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Jiali Huang

CHARLES UNIVERSITY
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Institute of IPS

**The Trade between the Czech Republic
and China: An Investigation of
Comparative Advantages**

Master thesis

Author: Jiali Huang

Study programme: International Economics and Political Studies

Supervisor: doc. Ing. Vladimír Benáček CSc.

Year of defence: 2023

Declaration of Authorship

1. I hereby declare that I have compiled this thesis using the listed resources and literature only.
2. I hereby declare that my thesis has not been used to gain any other academic title.
3. I fully agree to my work being used for study and scientific purposes.

In Prague on 30th July 30, 2023

Jiali Huang

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Mezinárodní obchod, komparativní výhoda, gravitační model, Česká republika a Čína, čínská iniciativa pásma a cesty

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Faculty of Social Sciences
Charles University in Prague

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Author:	Jiali Huang	Supervisor:	doc. Ing. Vladimír Benáček CSc.
E-mail:	36652276@fsv.cuni.cz	E-mail:	vladimir.benacek@fsv.cuni.cz
Phone:	+420 608237295	Phone:	...
Specialisation:	IEPS	Defense	September 2023
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Proposed Topic:

The trade between Czech Republic and China: An investigation of Comparative Advantages.

5 Keywords: comparative advantage; gravity model of international trade; China's belt and road initiative; international trade; Czech Republic and China

Topic characteristics / Research Question(s):

My thesis will focus on the estimation of comparative advantages of Czech Republic and China (mainland) correspondingly. First of all, I will collect the background information including policies, news, and academic papers to clarify the current situation both from the Czechia and Chinese sides. Second, I will analyze the trade structure decomposed into SITC 2 digits for exports and imports from Czech Republic to China in the last 12 years. Meanwhile, I will source the trade data from the China Customs Office and make a comparison on the other hand. Third, I will contrast the open trade regimes and trade deficits with China of other original "16+1" initiative countries, together with Germany and Austria. I will test the potential whether Czech Republic should follow the Baltic States to leave the initiative. Fourth, as a complement, I will also estimate a gravity model for cross sectional data to gain insight that if the trade between these two countries has been behaving in accordance with the trade gravity model or not.

Working hypotheses:

1. Hypothesis #1: in the terms of machinery and transport equipment, Czech Republic has a comparative advantage relative to China; in terms of primary commodities and manufactured goods China has a comparative advantage.
2. Hypothesis #2: Czech's trade openness is relatively greater than the openness in trade with China in other "16+1" countries.

3. Hypothesis #3: the trade flow between Czech Republic and China is in accordance with the gravity model.

Methodology:

Concerning the open trade regimes and gravity model analysis in my thesis, I will mainly use a quantitative method based on empirical theories, plus the literature research in investigating this topic. Regarding the data source, I will cite the trade database of Eurostat (in €). The comparative advantage theory of industrial structure is the most classical economic theory throughout the study of international trade. Therefore, it is useful to study from what kind of products, Czech Republic as well as China, benefit from the bilateral trade. In addition, since Czech Republic is one of the leading economies participating in the Belt and Road Initiative among the European countries, and China is the second largest economy in the world, there should be strong trade demand between them. In this way, I will analyze the intensities of trade between Czechia and China by the gravity model of trade, which is a standard tool to predict the trade flows between two specific countries. I will test a hypothesis if stable traditional trade relationship can be observed by calculating their GDP sizes, population, distances and other independent variables.

Outline:

1. Introduction
2. Theoretical background and the review of world literature
3. An analysis of competitive advantages of Czech Republic and China by using the RCA model
4. A comparison of trade data from two sides
5. The openness to trade and trade deficit with China
6. Gravity model analysis
 - a. Description of the Data
 - b. Regression Model
 - c. Discussion of the Results
7. Conclusions
8. References / Bibliography

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List of Abbreviations

“14+1”	“14+1” China-CEEC Cooperation Initiative
ASEAN	Association of Southeast Asian Nations
BRI	Belt and Road Initiative
CEEC	Central and Eastern European Countries
CEPII	Centre d'Etudes Prospectives et d'Informations Internationales
CNKI	China National Knowledge Infrastructure
CZSO	Czech Statistical Office
EU	European Union
FTA	Free Trade Agreement
GDP	Gross National Product
G-L	Grubel-Lloyd Index
HS	Harmonized System
ITC	International Training Center
OPEC	Organization of the Petroleum Exporting Countries
POP	Population
RCA	Revealed Comparative Advantage
SITC	Standard international trade classification
V4	The Visegrad Group
WITS	World Integrated Trade Solution

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Chapter 1 Introduction

Since the People's Republic of China became a member of the WTO in 2001, its foreign trade has taken a new step forward and the characteristics of an externally oriented economy have become increasingly evident. According to the ITC, China has been maintaining the world's largest exporter for 12 years and its export volume accounted for 15.2% of the world's total exports in 2021. China plays an essential role in the Czech Republic in terms of trade activity. (De Castro, T.et al., 2017) The relations between the Czech Republic and China can be dated back to 1949, when China established diplomacy with the former Czechoslovakia and henceforward the economic exchanges continued. After 1993, the establishment of the Czech Republic, economic ties between the two countries stepped into a phase of rapid development. Another milestone was the establishment of the "16+1" cooperation initiative led by China to further intensify merchandise trade among Eastern European countries in 2012. One year later, the "Belt and Road Initiative" (BRI) was announced as a complement to the "16+1" forum. (Zheng, X., et al.,2019) The participation of Greece in 2019 sees a promising development, which expands this mechanism to "17+1". For the Czech Republic, China is the fourth biggest commodity trading partner, with imports in second place; and the Czech Republic is the second largest trading partner for China in the Central and Eastern Europe area in 2021, accounting for 17.4% of the total Sino-CEE trade. Compared with 2010, bilateral trade has increased by 130.2% (ITC); and there still has great potential for growth. (Yao, S., 2021) After the global financial crisis and the European debt crisis, the purchasing power of Europe has declined and investment in the Czech Republic has fallen significantly. Besides, as a result of the Ukraine war and tensions with Russia, exports to Russia have also fallen sharply, and it has become a common choice for CEEC to 'move east' to increase exports to China.

However, the complete step out of Baltic countries (Estonia, Latvia, and Lithuania) in

2022 led the initiative to transfer into “14+1”, at the same time, convinced the Czech Republic to follow their movement prior to the pandemic. (Gosling, 2022) This implies a fact that CEE governments became gradually dissatisfied with disappointing economic outcomes. (Tomčík, 2022) The potential collaboration as well as the implementation of “14+1” are different from nation to nation because of the discrepancies in political and economic development. (Tomčík, 2022) Albeit there is a significant improvement in trade flow, the volume of Chinese imports in the Czech Republic and the whole CEE bloc is much larger and its structure is focused on capital goods and intermediate goods. (Horak, & Kucera, 2021) Identically, intermediate goods (capital goods) occupy CEE exports to China, where the Czech Republic accounted for over 60% of intermediate goods. (Shang and Zajc, 2016)

Based on the potentially increasing trade flow and the highly overlapping export structure between the two countries, this thesis aimed at estimating the hypothesis of (1) whether both the Czech Republic and China are comparative in exporting capital and intermediate goods by calculating the Revealed Comparative Advantage Index (RCA); (2) whether there is a highly intra-industry trade in transportation, machinery and electrical sections by calculating the Grubel-Lloyd Index (G-L). Additionally, given the fact that the Czech government is considering withdrawing the “14+1” initiative, this thesis also estimates (3) the trade efficiency between Czechia and China by the Trade Gravity Model. To answer these questions, this thesis is divided into six parts. Firstly, a short background of the research is provided, followed by a literature review in the subsequent section. The third section describes the current merchandise trade status between the Czech Republic and China. The fourth section is an empirical analysis concerning comparative advantages by adopting RCA and G-L index models. A trade gravity model is used in the fifth section to estimate the trade efficiency between the Czech Republic and its trading partners. In the last section, conclusions are discussed concerning the competitiveness of Czechia and China. For reasons of space, trade in value added is not considered in this thesis.

Chapter 2 Literature Review

In recent years, there has been an abundant academic discussion of the comparative advantages of the Czech Republic and China in terms of research results into their merchandise trade. The literature directly relevant to this thesis focuses on three main directions: Comparative Advantage, Intra-industry trade and the Trade Gravity Model.

2.1 Comparative advantage

Going through the related literature, the Czech Republic has a significant RCA in producing and exporting vehicles and automotive components with Skoda, a Czech automobile manufacturer, is a well-known global brand. Additionally, the country's competitiveness extends to machinery and equipment and electrical and electronic equipment. There are some overlapping sectors on the Chinese side. China is recorded a major exporter of electrical machinery and equipment, as well as machinery and mechanical appliances. Choros-Mrozowska (2020) examined that the Czech Republic had the most comparative advantage in highly processed goods (SITC7, machinery and electrical), responsible for almost 33.5% of all CEEC exports to China. Even though there is significant competitiveness, he pointed out that CEE was losing out to Chinese competition at the same time because the trade imbalances in exchange of CEE countries with China have been persisting for many years and have yet to be reversed. On the other side, using the NRCA (Net Revealed Comparative Advantage) index combined with kernel density estimation and conditional probability density estimation, Jin et al. (2022) analyzed the current dynamic evolution of the comparative advantage of China's exports of ten categories of high-technology products to the Czech Republic, Hungary and Poland, the three major markets in Central and Eastern Europe. The study finds that China's comparative advantage in exports to the Czech Republic is more pronounced than that of Hungary and Poland.

However, this is limited to product category 04 (information and communication high technology products), while the comparative advantage varies considerably, and its dynamic evolution is unstable. (Jin et al., 2022) Regarding optoelectronic exports in category 03, China's comparative advantage over the Czech Republic fell to a negative value in 2019, indicating that its comparative advantage has turned into a comparative disadvantage. Apart from this, China's comparative advantage in high-technology products to the top three markets in Central and Eastern Europe is not significant, indicating that China's export structure is relatively homogeneous. Cheng (2021) drew the same conclusion that albeit trade flow during Visegrad four states was seen at a growing tendency during 2012- 2018, the cooperation field was very limited. Both sides have their areas of expertise in electromechanics; China is mainly in the field of home appliance manufacturing, mechanical equipment, etc., while the V4 countries are mainly in the field of automobile manufacturing, parts manufacturing, etc. As Jiang (2020) collected trade data from both the Chinese and Czechia sides, she claimed that there was a comparative advantage in the mutual trade between Czechia and China. Complementary commodities exchange in the fields of mechanical engineering, aerospace, electronic equipment, health care, finance and tourism could also be observed, from which China mainly exports electromechanical products, optical instruments, clocks and watches, medical equipment and transport equipment to the Czech Republic, and imports electromechanical products, chemical products, transport equipment, base metals and products, etc. from the Czech Republic. Furthermore, these two economies achieved a very satisfying result in bilateral trade under the positive process of BRI and "16+1". Besides, Li and Andreosso (2018) recognised that China had a less comparative advantage in agri-food products; therefore, the trade balance position for the EU countries can be improved by exporting relatively complementary agri-food products to China under the umbrella of an amicable mutual relationship. Yu and Qi (2016) also analysed the complementarity and comparative advantages of China and CEE countries in the

agri-section with similar methods. The results showed a strong complementarity between China-CEE countries in agricultural trade which has great potential for trade in products with a comparative advantages. Specifically, the Czech Republic has comparative advantages in live animals, tobacco and animal or vegetable fats, which complement China in the sectors of oil seeds and oleaginous fruits, wool and other vegetable textile fibers. Besides, an intra-trade tendency can be seen in the preparations of cereals and miscellaneous edible preparations. Wei et al. (2011) studied the comparative advantage and stability of 144 manufactured goods, the structure of export trade and its degree of change during the period 1999-2009, and found that high-technology manufactured goods are gradually replacing low-technology manufactured goods in the absolute dominance of China's exports and have become the number one category of China's exports. As for the agri-section, it was not as strong as the machinery goods in general. An inter-industry character was obviously witnessed, which explains that there is less competitiveness in agricultural goods for Czechia. However, if the analysis is focused on individual aggregations, at least some aggregations can get a comparative advantage in the global market, i.e. live animals and tobacco. (Kuzmenko, et al, 2022) Based on the previous results, he also revealed that the EU single market is the final destination for most Czech agricultural products. These do not have a comparative advantage over countries richly endowed with agricultural land and capital.

2.2 Intra-industry Trade

By estimating the Grubel-Lloyd index, Zapletal and Stuchlikova (2013) analysed the import from China, and they found that the ratio of Czech imports from China is 8:2 for investment and consumer goods. Therefore, the Czech Republic is considered to doing the favour of promoting Chinese commodities into the EU market because of its EU membership. Moreover, the result implied that Czechia gained a relatively low index of the intra-trade model, which means the general export and import have

happened in different sectors, and the Sino-Czech trade was significantly complimentary. Commodities from China were reprocessed in the domestic market and then exported to other European countries. It is also worth noticing that the exported structure of both China and CEE countries were identical, mainly focusing on electromechanical products, meaning the import volume was driven by the supply capacity of CEE countries, the market size of China and the "17+1" cooperation mechanism; and the hampered factors were hindered by the supply capacity of China, the market size of CEE countries and cultural distance. (Wei & Zhang, 2020) Jiao (2021), in his literature review part, pointed out that the trade complementarity index yields strong inter-industry complementarities between CEE and China, which was evident by stable but monopoly mutual trade. Regarding the indicators of trade facilitation levels, it showed a "double U-shaped" effect of higher levels at the end than at the beginning. (Jiao, 2021) Potential trade can still be explored, mainly for export from the CEE to China. As Castro and Hnát claimed (2017), almost 80% of imports from China to the Czech Republic are intermediate products meaning the Czech Republic specialised in re-exporting manufactured products which are motor vehicles, trailers and semi-trailers. Besides, the trade deficit with China in value-added terms has been much smaller than the gross trade deficit, also proving the fact that Czechia deals with much intermediate trade because of its membership of the EU, favourable geographical location, educated labour force and stable economy. (Castro & Hnát, 2017) Czech exporters have more chances to penetrate the European market at a relatively lower cost. A more comprehensive study was conducted by Liu, (2021). He applied the methodology of the Revealed Comparative Advantage, the Trade Intensity Index and the Trade Complementarity Index and claimed a significant intra-industry in specific sectors between CEE states and China. Mutual trade was characterised as highly uneven within the CEE region, where 75% of the flow was concentrated in Poland, Czech Republic, Hungary, Romania, Slovakia and Greece, and lacking trade diversity, with trade in electromechanical products far exceeding

trade in other products. (Liu, 2021) Based on annual China–CEE bilateral trade flows and the Constant Market Share Analysis during 2002-2011, Shang and Zajc (2016) revealed that both Czechia and China tended to obtain market shares in commodities characterised by non-dynamic import demand growth. While the centrality of intermediate goods occupied in the Czech Republic, exports to China have accounted for over 60% of her aggregate exported volume, which is an unfavourable structure. (Shang & Zajc, 2016) Three more modern indicators like TC (trade complementarity index), TCI (trade competition index) and ESI (export similarity index) are utilized by Yao (2021) to investigate trade complementarity and competition between Czechia and China. The study found that the Czech Republic is competitive in the resource-intensive and capital-intensive sections, which strongly meets the standard of complementary of China's imports. While China has advantages in labour-intensive and capital-intensive goods, which implies the complement of Czechia's imports. In addition, the author points out that both economies mostly export capital-intensive goods, leading to fierce competition in the world market.

2.3 Trade Gravity Model

The gravity model of international trade has become one of the standard tools for analysing trade patterns and trade; (Šimáková, 2014) Scholars categorised the current literature reviews about the trade gravity model as two parts: one is for the quantified impact of economic factors, and the other is for predicting the trade potential. (Li & Andreosso, 2022) Trade gravity model was extensively used in estimating the agricultural and manufactured products for CEE countries. Li and Andreosso (2022) proved the claim that EU member countries had a positive relationship with agricultural goods vis-à-vis China. Surprisingly, in the aspect of testing the geographical distance, it showed a positive relationship with the trade in beverages and tobacco products, which can be accounted for the product differentiation from the different original places. Following the same methodology, Stanojevic (2020)

examined a crowding-out effect in textile and furniture sectors which are featured as low-tech goods, by comparing the import data of CEEC from the EU15 with the one from China. Besides, there is a more intensive exchange value of Sino-CEEC in the sectors of electronics and machinery than the value of EU15-CEEC. Based on the prediction of the trade gravity model with the extra uncommon variables (the number of China-Railway Express, membership of the EU and the membership of BRI), Liu (2021) addressed that the Czech Republic, as a relatively larger market, has achieved a better result than other small CEE economics, but the potential trade between two sides are far from the ideal level, meaning there is still a vast opportunity for both to optimise trade activities. Xie (2010) inferred that the impact of the economic scale on agricultural trade is more significant than the effect of population size, while geographical distance and the EU enrollment hamper mutual agricultural exchange with the Chinese side as expected. Moreover, an empirical test result showed that identical per capita national income levels and the convergence of demand structure favour bilateral agricultural product trade was drawn based on the Preferences Similarity. Interestingly, carbon productivity was inputted in Yao's research (2018) as a new variable of the trade gravity model. China as the biggest exporter of manufactured products, produced very prominent CO₂ emissions. In addition, the highly concentrated trade structure of electromechanical products causes low carbon productivity, which means the increasing trade flow between CEE-China was at the expense of both environments. Indicating the diversification of trade commodities is necessary.

Referring to the function of predicting the trade potential, Kuang and Gao (2019) used the gravity model to conclude the average index for exports and imports between China and CEE countries, implying the overall trade between these two areas is insufficient and the potential exists to increase bilateral trade further. Obvious potential trade structures between Sino-CEE were also reported by this research, where the imported proportion of machinery and equipment, electromechanical

products, electrical machinery and parts thereof was gradually increasing from the Chinese side, and agricultural products such as beef, lamb and dairy products from CEE region achieved significant growth in exports to China. The same methodology was utilised by Yan and He in 2019. In order to estimate the trade potential and scope for trade expansion in CEE countries, they compared the trade efficiency of 129 countries with China and found that China's export and import trade efficiency is relatively higher with non-BRI countries than the BRI countries. Among the CEE countries, the Czech Republic ranked second place in export and import trade efficiency within the CEE region, meaning there is still room for trade expansion between Czechia and China.

Šimáková (2014) mentioned the Czech Republic is a small open economy with a high ratio of foreign trade to GDP. Meanwhile, she introduced the exchange rate to the gravity model and concluded that the nominal exchange rate volatility of Czech koruna has a significant negative effect on bilateral trade. Chen and Liu(2018) verified the impact of trade facilitation on China's trade potential in countries along the "Belt and Road". They found that the Trade Facilitation Index (TWTFI) was presented in a "double-U-shape" in time and space, meaning the level at the end is higher than the level at the beginning in terms of time latitude; in terms of space dimension, it is higher in East Asia and Europe and lower in Central and West Asia. By inserting the TWTFI as a new variable in the trade gravity model, the authors got a result that the effect of TWTFI on bilateral trade flows is significantly positive at the 1% confidence level as well as the GDP and population size, while the mutual distance and border on bilateral trade flows are significantly negative to the trade flow. Concerning that transport cost is a vital factor while measuring bilateral trade in practice, Limao and Venables (2001) examine the augmented transport cost in the trade gravity model, including the quality of infrastructure and oil prices. The result shows that these two variables are significant, and the coefficient for the oil price is negative. Chen and Hsu (2013) also introduce oil price volatility into a standard

gravity model because the oil price and distance variables are the proxies for transport costs. The greater the distance, the higher the transport cost during the conduction of bilateral trade, and hence, the more uncertainty they face as oil prices fluctuate significantly. (Chen and Hsu, 2013) Their empirical result suggests that the rise in oil prices will lead to a significant adverse effect on bilateral trade, and this negative effect enhances as the distance increases.

Chapter 3 Current Merchandise Trade Status of the Czech Republic and China

3.1 Trade Status between the Czech Republic and China

At the beginning of the 21st century, Czech exports were mainly directed to the EU. (Ru, C.&Liu, Z., 2019) Compared to nine years ago, CEE-China trade has increased by almost 85%, especially as CEE's exports have increased by 22% compared to imports. CEE-China economic and trade cooperation has led to significant growth in Czech-Sino trade. Due to the global financial crisis and the European debt crisis, the Czech Republic's trade with the EU countries declined. However, bilateral trade with China multiplied significantly even during the pandemic (as shown in figure), except for a fluctuation in 2009 because of the economic crisis. Drawing from the figure, the total import and export volume of the Czech Republic and China was only US\$762,940 thousand in 2000, while this number reached US\$46,699,085 thousand in 2022, with an increased rate of 6,037.03% than the origin year and year-on-year increase of 22.63%. Over the past two decades, Czechia's total import and export trade with China has grown remarkably, and this trade scale has continued to expand.

Figure 1 Czech import and export trade with China



Source: ITC

Regarding the export part, Czechia has had an overall upward trend in exporting to China from 2000 to 2022, with a slight decline in 2012, 2015 and 2019, then a rebound to around US\$2,997,803 thousand in 2021, an increase of 15.09% in 2020; but it dropped to US\$2,687,984 thousand in 2022. In terms of the import section, Czechia's import activity with China followed a similar trend to the total bilateral imports and exports, from US\$694,820 thousand in 2000 to US\$44,011,101 thousand in 2022, an increase of 6234.17% in the first observation year and 25.44% over the previous year. Even under the global economic backdrop of the pandemic, Czechia's import from China was still showing a solid growth path. In particular, merchandise trade between the Czech Republic and China has been rising steadily, with an average annual growth rate of 7.14%. Even though Czechia has had an overall positive trade balance since the mid-2000s, the trade balance with China was in a negative situation during these years, and this deficit gap is getting wider and wider. Moreover, among the Visegrad countries, Czechia maintained the highest deficit (De Castro, T.et al., 2017). The growing tendency indicates that the Czech Republic is gradually relying on Chinese manufacturers. On the Chinese side, China's trade surplus with the Czech

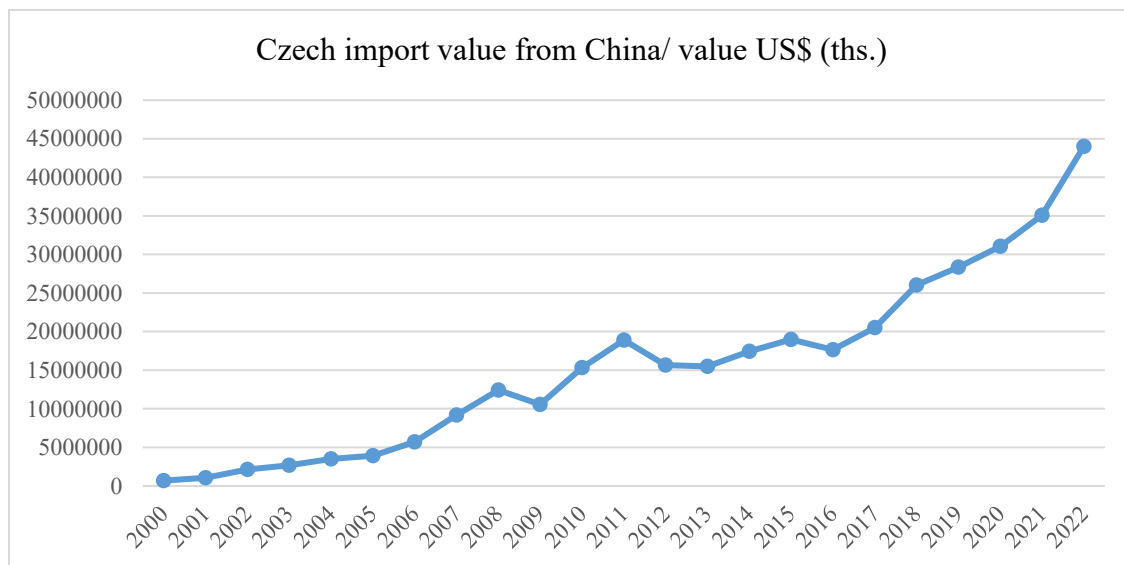
Republic has consistently increased, from US\$271 million in 2000 to US\$17,649 million in 2021. Furthermore, the bilateral flow structure is focused on capital goods and intermediate goods. (Horak, J., & Kucera, J., 2021)

Figure 2 Czech export value to China



Source: ITC

Figure 3 Czech import value from China



Source: ITC

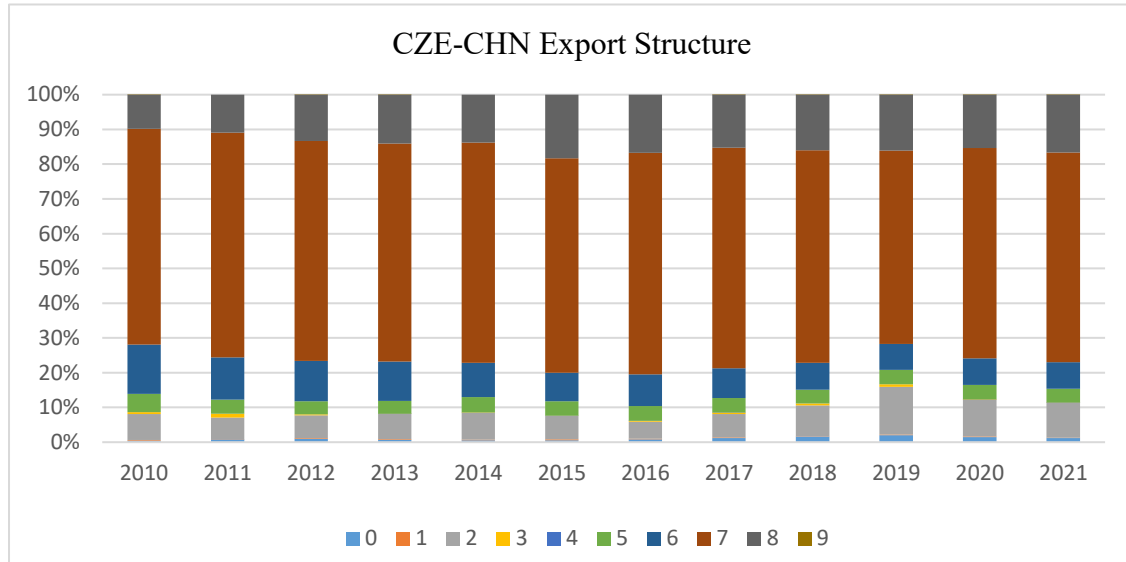
According to SITC Rev.3 and UNCOMTRADE, SITC0-4 are resource-intensive products, and SITC5-8 categorises manufactured goods. Capital-intensive

commodities fall under SITC5 and SITC7, while SITC6 and SITC8 are considered labour-intensive. Meanwhile, SITC7 is also defined as machinery and transport equipment. In 2021, Czechia's exports to the world were mostly made up of manufactured goods, which accounted for 90.27% of the total. When looking specifically at trade with China, the export of SITC7, SITC8, and SITC2 products dominated, representing 86.4% of exports in 2020 and increasing to 87.1% in 2021. These three categories remained the top exports to China. Among the three aggregations, the Czech Republic had the most comparative advantage in highly processed goods which belong to SITC7 aggregates. (Choros-Mrozowska, 2020) Specifically, SITC7 is the largest share of the export amount, accompanied by 60.3%, reaching US\$1,808 million in 2021. (UNCOMTRADE) Following are the SITC6 and the SITC5 which remain at 7.7% and 3.9%, respectively. A similar description can be seen on the Chinese side, as Jiang (2020) and Cheng (2021) depicted, China mainly imports the same section of electromechanical products from the Czech Republic.

