indicates the overall level of each indicator together with the position of the respective V4 country in the overall ranking.

**Table 1.** Analysis of LPI index in 2018 in V4 countries

Country/ ranking 2018	LPI Score	Customs	Infr.	Inter. shipments	Logistics competence	Tracking & tracing	Timeliness
Czech Republic	3,68	3,29	3,46	3,75	3,72	3,7	4,13
Poland	3,54	3,25	3,21	3,68	3,58	3,51	3,95
Hungary	3,42	3,35	3,27	3,22	3,21	3,67	3,79
Slovak Republic	3,3	2,79	3	3,3	3,14	2,99	3,14

*Note:* above average

*Source:* Own elaboration based on <https://lpi.worldbank.org/>.

Interpreting the data in Table 1, it can be seen that a high position of a given country means getting the highest position in practically every category, with one exception - the Czech Republic, with the highest position in the area of customs among the surveyed countries, takes the second place after Hungary. Analysis of the data in Table 1 also shows that the score differences between the individual components are really small, although the difference in ranking is already large.

The difference in LPI between the first and last ranked surveyed economies is only 0.38. In terms of individual components, the differences are even smaller. This means that the individual economies within the V4 are actually at a similar level of logistical development. Therefore, this situation should be used and considered as an opportunity to build and implement a co-opetition strategy. Table 2 shows the exact data for each of the components of the LPI and how they have changed over the years in all countries.

**Table 2.** Analysis of LPI index of V4 countries

year	2007	2010	2012	2014	2016	2018	2007/ 2018	2007	2010	2012	2014	2016	2018	2007/ 2018
	ranking							International shipments						
Czech Republic	38	26	44	32	26	22	+15	3,06	3,42	3,01	3,59	3,65	3,75	1,23
Poland	40	30	30	31	33	28	+12	2,92	3,22	3,47	3,46	3,44	3,68	1,26
Hungary	35	52	40	33	31	31	+4	3,07	2,78	2,99	3,4	3,44	3,22	1,05



Slovak Republic	50	38	51	43	41	53	-3	3,09	3,15	2,84	3,16	3,41	3,3	1,07
	LPI Score							Logistics competence						
Czech Republic	3,13	3,51	3,14	3,49	3,67	3,68	1,18	3	3,27	3,34	3,51	3,65	3,72	1,24
Poland	3,04	3,44	3,43	3,49	3,43	3,54	1,16	3,04	3,26	3,3	3,47	3,39	3,58	1,18
Hungary	3,15	2,99	3,17	3,46	3,43	3,42	1,09	3,07	2,87	3,8	3,33	3,35	3,21	1,05
Slovak Republic	2,92	3,24	3,03	3,25	3,34	3,3	1,13	3	3,15	3,07	3,16	3,12	3,14	1,05
	Customs							Tracking & tracing						
Czech Republic	2,95	3,31	2,95	3,24	3,58	3,29	1,12	3,27	3,6	3,17	3,56	3,73	3,7	1,13
Poland	2,88	3,12	3,3	3,26	3,27	3,25	1,13	3,12	3,45	3,32	3,54	4,13	3,51	1,13
Hungary	3	2,83	2,82	2,97	2,02	3,35	1,12	3	3,54	3,52	3,82	4,06	3,67	1,22
Slovak Republic	2,61	2,79	2,88	2,89	3,28	2,79	1,07	2,87	2,87	2,84	3,02	3,94	2,99	1,04
	Infrastructure							Timeliness						
Czech Republic	3	3,25	2,96	3,29	3,36	3,46	1,15	3,56	4,16	3,4	3,84	3,94	4,13	1,16
Poland	2,69	2,98	3,1	3,08	3,17	3,21	1,19	3,59	4,52	4,04	3,46	3,8	3,95	1,10
Hungary	3,12	3,08	3,4	3,8	3,48	3,27	1,05	3,69	3,52	3,41	3,4	3,88	3,79	1,03
Slovak Republic	2,68	3	2,99	3,22	3,24	3	1,12	3,26	3,92	3,57	3,12	3,81	3,14	0,96

*Source: Own elaboration based on <https://lpi.worldbank.org/>.*

An important element is also the fact that the positions of countries and individual components of the indicator in subsequent rankings have changed, which means that actions are taken, which sometimes bring positive results, and sometimes not. Therefore, when trying to implement cooperation, it is possible to indicate which elements are the strengths of which countries.

Table 2 shows that, in fact, in each ranking, the positions change, dominated by Poland and the Czech Republic, which often swap places, while the results of the index in terms of individual components are very similar. It can therefore be pointed out that these very results may constitute a basis for further research and the search for areas of cooperation.

The analysis does not show any particular element in which any of the countries would be particularly competitive, so perhaps it is precisely the type of specialisation or exploitation to a greater extent of the specificity of geographical location that can be a competitive advantage of a given country. This element should be further and more intensively researched.

Actually, in each of the areas (Slovakia being an exception), compared to the 2007 and 2018 rankings, countries are improving their positions and getting closer to the

leader of the LPI ranking. It seems that geographical specificity can be an element of competition (e.g., for the range of logistics services - maritime logistics - Poland). And a lot of elements can be a platform for cooperation or complementing each other.