On the other hand, an identical manufactured-oriented pattern can also be seen in the exported activity on Chinese export, which accounted for over 98.92% of its total exports in 2021. China's manufactured goods exports already accounted for over 95% of total exports to the world in 2021. (China Statistical Yearbook, 2022) Three types of products with the largest export volume in China are SICT7, SICT8 and SITC6, which accounted for 97.6% of all the exports to the Czech Republic in 2020. (Yao, 2021) With capital-intensive SITC7 becoming China's top export product to the Czech Republic, its exports amounted to US\$12,233 million, which rose to 80.97% in 2021. The same export aggregation of SITC7 between Czechia and China reveals a high overlap between these two countries' export sections. It is also worth noticing that the total share of labour-intensive products, such as SITC 6 and SITC 8, has gradually decreased from 17.9% in 2010 to 15.5% in 2021. As can be seen from Figure 2, during the monitored period, the share of SITC8 exports was diminishing, while SITC7 exports increased significantly from 2010 to 2021, which reveals that the

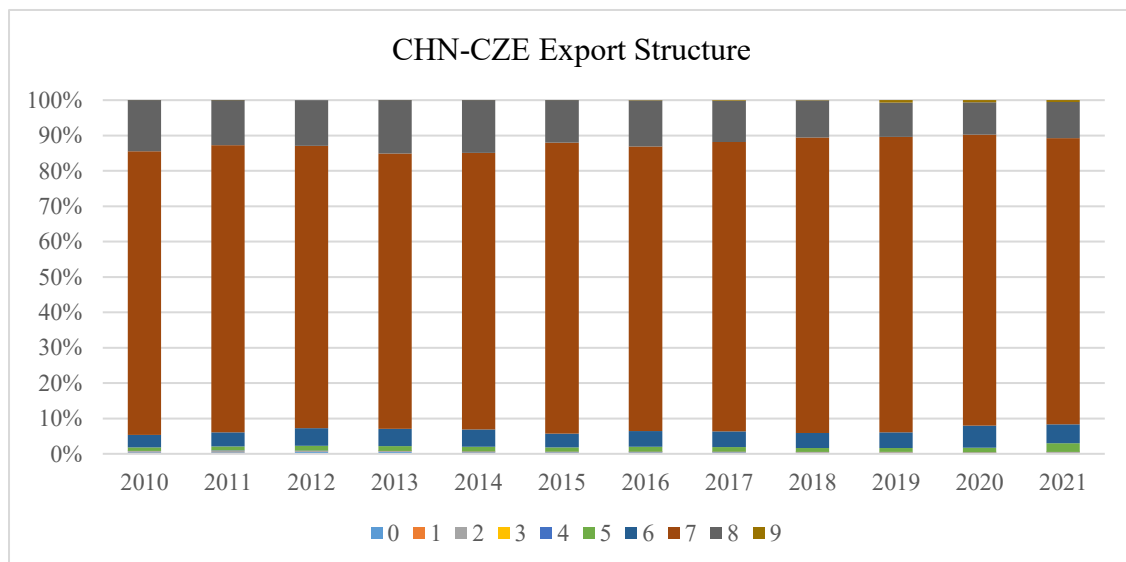
technical content of China's exports to the Czech Republic has increased. The exported structure from China to the Czech Republic has been optimised. (Yao, 2021)

Figure 4 Czech import value from China



Source: UNCOMTRADE and author's calculation

Figure 5 CHN-CZE Export Structure



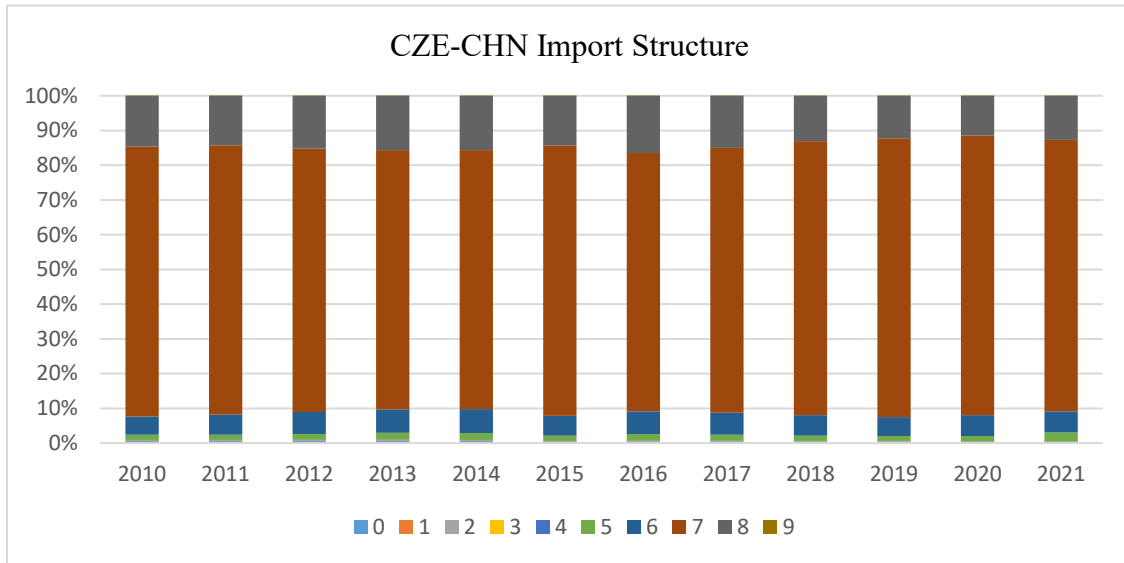
Source: UNCOMTRADE and author's calculation

In view of the import structure, the same overwhelming manufactured goods have yet to be replaced by other products during the study years. The import section of Czechia

has consistently seen SITC7 from China as the top product. From 2010 to 2016, its share remained stable at around 77.23% of the total import volume without significant changes. However, it saw a rapid expansion after 2016 and has now exceeded US\$ 27 billion in 2021. The following are the labour-intensive goods (SITC8 and SITC6); both sections accounted for an average of 20.3%, while the percentage of these aggregations is decreasing, drawing from the bar chart. The remaining aggregations (SITC0-5) hovered at only around 2.47%, which is a very tiny section of the total import all the time.

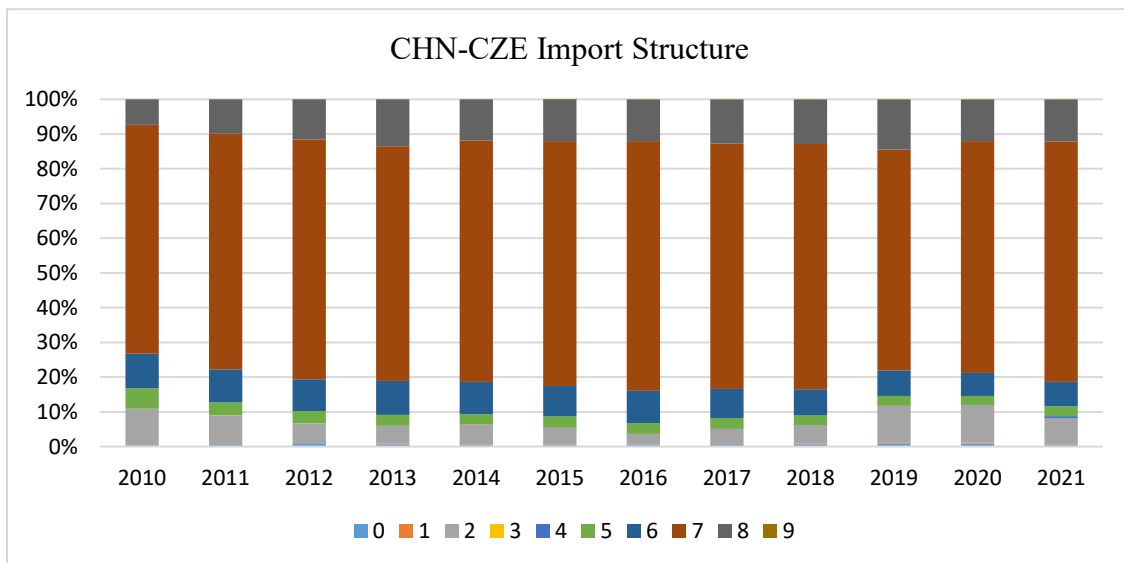
On the other front, though the import flows from Czechia to China are not significant as the export ones, the overall volume witnessed an increasing trend rising from US\$1.7 billion to US\$6.1 billion with an increased rate of 358.8% between the years. SITC7 has a similar growth path as the total import flow, which is undoubtedly the largest category (63.8% on average) that flowed from the Czech Republic to China. Labour-intensive goods SITC8 also saw an apparent climbing trend from US\$126 million in 2010 to US\$733 million in 2021, which contributes to the second highest import with an expanding share of 4.8%, reaching 12.1% in 2021. However, SITC6 followed a different route than SITC8, and its share gradually declined from 10% to 6.9%. Surprisingly, the import flow of SITC2 (non-food unprocessed materials) experienced a meteoric rise after 2016 surging from US\$178 million in 2010 to US\$420 million in 2021.

Figure 6 CZE-CHN Import Structure



Source: UNCOMTRADE and author's calculation

Figure 7: CHN-CZE Import Structure



Source: UNCOMTRADE and author's calculation

After analysing the data presented above, it becomes clear that both markets have a very homogeneous commodity exchange structure, with a heavy emphasis on manufactured goods. In fact, these goods make up approximately 96% of the mutual trade flow, indicating a strong focus on capital endowments. A highly unbalanced

share in the primary products can be seen with only 4%. Correspondingly, the trade relationship between the Czech Republic and China is relatively close in capital-intensive goods, and they are both in different links of the global value chain division of mechanical and electrical products. The products exported to the Czech Republic will likely be processed and then sold to Europe and the world. (De Castro, et al., 2017) The two countries have the potential to carry out a production capacity cooperation foundation. This chapter will be divided into two parts, accompanied by the Czech Republic and China trade structure from the view of the RCA index and the intra-industry trade (Grubel–Lloyd Index), respectively.

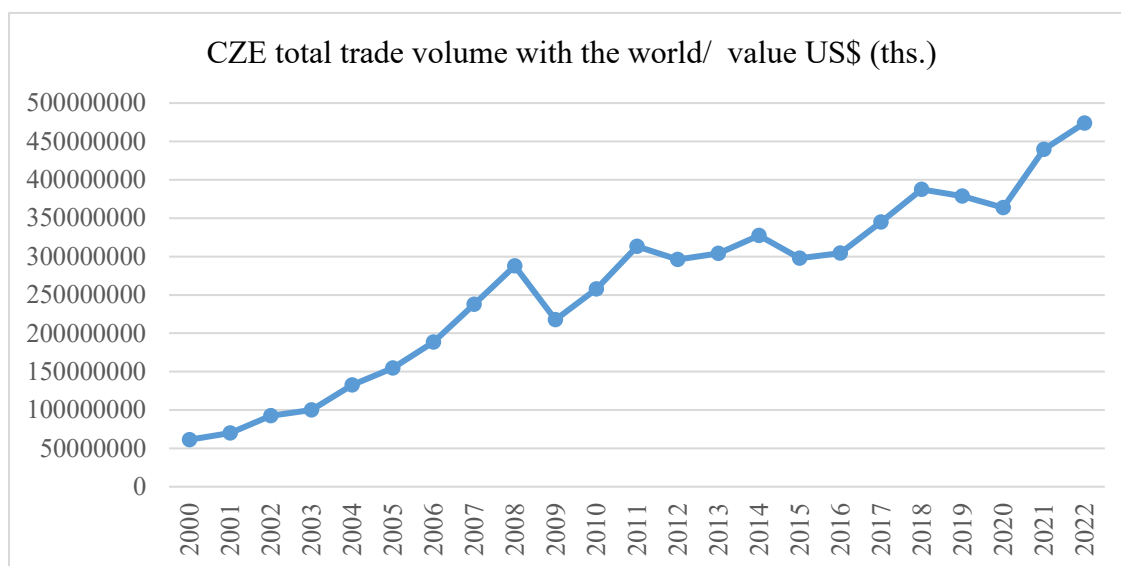
3.2 Czechia's Trade Structure

3.2.1 Overview of Czechia's Trade

In terms of the macroeconomic level of the Czech Republic, it benefits from its heart location in Europe and the relatively educated and budgeted labour force. Favourable elements harboured an industrial tradition in many sectors, including the automotive and machinery industries. (De Castro et al., 2017) According to the Czech Statistical Office, the manufacturing sector constituted 21% of its GDP and 26% of its employment in 2021. Due to the world economic crisis in 2009 and the pandemic in 2020, the country maintained a fluctuating pattern in GDP development, but grow rate in 2021 reached 3.5%, which basically recovered to the pre-pandemic level. Today, Czechia keeps a relatively stable positive GDP growth rate and the lowest unemployment rate in the European Union. (OECD, 2021) In addition, the recovery caused a pick-up in merchandise trade. Czechia has lost 16.7% in service trade while has gained 9% in merchandise exchange during 2020, which has benefited countries heavily involved in supply chains. (OECD, 2021) Merchandise trade in Czechia can also be seen in a fluctuating increased trend in the past decades, but the overall growth rate is outstanding, and trade size continues to expand. The below figure 8 shows the

data on Czechia's total import and export of merchandise trade with the world. It can be observed that the trade volume increased from US\$61,295,453 thousand to around US\$473,879,526 thousand, achieving an increase of 7 times.

Figure 8: CZE total trade volume with the world



Source: ITC

During the research period, Czechia has gained an average positive 5.09% of the surplus rate. Within 2021, trade data reached the amount of US\$ 212 billion and US\$ 227 billion in the import and export field, respectively, with a surplus rate of 3.34% or around US\$14 billion. Meanwhile, according to the World Development Indicators database, Czechia's total foreign trade volume from 2010 to 2021 accounted for 148.54% of the GDP on average (dependence on foreign trade), compared with the average world number, which was 59.95%. In 2021, the foreign trade turnover participated in GDP with 156.03 %, while the world's number was only 56.53%, and the share of exports to GDP accounted for 80.62%. The surplus rate (surplus/ total import and export) during the analysed period was kept in positive status, but it can be seen as a "U shape" trend, meaning the ratio first climbed up until 2014 and then went down around to the original level. This explains that the added value completed in the foreign trade process has decreased in recent years. The above statistics indicate that

Czechia is a very open and highly export-focused economy. (Český statistický úřad, 2015) This dependence results from the fact that Czechia's economy largely corresponds to its trade volume, meaning the more significant the GDP growth, the greater the capacity of Czechia to absorb foreign products.

YEAR	GDP	Import and Export Value	Dependence on Foreign Trade	Export Value	Import Value	Trade Balance	Surplus Rate
2010	209,070	257,832	123.32%	132,141	125,691	6,450	2.50%
2011	229,563	313,205	136.44%	162,392	150,813	11,578	3.70%
2012	208,858	296,150	141.79%	156,423	139,727	16,696	5.64%
2013	211,686	304,050	143.63%	161,524	142,526	18,998	6.25%
2014	209,359	327,505	156.43%	174,279	153,225	21,054	6.43%
2015	188,033	297,910	158.44%	157,194	140,716	16,478	5.53%
2016	196,272	304,415	155.10%	162,087	142,328	19,760	6.49%
2017	218,629	345,130	157.86%	182,231	162,899	19,332	5.60%
2018	249,001	387,446	155.60%	202,522	184,924	17,598	4.54%
2019	252,548	378,743	149.97%	199,470	179,273	20,197	5.33%
2020	245,975	363,748	147.88%	192,307	171,440	20,867	5.74%
2021	281,778	439,649	156.03%	227,168	212,481	14,688	3.34%

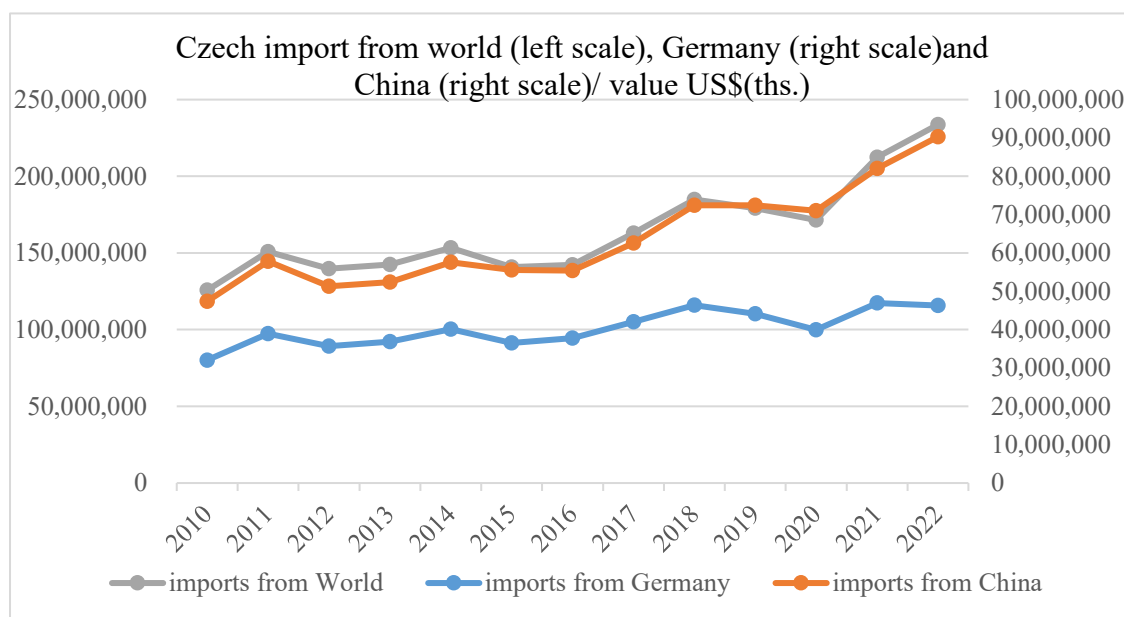
Source: World Bank, ITC and author's calculation

3.2.2 Import Structure of Czechia

To have a detailed look at the trade features of Czechia, the foreign trade part analysis of the Czech Republic will be subdivided into import and export, respectively. During

2022, the Czech Republic imported US\$233.7 from the world, representing 1% of the world's imports, and a 10% growth rate was observed from the last year. By selecting the data from ITC, 7 out of the top 10 are the European countries that exported most frequently to the Czech Republic; the remaining three were China, Russia, and the United States. Among those top 10 imported partners, Germany was seen as the country with the highest flow, whose volume reached US\$46.3 billion, making up 19.8% of Czechia's total imports. Following was China, shipping US\$44 billion in commodities which were 18.8% of total imports to Czechia. It is worth noting that import volume from China to the Czech Republic has grown 25% since 2021, enhancing the deficit situation on the Czechia side and China's the top deficit country. Poland and Russia secured a third and fourth place as the most imported country for Czechia, and the trade deficit is evident. With the exception of Poland, Czechia has recorded a surplus in gross trade with EU member states but a deficit with other non-EU countries. Specifically, Czechia's exports to China as a percentage of imports from China were only 6.11%, Russia at 13.82%, Japan at 31.86%, and South Korea at 12.13%. The below graph presents Czechia's imports from the world, Germany and China from 2010 to 2022. An immense similarity was observed among the import trend from China, Germany, and the world before 2019. The difference was only seen after the pandemic (2019-2022) when imports from Germany and the world shrank sharply while imports from China continued to grow. The three identical dynamic traces suggest that the "14+1" forum has no significant impact on the Czech Republic's imports. Furthermore, the growth after 2019 from China was allowed by China's strong manufacturing performance.

Figure 9 Czech import from world, Germany and China

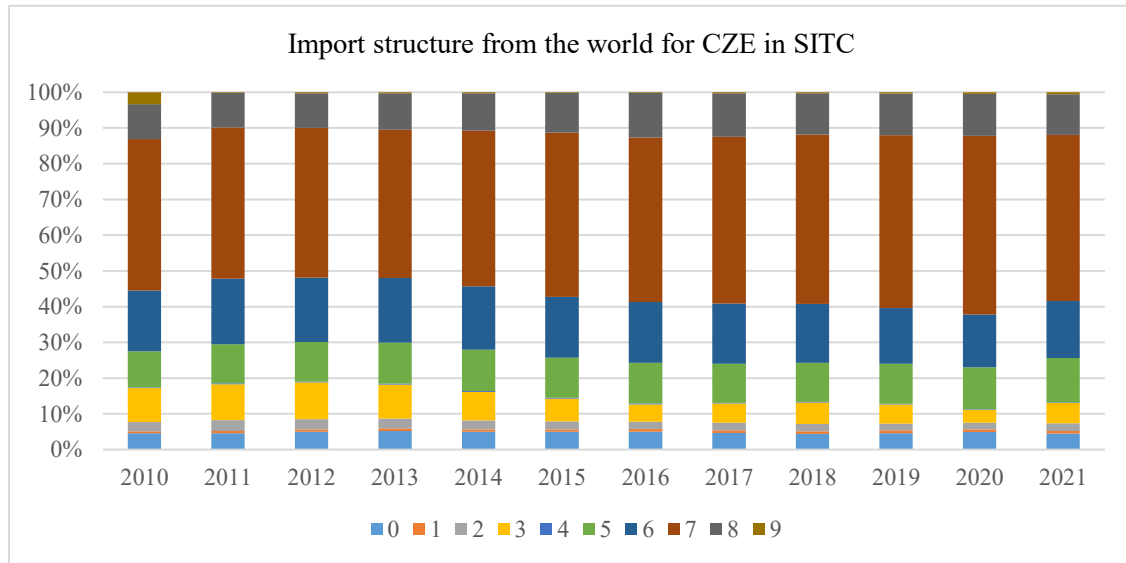


Source:ITC

According to the Czech Statistical Office, the Czech Republic has a deficit in foreign trade in the following sections: metals, plastics and articles thereof, miscellaneous, chemical products, mineral products, stone and glass, plastic and rubbers and textiles in 2021. The deficit situation suggests that the Czech Republic has yet to have a particular specialisation in the early stages of value chains.(De Castro, et al., 2017) The graph below illustrates the relatively stable structure of Czech merchandise imports over time. It reveals a dominant focus on machinery and transport equipment (SITC7) and primary manufactured goods (SITC6), accounting for an average of 45% and 17%, respectively. As a result, the proportion of SITC7 imports has even seen an increase from 42% to 47%; there was also a slight growth in the proportion of chemicals (SITC5) and miscellaneous items (SITC8). In contrast, the share of SITC6 and non-classified commodities (SITC9) decreased, especially in the later section, considerably dropping from 3% to 0.54%. While the other sections remained at the same level throughout the study period. A more detailed insight can be seen in the HS system that a fairly stable commodity structure has been maintained during the period. The top five commodities imported were trucks and their parts (HS84, SITC7),

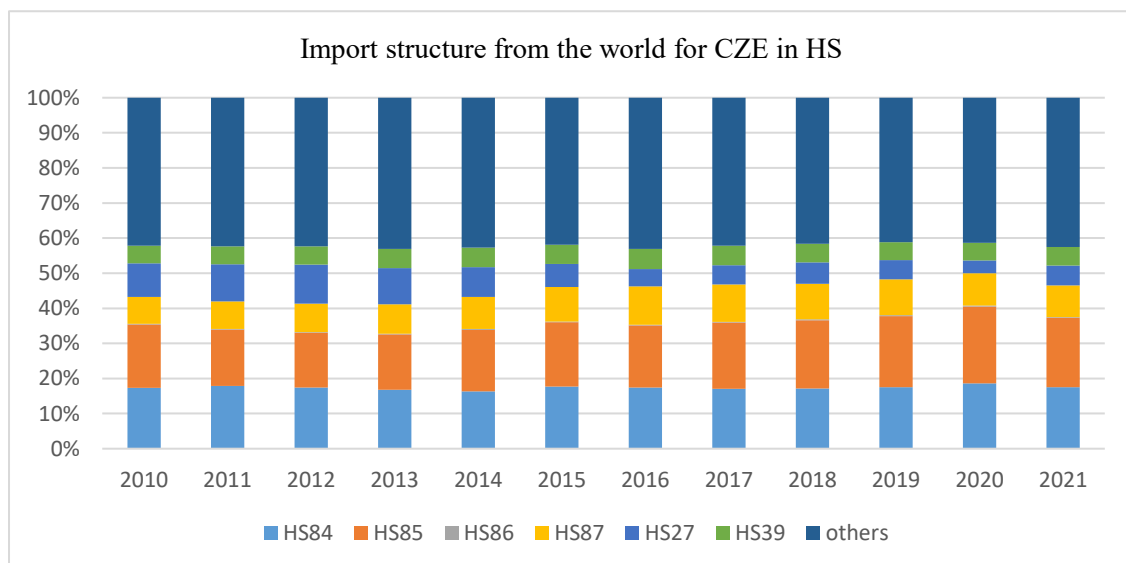
electrical machinery and electronics (HS85, SITC7), vehicles (HS87, SITC7), mineral fuels (HS27, SITC3), plastics and articles (HS39, SITC5). The amount of HS86 is only minimal, averaging 0.22%. Within this primary sector, machinery and transport equipment totally took up an average of 45%, meaning Czechia consistently focused on purchasing this sector from the global market.

Figure 10: Import structure from the world for CZE in SITC



Source: UNCOMTRADE and author's calculation

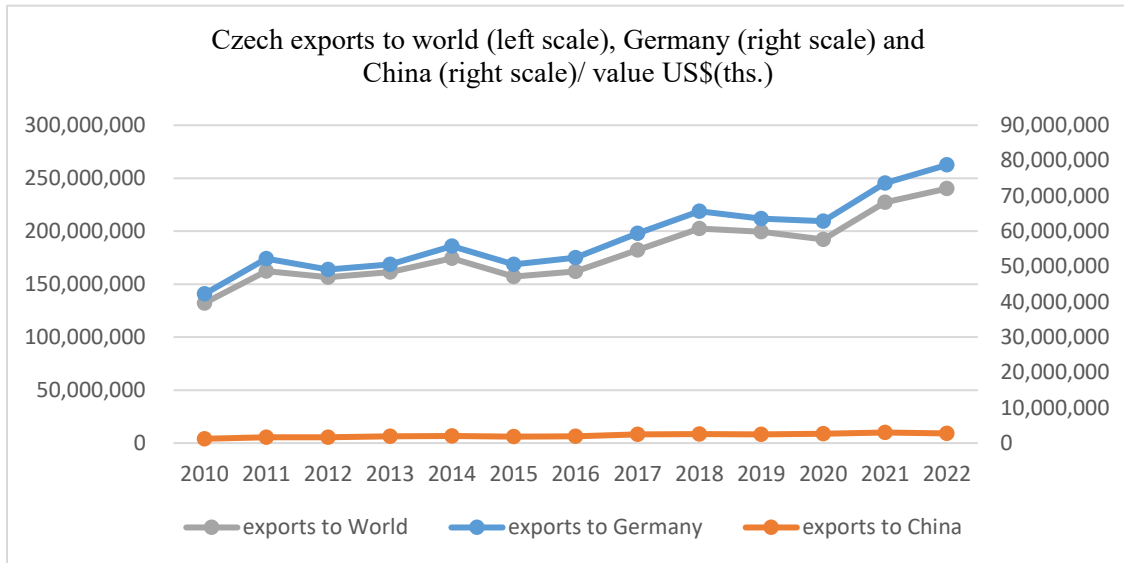
Figure 11: Import structure from the world for CZE in HS



3.2.3 Export structure of Czechia

In 2022, the Czech Republic exported US\$240 billion to the world market, representing 1% of world exports as the import section. Thanks to the favourable geographical location and membership in the European Union, Czech exports have already penetrated the EU market. (De Castro, et al., 2017) According to ITC, the European countries traded most frequently with the Czech Republic, the share accounted for 81.4% of the export section in 2022, and the top ten destinations for Czech exports are all EU countries apart from the UK. Germany has been the leading export destination for the Czech Republic, with 32.8% of merchandise shipped there, upped to US\$78.7 billion. Slovakia was the second largest market, accounting for US\$20.0 billion and 8.3% of total exports. With both Germany and Slovakia, the Czech Republic has maintained a trade surplus and positive growth during the study period suggesting that Czechia plays a critical role in their local supply chain. On the other hand, China and Russia recorded a downward in Czechia's exports at 10% and 64% respectively, which caused the deficit condition to become more serious. The below graph presents Czechia's exports to the world, Germany and China from 2010 to 2022. The value of Czech exports to Germany was very identical to the value to the world, which remained stable over time with a slight dip in between, but overall there was a rise (from US\$42.2 billion and US\$132.1 billion in 2010 to US\$78.7 billion and US\$240.1 billion in 2022). The dynamic trend of Germany and the world indicates that Czechia's export is highly dependent on the German market. The value of Czech exports to China only took a tiny fraction compared with Germany; however, it followed a general upward trend in line with the global trend until 2016. In 2017, export flow grew at a higher rate than the world level, but this value fluctuated due to the epidemic. In the post-epidemic era, the value of exports rebounded quicker than the world average, but it failed to maintain its growth potential in 2022.

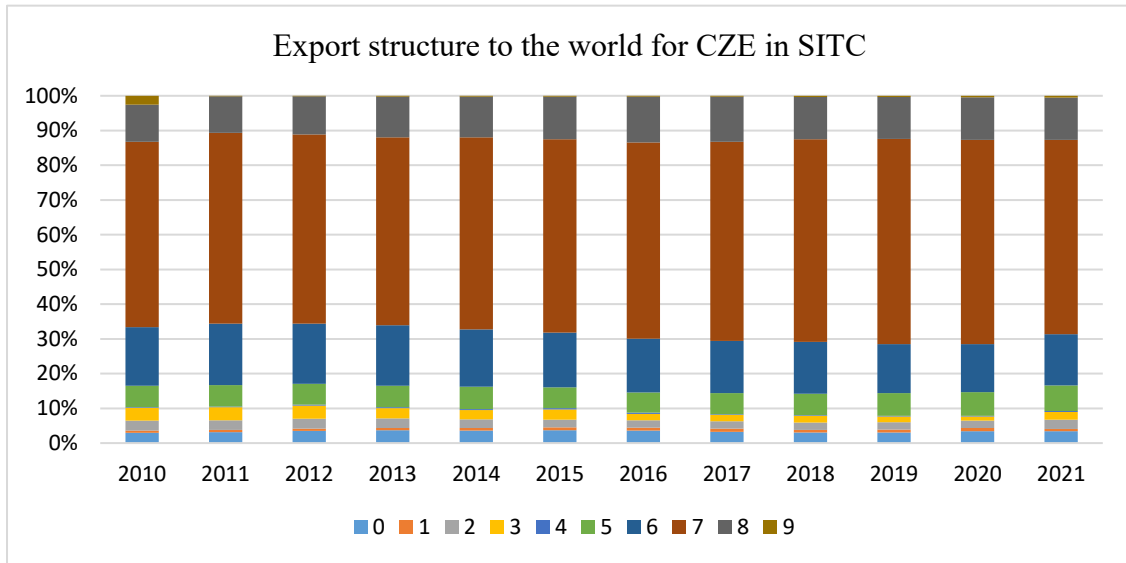
Figure 12: Czech exports to world, Germany and China



Source: ITC and author's calculation

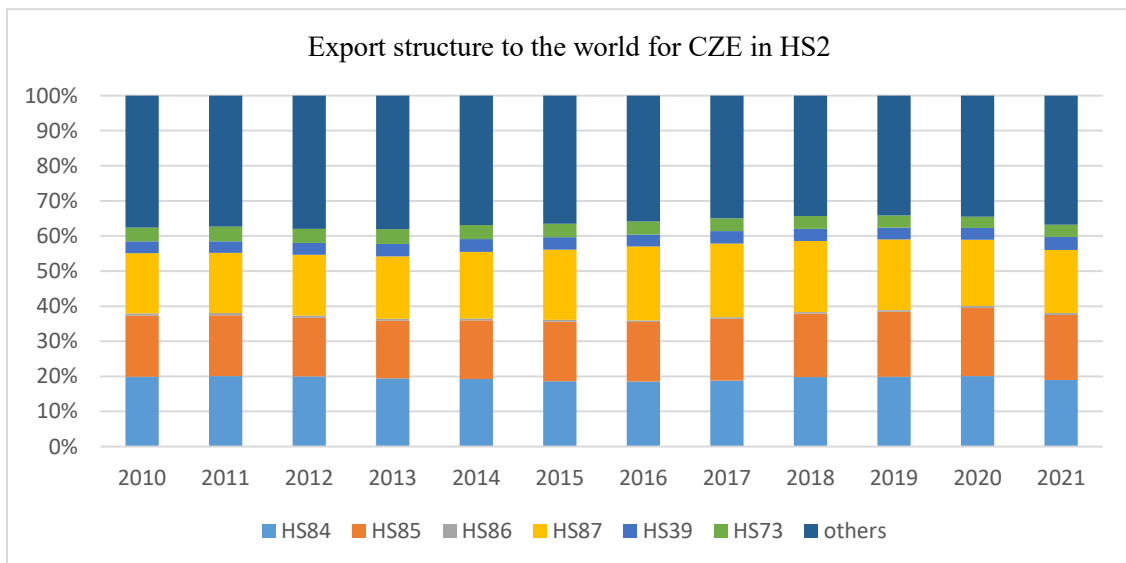
Regarding the export commodity structure, a highly identical distribution was observed as the import structure, where SITC7 took up the majority of exports with an average of 56%, showing an increased trend. Besides, SITC6 (16%) and SITC8 (12%) were also the crucial products that Czechia exported to the world, while the former section saw a downward direction and the latter saw the opposite trend. Within the SITC7, a large portion of exports were directed towards HS84, HS85 and HS87, as the HS graph shows, making up a total of 56% on average. This indicates a strong tendency for intra-industry trade within these two sectors and highlights Czechia's active participation in exporting foreign intermediate goods.

Figure 13: Export structure to the world for CZE in SITC



Source: UNCOMTRADE and author's calculation

Figure 14: Export structure to the world for CZE in HS2



Source: ITC and author's calculation

3.3 China's Trade Structure

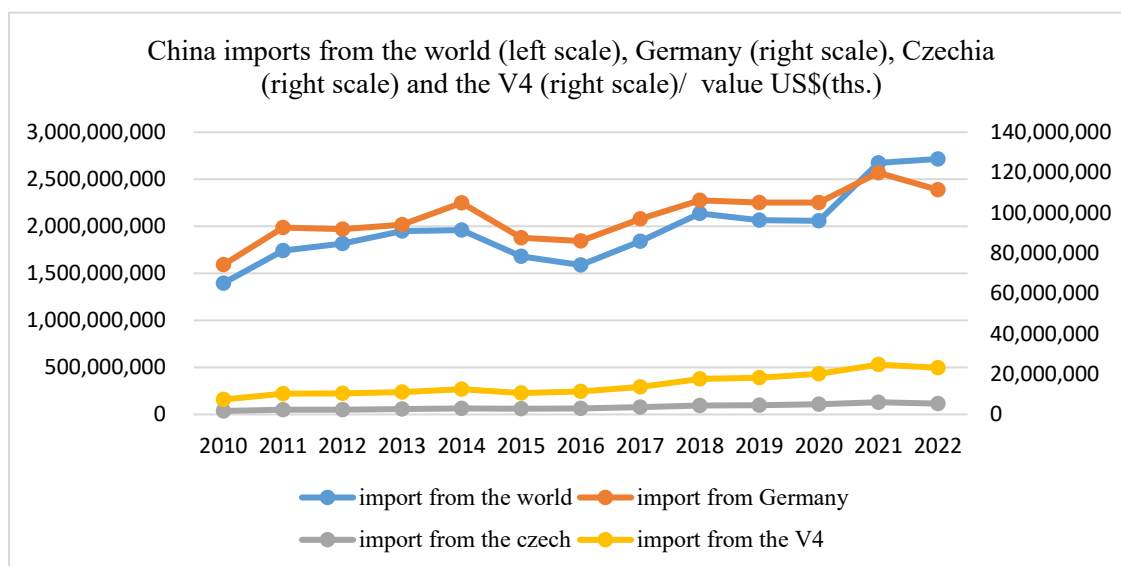
3.3.1 Overview of China's Trade

According to Chinese Customs, China's foreign trade reached a new record high in 2021 post-pandemic, keeping its largest trading economy since 2014. China's total foreign trade imports and exports in 2021 amounted to US\$6.05 trillion, indicating a 21.4% increase from the previous year. The exports were valued at US\$3.36 trillion, reflecting a 21.2% year-on-year increase, while imports amounted to US\$2.69 trillion, up by 21.5%. Specifically, China's trade with ASEAN, the EU, and the U.S. witnessed a 19.7%, 19.1%, and 20.2% year-on-year increase, respectively, while trade with countries along the BRI increased by 23.6%. As the world's second-largest economy, China's GDP kept at a high growth rate after 2000, and it retained US\$14 trillion with a positive 2.2% growth rate even during the pandemic. This number was upped to US\$17.73 trillion and recovered to an 8.4% growth rate in 2021. China is also the world's major manufacturing centre, whose manufacturing export accounted for 21% of the world's merchandise exports in 2021. Furthermore, this aggregation was China's dominant export product for many years; the share of it took up around 90% of China's foreign exports since 2000. Besides, this section occupied 32.6% of its GDP and 36.6% of its employment, indicating that this industry has played a vital role in the domestic economy. (China Statistical Yearbook, 2022) Compared with the above Czechia indexes (21% and 26% respectively), Chinese ones have a slightly higher proportion, which is resulted from relatively less educated and abundant labour as well as a less-resilient capital structure. In light of China's foreign trade structure, although the share of primary products in China's exports is decreasing and the allocation of industrial products in exports is increasing, China's exports are still dominated by primary manufacturing products. In contrast, exports of traditional advantageous and labour-intensive products continue to maintain high growth. Imports of equipment manufacturing equipment and high-tech products remain high, and the structural imbalance remains prominent.

3.3.2 Import Structure of China

In 2022, China imported US\$ 2.7 billion from the world, which is 11.1% of world imports, maintaining an enormous trade surplus with the world. The top 3 most imported partners were all located in Asia, say, Chinese Taipei (US\$238 billion), South Korea (US\$ 199.7 billion) and Japan (US\$ 184.5 billion). All of their import values were under 10% of Chinese total imports and saw a negative growth compared with last year's value. From a dynamic perspective, imports from the world have significantly increased between 2010 and 2022 with an average growth rate at 6.41%. The overall import value from Germany has also increased, from US\$74 billion to US\$111 billion, while it slowed down after 2018 and even experienced a 7% decline in 2022, falling to US\$ 111.4 billion. Import flow from the V4 countries saw an overall increase trend (from US\$7.4 billion to US\$23.2 billion), which followed a similar trace as the world and Germany before 2015, and then it performed more impetus growth (average of 10.93% than the world of 6.41% and the Germany of 3.98%). Regarding the Czech Republic, import value achieved a more robust increase than the world and Germany as well (average of 10.66%) especially after 2016, with an average growth rate of 11.34%. However, it went through a 10% drop in 2022, resulting in a total of US\$5.4 billion due to the pandemic shock. The general trend saw significant growth meaning the “14+1” forum prompted Czechia’s export on the Chinese side.

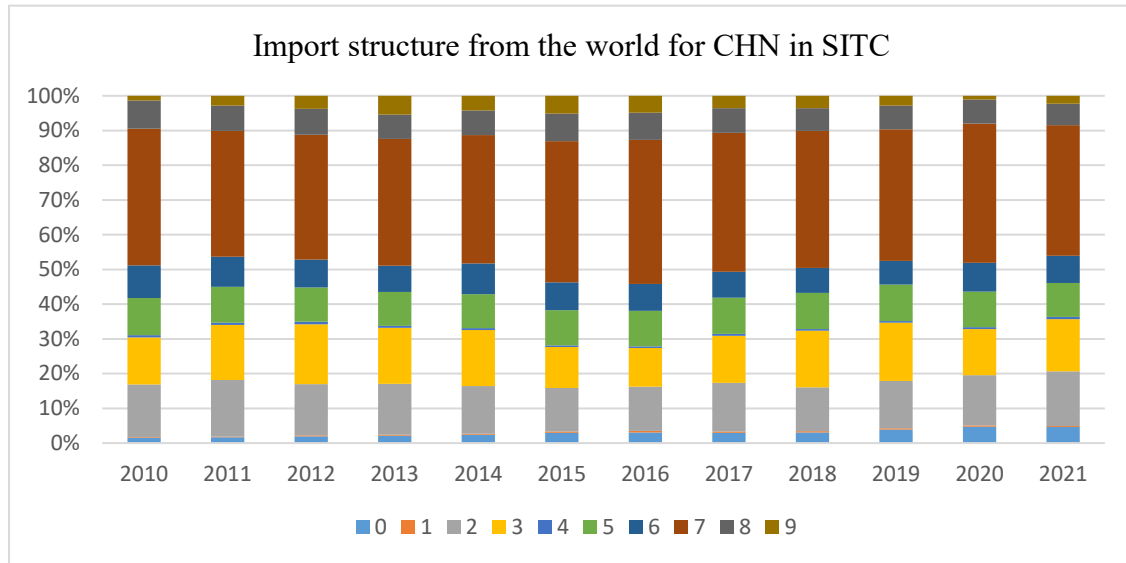
Figure 15: China imports from the world, Germany, Czechia and the V4



Source:ITC

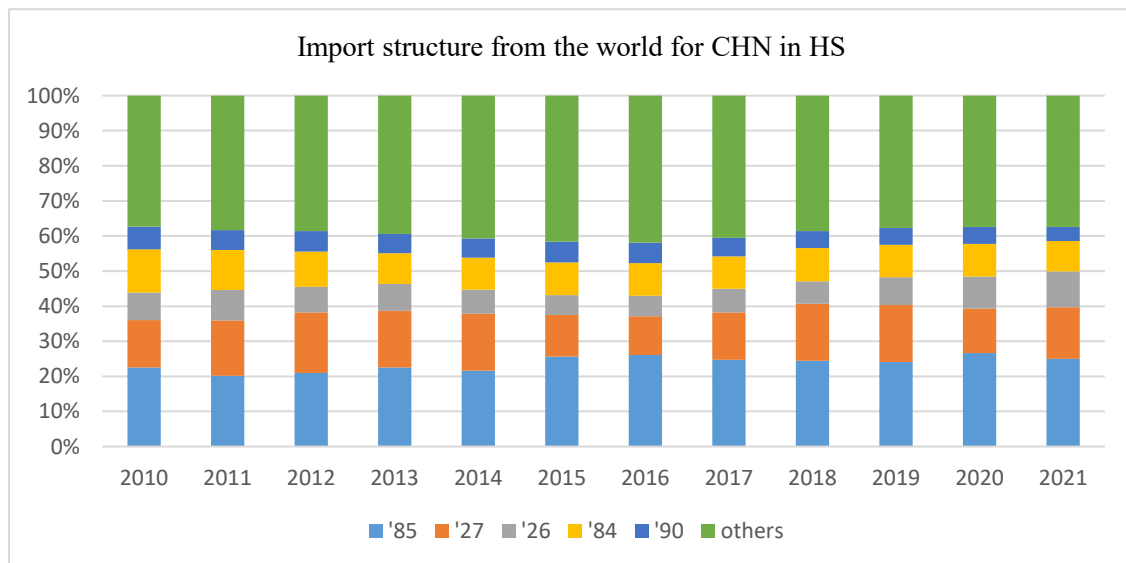
As for the combination of imports, it appeared to have a more diversified structure than the Czech's. While SITC7 remains the dominant import classification with an average of 39%, other classifications such as SITC3 (15%), SITC2 (14%), and SITC5 (10%) are more evenly distributed. Specifically, the top five most demanded products in China were HS85, mineral fuels (HS27, SITC3), ores (HS26, SITC2), HS84 and optical products (HS90, SITC8). Among them, HS85, HS27 and HS84 are also very much in demand in the Czech Republic. When looking at the imports of Czech Republic and China, it is clear that China has a higher demand for resource-intensive products while the Czech Republic is more focused on manufactured goods.

Figure 16: Import structure from the world for CHN in SITC



Source: UNCOMTRADE and author's calculation

Figure 17: Import structure from the world for CHN in HS



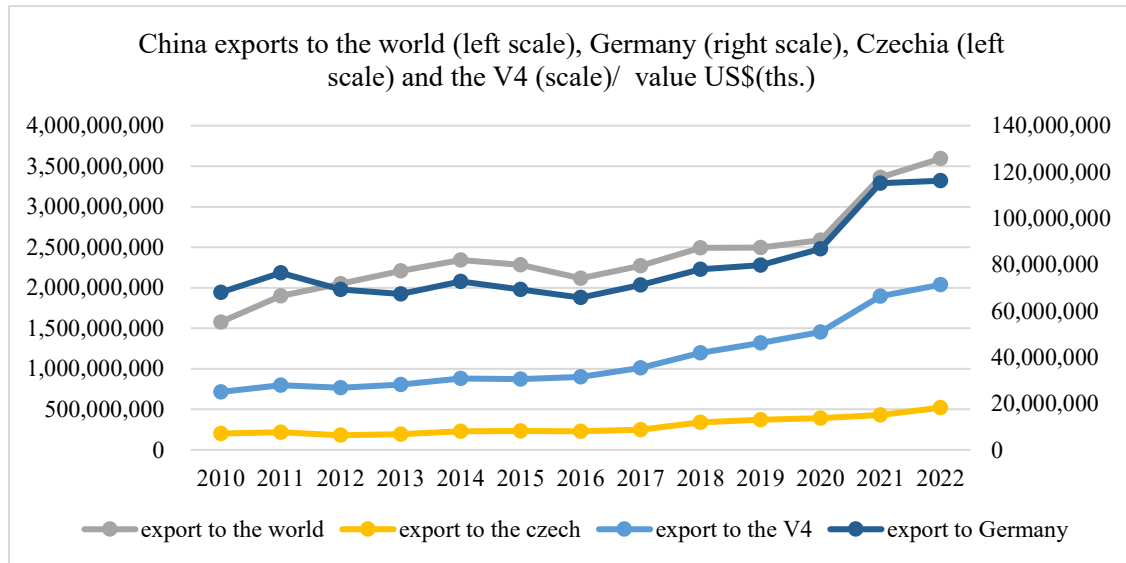
Source: ITC and author's calculation

3.3.3 Export Structure of China

Based on the graph below, China exported US\$3.6 trillion to the world in 2022, which occupied 15% of the world's exports and ranked the most prominent exporter. Export

activity has recorded a 7% growth since last year. The top five export destinations for China were the United States (US\$582.6 billion), Hong Kong (US\$297.5 billion), Japan (US\$172.9 billion), South Korea (US\$162.6 billion) and Vietnam (US\$147 billion); among these, Japan and South Korea stayed a trade surplus, while the other three countries had a trade deficit with China. Among the European Union countries, the Netherlands stood as the biggest market for China. China's exports to the Netherlands amounted to US\$ 117.7 billion, accounting for 3.3% of the total exports. Following was Germany, reaching US\$ 116.2 billion and 3.2%. Drawing from the graph, the flow path of Sino-Germany largely coincides with the China-world one in the period from 2013 to 2020, but the former growth rate was left behind the latter after 2021. The average annual growth rate of export volume to the V4 states was 9.4%, which was higher than the other three objects being compared. The growth path of the Czech Republic kept the same pace as the V4's until 2016, but it was left behind after 2017. Although the Czech Republic only represents a small fraction of Chinese exports, with US\$18.2 billion and 0.5% in 2022, it is worth noting that the total amount of Chinese exports to the Czech Republic has been steadily increasing each year (at an average of 8.84% growth rate). In fact, the growth rate since 2018 has been more potent than that of the rest of the world, with a remarkable 21% increase during the post-pandemic period. Even during the pandemic, China's exports to the Czech Republic continued to grow, defying the global trend and demonstrating the Czech Republic's strong demand for Chinese products.

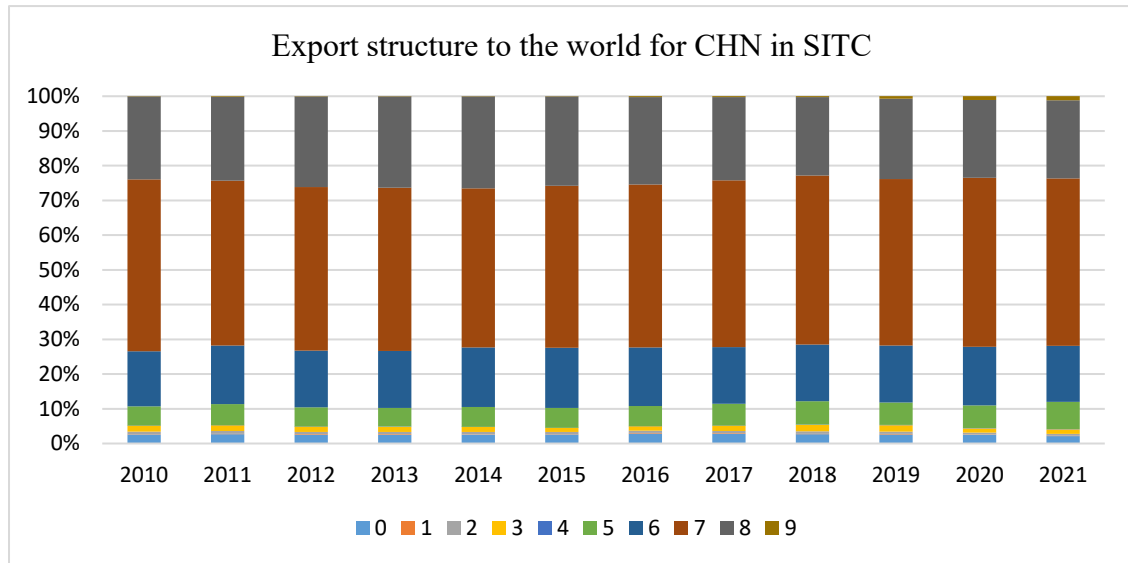
Figure 18: China exports to the world, Germany, Czechia and the V4



Source:ITC

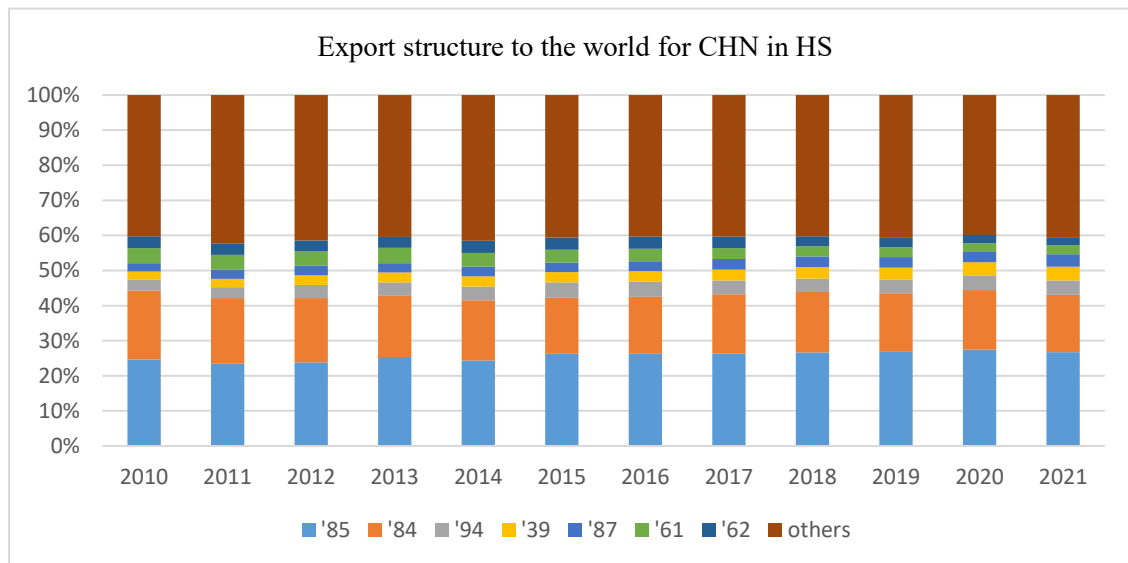
Compared with Chinese imports, its exports concentrated on SITC7, SITC8 and SITC6, which accounted for 48%, 24% and 17%, respectively. The majority was seen in chapters 85 and 84 as the Czech exports. It is worth noting that the decrease in the SITC6 section indicates that China's manufacturing sector is shifting from labour-intensive to capital-intensive products, which is evidenced by the decrease in the proportion of HS61 and HS62. The increase in the proportion of SITC5 (from 6% to 8%) further indicates this trend.

Figure 19: Export structure to the world for CHN in SITC



Source: UNCOMTRADE and author's calculation

Figure 20 Export structure to the world for CHN in HS



Source: ITC

Chapter 4 Trade Competitiveness Analysis

According to Adam Smith's absolute advantage, international trade occurs because

countries have varying absolute costs. David Ricardo put forth the theory of comparative advantage, which builds upon the concept of absolute advantage. He claimed that a nation should focus on specialising goods with a comparative advantage and then trade these products with other countries. The differentiation of production technology or productivity between countries is the basis for forming international trade. Heckscher and Ohlin proposed that different factor endowments (land, labour and capital) lead to price differences; the price of factor endowments will depend on the relative abundance of the country's production capacity. (Leamer, 1995) The country with abundant endowments also has a comparative advantage, which explains the emergence of commodities trade between countries with different factor endowments. The Revealed Comparative Advantage (RCA) is often used to reflect the comparative advantage of a country or region in a certain trade industry by calculating the index. (Balassa, 1965) There is an endogenous relationship between comparative advantage and export structure. On the one hand, an increase in the comparative advantage of a particular export product drives up the share of its exports; on the other hand, an increase in the share of exports of that product drives up the comparative advantage via the increment of investment and production. The mutual promotion of the two promotes the transformation of a comparative disadvantage into a comparative advantage. RCA index is calculated as follows:

$$RCA_{ij} = (X_{ij} / X_i) / W_j / W$$

in the equation, RCA_{ij} denotes the revealed comparative advantage of product i of country or region j , X_{ij} denotes the total exports of product i of country j , X_j denotes the total exports of country j , W_j denotes the total world exports, and W denotes the total world exports. The value of RCA_{ij} ranges from $[0, +\infty]$. The larger the value of RCA_{ij} , the higher the degree of comparative advantage of product i . $0 < RCA_{ij} < 1$, indicating that country j does not have a dominant comparative advantage in the product i . $RCA_{ij} > 1$ indicates that country j has a significant comparative advantage in the export of product i . $2 < RCA_{ij} \leq 3$ reflects that country j has a strong comparative

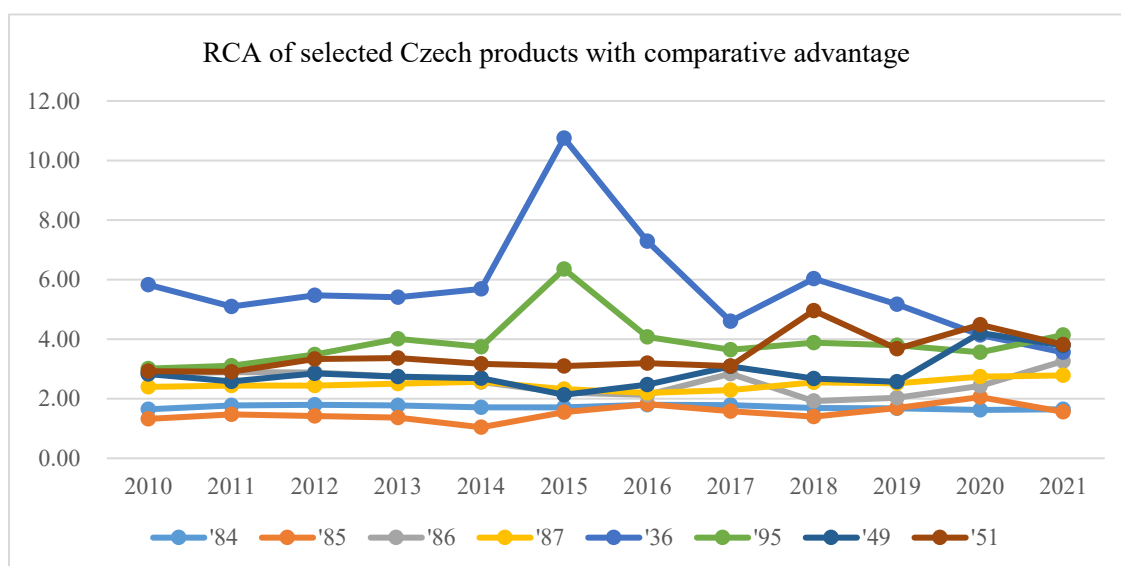
advantage in product i . $RCA_{ij}>3$ reflects that country j has a significant comparative advantage in product i .