## **6. Discussion, Limitations and Conclusions**

The phenomena of simultaneous competition and cooperation observed in coopetition can occur when there is repeated interaction between business partners. Coopetition at the economic level is a natural phenomenon between countries. From one side there is economic exchange (import, export), and from the other, each country has a specific national interest that is realized, also by economic entities that compete in the market. It is worth considering whether changes in the size of the indicator are related to coopetition or only to the political, geopolitical, social or economic situation.

Coopetition can bring positive benefits without closing off the opportunity to compete. The experience of organisations specialising in and implementing a coopetition strategy as an organisational model or as an element of it can be transferred to national economies, and this should be the subject of a broad scientific discussion. Considering the assumptions and adapting solutions from the organisational level, it can be indicated that the undertaken activities may support the creation of product innovations (Obul *et al.*, 2021), radical innovation (Chen *et al.*, 2020), organisational innovation (Navio-Marco *et al.*, 2021) and innovation in services (Markovic, 2020).

The dynamics of innovation coopetition between small firms are also indicated (Ferreira 2020), large and medium-sized (Chiambaretto, 2020) or companies from various industries, e.g., high-tech (Bouncken 2020), between competitors and companies cooperating (Pekovic 2020), as well as national and global consortia (Hani and Dagnino 2020; Crick and Crick 2020). This approach focuses on the context of inter-organisational relationships but does not consider the context of national economies, which is why this approach should be scientifically developed.

All research and literature emphasise the importance of knowledge exchange and learning processes, regardless of the type of activity undertaken, innovations introduced, or outcomes desired. This aspect should also be considered in the context of a wider picture, that of national economies. They are ideally suited for this, as coopetition requires a variety of knowledge, sharing and assimilation, and these are the capabilities of national economies.

Implementing coopetition principles should rely on trust, capabilities and emotions, which are correlated and interact with each other. This can be successful when the level and scope of trust is clearly defined, the role of trust in managing such strategies is emphasised (Jakobsen, 2020).

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More and more studies are appearing on this topic (Lascaux, 2020) and can become a starting point for extensive research and exploration of other levels of trust. The aim and one of the tasks of undertaking a co-opetition strategy are to achieve the assumed positive results and to overcome barriers to the implementation of this type of strategy.

The range of outcomes achieved by the strategy depends on the objectives adopted. It can be based on Gernsheimer (2021), implementation of business-to-business marketing strategies in times of crisis (Crick and Crick, 2020), adoption of digital strategies (Zhu *et al.*, 2020), increasing sales results (Crick and Crick, 2021; Crick and Crick, 2020), implementation of product and market strategies (Crick and Crick, 2020) or implementation of the sustainable development strategy (Manzhynski and Figge, 2020).

Some studies show how differences and similarities between and among partners affect co-opetition outcomes, focusing on their power to influence and the power of influence (Chen and Lee, 2020) and market influences on the performance of co-opetition in different industries (Klein *et al.*, 2020), and technological and geographical similarities (Yan *et al.*, 2020). Especially this last element can be taken as an argument for further research on the success of the co-opetition strategy at the macroeconomic level, i.e., cooperation and simultaneous competition of national economies.

V4 countries through cooperation and simultaneous competition may not only intensify the development of transport and logistics infrastructure but also optimise joint effects from the relocation of links in chains, guided, for example by the specialisation and comparative advantages of individual economies forming the V4 group.

When analysing the positions of the V4 countries to each other expressed by the values forming the LPI index in individual areas, one should note the very strong position of the Czech Republic in the 2018 rankings (above the V4 average) and the position of Slovakia (below the V4 average).

It should be noted that in the period after World War II, both countries functioned as a single state under the influence of the Eastern Bloc operating within the framework of the Comecon (Council for Mutual Economic Assistance), which was an answer to the EEC (now EU) operating in the structures of Western countries.

It should be stressed that despite its worse position expressed by the LPI score, Slovakia can use its advantages, including those resulting from the co-operation within the V4 countries, being an attractive location for some foreign investments. It should also be pointed out that the cooperation of these countries in the field of logistics is an opportunity to attract further investments related to the fact of shortening global supply chains, thus contributing to the concept of

reindustrialisation of Europe and increasing the competitiveness of the EU as a whole.

Analysing the individual elements of the indicator in detail, it can be said that the support of countries in particular areas can bring positive effects for all and contribute to increasing the strong position of all countries. Within the scope of the study conducted, no particular areas of co-opetition are visible, but the topic should be further explored to specify and highlight specific areas.

The co-opetition of V4 countries can become their bargaining power, both the geopolitical position and the possibilities to compete in the field of logistics strategies can contribute to improving their economic performance in comparison to other European countries and beyond, without distorting competition and competing with those factors and in those areas, which are their strengths.

It should be recognized that all elements that support competitiveness and improve economic performance and should be used for analysis, including comparative analysis, or theses on the possible use of data to build even stronger cooperation that will allow greater competitiveness of whole economies or for example countries cooperating as V4.

Logistical ties and geopolitical and cross-border cooperation can be an element of coopetition, apart from the standard and already known elements of cooperation, other areas and justification for their use should be sought, for example by referring to the mentioned LPI indicator.

Geopolitical, economic activities within different economic structures can support logistical strategies and the logistical efficiency of individual economies. It therefore makes sense to study and analyse various indicators in order to gain as much knowledge as possible about the strengths and weaknesses of the economies concerned and to use the results of the analysis to improve their competitiveness.

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