4.1 Czechia's RCA

According to the concordance table between HS Combined and SITC Rev.3 provided by the World Integrated Trade Solution (WITS), the below RCA analysis provides a detailed view of the product categories in HS2 form. As shown in the RCA table in the appendix section, the index presented that there is no coordination among all of Czechia's product types, and the level is uneven. (Zheng et al., 2019) In 2021, 31 of 97 chapters exported by the Czech Republic had a comparative advantage ($RCA>1$), accounting for 32%. Among them, 8 had a strong comparative advantage ($2<RCA\leq 3$), and 5 had a significant comparative advantage ($RCA>3$). From a dynamic perspective, there has been a decrease in the total number of comparable products from 37 in 2010 to 31 in 2021. A downward was also seen in the strong comparative group, dropping from 10 to 8, while the significant comparative sections grew from 3 to 5 during the study period. Within the group of significant competitiveness in 2021, HS95, HS51, HS49, HS36, and HS86 can be seen, where HS95, HS51 and HS49 are labour-intensive goods and HS36 and HS86 belong to capital-intensive ones. Compared with China's significant product groups, it is evident that Czechia has a more diverse structure with abundant capital elements, where capital-intensive goods took 40%, and 0% was on the Chinese side. Additionally, capital-intensive goods in the Czech side experienced a slight growth but have overall maintained stable with share of 24.3% in 2010 and 29% in 2021. Within the group, transportation categories HS86 and HS87, which are under the SITC7, both experienced an increase (from 2.85 and 2.39 in 2010 to 3.26 and 2.78 in 2021), maintaining steady and leading competitiveness during the period. As for the machinery and electrical section (i.e. HS84 and HS85), they also stayed at a long-standing significant competitive position, with no volatile changes perceived during these years. (HS84 keeps around

1.65, and HS 85 grew from 1.33 to 1.56) HS36 is the most comparative product in Czechia's export, but this index showed a downward trend (from 5.82 in 2010 to 3.55 in 2021). When it comes to labour-intensive goods, the proportion of those products with comparative advantage ($RCA > 1$) witnessed a very light decrease. However, generally, they stayed at an initial level (59.5% and 58.6% in 2010 and 2021, respectively). It is worth noting that albeit the overall portion went into a decreasing trend, the RCA index of labour-intensive products with a very significant comparative advantage (i.e. HS95 and HS51) is, however, increasing from 3.01 and 2.92 in 2010 to 4.14 to 3.82 in 2021 respectively.

Figure 21: RCA of selected Czech products with comparative advantage



Source: ITC and author's calculation

To sum up, the overall number of export products with comparative advantage ($RCA > 1$) shows a downward trend, and the intensified leading HS95, HS51 and HS49 reveals that the exported structure of the Czech Republic has gathered to the labour-resource items. Besides, the leading place of transportation products (HS86, HS87) points to the fact that the Czech Republic has highly specialised in exporting capital-intensive goods. Another capital-intensive group is machinery and electronic items (HS84, HS85); the steadily growing tendency explains that the automotive

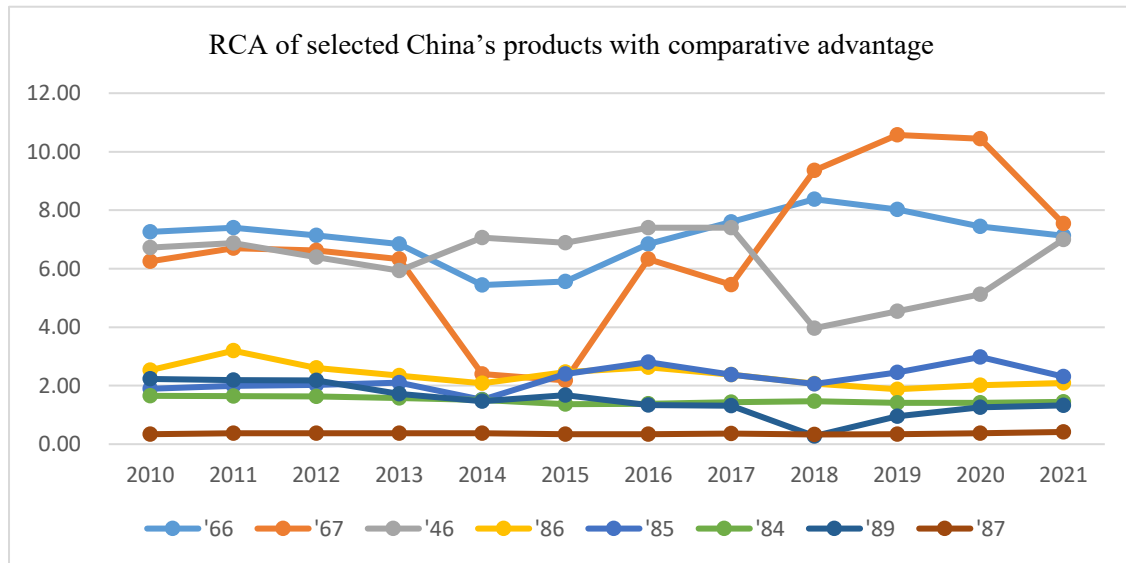
industry has always been an essential and traditional pillar of the country, and the increasing global demand for electric vehicles also expects the same growing pace of competitiveness of Czech car manufacturers in the future. It seems that SITC7 is expected to remain stable and valuable in this country as global manufacturing continues to grow and there is a greater need for modernisation. The finding also complies with the most exports to China as the other scholar depicted that the Czech Republic had the most comparative advantage in highly processed goods belonging to HS84 and HS85 aggregates.

4.2 China's RCA

In 2021, 41 of the 97 chapters exported by China had a comparative advantage ($RCA > 1$), accounting for 42%. Among them, 15 had a strong comparative advantage ($2 < RCA \leq 3$), and 12 had a significant comparative advantage ($RCA > 3$). Compared with the Czech Republic, China has more advantageous export products but more concentrated ranges (basically focuses on SITC6 and SITC8). The significant comparative group includes HS66, HS67, HS46, HS50 and HS65, whose RCA indices were over 3 in 2021. When comparing the average level between 2010 and 2021, it was observed that the previously mentioned categories maintained their ranking. Furthermore, HS58, HS60, HS61, HS64, HS63, and HS95 also had an index above 3. This indicates that all the Chinese significantly competitive products during these 12 years fall into the SITC8 and SITC6 sectors, which are labour-intensive products, particularly in the textile and fabric category. As for the group with competitiveness and strong competitiveness ($RCA > 1$), the majority of them go to labour-intensive products, as expected. It is worth noticing that HS86, HS85, HS84 and HS89, those under the category of machinery and transport equipment (SITC7), can also be observed in this group, stabilized at around 8.58%, meaning China has competitiveness in exporting some of the capital-intensive goods. Still, the advantage is not as strong as the Czechia's. The aggregation of SITC2 (i.e. HS43, HS53, HS92,

HS51, HS13) enjoy competitiveness as well. From a dynamic point of view, during the 12 years, the total comparative products accounted for 44 of 97 in 2010, and this number reached the highest 47 in 2011, but it kept fluctuating to 41 in 2021. The significant comparative products (RCA>3) accounted for 14 in 2010 and decreased to 12 in 2021. The growth of labour-focused goods has been inconsistent over the years. In 2010, it was at 68.18%, and by 2017, it had risen to 72.5%. However, it experienced a sharp decline in 2018, dropping to 64%, before eventually recovering to 73% in 2021. On the other hand, capital-intensive goods had a steady rate of over 10% until 2020 when it dropped to 9.76% in 2021. For the share of SITC7, it flowed as the trend of capital goods climbed to 10% in 2017 but decreased to 7.32% at the end. This indicates that labour-cost products, which have strong competitiveness, dominate the scale of exports.

Figure 22: RCA of selected China's products with comparative advantage



Source:ITC and author's calculation

To conclude, the overall number of export products with comparative advantage (RCA>1) has slightly decreased, indicating that the overall competitiveness of China's foreign exports has still staggered around at the same level. Products with a significant comparative advantage among China's exports have also decreased in

recent years, explaining that more products have only a strong comparative advantage rather than a significant one. Furthermore, a majority of competitive products in China (67.4%) rely on labour-intensive methods, with only 13% of goods being capital-oriented. The former is trending upwards while the latter is declining. These phenomena claim that the RCA of capital-intensive products shifted to more labour-intensive products causing the distribution of labour to vary to other laboured categories. It was related to the consistent expansion of Chinese exports because of the recovery from the pandemic. The fact is that de-concentration only exists within the low-value part, and Chinese exports still have been characterised by "low technology content", especially in the textile and fabric category. RCA indices for machinery and transport equipment have fluctuated in recent years, reflecting the industrial adjustment and optimisation of China's comparative advantage in exports.

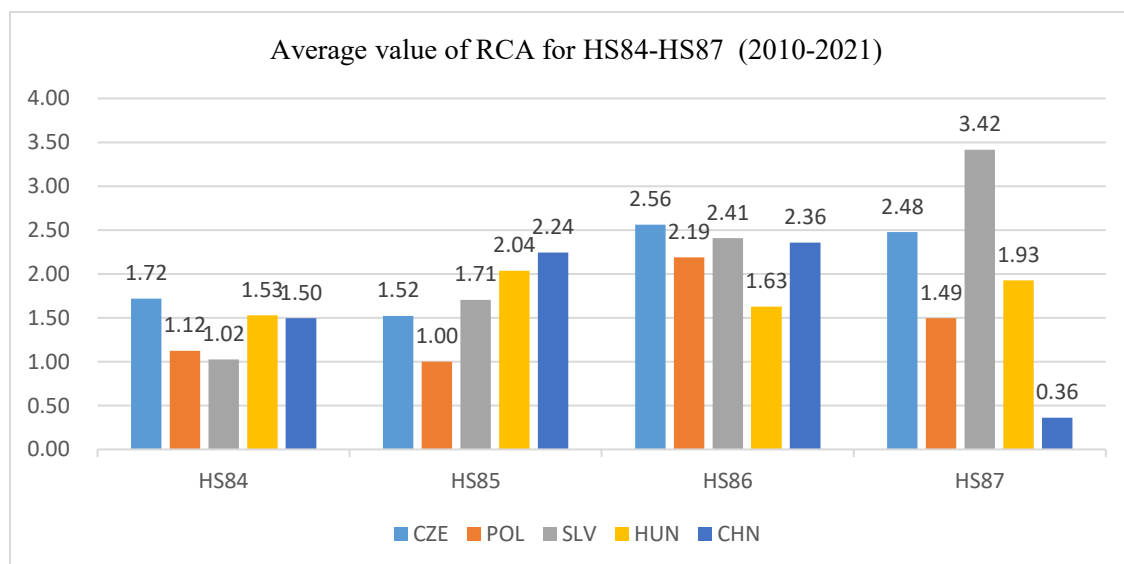
4.3 Comparison of RCA indices for V4 Countries

The concept of V4 is defined as Visegrad's countries, including Poland, Czech Republic, Slovakia and Hungary. According to ITC, China's trade flow with V4 countries accounted for 78% of China's trade with CEE countries in 2022. Specifically, China imported mainly electromechanical transport equipment (chapters 84-87) from the CEE region, which account for up to 60% of total imports. (Zhang, 2021) Technology-intensive electromechanical products (chapters 84-85) were the main commodities exported by China, accounting for about 45% of total exports; followed by labour-intensive products, (chapters 39, 42, 61, 62, 63, 64, as well as 94 and 95), which account for 35% of the country's exports. (Zhang, 2021) Besides, drawing from the above-mentioned Czech-Sino trade status, it is known that the trade structure of both sides is also dominated by machinery and transport equipment. To investigate if Czechia is competitive in the electromechanical transport sector among V4 countries, it is necessary to compare its RCA with the other three members.

Based on the average indices (see appendix), Hungary is strongly competitive on HS1

(live animals, SITC0); Poland is strongly competitive on HS24 (tobacco, SITC1), HS94 (furniture, SITC8), HS2 (meat, SITC0) and HS49 (printed books, SITC8); and Slovakia is on HS87 (vehicles, SITC7). In terms of electromechanical transport equipment, all of the V4 members got RCA indices larger than or equal to 1, meaning they are all competitive in exporting this category, in which the Czech Republic gained the most comparative advantage in HS84 and HS86. At the same time, Hungary has the highest index in HS85 and Slovakia in HS87. Nevertheless, when comparing the V4 group with China, the most comparative country switched to China in chapter 85, and indices of China in HS84 and HS86 are very close to the highest ones. The result indicates that there is a market competition between V4 countries and China in the field of electromechanical transport (i.e. HS84, HS85, HS86). Despite the differences in their factor endowment, China concentrates on producing low-precision machine tools, high-speed railways, and automobiles, whereas the V4 countries prioritize high-precision machine tools and trains (i.e., HS87). As a result, there are complementary trade opportunities between the two sides.

Figure 23: Average value of RCA for HS84-HS87 (2010-2021)



Source:ITC and author's calculation

4.4 Intra-industry Comparative Advantage Analysis

The above RCA analysis shows that the Czech Republic and China have different competitiveness in complementary categories. However, the two countries can also witness some identical competitiveness (i.e. machinery and electronics). Inter-industry trade or so called “vertical trade” is mainly based on the traditional theory of comparative advantage. (Zhang, 2021) In contrast, intra-industry trade or so called “horizontal trade” refers to two countries or regions with a certain degree of homogeneity and competition in their goods. (Zhang, 2021) The concept is derived from the New Trade Theory, which considers international trade flow is a result of economies of scale and product differentiation rather than different endowments. (Brühlhart, 1995) The Swedish economist S.B. Linder (1961) explained intra-industry trade in terms of demand preferences; B. Balassa, in his 1963 and 1966 studies on the trade effects of manufactured goods in the European Community, argued that most of the growth in trade in manufactured goods occurred within the commodity groups classified by the SITC system, rather than between commodity groups. H.G., Grubel and P.J. Lloyd (1975) analysed trade between European Community member states in the period 1959-1967 and found that more than half of this trade was intra-industry and that 71% of the increase in trade was intra-industry. Based on the concept of intra-industry trade, a country or region can manufacture a significant amount of a particular product within a given timeframe and import and export the said product. If the intra-industry trade index is applied to describe a country or region, then it exists international trade complementarity. Grubel-Lloyd is calculated as follow:

$$GL_i = 1 - |X_i - M_i| / (X_i + M_i)$$

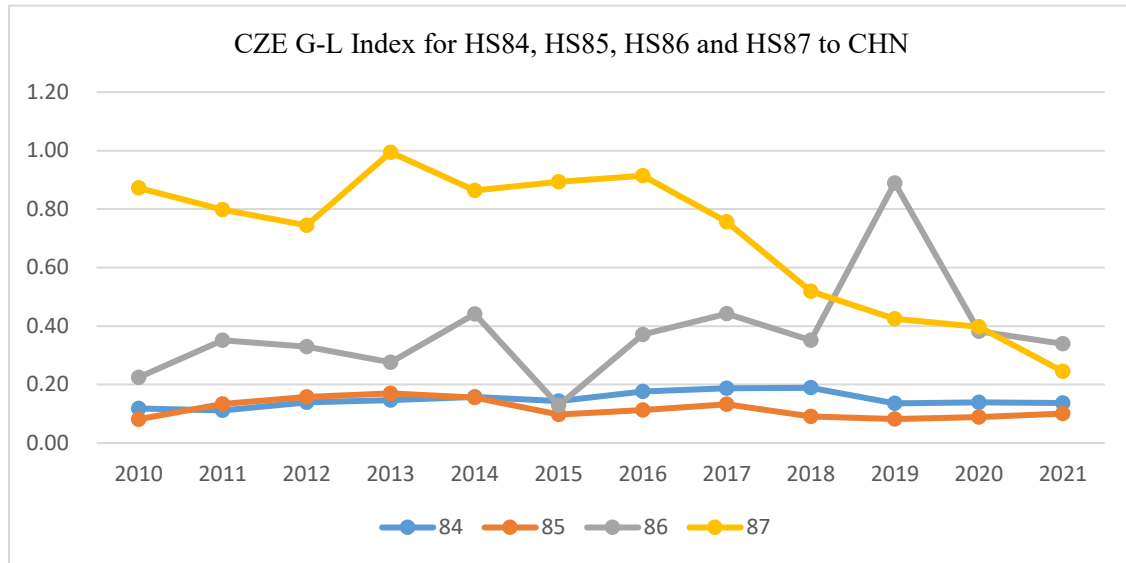
Where GL_i is the G-L index for industry i , and X_i and M_i represent the volume of trade in imports and exports of product i between the two countries, respectively. The G-L index ranges between 0 and 1, with larger values indicating a more significant overlap between imports and exports and a higher level of intra-industry trade in the

product. If exports and imports of the same product are equal, the G-L index is 1, meaning that all trade is entirely intra-industry; if the trade in imports or exports of an industry is zero, the G-L index is 0, meaning that trade is entirely inter-industry. Generally, if the G-L index is larger than 0.5, the industry's trade pattern is dominated by intra-industry trade; if the G-L index is less than 0.5, it is dominated by inter-industry trade.

4.4.1 The Czechia's Grubel-Lloyd Index

As shown in the appendix Grubel-Lloyd table, during 2021, 11 out of 98 Czechia products showed an intra-trade tendency in the Chinese market, accounting for 11.2%. The top five products were cocoa (HS18,SITC0), beverages (HS22, SITC1), work of arts (HS97, SITC8), milling industry (HS11, SITC5) and optical (HS90, SITC8). Within the five categories, HS18 was at a very high intra-trade level recording 0.91, representing the gap between imports and exports was narrow. The remaining four categories recorded an active sign at 0.86, 0.78, 0.75 and 0.70, respectively. It is interesting that only HS90 maintained a relatively stable trend (0.7), while the others saw a dramatic bump between 0 and 1, which was mainly attributed to the changes in the exports and the insignificant import volume. Therefore, it is better to explore from the average indices that HS18 only got 0.32 during the observation years, which was characterised as an inter-industry trade feature. In comparison, lac and gums (HS13, SITC2) were the most significant intra-industry trade chapter during the years, with 0.82 on average. As for the transportation sector, HS86 stayed at the inter-trade situation (around 0.37) during the monitoring period but experienced a sudden bound in 2019; while HS87 gradually shifted from intra-trade to inter-trade (index dropped from 0.87 to 0.25). The machinery and electrical section (HS84, HS85) remained at a relatively low intra-trade level during the period.

Figure 24: CZE G-L Index for HS84, HS85, HS86 and HS87 to CHN

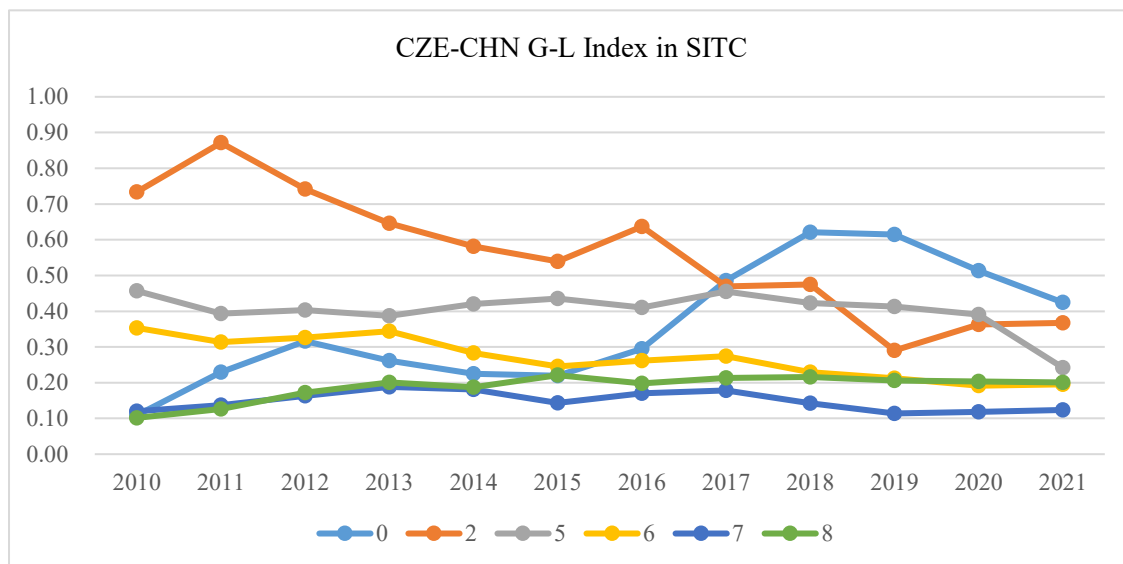


Source:ITC and author's calculation

In view of the SITC category system, the intra-industry trade index for Czechia's SITC0 showed an increase (from 0.11 to 0.43), which indicates that in the previous years, the Czech Republic had complementary and later competitive relationships with China, but this competition is now strong enough. The index of SITC8 also increased but not by much, hovering around 0.18, pointing that trade between the two sides was more complementary in this category in the first few years and then gradually shifted focus due to the transformation of industries on both sides, but it was still complementary overall. SITC2, SITC5 and SITC6 experienced a relatively steady decrease, identifying there were increasingly complementary with China in inedible crude materials (except fuels), chemicals and material manufactured goods. Due to the historical tradition and the strategic advantages of the country, transport equipment has always had the upper hand over Chinese products. SITC7 maintained the same level at 0.12, also seeing a strong complementary supply with China, which indicates the same Chinese industry populates some machinery and transport equipment produced by Czechia. In recent years, automotive components have also become a big new demand in the Chinese market. China is the world's largest

automotive producer and has a huge demand for automotive components; the main production base for automotive components in Europe is in the Czech Republic, and a specific scale of industry chain has been formed, so the Czech Republic has a significant advantage in terms of costs and production technology in this field

Figure 25: CZE-CHN G-L Index in SITC



Source: UNCOMTRADE and author's calculation

Chapter 5 Trade Gravity Model

The trade gravity model is a method used to analyse the flow of international trade between countries, and it has been extensively used in economic literature dealing with international trade issues. It was first introduced in 1961 by Linder, then used by Tinbergen in 1962 and followed by Linnemann in 1966. (Toševska-Trpčevska & Tevdovski, 2016) In the early 1950s, economists observed that the volume of trade between two countries was clearly influenced by their geographical distance, i.e. the larger the trade flows between countries that were geographically close to each other. Tinbergen (1962) and Poyhonen (1963) summarised the basic form of the gravitational model of trade based on the universal gravity formula:

$$T_{ij} = A(Y_i + Y_j) / D_{ij} \quad (1)$$

In this formula, i and j represent country i and country j ; $i, j = 1, 2, \dots, N$ where $N=102$ countries and $i \neq j$; T is the abbreviation for total bilateral trade (import+export), and T_{ij} represents the trade volume between countries i and j . A is a constant, and Y_i and Y_j represent the economic scale of countries i and j , respectively, which is generally measured by the GDP of the two countries. D is an abbreviation for distance, and D_{ij} denotes the geographical distance between country i and country j . According to the equation, the larger the value of the GDP of the two countries, the larger the value of trade; the larger the value of geographical distance, the smaller the trade value. Since the trade gravity equation is a static model, while in reality, in a dynamic process, trade barriers between countries change, and so does the efficiency of transport over geographical distances; from the 1960s onwards, economists from different countries began to explore the different factors affecting bilateral trade flows. Lineman (1966) confirmed in the gravity model that demographic factors contribute to the size of the trade. Bertsrand (1989) further studied that the higher the per capita income of a country, the higher its consumption, i.e. the demand for foreign trade. Chen and Hsu (2013) introduced oil price volatility into the standard gravity model, claiming that the oil price significantly negatively impacts bilateral trade. Subsequently, scholars have extended the gravity model by introducing different explanatory variables, such as investment, cultural, institutional, exchange rate and trade freedom factors, according to their research priorities, to measure trade potential using quantifiable indicators.

5.1 Selection of Variables and Data Sourcing

In order to examine the trade efficiency between the Czech Republic and China, this thesis collected 102 trade partners of Czechia during the time span from 2010 to 2021; data was sourced from WTO, CEPII, ITC and OPEC. The total exports and import volume between the Czech Republic and its trading partners are the dependent

variable (T_{ij}). In terms of the selection of independent variables, the thesis refers to the findings of the current literature and takes into account the influencing factors in terms of geographical capital distance (D_{ij}), the oil price in the year (O), GDP of Czechia (Y_i), GDP of Czechia's partner country (Y_j) and population of Czechia (P_i), population of Czechia's partner (P_j) as continuous variables; as well as whether the common border (B_{ij}) and same regional trade agreement (R_{ij}) as the dummy variables. The newly constructed model is shown below:

$$\text{Ln}T_{ij} = \beta_0 + \beta_1 \text{Ln}D_{ij} + \beta_2 \text{Ln}O + \beta_3 \text{Ln}P_i + \beta_4 \text{Ln}P_j + \beta_5 \text{Ln}Y_i + \beta_6 \text{Ln}Y_j + \beta_7 B_{ij} + \beta_8 R_{ij} + \mu_{ij}$$

(2)

$\text{Ln}T_{ij}$, $\text{Ln}D_{ij}$, $\text{Ln}O$, $\text{Ln}P_i$, $\text{Ln}P_j$, $\text{Ln}Y_i$, $\text{Ln}Y_j$, are logarithmic forms of T_{ij} , $\text{Ln}D_{ij}$, O , P_i , P_j , Y_i , Y_j , respectively; B_{ij} dummy represents the common border of the pair countries. If both share a common border, it goes to 1; otherwise, it goes to 0; R_{ij} dummy is the membership of regional trade agreements. If both are members of the agreements, R is assigned to 1; otherwise, it is 0. μ_{ij} is a random error term. Coefficients β_1 , β_2 , β_3 , β_4 , β_5 , and β_6 are elasticities for a unit change in the given exogenous variables $\text{Ln}D_{ij}$, $\text{Ln}O$, $\text{Ln}P_i$, $\text{Ln}P_j$, $\text{Ln}Y_i$, $\text{Ln}Y_j$, respectively.

Using the data collected regression analysis of formula (2) is carried out with the help of Stata MP17. This empirical study covers a long-term period from 2010 to 2021, using a sample of 102 countries around the world with which the Czech Republic has trade relations. $102 \times 12 \times 8 = 9792$, i.e. 102 countries with eight variables over 12 years. The sample size of 9792 is sufficient to support a stable gravity model, which is necessary to obtain the expected regression results to measure the trade efficiency more accurately.

5.2 Model Test

If the standard deviation of the variables is larger than the mean, it implies that the data distribution is more dispersed and more volatile; conversely, if the mean is larger

than the standard deviation, it means that the data is more concentrated and less volatile. From the descriptive statistics of the variables in the table below, it can be seen that only the contig variable (common border) shows a volatile characteristic, while other variables show relatively concentrated.

Table 2: Variable Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ln T _{ij}	1224	12.94	2.116	6.816	18.608
ln distcap _{ij}	1224	7.941	1.059	5.533	9.81
ln oilprice	1224	4.241	.347	3.708	4.695
ln pop _i	1224	9.266	.007	9.257	9.278
ln pop _j	1224	14.798	2.963	7.625	21.065
ln gdp _i	1224	19.218	.119	19.037	19.459
ln gdp _j	1223	24.059	2.544	17.572	28.787
contig	1224	.039	.194	0	1
fta wto	1224	.524	.5	0	1

After the LLC test, LnT_{ij}, LnO, LnP_i, LnP_j, LnY_j variables were all stationary at the 1% significant level, demonstrating that there is no unit root and that a long-standing co-integration relationship between the explanatory and explained variables can be considered. However, LnD_{ij} and B_{ij} got the result of “no observation” because of highly repeated data; while LnY_i and R_{ij} indicated non-stationary.

The F-test, BP-test and Hausman test were applied to select the best model among the mixed regression model, the fixed effects model and the random effects model. Firstly, the results of the F-test (F-value is 70.92 with a P-value of 0.000, smaller than 0.05) proved that the fixed-effected model fitted better than the mixed regression model. Secondly, the result of the BP-test (the statistic was 5967.14 with a P-value of 0.000, smaller than 0.05) suggested that the random effects model was more suitable than the

mixed regression model. Thirdly, the Hausman test statistic was 25.54 with a P-value of 0.0003, less than 0.05, which rejects the original hypothesis that the individual effects are not correlated with the explanatory variables; therefore, the fixed effects model is decided to be better than the random effects model for this thesis.

Finally, the data were tested for multicollinearity and it was found that there was strong multicollinearity between $\text{Ln}(\text{POP}_i)$ and $\text{Ln}(\text{GDP}_i)$ as well as $\text{Ln}(\text{POP}_j)$ and $\text{Ln}(\text{GDP}_j)$. Since GDP is theoretically the most significant explanatory variable in the trade gravity model as WTO data presented that the higher the GDP, the more open the economy. Therefore, GDPs will still be kept separately while POP_i and POP_j are chosen to be multiplied together as a new variable (P_iP_j) . The modified model equation is obtained as follows:

$$\text{LnT}_{ij} = \beta_0 + \beta_1 \text{LnD}_{ij} + \beta_2 \text{LnO} + \beta_3 \text{Ln}(P_iP_j) + \beta_4 \text{LnY}_i + \beta_5 \text{LnY}_j + \beta_6 B_{ij} + \beta_7 R_{ij} + \mu_{ij}$$

(3)

5.3 Regression Result

Table 3: Panel data regression result

$\ln T_{ij}$	Coef.	St.Err.	t-value	p-value	[95% Conf	Intervall]	Sig
$\ln \ln D_{ij}$	-0.814	.337	-2.41	.016	-1.475	-.153	**
$\ln O$	-0.146	.036	-4.02	0.000	-.217	-.074	***
$\ln(P_i P_j)$	.542	.235	2.31	.021	.081	1.003	**
$\ln Y_i$	.659	.108	6.09	0.000	.446	.871	***
$\ln Y_j$	.814	.065	12.57	0.000	.687	.941	***
contig	12.189	1.042	11.70	0.000	10.144	14.233	***
fta	-0.141	.06	-2.35	.019	-.258	-.023	**
iso3_d : base ALB							
AUT	-2.147	.228	-9.40	0	-2.595	-1.699	***
CHN	7.88	.828	9.52	0	6.255	9.505	***
DEU	-3.014	.664	-4.54	0	-4.315	-1.712	***
POL	-1.968	.302	-6.51	0	-2.561	-1.375	***
SVK	0	.	.	.	.	.	.
Constant	-27.208	2.968	-9.17	0	-33.031	-21.385	***
Mean dependent var	12.940		SD dependent var	2.116			
R-squared	0.972		Number of obs	1224			
F-test	372.022		Prob > F	0.000			
Akaike crit. (AIC)	1125.467		Bayesian crit. (BIC)	1672.224			
*** $p < .01$, ** $p < .05$, * $p < .1$							

The above regression result table is based on equation (3), $R^2=0.972$, the estimated value of each parameter is significantly non-zero, with 4 of 7 passing the significance test at the 1% level and the remaining 3 passing at the 5% level, meaning the goodness of fit is acceptable. The partial elasticity of the dependent variable to the independent variable is the coefficient index, whose value is in logarithms or percentages. The fitting equation can be written as follows:

$$\ln T_{ij} = -27.208 - 0.814 \ln D_{ij} - 0.146 \ln O_i + 0.542 \ln(P_i P_j) + 0.659 \ln Y_i + 0.814 \ln Y_j + 12.189 B_{ij} - 0.141 R_{ij} + \mu_{ij}$$

Based on the coefficients of the variables, it can be concluded that the population and size of the economies in Czechia and its trading partner, as well as the presence of a common border, have a positive influence on bilateral trade. However, geographical

distance, oil prices, and free trade agreements have a negative impact on the volume of trade. The coefficients are analysed as follows:

1. D_{ij} : The regression result of β_1 (capital distance) is -0.814, which is significantly negative at a confidence level 0.05. This indicates that if other variables stay unchanged, a 1% increase in capital distance between the Czech Republic and its trading will lead to a decrease in their bilateral trade of around 0.814%. As described before, geographical distance is the proxy of transportation cost and has been an unmissable part of the trade barriers. Due to the long geographical distances between countries, transport costs are naturally higher, which hampers the flow of goods and reduces trade value.

2. O : The regression result of β_2 (oil price) is -0.146, which is significantly negative at a confidence level of 0.01. This means that if all other factors remain constant, a 1% rise in oil prices will result in a reduction of approximately 0.146% in the bilateral trade between the two countries. As the international oil prices rise, the trade between Czechia and its trading partners is expected to decrease.

3. P_iP_j : The regression result of β_3 (product of two countries' populations) is 0.542, which is significantly positive at a confidence level of 0.05. This indicates that if other variables stay unchanged, a 1% increase in the population product of the Czech Republic and its trading partner will lead to an increase in their bilateral trade of around 0.542%.

4. Y_i : The regression result of β_4 (Czechia's GDP) is 0.659, significantly positive at a confidence level of 0.01. This implies that if other variables stay unchanged, a 1% increase in Czechia's GDP, the bilateral trade between the country pair will increase by around 0.659%. The GDP of the Czech Republic reflects the strength and level of the Czech economy and its ability to produce a wide range of products or to consume foreign commodities.

5. Y_j : The regression result of β_5 (trading partner's GDP) is 0.814, which is

significantly positive at a confidence level of 0.01. This implies that if other variables remain the same, a 1% increase in the GDP of Czechia's trading partner, the bilateral trade between the country pair will increase by around 0.814%. It is important to mention that the value of this regression coefficient is larger than the value of the Czech GDP regression coefficient, indicating that the growth of GDP in the trading country is a more vital driving force for the growth of bilateral trade volume than the growth of Czech GDP. The rise in the GDP of the trading country has resulted in an expansion in the demand and purchasing power of its domestic commodity market. At the same time, as the economic strength of the trading country continues to increase, so does the ability to produce and supply goods as well as its ability to export is further strengthened.

6. β_6 : The regression result of β_6 (common border) is 12.189, which is significantly positive at a confidence level of 0.01. This coefficient is the highest number among all the parameters, which is attributed to the fact that the Czech Republic is a landlocked country and its trade activity most happening among its adjacent EU countries (Germany, Austria, Poland and Slovakia), accounting for around 45.8% during the study period. Besides, Germany, Austria, and Slovakia are developed countries as well as opened economies with relatively more substantial purchasing power, which laid a firm foundation for the Czech Republic to trade with its bordering countries.

7. R_{ij} : The regression result of β_7 (free trade agreement) is -0.141 with a negative impact at a confidence level of 0.05. This coefficient is an interesting finding since FTA is supposed to eliminate trade barriers on trade among its members and generate trade creation. (Urata, S., & Okabe, M., 2010) However, this negative coefficient is not large, indicating that the counter-impact on trade flows between the two sides is not significant, which can be confirmed by the most-trading countries with Czechia. Of the top 20 countries with which the Czech Republic had the highest trade flows in 2021, three countries (i.e., China, Russia, United States, etc.) have not established

FTA and the other two (Japan and South Korea) have done so in recent years. Besides, as a member of the EU, all free trade agreements that have come into force between the EU and other regions also apply in Czechia. Czechia also naturally benefits from FTA with all the EU members with low trade barriers as well as tariff levels. However, the EU is a relatively closed and introverted organization, causing a trade diversion from the non-member efficient trade partners to its allies.

5.4 Comparison of Czechia-China and Czechia-Germany in Simple Time Series Model

From the above result in Table 3, China observed a relatively high positive coefficient (7.88) at a high confidential level, indicating that a 1% increase in the bilateral Czechia-Sino trade will lead to a 7.88% increase in the Czech overall trade volume. On the other hand, Germany, as the top trading partner with Czechia, saw a negative coefficient of -3.014, meaning a 1% increase in the bilateral trade between Czechia and Germany will cause a decline in the Czech overall trade volume of around 3.014%. To further examine the disparities, the imports from China and exports to China will be examined as the new dependent variables, respectively. These variables will undergo analysis in the new models, with a time frame extending from 2010 to 2021. The same approach will be employed for the case of Czechia-Germany.

Czechia-Sino: In terms of the export volume, the only significant variable is the coefficient of China's GDP at 0.01 level, which has significant impact on the export flow between Czechia and China, contributing 0.887% for every 1% increase. Correspondingly, the GDP of Czechia is of 1.131% impact on the import flow from China at statistically significant 0.1 level.

Table 4: Time-series regression result of Czechia-Sino export value

ln_exportvalue	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
ln_oilprice	.042	.107	0.40	.705	-.211	.296	
ln_pop_o	-9.597	14.615	-0.66	.532	-44.156	24.963	
ln_gdp_o	.488	.471	1.04	.335	-.625	1.601	
ln_gdp_d	.887	.196	4.53	.003	.424	1.35	***
Constant	73.411	123.707	0.59	.572	-219.108	365.93	
Mean dependent var	14.535		SD dependent var	0.251			
R-squared	0.967		Number of obs	12			
F-test	51.525		Prob > F	0.000			
Akaike crit. (AIC)	-31.128		Bayesian crit. (BIC)	-28.703			

*** p<.01, ** p<.05, * p<.1

Table 5: Time-series regression result of Czechia-Sino import value

ln_importvalue	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
ln_oilprice	-.168	.134	-1.25	.25	-.486	.149	
ln_pop_o	10.067	18.278	0.55	.599	-33.153	53.286	
ln_gdp_o	1.331	.589	2.26	.058	-.061	2.723	*
ln_gdp_d	.131	.245	0.54	.609	-.448	.71	
Constant	-104.323	154.705	-0.67	.522	-470.143	261.497	
Mean dependent var	16.853		SD dependent var	0.289			
R-squared	0.961		Number of obs	12			
F-test	43.161		Prob > F	0.000			
Akaike crit. (AIC)	-25.761		Bayesian crit. (BIC)	-23.337			

*** p<.01, ** p<.05, * p<.1

Czechia-Germany: When it comes to exports, Germany's GDP has a significant impact on the flow at a confident 0.05 level, contributing approximately 1.644%. Similarly, for imports, Germany's GDP plays a crucial role in influencing the flow at a

confident 0.1 level, accounting for roughly 1.543%.

Table 6: Time-series regression result of Czechia-Germany export value

ln_exportvalue	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
ln_oilprice	-.048	.085	-0.56	.592	-.249	.153	
ln_pop_o	10.8	6.104	1.77	.12	-3.633	25.234	
ln_gdp_o	-.293	.289	-1.02	.343	-.976	.389	
ln_gdp_d	1.644	.508	3.24	.014	.443	2.845	**
Constant	-112.625	48.37	-2.33	.053	-227.001	1.752	*
Mean dependent var	17.839		SD dependent var	0.154			
R-squared	0.951		Number of obs	12			
F-test	33.926		Prob > F	0.000			
Akaike crit. (AIC)	-38.124		Bayesian crit. (BIC)	-35.699			

*** p<.01, ** p<.05, * p<.1

Table 7: Time-series regression result of Czechia-Germany import value

ln_importvalue	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
ln_oilprice	-.061	.114	-0.53	.611	-.329	.208	
ln_pop_o	3.258	8.165	0.40	.702	-16.05	22.566	
ln_gdp_o	-.202	.386	-0.52	.618	-1.115	.712	
ln_gdp_d	1.543	.679	2.27	.057	-.064	3.15	*
Constant	-42.562	64.705	-0.66	.532	-195.564	110.44	
Mean dependent var	17.493		SD dependent var	0.112			
R-squared	0.836		Number of obs	12			
F-test	8.902		Prob > F	0.007			
Akaike crit. (AIC)	-31.141		Bayesian crit. (BIC)	-28.716			

*** p<.01, ** p<.05, * p<.1

Above the four models, GDPs play an important role in affecting bilateral trade. Nevertheless, the difference is that the significant variable affecting Czech-German trade is Germany's GDP, and the coefficient is higher than any others, which indicates that Germany's economic development plays a significant role in the trade between

the two sides. In contrast, in the case of trade between the Czech Republic and China is characterised by a mutual balance of their GDPs' influence.

5.5 Cross-section Simple Regressions

To see each variable changed over time, this thesis also compared the cross-section models with 102 trading partners in the year 2010 with 2021. In consideration of collinearity, oilprice, the population of Czechia and the GDP of Czechia were omitted.

In 2010, the coefficient of the trading partner's GDP was 0.478, which was lower than the panel data one (0.814), implying that a 1% increase in the partner's GDP would correlate to 0.478% in their overall trade flow. Identically, the coefficient of contiguity also saw a weaker impact of 2.251 compared to 12.189; the coefficient of the partner's population was even negative, indicating that 1% growth in its population will cause a 0.697% decline in trade. The two smaller coefficients and the counter-effect of population growth in 2010 appear they did not influence the commodity exchange flow as satisfied as the entire study period, which is probably related to the European financial crisis.

Table 8: Cross-section simple regression result in 2010

ln_T	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]	Sig	
ln_distcap	-.204	.192	-1.06	.29	-.586	.177	
ln_pop_d	-.697	.133	-5.25	0	-.961	-.434	***
ln_gdp_d	.478	.147	3.26	.002	.186	.769	***
contig	2.251	.853	2.64	.01	.557	3.944	***
fta_wto	-.133	.356	-0.37	.71	-.839	.574	
Constant	13.692	2.367	5.78	0	8.993	18.391	***
Mean dependent var	13.286	SD dependent var	2.041				
R-squared	0.481	Number of obs	102				
F-test	17.819	Prob > F	0.000				
Akaike crit. (AIC)	379.028	Bayesian crit. (BIC)	394.778				

*** p<.01, ** p<.05, * p<.1

In 2021, a similar situation occurred, with the coefficient of the trading partner's GDP being 0.57, the shared border being 2.375, and a negative population coefficient of Czechia's trading partner (-0.765). In addition, the three coefficients exhibited greater strength than those in 2010. This indicates that the GDP, border and population variables would do a more robust effect on the bilateral trade, potentially attributed to the pandemic crisis.

Table 9: Cross-section simple regression result in 2021

ln_T	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]	Sig
ln_distcap	-.196	.243	-0.81	.422	-.678 .287	
ln_pop_d	-.765	.138	-5.55	0	-1.039	-.492 ***
ln_gdp_d	.57	.151	3.76	0	.269	.87 ***
contig	2.375	.931	2.55	.012	.527	4.223 **
fta_wto	.13	.449	0.29	.772	-.76	1.021
Constant	11.684	2.52	4.64	0	6.683	16.686 ***
Mean dependent var	12.591	SD dependent var	2.211			
R-squared	0.474	Number of obs	102			
F-test	17.285	Prob > F	0.000			
Akaike crit. (AIC)	396.813	Bayesian crit. (BIC)	412.563			

*** p<.01, ** p<.05, * p<.1

Conclusion

Due to the ongoing implementation of the BRI and "14+1", there is a possibility of an increase in the trade volume between the Czech Republic and China. As of now, China is the fourth largest trading partner for the Czech Republic and is responsible for the highest trade deficit for Czechia in 2022. Although Czechia only accounts for a small portion of China's trade flow, it remains the second-largest trading partner among the CEEC. Additionally, both countries are export-oriented economies; in particular, China is the world's largest exporter, and Czechia is the main supplier for

the EU market, maintaining a positive trade balance and strong export impetus in recent years. When it comes to their commodity trade structure, Czechia mainly conducts import and export activity in the section of machinery and transport equipment (SITC7) in the global market, particularly focusing on the machinery and mechanical appliances (HS84), electrical machinery and equipment (HS85) and vehicles (HS87). China, on the other hand, presented a more balanced distribution, with electrical machinery and equipment (HS85), mineral fuels (HS27) and ores (HS26) the most demanding products; and electrical machinery and equipment (HS85), as well as mechanical appliances (HS84), being the most exported chapters.

A highly overlapping bilateral trade structure focusing on machinery and transport equipment was also recorded between 2010 and 2021. Therefore, through the calculation of the Revealed Comparative Advantage index, this thesis found out that at an average level, Czechia has competitiveness in electromechanical products such as railways, tramways, locomotives (HS86), vehicles (HS87), machinery and mechanical appliances (HS84) and electrical machinery and equipment (HS85). Besides these chapters, it also strongly compared the sections on explosives (HS36), toys (HS95) and wool (HS51), which are capital-intensive and labour-intensive goods, respectively. On the Chinese side, HS84-86 have also observed competitiveness during the years, but rather HS87. Additionally, umbrellas (HS66) and feathers and down (HS67) recorded a strong competitive. By comparing the RCA index of HS84-87 with the V4 States and China, this thesis also discovered that Czechia has competitiveness in chapters 84 and 86; Slovakia excels in HS87, and China has an advantage in HS86.

To explore further the intra-industry trade comparative advantages, with the calculation of the Grubel-Lloyd index, there is a remarkable trade complementary between the Czech Republic and China under the SITC7 category. Czechia's HS84, HS85 and HS86 were yet to stay at the intra-industry situation; only HS87 recorded an intra-industry trade tendency before 2018, but it shifted to inter-industry trade

thereafter. On the other hand, out of all the chapters involved, only HS87 from China maintained an intra-industry relationship with Czechia, and the rest did not.

By the supplementary estimation of the trade gravity model, the trade flow between Czechia and its 102 trading partners is proportional to the population product of the countries pairs, Czechia's GDP and its partners' GDP. Furthermore, the presence of a common border has a strong positive impact on trade between the countries. Nevertheless, the variables of the capital distance between Czechia and its trading partners and the oil price of the year negatively resulted in the bilateral trade volume. Interestingly, the free trade agreement had a counter-effect on the total trade flow, which is mostly attributed to the EU membership of the Czech Republic. Among all the trading partners, Germany and China were selected for further comparison. The results showed that only Germany's GDP plays a significant role in bilateral trade with the Czech Republic, while the Czech and China's GDP determine their commodity exchange mutually. Besides, in estimating the data every single year, this thesis finds out that the European financial crisis and the pandemic crisis strongly impact the trade volume in that year.

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Appendices

RCA of the exports from the Czech Republic to the world from 2010 to 2021

RCA of the Czech Republic from 2010 to 2021

	Live animals	Meat	Fish; crustaceans	Dairy produce; eggs; honey	Animal originated products	Trees; plants	Vegetables	Fruit; nuts	Coffee, tea, mate, spices	Cereals
Year	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10
2010	1.61	0.27	0.12	1.15	0.54	0.14	0.27	0.24	0.30	0.54
2011	1.72	0.27	0.12	1.17	0.57	0.11	0.26	0.19	0.24	0.67
2012	1.92	0.32	0.12	1.24	0.60	0.15	0.26	0.21	0.34	0.72
2013	1.93	0.31	0.13	1.22	0.62	0.27	0.24	0.23	0.36	0.63
2014	1.73	0.30	0.14	1.11	0.78	0.20	0.21	0.22	0.55	0.56
2015	1.60	0.34	0.11	0.67	2.27	0.10	0.20	0.17	0.59	0.52
2016	1.55	0.37	0.09	0.93	0.55	0.09	0.19	0.16	0.54	0.62
2017	1.54	0.31	0.12	1.05	0.66	0.09	0.15	0.13	0.45	0.67
2018	1.87	0.15	0.12	0.88	0.49	0.14	0.15	0.13	0.46	0.38
2019	1.74	0.15	0.11	0.87	0.46	0.13	0.15	0.12	0.48	0.32
2020	1.56	0.21	0.09	0.79	0.60	0.14	0.11	0.13	0.64	0.59
2021	1.60	0.19	0.10	1.04	0.62	0.18	0.12	0.14	0.50	0.64
Avg 1-6	1.75	0.30	0.12	1.09	0.90	0.16	0.24	0.21	0.40	0.61
Avg 7-12	1.64	0.23	0.10	0.93	0.56	0.13	0.15	0.13	0.51	0.54
% Differ	94%	76%	85%	85%	63%	81%	61%	65%	129%	89%
	decrease	decrease	decrease	decrease	decrease	decrease	decrease	decrease	increase	decrease
	Milling industry	Oil seeds, oleaginous fruits	Lac; gums	Vegetable plaiting materials	Animal or vegetable fats	Meat, fish or crustaceans, molluscs	Sugars and sugar confectionery	Cocoa and cocoa preparations	Preparations of cereals, flour, starch or milk	Preparations of plants
Year	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20
2010	1.10	0.49	1.05	0.05	0.34	0.51	0.77	0.59	0.76	0.27
2011	1.08	0.40	0.78	0.16	0.28	0.51	0.73	0.61	0.77	0.27
2012	1.19	0.56	0.47	0.37	0.53	0.57	1.10	0.70	0.85	0.28
2013	1.13	0.55	0.73	0.22	0.56	0.60	1.03	0.77	0.92	0.29
2014	1.14	0.37	0.57	0.26	0.57	0.50	0.89	0.70	0.78	0.26
2015	0.85	0.31	0.42	0.12	0.51	0.43	0.79	0.38	0.92	0.30
2016	0.93	0.33	0.60	0.16	0.41	0.46	0.79	0.40	0.79	0.26
2017	0.80	0.38	0.58	0.20	0.47	0.45	0.77	0.48	0.84	0.25
2018	0.81	0.27	0.70	0.22	0.28	0.49	0.65	0.53	0.84	0.29
2019	0.83	0.31	0.73	0.33	0.31	0.48	0.62	0.54	0.88	0.27
2020	1.19	0.25	0.69	0.25	0.34	0.50	0.72	0.68	0.59	0.18
2021	1.10	0.37	0.69	0.31	0.42	0.52	0.71	0.62	0.81	0.19
Avg 1-6	1.08	0.45	0.67	0.20	0.46	0.52	0.89	0.62	0.83	0.28
Avg 7-12	0.94	0.32	0.66	0.24	0.37	0.48	0.71	0.54	0.79	0.24
% Differ	87%	71%	99%	124%	80%	93%	80%	87%	95%	86%
	decrease	decrease	decrease	increase	decrease	decrease	decrease	decrease	decrease	decrease
	Edible preparations	Beverages, spirits and vinegar	Food industries, residues	Tobacco and substitutes	Plastering materials	Ores, slag and ash	Mineral fuels, mineral oils and products	Inorganic chemicals	Organic chemicals	Pharmaceutical products
Year	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30
2010	1.08	0.67	0.59	1.36	0.73	0.02	0.24	0.52	0.38	0.38
2011	1.06	0.54	0.61	1.35	0.76	0.01	0.21	0.47	0.37	0.41
2012	1.15	0.59	0.62	1.37	0.65	0.01	0.20	0.52	0.33	0.40
2013	1.14	0.67	0.70	1.46	0.70	0.01	0.17	0.53	0.33	0.44
2014	1.00	0.67	0.77	1.52	0.61	0.02	0.21	0.46	0.30	0.56
2015	0.91	0.65	0.52	1.27	0.55	0.02	0.19	0.71	0.26	0.48
2016	0.88	0.61	0.56	1.13	0.57	0.02	0.21	0.50	0.29	0.46
2017	0.87	0.57	0.81	1.21	0.55	0.02	0.20	0.43	0.29	0.45
2018	0.98	0.74	0.88	1.80	0.56	0.01	0.14	0.50	0.25	0.44
2019	0.98	0.80	0.88	2.00	0.57	0.01	0.12	0.45	0.28	0.47
2020	1.23	0.67	0.64	1.58	1.27	0.02	0.20	0.20	0.40	0.41
2021	1.11	0.56	0.75	1.78	1.23	0.02	0.23	0.26	0.28	0.54
Avg 1-6	1.06	0.63	0.63	1.39	0.67	0.02	0.20	0.53	0.33	0.44
Avg 7-12	1.01	0.66	0.75	1.58	0.79	0.02	0.18	0.39	0.30	0.46
% Differ	95%	104%	119%	114%	119%	110%	90%	73%	90%	104%
	decrease	increase	increase	increase	increase	increase	decrease	decrease	decrease	increase
	Fertilizers	Tanning or dyeing extracts	Cosmetic or toilet preparations	Soap, organic surface-active agents	Albuminoidal substances	Explosives; pyrotechnic products	Photographic goods	Chemical products	Plastics and articles	Rubber and articles
Year	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40
2010	0.29	1.05	0.58	1.97	0.29	5.82	0.20	0.36	1.08	2.19
2011	0.30	1.47	0.66	1.55	0.26	5.09	0.24	0.46	1.06	1.99
2012	0.32	1.76	0.66	1.39	0.23	5.47	0.28	0.47	1.10	2.15
2013	0.28	1.89	0.70	1.35	0.25	5.41	0.33	0.46	1.14	2.28
2014	0.28	1.60	0.76	1.09	0.22	5.69	0.26	0.45	0.96	2.31
2015	0.22	1.04	0.67	0.69	0.25	10.75	0.27	0.40	0.92	2.18
2016	0.27	1.18	0.63	0.79	0.17	7.28	0.34	0.42	0.82	2.03
2017	0.28	1.20	0.61	1.09	0.20	4.60	0.22	0.39	0.94	1.99
2018	0.20	0.72	1.10	1.20	0.23	6.03	0.26	0.25	1.15	1.68
2019	0.21	0.73	1.45	1.31	0.22	5.17	0.29	0.31	1.01	1.56
2020	0.21	1.46	0.68	1.43	0.18	4.14	0.21	0.30	0.86	1.74
2021	0.22	1.70	0.65	1.03	0.20	3.55	0.24	0.49	1.00	2.00
Avg 1-6	0.28	1.47	0.67	1.34	0.25	6.37	0.26	0.43	1.04	2.18
Avg 7-12	0.23	1.17	0.85	1.14	0.20	5.13	0.26	0.36	0.97	1.83
% Differ	82%	79%	127%	85%	79%	81%	98%	83%	92%	84%
	decrease	decrease	increase	decrease	decrease	decrease	decrease	decrease	decrease	decrease

	Raw hides and skins	Articles of leather	Furskins and artificial fur	Wood and articles of wood	Cork	Manufactures of straw	Pulp of wood	Paper and paperboard	Printed books	Silk
Year	'41	'42	'43	'44	'45	'46	'47	'48	'49	'50
2010	0.41	0.51	0.12	2.00	0.10	0.07	1.03	1.20	2.83	0.01
2011	0.55	0.61	0.13	1.96	0.07	0.06	0.93	1.21	2.58	0.02
2012	0.55	0.61	0.12	1.95	0.11	0.07	0.95	1.01	2.85	0.02
2013	0.46	0.72	0.09	1.94	0.11	0.08	1.00	0.99	2.74	0.02
2014	0.41	0.63	0.09	1.72	0.10	0.06	0.92	0.88	2.69	0.02
2015	0.38	0.57	0.11	1.48	0.24	0.05	1.34	0.89	2.13	0.02
2016	0.41	0.61	0.09	1.49	0.22	0.05	1.37	0.89	2.48	0.02
2017	0.35	0.63	0.18	1.51	0.19	0.07	0.91	0.82	3.09	0.01
2018	0.13	0.57	0.03	1.65	0.06	0.12	0.66	0.89	2.68	0.01
2019	0.11	0.55	0.04	1.58	0.06	0.16	0.73	0.89	2.57	0.01
2020	0.33	0.61	0.12	2.00	0.27	0.06	0.74	0.93	4.21	0.00
2021	0.37	0.54	0.13	2.18	0.26	0.07	0.72	0.93	3.78	0.00
Avg 1-6	0.46	0.61	0.11	1.84	0.12	0.06	1.03	1.03	2.64	0.02
Avg 7-12	0.29	0.58	0.10	1.74	0.18	0.09	0.86	0.89	3.13	0.01
% Differ	62%	96%	89%	94%	146%	138%	83%	87%	119%	49%
	decrease	decrease	decrease	decrease	increase	increase	decrease	decrease	increase	decrease
	Wool	Cotton	Vegetable textile fibres	Man-made filaments	Man-made staple fibres	Wadding, felt and nonwovens, special yarns	Carpets	Fabrics, special woven fabrics	Textile fabrics	Fabrics; knitted or crocheted
Year	'51	'52	'53	'54	'55	'56	'57	'58	'59	'60
2010	2.92	0.48	0.30	0.76	0.55	2.16	0.76	0.68	1.45	0.37
2011	2.91	0.48	0.31	0.58	0.51	2.52	0.68	0.62	1.45	0.39
2012	3.33	0.46	0.26	0.56	0.50	2.37	0.70	0.63	1.57	0.36
2013	3.36	0.42	0.27	0.55	0.50	2.36	0.76	0.58	1.57	0.34
2014	3.18	0.44	0.14	0.63	0.46	1.60	0.90	0.59	1.21	0.40
2015	3.10	0.26	0.17	0.51	0.53	2.34	0.72	0.66	1.62	0.21
2016	3.19	0.27	0.21	0.50	0.51	2.50	0.75	0.39	1.77	0.23
2017	3.10	0.26	0.19	0.54	0.47	2.49	0.57	0.47	1.89	0.31
2018	4.96	0.21	0.19	0.81	0.52	2.35	0.55	0.93	1.13	0.29
2019	3.68	0.19	0.16	0.71	0.45	2.27	0.63	0.71	0.89	0.29
2020	4.48	0.14	0.16	0.24	0.56	3.15	0.67	0.95	1.65	0.21
2021	3.82	0.21	0.24	0.34	0.54	2.76	0.58	0.81	1.49	0.28
Avg 1-6	3.13	0.42	0.24	0.60	0.51	2.22	0.75	0.63	1.48	0.34
Avg 7-12	3.87	0.21	0.19	0.52	0.51	2.59	0.63	0.71	1.47	0.27
% Differ	124%	50%	80%	87%	100%	116%	83%	113%	99%	77%
	increase	decrease	decrease	decrease	-	increase	decrease	increase	decrease	decrease
	Apparel and clothing accessories	Apparel and clothing accessories	Textiles, made up articles	Footwear	Headgear	Umbrellas, walking-sticks	Feathers and down, prepared	Stone, plaster	Ceramic products	Glass and glassware
Year	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70
2010	0.26	0.53	1.03	0.56	1.20	0.98	0.06	1.54	1.59	3.14
2011	0.25	0.48	0.95	0.60	0.80	0.86	0.04	1.59	1.48	3.02
2012	0.28	0.50	0.89	0.72	0.80	0.91	0.05	1.66	1.43	2.99
2013	0.26	0.46	0.84	0.74	0.82	0.60	0.04	1.49	1.38	2.95
2014	0.26	0.40	0.79	0.83	0.86	0.53	0.04	1.70	1.36	3.20
2015	0.20	0.37	0.72	0.86	0.56	0.07	0.11	1.28	1.03	3.01
2016	0.21	0.33	0.80	0.97	0.73	0.10	0.10	1.31	1.13	2.67
2017	0.24	0.37	0.93	0.66	0.71	0.13	0.06	1.32	1.14	2.61
2018	0.53	0.49	1.00	0.69	0.55	0.98	0.13	1.35	1.03	2.85
2019	0.51	0.47	0.98	0.68	0.69	0.97	0.22	1.28	1.05	2.65
2020	0.30	0.42	0.64	0.64	0.77	0.83	0.07	1.78	1.01	1.33
2021	0.29	0.39	0.55	0.59	0.75	0.66	0.06	2.01	1.15	2.62
Avg 1-6	0.25	0.46	0.87	0.72	0.84	0.66	0.06	1.54	1.38	3.05
Avg 7-12	0.35	0.41	0.82	0.70	0.70	0.61	0.11	1.51	1.08	2.46
% Differ	138%	90%	94%	98%	83%	93%	188%	98%	79%	80%
	increase	decrease	decrease	decrease	decrease	decrease	increase	decrease	decrease	decrease
	Natural, cultured pearls	Iron and steel	Iron or steel articles	Copper and articles	Nickel and articles	Aluminium and articles	Lead and articles	Zinc and articles	Tin	Metals
Year	'71	'72	'73	'74	'75	'76	'78	'79	'80	'81
2010	0.10	1.18	2.47	0.69	0.35	1.13	1.19	0.51	0.17	0.53
2011	0.12	1.27	2.53	0.55	0.24	1.13	0.85	0.42	0.10	0.67
2012	0.15	1.33	2.44	0.65	0.47	1.24	1.07	0.49	0.38	0.84
2013	0.12	1.34	2.55	0.76	0.40	1.24	1.23	0.69	0.87	0.94
2014	0.15	1.08	2.41	0.53	0.43	1.17	1.46	1.82	0.58	0.86
2015	0.18	0.67	2.26	0.66	0.23	1.12	0.88	2.48	0.34	0.82
2016	0.14	0.69	2.28	0.76	0.38	1.09	1.00	2.51	0.38	0.61
2017	0.14	0.89	2.26	0.73	0.33	1.12	1.33	1.89	0.83	0.69
2018	0.08	1.10	2.22	0.28	0.25	1.21	2.94	0.35	0.09	0.55
2019	0.10	0.64	2.09	0.25	0.23	1.19	2.85	0.28	0.08	0.59
2020	0.13	1.54	0.73	0.58	0.17	1.08	1.91	1.61	0.47	0.79
2021	0.13	1.34	1.36	0.60	0.24	0.93	1.19	1.51	0.47	0.84
Avg 1-6	0.14	1.14	2.44	0.64	0.35	1.17	1.11	1.07	0.41	0.78
Avg 7-12	0.12	1.03	1.82	0.53	0.27	1.10	1.87	1.36	0.39	0.68
% Differ	88%	90%	75%	83%	76%	94%	168%	127%	96%	87%
	decrease	decrease	decrease	decrease	decrease	decrease	increase	increase	decrease	decrease

	Tools, implements	Metal	Nuclear reactors, boilers, machinery and	Electrical machinery and equipment	Railway, tramway locomotives	Vehicles	Aircraft, spacecraft	Ships, boats	Optical, photographic	Clocks and watches
Year	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91
2010	1.49	2.77	1.65	1.33	2.85	2.39	0.24	0.02	0.50	0.07
2011	1.49	3.17	1.78	1.47	2.90	2.44	0.19	0.03	0.51	0.07
2012	1.44	2.87	1.79	1.42	2.88	2.44	0.18	0.01	0.53	0.07
2013	1.35	2.85	1.78	1.36	2.75	2.50	0.23	0.02	0.56	0.09
2014	1.19	2.52	1.71	1.04	2.56	2.57	0.18	0.02	0.52	0.09
2015	0.90	2.37	1.71	1.55	2.21	2.32	0.14	0.01	0.61	0.23
2016	0.88	2.32	1.80	1.82	2.13	2.20	0.13	0.01	0.60	0.17
2017	0.92	2.36	1.78	1.58	2.84	2.29	0.14	0.01	0.54	0.13
2018	1.18	2.26	1.69	1.40	1.92	2.54	0.27	0.01	0.61	0.19
2019	1.14	2.05	1.68	1.69	2.03	2.52	0.28	0.02	0.64	0.21
2020	0.90	2.24	1.62	2.05	2.43	2.74	0.21	0.02	0.57	0.07
2021	0.98	2.46	1.65	1.56	3.26	2.78	0.18	0.01	0.55	0.08
Avg 1-6	1.31	2.76	1.74	1.36	2.69	2.44	0.19	0.02	0.54	0.10
Avg 7-12	1.00	2.28	1.70	1.68	2.44	2.51	0.20	0.01	0.59	0.14
% Differ	76%	83%	98%	124%	91%	103%	105%	82%	108%	136%
	decrease	decrease	decrease	increase	decrease	increase	increase	decrease	increase	increase
	Musical instruments	Arms and ammunition	Furniture	Toys, games and sports requisites	Miscellaneous manufactured articles	Works of art	Simplified declaration of goods			
Year	'92	'93	'94	'95	'96	'97	'99			
2010	0.92	1.98	2.08	3.01	1.22	0.03	0.04			
2011	0.86	1.49	2.06	3.11	1.28	0.03	0.04			
2012	0.97	1.80	1.83	3.49	2.19	0.03	0.04			
2013	0.97	1.87	1.97	4.01	2.33	0.03	0.04			
2014	0.76	2.63	1.94	3.74	2.08	0.02	0.04			
2015	1.21	2.84	1.42	6.35	2.15	0.06	0.05			
2016	1.24	2.08	1.30	4.08	2.54	0.02	0.05			
2017	1.05	1.99	1.51	3.65	2.41	0.02	0.04			
2018	0.67	3.04	2.10	3.88	2.26	0.04	0.07			
2019	0.68	2.93	1.94	3.79	2.39	0.06	0.07			
2020	0.83	2.02	1.23	3.56	1.97	0.02	0.04			
2021	0.90	2.08	1.78	4.14	2.29	0.03	0.04			
Avg 1-6	0.95	2.10	1.88	3.95	1.87	0.04	0.04			
Avg 7-12	0.90	2.36	1.64	3.85	2.31	0.03	0.05			
% Differ	94%	112%	87%	97%	123%	93%	118%			
	decrease	increase	decrease	decrease	increase	decrease	increase			

The overall trend of live animals (HS01), tobacco (HS24), chemical products, explosives (HS36), plastic products (HS39 and HS40), wood articles (HS44), printed books (HS49), extile raw materials and manufactured textile products (HS51,HS56, HS59), stone products (HS68-70), base metal (HS72, HS73, HS76, HS83), the high-tech machineries, say HS84 and HS85, transportation equipment (HS86-87), arms (HS93) and miscellaneous (HS94-95).

RCA of the exports from China to the world from 2010 to 2021

RCA of the China from 2010 to 2021											
	Animals; live	Meat	Fish; crustaceans	Dairy produce; birds' eggs; natural honey	Animal originated products	Trees; plants	Vegetables	Fruit; nuts	Coffee, tea, mate, spices	Cereals	
Year	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	
2010	0.24	0.10	1.03	0.06	1.83	0.11	1.27	0.34	0.43	0.06	
2011	0.26	0.09	1.09	0.06	1.95	0.10	1.33	0.35	0.38	0.05	
2012	0.24	0.08	1.06	0.06	1.94	0.11	1.04	0.37	0.36	0.03	
2013	0.22	0.07	1.02	0.05	1.79	0.11	1.01	0.36	0.42	0.04	
2014	0.19	0.07	1.10	0.05	2.85	0.21	1.07	0.37	0.50	0.03	
2015	0.21	0.06	0.99	0.05	2.53	0.20	0.87	0.37	0.45	0.03	
2016	0.21	0.06	0.93	0.05	2.28	0.12	0.85	0.35	0.46	0.04	
2017	0.21	0.05	0.89	0.05	2.18	0.09	0.96	0.33	0.43	0.03	
2018	0.44	0.03	1.03	0.06	1.85	0.02	1.27	0.35	0.51	0.03	
2019	0.37	0.04	1.04	0.07	1.94	0.04	1.17	0.36	0.54	0.03	
2020	0.17	0.04	0.93	0.04	1.93	0.04	0.83	0.29	0.47	0.03	
2021	0.18	0.04	1.04	0.03	1.69	0.14	0.96	0.29	0.36	0.03	
Avg 1-6	0.23	0.08	1.05	0.05	2.15	0.14	1.10	0.36	0.42	0.04	
Avg 7-12	0.26	0.05	0.98	0.05	1.98	0.07	1.01	0.33	0.46	0.03	
% Differ	117%	59%	94%	93%	92%	53%	92%	92%	109%	77%	
	increase	decrease	decrease	decrease	decrease	decrease	decrease	decrease	increase	decrease	
	Milling industry	Oil seeds and oleaginous fruits	Lac; gums	Vegetable plaiting materials	Animal or vegetable fats	Meat, fish or crustaceans, molluscs	Sugars and sugar confectionery	Cocoa and cocoa preparations	Preparations of cereals, flour, starch or milk	Preparations of plants	
Year	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20	
2010	0.37	0.29	1.09	0.67	0.04	1.50	0.23	0.05	0.23	1.11	
2011	0.31	0.27	1.18	0.84	0.05	1.68	0.23	0.07	0.26	1.17	
2012	0.29	0.25	0.70	0.99	0.05	1.71	0.21	0.07	0.23	1.18	
2013	0.27	0.25	1.06	0.89	0.05	1.54	0.24	0.07	0.20	1.10	
2014	0.20	0.23	0.95	1.22	0.05	1.80	0.27	0.08	0.19	0.96	
2015	0.15	0.20	1.02	0.44	0.06	1.62	0.24	0.07	0.18	0.94	
2016	0.21	0.20	0.97	0.53	0.05	1.03	0.24	0.07	0.17	1.05	
2017	0.30	0.24	0.89	0.48	0.05	1.68	0.24	0.06	0.17	1.04	
2018	0.34	0.19	1.33	0.98	0.08	1.10	0.23	0.08	0.16	1.36	
2019	0.36	0.20	1.28	0.93	0.09	1.26	0.23	0.07	0.16	1.16	
2020	0.30	0.21	0.78	0.61	0.05	1.16	0.27	0.10	0.15	1.06	
2021	0.29	0.21	0.98	0.86	0.04	1.51	0.25	0.07	0.16	1.06	
Avg 1-6	0.27	0.25	1.00	0.84	0.05	1.64	0.24	0.07	0.21	1.08	
Avg 7-12	0.30	0.21	1.04	0.73	0.06	1.29	0.24	0.07	0.16	1.12	
% Differ	113%	83%	104%	87%	123%	79%	103%	107%	76%	104%	
	increase	decrease	increase	decrease	increase	decrease	increase	increase	decrease	increase	
	Edible preparations	Beverages, spirits and vinegar	Food industries, residues	Tobacco and substitutes	Plastering materials	Ores, slag and ash	Mineral fuels, mineral oils and products	Inorganic chemicals	Organic chemicals	Pharmaceutical products	
Year	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	
2010	0.32	0.11	0.33	0.28	0.78	0.03	0.11	0.98	0.81	0.10	
2011	0.34	0.11	0.30	0.27	0.70	0.02	0.09	1.17	0.85	0.11	
2012	0.35	0.12	0.37	0.26	0.66	0.02	0.08	0.98	0.82	0.11	
2013	0.33	0.10	0.29	0.26	0.64	0.01	0.09	0.94	0.81	0.11	
2014	0.33	0.09	0.41	0.22	0.45	0.01	0.10	0.98	1.05	0.11	
2015	0.30	0.09	0.35	0.24	0.59	0.01	0.10	1.00	1.06	0.08	
2016	0.30	0.09	0.31	0.23	0.67	0.02	0.09	1.04	1.04	0.09	
2017	0.31	0.09	0.32	0.21	0.67	0.01	0.09	0.99	0.98	0.09	
2018	0.34	0.20	0.33	0.46	0.63	0.02	0.13	1.51	0.86	0.10	
2019	0.29	0.18	0.34	0.45	0.58	0.04	0.13	1.36	0.79	0.09	
2020	0.29	0.13	0.33	0.29	0.45	0.02	0.07	1.09	0.69	0.09	
2021	0.29	0.09	0.29	0.26	0.63	0.01	0.08	1.06	0.79	0.10	
Avg 1-6	0.33	0.10	0.34	0.25	0.64	0.02	0.10	1.01	0.90	0.10	
Avg 7-12	0.30	0.13	0.32	0.32	0.61	0.02	0.10	1.17	0.86	0.09	
% Differ	93%	126%	94%	124%	95%	113%	104%	117%	95%	91%	
	decrease	increase	decrease	increase	decrease	increase	increase	increase	decrease	decrease	
	Fertilizers	Tanning or dyeing extracts	Cosmetic or toilet preparations	Soap, organic surface-active agents	Albuminoidal substances	Explosives; pyrotechnic products	Photographic goods	Chemical products	Plastics and articles	Rubber and articles	
Year	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40	
2010	0.95	0.59	0.27	0.41	0.75	1.65	0.57	0.60	0.69	0.84	
2011	1.00	0.65	0.28	0.47	0.75	1.75	0.60	0.62	0.77	0.87	
2012	0.87	0.62	0.28	0.47	0.75	1.76	0.61	0.55	0.88	0.90	
2013	0.81	0.61	0.28	0.46	0.74	1.66	0.62	0.57	0.89	0.96	
2014	0.88	0.86	0.30	0.43	1.03	0.59	0.57	0.66	0.75	0.99	
2015	0.78	1.07	0.24	0.38	0.80	0.38	0.56	0.59	0.75	0.86	
2016	0.79	0.67	0.23	0.50	0.88	0.48	0.54	0.66	0.73	0.82	
2017	0.88	0.59	0.24	0.54	0.81	1.29	0.52	0.59	0.83	0.84	
2018	0.78	0.79	0.32	0.14	1.40	1.58	1.01	0.42	0.94	0.73	
2019	0.77	0.78	0.31	0.20	1.11	1.28	0.83	0.42	0.89	0.71	
2020	0.67	0.56	0.23	0.20	0.71	1.10	0.75	0.50	0.80	0.74	
2021	0.90	0.61	0.24	0.42	0.70	0.99	0.69	0.67	0.78	0.88	
Avg 1-6	0.88	0.73	0.27	0.44	0.80	1.30	0.59	0.60	0.79	0.90	
Avg 7-12	0.80	0.67	0.26	0.33	0.94	1.12	0.72	0.54	0.83	0.79	
% Differ	91%	91%	96%	77%	117%	86%	122%	91%	105%	87%	
	decrease	decrease	decrease	decrease	increase	decrease	increase	decrease	increase	decrease	

	Raw hides and skins	Articles of leather	Furskins and artificial fur	Wood and articles of wood	Cork	Manufactures of straw	Pulp of wood	Paper and paperboard	Printed books	Silk
Year	'41	'42	'43	'44	'45	'46	'47	'48	'49	'50
2010	0.13	3.85	2.27	0.87	0.09	6.73	0.03	0.54	0.57	4.81
2011	0.13	3.91	2.36	0.90	0.09	6.88	0.04	0.65	0.60	4.96
2012	0.13	3.69	2.24	0.93	0.08	6.39	0.03	0.74	0.74	4.87
2013	0.11	3.52	2.10	0.84	0.08	5.93	0.02	0.79	0.75	4.46
2014	0.52	2.78	3.40	0.85	0.09	7.06	0.03	0.59	0.99	5.19
2015	0.17	2.72	3.87	0.73	0.10	6.88	0.03	0.63	0.90	4.67
2016	0.08	2.83	3.94	0.71	0.10	7.40	0.01	0.67	0.93	5.27
2017	0.09	2.92	3.33	0.84	0.09	7.40	0.01	0.69	0.99	5.58
2018	0.08	0.80	3.06	0.86	0.09	3.97	0.02	0.53	0.77	5.08
2019	0.09	0.84	3.15	0.82	0.10	4.54	0.02	0.37	0.82	4.86
2020	0.09	1.13	2.75	0.80	0.15	5.12	0.03	0.37	0.97	4.53
2021	0.10	2.67	2.91	0.91	0.17	7.00	0.03	0.76	0.88	4.13
Avg 1-6	0.20	3.41	2.71	0.86	0.09	6.65	0.03	0.66	0.76	4.83
Avg 7-12	0.09	1.87	3.19	0.82	0.12	5.91	0.02	0.56	0.89	4.91
% Differ	44%	55%	118%	96%	131%	89%	66%	86%	118%	102%
	decrease	decrease	increase	decrease	increase	decrease	decrease	decrease	increase	increase
	Wool	Cotton	Vegetable textile fibres	Man-made filaments	Man-made staple fibres	Wadding, felt and nonwovens, special yarns	Carpets	Fabrics, special woven fabrics	Textile fabrics	Fabrics; knitted or crocheted
Year	'51	'52	'53	'54	'55	'56	'57	'58	'59	'60
2010	1.76	2.14	2.17	2.35	2.25	1.27	1.33	3.13	2.40	3.15
2011	1.71	2.09	2.48	2.68	2.56	1.41	1.42	3.38	2.67	3.32
2012	1.59	1.96	2.40	2.70	2.43	1.42	1.41	3.28	2.51	3.33
2013	1.54	2.08	2.59	2.75	2.38	1.48	1.33	3.12	2.48	3.36
2014	1.38	2.26	1.90	2.76	2.49	1.18	1.40	2.55	1.98	4.30
2015	1.39	2.19	2.10	2.76	2.45	1.38	1.32	2.97	2.04	3.62
2016	1.77	2.29	2.19	2.51	2.58	1.57	1.35	3.39	2.69	3.62
2017	1.85	2.35	2.02	2.63	2.57	1.44	1.16	3.34	2.92	4.23
2018	3.10	2.45	4.21	2.90	3.82	1.43	1.15	6.16	1.66	4.10
2019	2.30	2.45	3.96	2.97	3.28	1.49	1.22	5.64	1.45	3.50
2020	1.95	1.87	2.65	2.61	2.85	1.58	1.40	5.29	2.26	3.49
2021	1.60	2.55	2.79	3.01	3.14	1.38	1.32	4.25	2.70	4.18
Avg 1-6	1.56	2.12	2.27	2.67	2.43	1.36	1.37	3.07	2.35	3.51
Avg 7-12	2.10	2.33	2.97	2.77	3.04	1.48	1.27	4.68	2.28	3.85
% Differ	134%	110%	131%	104%	125%	109%	92%	152%	97%	110%
	increase	increase	increase	increase	increase	increase	decrease	increase	decrease	increase
	Apparel and clothing accessories	Apparel and clothing accessories	Textiles, made up articles	Footwear	Headgear	Umbrellas, walking-sticks	Feathers and down, prepared	Stone, plaster	Ceramic products	Glass and glassware
Year	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70
2010	3.57	3.08	3.90	3.52	4.36	7.26	6.25	1.48	2.70	1.57
2011	3.66	3.04	3.86	3.48	4.56	7.40	6.70	1.61	2.97	1.68
2012	3.70	2.85	3.81	3.57	4.60	7.14	6.62	1.61	3.16	1.87
2013	3.60	2.81	3.67	3.38	4.50	6.84	6.33	1.75	3.16	1.87
2014	3.16	2.56	2.70	2.66	4.30	5.44	2.40	1.46	2.74	7.64
2015	3.25	2.44	2.81	2.77	3.96	5.57	2.18	1.51	2.69	3.37
2016	3.12	2.36	2.70	2.88	5.06	6.84	6.33	1.90	2.77	2.44
2017	3.11	2.43	2.73	3.28	4.82	7.60	5.45	1.85	2.76	1.97
2018	3.53	1.84	3.56	3.89	2.81	8.37	9.36	2.23	2.87	2.10
2019	3.55	1.96	3.32	3.49	3.69	8.02	10.57	1.98	3.36	1.92
2020	3.29	2.28	3.01	2.93	5.51	7.45	10.45	1.44	3.58	1.22
2021	3.25	2.47	2.73	3.12	3.70	7.13	7.55	1.49	3.22	2.04
Avg 1-6	3.49	2.80	3.46	3.23	4.38	6.61	5.08	1.57	2.90	3.00
Avg 7-12	3.31	2.22	3.01	3.27	4.26	7.57	8.28	1.82	3.09	1.95
% Differ	95%	80%	87%	101%	97%	115%	163%	116%	106%	65%
	decrease	decrease	decrease	increase	decrease	increase	increase	increase	increase	decrease
	Natural, cultured pearls	Iron and steel	Iron or steel articles	Copper and articles	Nickel and articles	Aluminium and articles	Lead and articles	Zinc and articles	Tin	Metals
Year	'71	'72	'73	'74	'75	'76	'78	'79	'80	'81
2010	0.27	0.71	1.52	0.29	0.44	0.96	0.25	0.20	0.24	1.88
2011	0.41	0.80	1.63	0.35	0.32	1.03	0.19	0.17	0.18	1.89
2012	0.52	0.78	1.65	0.38	0.29	1.06	0.08	0.10	0.11	1.62
2013	0.48	0.83	1.58	0.37	0.31	1.06	0.19	0.15	0.18	1.60
2014	0.60	1.07	1.54	0.34	0.17	1.02	0.11	0.30	0.13	1.57
2015	0.56	0.83	1.55	0.38	0.18	1.21	0.12	0.29	0.15	1.55
2016	0.58	0.77	1.53	0.45	0.17	0.95	0.12	0.22	0.15	1.54
2017	0.64	0.84	1.56	0.39	0.23	0.96	0.14	0.07	0.16	1.53
2018	0.86	0.89	1.81	0.58	0.27	1.42	0.23	0.19	0.29	1.52
2019	0.77	0.61	1.74	0.55	0.31	1.51	0.22	0.19	0.35	1.90
2020	0.59	0.85	1.47	0.45	0.22	1.02	0.29	0.15	0.23	1.70
2021	0.54	0.80	1.57	0.39	0.22	0.92	0.24	0.16	0.18	1.63
Avg 1-6	0.47	0.84	1.58	0.35	0.28	1.05	0.16	0.20	0.16	1.68
Avg 7-12	0.66	0.79	1.61	0.47	0.23	1.13	0.21	0.16	0.23	1.64
% Differ	140%	94%	102%	133%	83%	107%	133%	80%	138%	97%
	increase	decrease	increase	increase	decrease	increase	increase	decrease	increase	decrease

	Tools, implements	Metal	Nuclear reactors, boilers,	Electrical machinery and equipment	Railway, tramway locomotives	Vehicles	Aircraft, spacecraft	Ships, boats	Optical, photographic	Clocks and watches
Year	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91
2010	1.65	1.84	1.65	1.90	2.53	0.34	0.05	2.23	1.05	0.79
2011	1.73	1.99	1.64	2.00	3.19	0.37	0.06	2.19	1.09	0.73
2012	1.76	2.06	1.64	2.02	2.61	0.38	0.05	2.18	1.18	0.86
2013	1.76	2.06	1.58	2.10	2.34	0.37	0.05	1.72	1.13	0.87
2014	1.67	1.72	1.51	1.52	2.08	0.37	0.06	1.47	1.29	0.94
2015	1.66	1.56	1.37	2.40	2.46	0.34	0.04	1.67	1.12	0.86
2016	1.71	1.68	1.38	2.80	2.63	0.34	0.04	1.34	1.05	0.78
2017	1.69	1.98	1.43	2.38	2.38	0.36	0.05	1.31	0.96	0.87
2018	1.82	2.20	1.46	2.06	2.07	0.33	0.16	0.28	0.89	0.80
2019	1.87	2.26	1.41	2.45	1.88	0.35	0.16	0.96	0.89	0.84
2020	1.99	1.60	1.42	2.98	2.02	0.37	0.09	1.27	0.84	1.05
2021	1.79	2.02	1.45	2.31	2.09	0.42	0.05	1.32	0.98	0.88
Avg 1-6	1.70	1.87	1.56	1.99	2.54	0.36	0.05	1.91	1.14	0.84
Avg 7-12	1.81	1.96	1.43	2.50	2.18	0.36	0.09	1.08	0.94	0.87
% Differ	106%	105%	91%	126%	86%	100%	175%	56%	82%	104%
	increase	increase	decrease	increase	decrease	-	increase	decrease	decrease	increase
	Musical instruments	Arms and ammunition	Furniture	Toys, games and sports requisites	Miscellaneous manufactured articles	Works of art	Simplified declaration of goods			
Year	'92	'93	'94	'95	'96	'97	'99			
2010	2.41	0.07	2.90	3.34	3.07	0.09	0.05			
2011	2.39	0.08	2.97	3.55	3.24	0.18	0.07			
2012	2.34	0.08	3.33	3.56	2.50	0.20	0.04			
2013	2.22	0.07	3.25	3.47	2.38	0.36	0.04			
2014	1.65	0.09	2.70	2.83	2.64	0.36	0.03			
2015	2.22	0.08	2.37	2.65	2.58	0.32	0.04			
2016	2.60	0.08	2.34	2.76	2.54	0.29	0.05			
2017	2.41	0.07	2.36	3.17	2.41	0.28	0.05			
2018	1.64	0.07	2.41	2.39	2.46	0.33	0.00			
2019	1.78	0.03	2.42	2.32	2.58	0.32	0.01			
2020	2.40	0.02	2.47	5.64	2.33	0.28	0.01			
2021	2.47	0.11	2.66	2.69	2.67	0.29	0.03			
Avg 1-6	2.21	0.08	2.92	3.23	2.73	0.25	0.05			
Avg 7-12	2.22	0.06	2.44	3.16	2.50	0.30	0.03			
% Differ	101%	79%	84%	98%	91%	118%	60%			
	increase	decrease	decrease	decrease	decrease	increase	decrease			

Throughout the period, China consistently had a comparative advantage in agricultural and food products (such as HS05, HS07, HS16, HS20), fur products (HS42 and HS43), paper products (HS46), textile raw materials and manufactured textile products (HS50-63), shoes, hats, umbrellas, sticks, whips, feather products (HS64-67), parts of the base metal (HS73, HS76, HS81-83), as well as the high-tech industries, say HS84 and HS85, transportation equipment (HS86-89), instruments (HS92) and miscellaneous (HS94).

The steadily increasing values indicate a firm comparative advantage, while some of the categories fluctuated over the years, suggesting changes in specialization or competitiveness. By comparing the RCA indices of the Czech Republic and China, it is evident that both countries are competitive in high-tech machinery appliances and transportation equipment. However, China gained more competitive products than Czechia, and it focused more on the textile chapters that require labour-intensive work; Czechia, on the other hand, was more competitive in chemicals and arms with capital-intensive features.

RCA of the exports from Poland to the world from 2010 to 2021

RCA of the Poland from 2010 to 2021											
	Animals; live	Meat	Fish; crustaceans	Dairy produce; birds' eggs;	Animal originated products	Trees; plants	Vegetables	Fruit; nuts	Coffee, tea, mate, spices	Cereals	
Year	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	
2010	1.38	2.74	1.11	2.34	2.35	0.69	1.62	1.14	0.74	0.46	
2011	1.14	2.90	1.03	2.32	2.41	0.61	1.54	1.15	0.94	0.35	
2012	1.13	3.29	1.00	2.61	2.47	0.64	1.68	1.50	1.14	0.70	
2013	0.98	3.32	1.13	2.48	2.51	0.75	1.70	1.41	1.14	0.83	
2014	0.74	3.22	1.13	2.42	2.62	0.59	1.54	1.27	1.22	0.80	
2015	0.64	3.24	0.99	1.95	2.16	0.61	1.26	0.98	1.35	0.71	
2016	0.58	3.52	1.00	1.70	2.33	0.56	1.12	0.92	1.10	0.68	
2017	0.40	3.48	1.02	2.12	2.62	0.54	1.09	0.81	0.92	0.55	
2018	0.54	3.11	1.10	2.11	2.51	0.71	1.26	0.78	1.07	0.49	
2019	0.61	3.43	1.06	2.14	2.64	0.82	1.28	0.75	1.21	0.46	
2020	0.55	3.20	0.99	1.72	2.62	0.80	1.11	0.77	1.38	1.05	
2021	0.47	2.72	1.00	1.70	2.68	0.83	1.17	0.81	0.94	1.04	
Avg 1-6	1.00	3.12	1.07	2.35	2.42	0.65	1.56	1.24	1.09	0.64	
Avg 7-12	0.53	3.24	1.03	1.92	2.57	0.71	1.17	0.81	1.10	0.71	
% Differ	52.57%	103.93%	96.32%	81.41%	106.08%	109.79%	75.15%	65.04%	101.63%	110.76%	
	decrease	increase	decrease	decrease	increase	increase	decrease	decrease	increase	increase	
	Milling industry	Oil seeds and oleaginous	Lac; gums	Vegetable plaiting materials	Animal or vegetable fats	Meat, fish or crustacean	Sugars and sugar confection	Cocoa and cocoa preparation	Preparations of cereals,	Preparations of plants	
Year	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20	
2010	1.00	0.37	0.12	0.38	0.50	2.25	1.08	2.35	2.03	1.88	
2011	1.01	0.21	0.10	0.25	0.45	2.26	1.06	2.59	2.12	2.04	
2012	1.08	0.27	0.08	0.21	0.48	2.42	1.50	2.75	2.14	2.31	
2013	1.09	0.51	0.17	0.28	0.69	2.58	1.38	3.12	2.17	2.21	
2014	0.99	0.38	0.10	0.21	0.65	2.17	1.21	2.65	2.12	1.85	
2015	1.10	0.46	0.11	0.16	0.63	1.99	1.04	2.72	2.33	1.73	
2016	1.44	0.22	0.17	0.18	0.60	2.25	1.14	2.73	2.51	1.98	
2017	1.42	0.30	0.18	0.15	0.36	2.47	1.41	2.39	2.76	1.84	
2018	1.35	0.23	0.24	0.16	0.26	2.99	1.19	2.52	2.67	2.04	
2019	1.41	0.29	0.25	0.25	0.32	2.96	1.13	2.67	2.49	1.92	
2020	1.51	0.35	0.24	0.29	0.42	3.07	1.39	3.51	2.55	1.82	
2021	1.50	0.34	0.27	0.29	0.54	3.15	1.23	3.06	2.35	1.82	
Avg 1-6	1.04	0.37	0.11	0.25	0.57	2.28	1.21	2.70	2.15	2.00	
Avg 7-12	1.44	0.29	0.22	0.22	0.42	2.82	1.25	2.81	2.56	1.90	
% Differ	137.90%	78.66%	199.77%	88.69%	73.37%	123.57%	102.89%	104.27%	118.86%	94.94%	
	increase	decrease	increase	decrease	decrease	increase	increase	increase	increase	decrease	
	Edible preparations	Beverages, spirits and vinegar	Food industries, residues	Tobacco and substitutes	Plastering materials	Ores, slag and ash	Mineral fuels, mineral oils	Inorganic chemicals	Organic chemicals	Pharmaceutical products	
Year	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	
2010	2.44	0.64	0.89	4.30	0.56	0.03	0.27	0.54	0.34	0.48	
2011	2.42	0.61	0.89	4.34	0.57	0.02	0.27	0.63	0.43	0.47	
2012	2.47	0.56	0.93	4.38	0.64	0.02	0.27	0.72	0.43	0.52	
2013	2.50	0.60	1.00	4.36	0.61	0.02	0.27	0.75	0.38	0.60	
2014	2.42	0.65	1.05	4.81	0.56	0.04	0.33	0.67	0.36	0.62	
2015	2.10	0.66	0.88	5.06	0.53	0.02	0.24	0.58	0.30	0.53	
2016	2.08	0.63	0.85	3.86	0.51	0.07	0.18	0.54	0.31	0.47	
2017	2.16	0.60	1.14	5.46	0.48	0.04	0.18	0.58	0.32	0.65	
2018	2.25	0.86	1.41	6.97	0.50	0.10	0.18	0.63	0.31	0.46	
2019	2.32	0.77	1.52	7.66	0.44	0.04	0.16	0.59	0.30	0.47	
2020	2.48	0.75	1.62	7.65	0.44	0.03	0.10	0.50	0.27	0.47	
2021	2.48	0.64	1.80	6.98	0.42	0.03	0.14	0.58	0.24	0.35	
Avg 1-6	2.39	0.62	0.94	4.54	0.58	0.03	0.27	0.65	0.37	0.54	
Avg 7-12	2.29	0.71	1.39	6.43	0.47	0.05	0.16	0.57	0.29	0.48	
% Differ	95.92%	114.32%	147.98%	141.58%	80.62%	197.66%	56.91%	88.11%	77.97%	89.46%	
	decrease	increase	increase	increase	decrease	increase	decrease	decrease	decrease	decrease	

	Fertilizers	Tanning or dyeing extracts	Cosmetic or toilet preparation	Soap, organic surface-	Albuminoid substances	Explosives; pyrotechnic products	Photographic goods	Chemical products	Plastics and articles	Rubber and articles
Year	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40
2010	1.09	0.86	2.62	2.63	0.87	1.68	0.08	0.58	1.28	2.13
2011	1.13	0.95	2.49	2.78	0.79	1.15	0.16	0.72	1.38	2.13
2012	1.19	1.05	2.55	2.95	0.81	1.10	0.20	0.68	1.43	2.20
2013	1.07	1.06	2.36	3.03	0.79	1.02	0.18	0.75	1.45	2.37
2014	1.13	1.04	2.30	2.77	0.79	1.09	0.15	0.87	1.17	2.39
2015	1.11	0.96	2.23	2.33	0.72	0.79	0.17	0.77	1.18	2.22
2016	0.79	1.00	2.19	3.10	0.74	0.87	0.17	1.14	1.13	2.15
2017	0.79	1.04	2.18	3.13	0.82	0.96	0.17	1.02	1.24	2.19
2018	0.77	1.18	2.55	2.69	0.95	1.11	0.22	0.50	1.64	1.83
2019	0.82	1.14	2.63	2.86	0.80	0.71	0.13	0.53	1.41	1.67
2020	0.78	1.01	2.43	3.07	1.03	0.77	0.17	0.95	1.20	1.71
2021	1.05	1.05	2.08	3.14	1.17	0.65	0.13	1.44	1.33	1.88
Avg 1-6	1.12	0.98	2.42	2.75	0.79	1.14	0.16	0.73	1.32	2.24
Avg 7-12	0.84	1.07	2.34	3.00	0.92	0.84	0.16	0.93	1.33	1.90
% Differ	74.57%	108.66%	96.57%	109.12%	115.67%	74.29%	103.69%	127.95%	100.69%	85.05%
	decrease	increase	decrease	increase	increase	decrease	increase	increase	increase	decrease
	Raw hides and skins	Articles of leather	Furskins and artificial	Wood and articles of wood	Cork	Manufactures of straw	Pulp of wood	Paper and paperboard	Printed books	Silk
Year	'41	'42	'43	'44	'45	'46	'47	'48	'49	'50
2010	0.69	0.39	2.26	2.78	0.24	1.34	0.23	2.32	1.50	0.02
2011	0.80	0.37	1.86	2.78	0.30	1.24	0.30	2.48	1.53	0.02
2012	0.85	0.35	1.51	2.83	0.37	1.18	0.25	2.32	1.87	0.02
2013	0.77	0.36	2.36	2.78	0.36	1.29	0.34	2.25	1.96	0.02
2014	0.73	0.38	4.24	2.61	0.35	0.92	0.47	1.97	2.03	0.02
2015	0.66	0.53	4.07	2.36	0.27	1.00	0.48	1.87	2.91	0.09
2016	0.67	0.59	3.04	2.39	0.20	1.07	0.49	1.92	3.07	0.03
2017	0.67	0.60	1.78	2.44	0.23	1.13	0.51	1.81	3.64	0.04
2018	0.63	0.55	1.37	2.79	0.20	1.19	0.45	1.99	4.12	0.03
2019	0.54	0.63	1.24	1.71	0.31	1.54	0.43	2.01	4.42	0.01
2020	0.48	0.61	0.77	1.70	0.65	1.91	0.45	1.96	5.03	0.01
2021	0.52	0.70	0.82	1.99	0.71	2.29	0.63	1.87	4.45	0.01
Avg 1-6	0.75	0.40	2.72	2.69	0.31	1.16	0.34	2.20	1.97	0.03
Avg 7-12	0.59	0.61	1.50	2.17	0.38	1.52	0.49	1.93	4.12	0.02
% Differ	78.07%	155.39%	55.36%	80.58%	122.64%	130.73%	143.39%	87.67%	209.51%	81.25%
	decrease	increase	decrease	decrease	increase	increase	increase	decrease	increase	decrease
	Wool	Cotton	Vegetable textile fibres	Man-made filaments	Man-made staple fibres	Wadding, felt and nonwovens	Carpets	Fabrics, special woven	Textile fabrics	Fabrics; knitted or crocheted
Year	'51	'52	'53	'54	'55	'56	'57	'58	'59	'60
2010	1.13	0.09	0.67	0.50	0.21	0.78	1.28	0.44	0.90	0.32
2011	0.94	0.08	0.66	0.48	0.19	0.92	1.52	0.42	0.99	0.28
2012	1.00	0.07	0.60	0.45	0.22	1.15	1.45	0.48	0.94	0.29
2013	0.82	0.07	0.63	0.41	0.22	1.23	1.41	0.41	1.04	0.29
2014	0.81	0.07	0.52	0.40	0.22	0.85	1.64	0.35	0.87	0.37
2015	0.72	0.08	0.80	0.35	0.19	0.89	1.44	0.35	0.90	0.29
2016	0.72	0.07	0.82	0.36	0.19	1.07	1.42	0.34	1.18	0.30
2017	0.68	0.07	0.71	0.38	0.22	1.13	1.04	0.35	1.35	0.36
2018	1.14	0.06	0.65	0.44	0.28	1.52	1.00	0.45	0.98	0.24
2019	0.84	0.06	0.69	0.39	0.25	1.59	0.97	0.42	0.82	0.16
2020	0.42	0.06	0.66	0.31	0.22	1.67	1.05	0.43	1.24	0.22
2021	0.36	0.06	0.87	0.36	0.22	1.61	0.92	0.38	0.95	0.20
Avg 1-6	0.90	0.08	0.65	0.43	0.21	0.97	1.46	0.41	0.94	0.31
Avg 7-12	0.70	0.07	0.73	0.37	0.23	1.43	1.07	0.40	1.09	0.25
% Differ	76.93%	86.53%	113.28%	86.78%	112.02%	147.64%	73.14%	96.78%	115.39%	80.84%
	decrease	decrease	increase	decrease	increase	increase	decrease	decrease	increase	decrease

	Apparel and clothing	Apparel and clothing	Textiles, made up articles	Footwear	Headgear	Umbrellas, walking-sticks	Feathers and down, prepared	Stone, plaster	Ceramic products	Glass and glassware
Year	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70
2010	0.72	1.00	1.41	0.51	1.14	0.72	0.13	1.81	2.24	1.96
2011	0.73	1.00	1.42	0.54	1.16	0.65	0.12	2.04	2.28	2.09
2012	0.70	1.00	1.39	0.63	1.14	0.64	0.11	2.06	2.11	2.05
2013	0.66	0.96	1.30	0.68	1.10	0.78	0.11	1.89	2.01	2.16
2014	0.68	0.96	1.28	0.77	1.01	0.78	0.11	2.06	1.95	2.56
2015	0.71	0.95	1.27	0.79	0.87	0.67	0.08	1.71	1.77	2.34
2016	0.79	1.03	1.37	0.84	1.10	0.75	0.11	1.86	1.75	2.21
2017	0.81	1.01	1.34	0.91	1.03	0.78	0.09	1.82	1.80	2.19
2018	1.03	1.15	1.69	1.30	0.74	0.83	0.15	2.01	1.63	2.53
2019	1.13	1.14	1.69	1.49	1.04	0.74	0.21	2.13	1.35	2.53
2020	1.22	1.46	1.96	1.35	1.81	0.82	0.25	2.10	1.52	1.21
2021	1.31	1.47	1.52	1.23	1.80	0.98	0.24	2.21	1.46	2.03
Avg 1-6	0.70	0.98	1.34	0.65	1.07	0.71	0.11	1.93	2.06	2.19
Avg 7-12	1.05	1.21	1.60	1.19	1.25	0.82	0.18	2.02	1.59	2.12
% Differ	150.14%	123.64%	118.74%	181.30%	117.18%	115.67%	156.44%	104.86%	77.02%	96.49%
	increase	increase	increase	increase	increase	increase	increase	increase	decrease	decrease
	Natural, cultured pearls	Iron and steel	Iron or steel articles	Copper and articles	Nickel and articles	Aluminium and articles	Lead and articles	Zinc and articles	Tin	Metals
Year	'71	'72	'73	'74	'75	'76	'78	'79	'80	'81
2010	0.21	0.94	1.92	2.59	0.29	1.24	1.83	1.82	0.48	0.19
2011	0.27	1.10	2.06	2.59	0.12	1.29	2.18	1.85	0.61	0.17
2012	0.28	1.24	2.05	2.71	0.22	1.36	2.33	1.94	0.84	0.19
2013	0.15	1.13	1.98	2.60	0.34	1.39	2.19	2.36	1.04	0.22
2014	0.18	0.97	1.96	2.36	0.41	1.36	2.47	3.25	1.38	0.15
2015	0.17	0.70	1.79	2.17	0.21	1.46	2.62	2.85	0.87	0.17
2016	0.19	0.64	1.83	1.86	0.10	1.40	2.10	1.61	1.02	0.13
2017	0.16	0.90	1.91	1.81	0.09	1.52	2.26	1.89	1.27	0.17
2018	0.13	0.98	2.04	1.46	0.10	1.74	2.67	1.61	1.12	0.16
2019	0.17	0.62	2.07	1.62	0.08	1.87	2.83	1.41	1.19	0.16
2020	0.17	0.97	2.01	1.62	0.07	1.69	2.65	1.09	0.97	0.19
2021	0.18	1.22	2.07	2.23	0.07	1.60	1.82	1.28	1.67	0.22
Avg 1-6	0.21	1.01	1.96	2.50	0.27	1.35	2.27	2.34	0.87	0.18
Avg 7-12	0.17	0.89	1.99	1.77	0.09	1.64	2.39	1.48	1.21	0.17
% Differ	78.05%	87.67%	101.39%	70.54%	32.17%	121.31%	105.15%	63.20%	138.74%	94.33%
	decrease	decrease	increase	decrease	decrease	increase	increase	decrease	increase	decrease
	Tools, implements	Metal	Nuclear reactors, boilers,	Electrical machinery and	Railway, tramway locomotive	Vehicles	Aircraft, spacecraft	Ships, boats	Optical, photographic	Clocks and watches
Year	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91
2010	2.12	1.67	1.08	1.03	2.08	1.83	0.19	1.78	0.29	0.09
2011	2.05	2.07	1.08	0.96	1.83	1.81	0.20	2.56	0.34	0.08
2012	2.13	2.13	1.13	0.94	1.87	1.60	0.26	2.56	0.34	0.06
2013	2.23	2.05	1.15	0.92	2.28	1.51	0.42	3.54	0.38	0.05
2014	2.11	1.92	1.15	0.73	2.21	1.42	0.26	3.58	0.39	0.06
2015	1.78	1.90	1.11	1.12	2.00	1.36	0.21	3.73	0.43	0.11
2016	1.71	2.13	1.12	1.22	1.75	1.44	0.26	2.37	0.45	0.13
2017	1.63	2.40	1.12	0.98	2.20	1.45	0.27	1.59	0.55	0.16
2018	1.43	2.36	1.14	0.83	2.07	1.44	0.45	1.72	0.55	0.17
2019	1.41	2.21	1.16	0.93	2.93	1.47	0.38	1.65	0.59	0.16
2020	1.55	2.03	1.11	1.26	1.99	1.33	0.24	1.85	0.56	0.17
2021	1.46	2.40	1.13	1.07	3.04	1.26	0.23	2.07	0.53	0.21
Avg 1-6	2.07	1.95	1.12	0.95	2.05	1.59	0.26	2.96	0.36	0.08
Avg 7-12	1.53	2.26	1.13	1.05	2.33	1.40	0.30	1.88	0.54	0.17
% Differ	73.96%	115.37%	101.24%	110.22%	113.94%	88.11%	119.36%	63.39%	148.82%	222.95%
	decrease	increase	increase	increase	increase	decrease	increase	decrease	increase	increase

	Musical instruments	Arms and ammunition	Furniture	Toys, games and sports	Miscellaneous manufactures	Works of art	Simplified declaration of goods			
Year	'92	'93	'94	'95	'96	'97	'99			
2010	0.24	0.16	4.81	0.26	0.50	0.14	0.02			
2011	0.25	0.17	5.02	0.38	0.53	0.14	0.04			
2012	0.27	0.15	4.51	0.48	2.94	0.14	0.04			
2013	0.27	0.21	4.29	0.53	2.81	0.06	0.06			
2014	0.26	0.42	4.33	0.62	2.69	0.07	0.02			
2015	0.47	0.65	3.87	1.31	2.41	0.09	0.03			
2016	0.52	0.87	4.09	1.43	2.33	0.14	0.04			
2017	0.46	0.40	4.24	2.10	2.15	0.06	0.06			
2018	0.30	0.51	4.25	2.37	2.06	0.05	0.05			
2019	0.29	0.55	4.19	2.24	2.19	0.03	0.08			
2020	0.57	0.34	3.75	2.41	2.00	0.03	0.03			
2021	0.69	0.57	3.78	2.52	2.01	0.08	0.03			
Avg 1-6	0.30	0.29	4.47	0.60	1.98	0.11	0.03			
Avg 7-12	0.47	0.54	4.05	2.18	2.12	0.07	0.05			
% Differ	159.48%	185.27%	90.55%	365.23%	107.29%	62.99%	143.30%			
	increase	increase	decrease	increase	increase	decrease	increase			

RCA of the exports from Hungary to the world from 2010 to 2021

RCA of the Hungary from 2010 to 2021										
	Live animal	Meat	Fish; crustaceans	Dairy produce; eggs; honey	Animal originated products	Trees; plants	Vegetables	Fruit; nuts	Coffee, tea, mate, spices	Cereals
Year	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10
2010	3.19	1.81	0.03	0.76	1.52	0.37	0.72	0.35	0.38	2.75
2011	3.92	1.89	0.04	0.85	1.59	0.49	0.77	0.40	0.42	2.63
2012	3.78	1.94	0.04	0.96	1.92	0.57	0.89	0.34	0.57	2.88
2013	3.46	1.81	0.04	0.97	2.11	0.43	0.77	0.33	0.44	2.45
2014	2.70	1.80	0.05	0.88	2.24	0.43	0.81	0.31	0.41	1.86
2015	2.63	1.58	0.05	0.79	1.35	0.44	0.72	0.29	0.23	1.69
2016	2.71	1.75	0.04	0.71	1.17	0.48	0.68	0.24	0.23	1.48
2017	2.57	1.46	0.04	0.82	1.24	0.53	0.68	0.27	0.19	1.97
2018	3.33	1.29	0.04	0.83	1.52	0.46	0.64	0.17	0.24	1.47
2019	3.54	1.41	0.02	0.85	1.87	0.49	0.55	0.18	0.28	1.54
2020	3.36	1.25	0.02	0.73	1.22	0.44	0.53	0.19	0.27	2.09
2021	3.45	1.20	0.02	0.73	1.87	1.05	0.60	0.19	0.24	1.97
Avg 1-6	3.28	1.80	0.04	0.87	1.79	0.45	0.78	0.34	0.41	2.38
Avg 7-12	3.16	1.40	0.03	0.78	1.48	0.57	0.61	0.20	0.24	1.75
% Differ	96.33%	77.33%	70.64%	89.91%	82.87%	126.51%	78.63%	60.72%	58.68%	73.79%
	decrease	decrease	decrease	decrease	decrease	increase	decrease	decrease	decrease	decrease
	Milling industries	Oil seeds, oleaginous fruits	Lac; gums	Vegetable plaiting materials	Animal or vegetable fats	Meat, fish or crustacean products	Sugars and sugar confection	Cocoa and cocoa preparation	Preparations of cereals, flours	Preparations of plants
Year	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20
2010	1.25	1.56	0.04	0.64	0.59	0.83	1.37	0.42	0.51	1.77
2011	1.33	1.69	0.03	0.95	0.75	0.87	1.56	0.40	0.60	1.72
2012	1.30	1.74	0.02	1.26	1.12	0.86	1.85	0.49	0.63	2.03
2013	1.30	1.15	0.04	0.95	1.39	0.90	1.59	0.70	0.68	1.94
2014	1.20	0.94	0.11	1.05	1.10	0.84	1.15	0.61	0.67	1.77
2015	1.35	0.86	0.08	0.77	1.00	0.73	0.86	0.56	0.50	1.49
2016	1.20	1.01	0.03	0.66	0.91	0.86	0.90	0.58	0.49	1.56
2017	1.08	1.06	0.02	0.72	0.98	0.95	0.93	0.54	0.54	1.58
2018	1.04	0.83	0.04	1.81	0.75	1.03	0.76	0.57	0.59	1.75
2019	1.28	0.93	0.07	3.59	0.78	1.12	0.66	0.60	0.59	1.52
2020	1.54	0.93	0.06	0.58	0.90	1.11	0.84	0.77	0.62	1.62
2021	1.67	0.84	0.03	0.77	1.23	1.21	0.78	0.74	0.64	1.48
Avg 1-6	1.29	1.32	0.05	0.94	0.99	0.84	1.40	0.53	0.60	1.79
Avg 7-12	1.30	0.93	0.04	1.36	0.93	1.05	0.81	0.63	0.58	1.58
% Differ	100.87%	70.48%	79.92%	144.55%	93.34%	124.84%	58.18%	119.55%	96.73%	88.62%
	increase	decrease	decrease	increase	decrease	increase	decrease	increase	decrease	decrease
	Edible preparations	Beverages, spirits and vinegar	Food industries, residues	Tobacco and substitutes	Plastering materials	Ores, slag and ash	Mineral fuels, mineral oils	Inorganic chemicals	Organic chemicals	Pharmaceutical products
Year	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30
2010	1.34	0.65	1.66	0.33	0.24	0.01	0.18	0.65	0.56	1.33
2011	1.61	0.65	1.71	0.54	0.32	0.01	0.20	0.69	0.56	1.63
2012	1.72	0.86	1.91	0.62	0.33	0.01	0.22	0.83	0.63	1.79
2013	1.54	1.03	2.09	0.89	0.29	0.01	0.21	0.81	0.65	1.78
2014	1.64	0.89	2.24	0.46	0.24	0.01	0.27	0.67	0.62	1.63
2015	1.48	0.86	1.99	0.39	0.27	0.00	0.16	0.56	0.60	1.60
2016	1.47	0.95	1.85	0.41	0.26	0.01	0.13	0.51	0.61	1.47
2017	1.53	0.97	1.90	0.55	0.28	0.01	0.17	0.57	0.76	1.53
2018	1.57	1.36	2.10	0.95	0.27	0.01	0.20	0.70	0.76	1.54
2019	1.52	1.44	2.07	0.90	0.28	0.01	0.18	0.63	0.64	1.52
2020	1.83	1.24	1.91	0.85	0.28	0.06	0.14	0.51	0.68	1.70
2021	1.78	1.07	2.21	0.63	0.28	0.01	0.21	0.59	0.59	1.63
Avg 1-6	1.56	0.82	1.93	0.54	0.28	0.01	0.21	0.70	0.60	1.63
Avg 7-12	1.62	1.17	2.01	0.71	0.28	0.02	0.17	0.59	0.67	1.56
% Differ	103.95%	142.03%	103.93%	133.01%	98.65%	222.92%	82.78%	83.80%	111.52%	96.05%
	increase	increase	increase	increase	decrease	increase	decrease	decrease	increase	decrease

	Fertilizers	Tanning or dyeing extracts	Cosmetic or toilet preparation	Soap, organic surface-	Albuminoid substances	Explosives	Photographic goods	Chemical products	Plastics and articles	Rubber and articles
Year	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40
2010	0.46	0.28	0.45	1.21	0.25	0.52	0.12	0.36	1.08	1.64
2011	0.53	0.28	0.55	1.17	0.25	0.39	0.12	0.42	1.16	1.74
2012	0.47	0.28	0.61	1.40	0.29	0.38	0.10	0.47	1.18	2.08
2013	0.43	0.35	0.86	1.68	0.43	0.51	0.32	0.50	1.22	2.30
2014	0.63	0.36	1.09	1.62	0.42	0.46	0.40	0.60	1.00	2.28
2015	0.42	0.33	1.08	1.46	0.30	0.50	0.45	0.66	0.98	2.30
2016	0.33	0.35	1.00	1.81	0.31	0.35	0.46	0.66	0.90	2.18
2017	0.37	0.31	1.02	1.74	0.46	0.35	0.44	0.86	1.03	2.09
2018	0.33	0.36	1.21	1.47	0.65	0.34	0.57	0.47	1.27	1.87
2019	0.30	0.40	1.09	1.46	0.63	0.29	0.47	0.48	1.11	1.72
2020	0.32	0.34	0.97	1.53	0.69	0.40	0.43	0.82	0.95	1.68
2021	0.38	0.32	0.87	1.47	0.76	0.35	0.42	1.03	1.22	1.98
Avg 1-6	0.49	0.31	0.77	1.42	0.32	0.46	0.25	0.50	1.10	2.06
Avg 7-12	0.34	0.35	1.03	1.58	0.58	0.35	0.46	0.72	1.08	1.92
% Differ	69.42%	110.97%	132.58%	111.06%	180.74%	75.74%	183.55%	143.59%	97.73%	93.36%
	decrease	increase	increase	increase	increase	decrease	increase	increase	decrease	decrease
	Raw hides and skins	Articles of leather	Furskins and artificial fur	Wood and articles of wood	Cork	Manufactures of straw	Pulp of wood	Paper and paperboard	Printed books	Silk
Year	'41	'42	'43	'44	'45	'46	'47	'48	'49	'50
2010	0.21	0.67	0.14	0.97	0.14	0.05	0.16	1.14	0.64	0.06
2011	0.28	0.66	0.26	1.10	0.22	0.08	0.23	1.17	0.81	0.05
2012	0.27	0.78	0.18	1.12	0.10	0.09	0.23	1.02	1.05	0.05
2013	0.29	0.76	0.20	1.05	0.06	0.09	0.22	0.99	1.01	0.02
2014	0.36	0.82	0.14	0.96	0.06	0.10	0.26	0.86	0.77	0.08
2015	0.25	0.96	0.10	0.85	0.12	0.15	0.24	0.89	0.63	0.12
2016	0.29	1.08	0.08	0.84	0.13	0.15	0.24	0.84	0.65	0.03
2017	0.21	1.13	0.05	0.87	0.14	0.19	0.24	0.81	0.75	0.07
2018	0.18	1.02	0.04	0.87	0.12	0.20	0.19	0.88	1.02	0.04
2019	0.16	0.86	0.03	0.78	0.14	0.19	0.17	0.83	0.86	0.01
2020	0.13	0.57	0.02	0.76	0.27	0.28	0.22	0.83	0.86	0.01
2021	0.17	0.56	0.02	0.95	0.51	0.36	0.29	0.79	0.97	0.03
Avg 1-6	0.28	0.77	0.17	1.01	0.12	0.09	0.22	1.01	0.82	0.06
Avg 7-12	0.19	0.87	0.04	0.85	0.22	0.23	0.23	0.83	0.85	0.03
% Differ	67.70%	112.38%	23.10%	83.87%	188.87%	247.75%	100.38%	82.10%	103.97%	54.04%
	decrease	increase	decrease	decrease	increase	increase	increase	decrease	increase	decrease
	Wool	Cotton	Vegetable textile fibres	Man-made filaments	Man-made staple fibres	Wadding, felt and nonwovens, special yarns	Carpets	Fabrics, special woven fabrics	Textile fabrics	Fabrics; knitted or crocheted
Year	'51	'52	'53	'54	'55	'56	'57	'58	'59	'60
2010	0.51	0.23	0.59	0.41	0.21	1.43	0.14	0.18	0.69	0.22
2011	0.45	0.22	0.60	0.41	0.18	1.64	0.13	0.22	0.71	0.35
2012	0.54	0.24	0.66	0.44	0.23	1.10	0.12	0.25	0.78	0.35
2013	0.43	0.25	0.55	0.46	0.21	1.31	0.17	0.24	0.82	0.34
2014	0.44	0.27	0.40	0.49	0.20	0.90	0.25	0.21	0.64	0.42
2015	0.34	0.21	0.41	0.42	0.19	0.96	0.25	0.19	0.69	0.35
2016	0.42	0.21	0.42	0.39	0.22	1.03	0.25	0.22	0.92	0.35
2017	0.40	0.19	0.35	0.40	0.19	1.18	0.23	0.22	0.91	0.50
2018	0.53	0.16	0.31	0.44	0.24	1.34	0.27	0.28	0.59	0.34
2019	0.35	0.13	0.21	0.41	0.22	1.42	0.24	0.32	0.62	0.31
2020	0.24	0.12	0.16	0.37	0.19	1.44	0.29	0.24	1.05	0.41
2021	0.28	0.09	0.20	0.37	0.14	1.45	0.26	0.27	0.94	0.36
Avg 1-6	0.45	0.24	0.54	0.44	0.20	1.22	0.17	0.21	0.72	0.34
Avg 7-12	0.37	0.15	0.28	0.40	0.20	1.31	0.26	0.26	0.84	0.38
% Differ	81.87%	63.40%	51.72%	90.80%	97.77%	106.83%	147.27%	121.49%	116.16%	112.52%
	decrease	decrease	decrease	decrease	decrease	increase	increase	increase	increase	increase

	Apparel and clothing accessories	Apparel and clothing accessories	Textiles, made up articles	Footwear	Headgear	Umbrellas, walking-sticks	Feathers and down, prepared	Stone, plaster	Ceramic products	Glass and glassware
Year	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70
2010	0.26	0.35	0.47	0.70	0.18	0.10	0.04	1.16	1.82	1.46
2011	0.29	0.38	0.55	0.78	0.20	0.11	0.01	1.28	1.87	1.51
2012	0.26	0.34	0.54	0.69	0.16	0.11	0.02	1.34	1.76	1.72
2013	0.28	0.34	0.58	0.68	0.18	0.08	0.01	1.24	1.72	1.83
2014	0.26	0.30	0.49	0.77	0.25	0.13	0.02	1.44	1.73	2.06
2015	0.23	0.24	0.42	0.67	0.17	0.09	0.01	1.35	1.56	1.81
2016	0.25	0.21	0.45	0.71	0.23	0.11	0.02	1.40	1.55	1.73
2017	0.28	0.21	0.44	0.78	0.23	0.13	0.02	1.38	1.49	1.72
2018	0.32	0.19	0.51	1.01	0.10	0.14	0.02	1.39	1.26	2.06
2019	0.32	0.21	0.61	0.88	0.14	0.14	0.04	1.34	1.18	1.89
2020	0.31	0.23	0.77	0.67	0.19	0.19	0.07	1.33	1.41	0.93
2021	0.39	0.19	0.60	0.60	0.24	0.19	0.09	1.47	1.30	1.51
Avg 1-6	0.26	0.32	0.51	0.71	0.19	0.10	0.02	1.30	1.75	1.73
Avg 7-12	0.31	0.21	0.56	0.77	0.19	0.15	0.04	1.39	1.37	1.64
% Differ	118.68%	63.50%	111.09%	108.47%	99.60%	146.27%	233.79%	106.45%	78.27%	94.94%
	increase	decrease	increase	increase	decrease	increase	increase	increase	decrease	decrease
	Natural cultured pearls	Iron and steel	Iron or steel articles	Copper and articles	Nickel and articles	Aluminium and articles	Lead and articles	Zinc and articles	Tin	Metals
Year	'71	'72	'73	'74	'75	'76	'78	'79	'80	'81
2010	0.03	0.56	0.76	0.17	0.02	1.44	0.08	0.16	0.19	0.27
2011	0.05	0.65	0.84	0.28	0.01	1.54	0.10	0.24	0.25	0.26
2012	0.06	0.74	0.90	0.37	0.02	1.59	0.19	0.22	0.32	0.30
2013	0.04	0.73	0.94	0.39	0.04	1.51	0.13	0.30	0.41	0.34
2014	0.04	0.59	0.91	0.30	0.02	1.35	0.12	0.27	0.40	0.22
2015	0.04	0.38	0.84	0.26	0.02	1.29	0.15	0.24	0.49	0.25
2016	0.04	0.34	0.86	0.27	0.01	1.26	0.17	0.21	0.36	0.29
2017	0.04	0.60	0.88	0.25	0.01	1.44	0.19	0.22	0.60	0.35
2018	0.03	0.71	0.90	0.26	0.01	1.64	0.21	0.27	0.90	0.23
2019	0.04	0.39	0.84	0.23	0.01	1.59	0.21	0.30	0.66	0.25
2020	0.04	0.65	0.84	0.22	0.02	1.24	0.18	0.36	0.50	0.29
2021	0.03	0.79	0.86	0.34	0.03	1.24	0.18	0.35	0.81	0.23
Avg 1-6	0.04	0.61	0.86	0.29	0.02	1.45	0.13	0.24	0.34	0.27
Avg 7-12	0.04	0.58	0.86	0.26	0.02	1.40	0.19	0.29	0.64	0.27
% Differ	89.73%	94.96%	99.87%	89.60%	70.81%	96.49%	149.19%	120.39%	187.45%	99.68%
	decrease	decrease	decrease	decrease	decrease	decrease	increase	increase	increase	decrease
	Tools, implements	Metal	Nuclear reactors, boilers, machinery and mechanical appliances	Electrical machinery and equipment	Railway, tramway locomotives	Vehicles	Aircraft, spacecraft	Ships, boats	Optical, photographic	Clocks and watches
Year	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91
2010	0.28	1.38	1.47	2.53	1.81	1.30	0.01	0.00	1.10	0.02
2011	0.30	1.33	1.57	2.45	1.74	1.34	0.01	0.00	1.20	0.07
2012	0.32	1.34	1.66	2.07	1.46	1.40	0.04	0.00	1.28	0.08
2013	0.33	1.34	1.70	1.82	1.81	1.75	0.02	0.01	1.28	0.07
2014	0.37	1.17	1.66	1.23	1.84	2.14	0.05	0.01	1.34	0.06
2015	0.31	1.19	1.61	1.82	1.51	2.23	0.02	0.01	1.01	0.08
2016	0.30	1.21	1.61	2.19	1.76	2.12	0.02	0.01	1.07	0.15
2017	0.28	1.26	1.55	1.83	1.56	2.07	0.03	0.01	1.11	0.10
2018	0.29	1.16	1.50	1.63	1.36	2.08	0.40	0.01	0.99	0.12
2019	0.29	1.01	1.40	2.08	1.38	2.22	0.04	0.02	0.95	0.10
2020	0.31	0.87	1.31	2.66	1.40	2.23	0.04	0.01	0.88	0.08
2021	0.37	1.00	1.28	2.14	1.90	2.27	0.07	0.02	0.82	0.09
Avg 1-6	0.32	1.29	1.61	1.99	1.69	1.69	0.02	0.01	1.20	0.06
Avg 7-12	0.31	1.08	1.44	2.09	1.56	2.16	0.10	0.01	0.97	0.11
% Differ	96.32%	83.97%	89.56%	105.03%	92.09%	127.81%	406.25%	191.40%	80.83%	169.17%
	decrease	decrease	decrease	increase	decrease	increase	increase	increase	decrease	increase

	Musical instruments	Arms and ammunition	Furniture	Toys, games and sports requisites	Miscellaneous manufactured articles	Works of art	Simplified declaration of goods			
Year	'92	'93	'94	'95	'96	'97	'99			
2010	0.14	0.24	1.30	0.68	0.31	0.03	0.07			
2011	0.17	0.17	1.46	0.80	0.38	0.02	0.07			
2012	0.14	0.28	1.48	0.87	2.03	0.02	0.07			
2013	0.17	0.29	1.44	0.93	1.99	0.02	0.06			
2014	0.16	0.37	1.36	0.92	2.01	0.07	0.05			
2015	0.18	0.31	1.21	1.17	1.96	0.02	0.07			
2016	0.19	0.35	1.21	1.22	1.92	0.02	0.07			
2017	0.20	0.35	1.15	1.03	1.88	0.02	0.06			
2018	0.11	0.36	1.18	1.14	1.76	0.02	0.05			
2019	0.10	0.51	1.08	1.12	1.59	0.02	0.12			
2020	0.08	0.59	0.95	1.09	1.42	0.06	0.12			
2021	0.08	0.61	1.03	1.36	1.61	0.01	0.10			
Avg 1-6	0.16	0.28	1.37	0.89	1.45	0.03	0.06			
Avg 7-12	0.13	0.46	1.10	1.16	1.70	0.03	0.09			
% Differ	78.89%	167.09%	79.78%	129.61%	117.29%	84.40%	134.41%			
	decrease	increase	decrease	increase	increase	decrease	increase			

RCA of the exports from Slovakia to the world from 2010 to 2021

RCA of the Slovakia from 2010 to 2021										
	Animals; live	Meat	Fish; crustaceans	Dairy produce; birds' eggs;	Animal originated products	Trees; plants	Vegetables	Fruit; nuts	Coffee, tea, mate, spices	Cereals
Year	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10
2010	2.19	0.44	0.02	1.11	0.45	0.11	0.28	0.21	0.57	0.72
2011	2.49	0.35	0.04	1.00	0.34	0.16	0.16	0.21	0.88	0.81
2012	2.78	0.43	0.01	0.98	0.32	0.16	0.21	0.21	1.18	0.75
2013	2.99	0.35	0.03	1.01	0.26	0.18	0.13	0.25	0.91	0.62
2014	0.93	1.23	0.37	0.97	1.22	0.92	1.58	0.84	1.30	1.22
2015	3.23	0.29	0.09	1.05	0.22	0.19	0.08	0.30	0.70	0.51
2016	2.08	0.26	0.01	0.65	0.30	0.16	0.12	0.19	0.95	0.58
2017	2.27	0.17	0.01	0.71	0.45	0.17	0.12	0.17	0.78	0.59
2018	2.13	0.23	0.01	0.70	0.46	0.18	0.12	0.17	0.88	0.47
2019	1.93	0.27	0.01	0.69	0.37	0.18	0.16	0.17	0.91	0.45
2020	1.81	0.18	0.01	0.56	0.36	0.20	0.14	0.17	0.89	0.73
2021	1.69	0.15	0.01	0.60	0.44	0.24	0.14	0.15	0.55	0.78
Avg 1-6	2.44	0.51	0.10	1.02	0.47	0.29	0.41	0.34	0.92	0.77
Avg 7-12	1.99	0.21	0.01	0.65	0.40	0.19	0.13	0.17	0.83	0.60
% Differ	81.59%	40.42%	13.30%	64.00%	84.53%	66.46%	32.86%	50.12%	89.45%	78.02%
	decrease	decrease	decrease	decrease	decrease	decrease	decrease	decrease	decrease	decrease
	Milling industry	Oil seeds and oleaginous	Lac; gums	Vegetable plaiting materials	Animal or vegetable fats	Meat, fish or crustacean	Sugars and sugar confection	Cocoa and cocoa preparation	Preparations of cereals,	Preparations of plants
Year	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20
2010	2.01	1.01	0.03	0.19	0.30	0.34	2.07	1.27	0.58	0.25
2011	2.28	1.33	0.03	0.16	0.46	0.39	2.23	1.31	0.50	0.29
2012	2.33	1.64	0.02	0.12	0.90	0.38	3.02	1.06	0.49	0.27
2013	2.22	1.17	0.04	0.08	0.73	0.38	2.12	1.10	0.50	0.23
2014	1.05	1.41	0.52	1.62	1.23	0.99	1.42	0.96	0.99	1.14
2015	2.12	0.83	0.08	0.05	0.60	0.38	1.49	1.15	0.51	0.21
2016	1.96	0.43	0.02	0.00	0.32	0.44	0.98	1.20	0.39	0.26
2017	1.67	0.48	0.04	0.00	0.17	0.48	1.16	1.06	0.44	0.29
2018	1.53	0.46	0.08	0.03	0.15	0.53	0.91	1.07	0.41	0.27
2019	1.76	0.40	0.06	0.07	0.10	0.52	0.96	1.01	0.45	0.22
2020	1.93	0.45	0.06	0.05	0.32	0.52	1.13	1.38	0.51	0.20
2021	1.89	0.53	0.07	0.03	0.33	0.50	1.04	1.12	0.51	0.21
Avg 1-6	2.00	1.23	0.12	0.37	0.70	0.48	2.06	1.14	0.59	0.40
Avg 7-12	1.79	0.46	0.06	0.03	0.23	0.50	1.03	1.14	0.45	0.24
% Differ	89.47%	37.35%	45.99%	7.81%	33.14%	104.81%	49.96%	99.86%	76.07%	61.03%
	decrease	decrease	decrease	decrease	decrease	increase	decrease	decrease	decrease	decrease
	Edible preparations	Beverages, spirits and vinegar	Food industries, residues	Tobacco and substitutes	Plastering materials	Ores, slag and ash	Mineral fuels, mineral oils	Inorganic chemicals	Organic chemicals	Pharmaceutical products
Year	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30
2010	0.76	0.44	0.26	0.04	1.84	0.08	0.34	0.25	0.26	0.23
2011	0.76	0.55	0.38	0.08	1.87	0.06	0.35	0.38	0.23	0.24
2012	0.63	0.53	0.41	0.03	1.50	0.05	0.32	0.35	0.21	0.18
2013	0.66	0.41	0.38	0.05	1.52	0.04	0.32	0.38	0.23	0.21
2014	0.96	1.30	1.07	0.64	0.98	1.23	1.02	0.91	0.91	0.85
2015	0.69	0.31	0.35	0.08	1.55	0.03	0.31	0.42	0.25	0.25
2016	0.65	0.33	0.30	0.03	1.38	0.04	0.19	0.19	0.15	0.23
2017	0.70	0.32	0.27	0.03	1.45	0.04	0.23	0.22	0.15	0.14
2018	0.72	0.45	0.31	0.05	1.47	0.04	0.21	0.32	0.16	0.15
2019	0.96	0.50	0.30	0.04	1.50	0.03	0.20	0.25	0.14	0.16
2020	1.14	0.44	0.28	0.06	1.60	0.04	0.15	0.19	0.14	0.19
2021	1.34	0.46	0.29	0.05	1.52	0.04	0.21	0.22	0.15	0.18
Avg 1-6	0.74	0.59	0.48	0.15	1.54	0.25	0.44	0.45	0.35	0.33
Avg 7-12	0.92	0.42	0.29	0.04	1.49	0.04	0.20	0.23	0.15	0.18
% Differ	123.60%	70.52%	60.80%	27.76%	96.39%	14.98%	44.98%	51.53%	42.09%	53.88%
	increase	decrease	decrease	decrease	decrease	decrease	decrease	decrease	decrease	decrease

	Fertilizers	Tanning or dyeing extracts	Cosmetic or toilet preparation	Soap, organic surface-	Albuminoid substances	Explosives; pyrotechnic products	Photographic goods	Chemical products	Plastics and articles	Rubber and articles
Year	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40
2010	0.77	0.39	0.60	0.43	0.40	0.05	0.11	0.31	0.97	1.94
2011	1.04	0.39	0.74	0.38	0.50	0.07	0.11	0.34	1.05	1.90
2012	0.98	0.43	0.65	0.42	0.45	0.12	0.13	0.31	0.90	2.06
2013	1.16	0.51	0.89	0.38	0.45	0.11	0.11	0.31	0.90	2.38
2014	0.84	0.85	0.73	1.12	1.00	1.06	1.19	1.02	1.00	0.87
2015	1.37	0.60	1.23	0.34	0.45	0.11	0.09	0.30	0.90	2.74
2016	0.87	0.31	0.64	0.59	0.45	0.15	0.10	0.47	0.75	2.76
2017	0.86	0.30	0.78	0.60	0.45	0.13	0.11	0.43	0.84	2.72
2018	0.83	0.28	0.89	0.54	0.50	0.11	0.21	0.19	0.99	2.33
2019	0.81	0.25	0.92	0.49	0.53	0.08	0.13	0.22	0.86	2.14
2020	0.81	0.24	0.79	0.47	0.66	0.08	0.09	0.28	0.73	2.09
2021	1.23	0.20	0.69	0.56	0.59	0.07	0.07	0.33	0.84	2.29
Avg 1-6	1.03	0.53	0.81	0.51	0.54	0.25	0.29	0.43	0.95	1.98
Avg 7-12	0.90	0.26	0.78	0.54	0.53	0.10	0.12	0.32	0.83	2.39
% Differ	87.51%	49.87%	97.23%	105.80%	97.82%	40.70%	40.96%	74.16%	87.45%	120.60%
	decrease	decrease	decrease	increase	decrease	decrease	decrease	decrease	decrease	increase
	Raw hides and skins	Articles of leather	Furskins and artificial	Wood and articles of wood	Cork	Manufactures of straw	Pulp of wood	Paper and paperboard	Printed books	Silk
Year	'41	'42	'43	'44	'45	'46	'47	'48	'49	'50
2010	0.79	0.47	0.01	2.06	0.05	0.17	0.86	1.57	1.24	0.03
2011	0.70	0.53	0.01	1.84	0.10	0.20	0.74	1.50	1.26	0.71
2012	0.94	0.47	0.00	1.83	0.05	0.13	0.85	1.36	1.30	0.73
2013	0.82	0.46	0.02	1.64	0.04	0.13	0.85	1.33	1.22	0.72
2014	1.14	1.02	0.22	1.12	1.38	1.02	1.00	1.02	1.07	1.01
2015	0.72	0.45	0.08	1.47	0.03	0.12	0.85	1.31	1.14	0.72
2016	1.08	0.59	0.09	1.32	0.03	0.10	0.75	1.18	1.13	0.00
2017	1.11	0.60	0.02	1.41	0.04	0.22	0.83	1.04	1.13	0.00
2018	0.95	0.50	0.01	1.51	0.04	0.27	0.76	1.10	1.24	0.00
2019	0.52	0.49	0.01	1.38	0.04	0.22	0.74	1.10	1.16	0.00
2020	0.51	0.40	0.01	1.32	0.07	0.25	0.83	1.03	1.21	0.00
2021	0.57	0.37	0.01	1.69	0.06	0.33	0.92	1.07	1.17	0.00
Avg 1-6	0.85	0.57	0.06	1.66	0.27	0.29	0.86	1.35	1.21	0.65
Avg 7-12	0.79	0.49	0.02	1.44	0.05	0.23	0.81	1.09	1.17	0.00
% Differ	92.73%	86.78%	39.72%	86.64%	17.33%	79.59%	93.92%	80.61%	97.30%	0.24%
	decrease	decrease	decrease	decrease	decrease	decrease	decrease	decrease	decrease	decrease
	Wool	Cotton	Vegetable textile fibres	Man-made filaments	Man-made staple fibres	Wadding, felt and nonwovens	Carpets	Fabrics, special woven	Textile fabrics	Fabrics; knitted or crocheted
Year	'51	'52	'53	'54	'55	'56	'57	'58	'59	'60
2010	0.35	0.18	0.01	0.77	0.38	0.84	0.18	0.43	0.45	0.51
2011	0.31	0.18	0.05	1.28	0.43	0.76	0.18	0.48	0.48	0.52
2012	0.28	0.19	0.11	0.67	0.66	0.51	0.28	0.53	0.60	0.57
2013	0.50	0.13	0.03	0.56	0.69	0.43	0.27	0.54	0.65	0.56
2014	0.57	1.44	4.14	1.20	0.96	1.17	1.03	0.99	0.92	1.02
2015	0.89	0.09	0.01	0.47	0.71	0.37	0.26	0.54	0.71	0.55
2016	0.12	0.07	0.03	0.47	0.65	0.45	0.23	0.60	0.70	0.64
2017	0.08	0.03	0.14	0.53	0.71	0.49	0.19	0.87	0.74	0.68
2018	0.10	0.02	0.09	0.54	0.92	0.58	0.18	0.92	0.44	0.44
2019	0.09	0.02	0.02	0.42	0.86	0.55	0.20	0.74	0.37	0.38
2020	0.04	0.01	0.02	0.35	0.62	0.50	0.18	0.69	0.69	0.40
2021	0.07	0.01	0.01	0.52	0.70	0.47	0.16	0.56	0.62	0.37
Avg 1-6	0.48	0.37	0.72	0.82	0.64	0.68	0.37	0.59	0.63	0.62
Avg 7-12	0.08	0.03	0.05	0.47	0.75	0.51	0.19	0.73	0.59	0.49
% Differ	16.81%	7.03%	7.04%	57.32%	116.59%	74.59%	51.90%	124.85%	93.83%	78.24%
	decrease	decrease	decrease	decrease	increase	decrease	decrease	increase	decrease	decrease

	Apparel and clothing	Apparel and clothing	Textiles, made up articles	Footwear	Headgear	Umbrellas, walking-sticks	Feathers and down, prepared	Stone, plaster	Ceramic products	Glass and glassware
Year	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70
2010	0.76	0.68	0.58	2.23	0.54	0.66	0.06	0.99	0.48	1.84
2011	0.77	0.66	0.58	2.60	0.49	0.66	0.06	1.23	0.47	1.80
2012	0.67	0.61	0.50	2.00	0.38	0.70	0.12	2.04	0.34	1.63
2013	0.62	0.60	0.49	2.18	0.41	0.63	0.15	1.26	0.24	1.70
2014	1.07	1.03	1.03	0.92	0.93	1.12	0.77	1.62	1.44	0.96
2015	0.58	0.58	0.47	2.37	0.43	0.56	0.20	0.77	0.16	1.78
2016	0.51	0.43	0.45	1.91	0.45	0.66	0.12	1.00	0.26	1.76
2017	0.58	0.46	0.46	1.87	0.44	0.62	0.16	0.84	0.27	1.74
2018	0.73	0.44	0.61	2.08	0.29	0.64	0.23	0.95	0.30	1.91
2019	0.80	0.41	0.83	1.84	0.37	0.62	0.24	0.85	0.31	1.91
2020	0.57	0.40	0.68	1.48	0.55	0.84	0.32	0.91	0.35	0.92
2021	0.56	0.38	0.52	1.23	0.46	0.99	0.30	1.16	0.34	1.42
Avg 1-6	0.75	0.69	0.61	2.05	0.53	0.72	0.22	1.32	0.52	1.62
Avg 7-12	0.62	0.42	0.59	1.73	0.43	0.73	0.23	0.95	0.31	1.61
% Differ	83.56%	60.77%	97.34%	84.65%	80.50%	100.89%	101.39%	72.33%	58.53%	99.56%
	decrease	decrease	decrease	decrease	decrease	increase	increase	decrease	decrease	decrease
	Natural, cultured pearls	Iron and steel	Iron or steel articles	Copper and articles	Nickel and articles	Aluminium and articles	Lead and articles	Zinc and articles	Tin	Metals
Year	'71	'72	'73	'74	'75	'76	'78	'79	'80	'81
2010	0.15	2.53	1.65	0.96	0.15	1.34	0.11	1.23	0.90	0.17
2011	0.10	2.28	1.66	1.12	0.34	1.32	0.14	0.74	0.83	0.20
2012	0.09	2.31	1.53	1.36	0.76	1.54	0.33	1.01	0.61	0.18
2013	0.09	2.35	1.41	0.79	0.47	1.51	0.39	1.03	1.34	0.14
2014	1.06	0.98	1.08	1.72	1.60	1.02	0.82	0.98	0.45	1.32
2015	0.08	2.39	1.31	0.46	0.30	1.49	0.48	1.06	2.95	0.10
2016	0.07	1.48	1.42	0.61	0.01	1.49	0.21	0.85	0.09	0.09
2017	0.09	2.09	1.43	0.70	0.02	1.64	0.27	1.15	0.10	0.13
2018	0.10	2.18	1.50	0.51	0.02	1.93	0.24	1.16	0.15	0.06
2019	0.10	1.24	1.41	0.60	0.02	1.97	0.32	0.98	0.08	0.08
2020	0.04	1.87	1.45	0.61	0.01	1.64	0.31	1.09	0.04	0.19
2021	0.04	2.89	1.53	0.87	0.01	1.55	0.21	1.24	0.11	0.26
Avg 1-6	0.26	2.14	1.44	1.07	0.60	1.37	0.38	1.01	1.18	0.35
Avg 7-12	0.07	1.96	1.46	0.65	0.02	1.70	0.26	1.08	0.10	0.14
% Differ	27.98%	91.52%	101.14%	60.74%	2.70%	124.20%	68.36%	106.84%	8.05%	38.70%
	decrease	decrease	increase	decrease	decrease	increase	decrease	increase	decrease	decrease
	Tools, implements	Metal	Nuclear reactors, boilers,	Electrical machinery and	Railway, tramway locomotive	Vehicles	Aircraft, spacecraft	Ships, boats	Optical, photographic	Clocks and watches
Year	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91
2010	0.43	2.49	0.82	1.86	3.17	2.82	0.08	0.11	0.30	0.08
2011	0.42	2.65	0.97	1.78	2.30	3.02	0.02	0.03	0.37	0.09
2012	0.42	2.60	0.99	1.75	2.06	3.32	0.05	0.03	0.36	0.10
2013	0.44	2.64	1.10	1.72	1.92	3.44	0.02	0.03	0.33	0.11
2014	0.96	0.99	0.90	1.02	1.07	0.97	2.51	0.75	1.08	0.94
2015	0.45	2.68	1.22	1.69	1.80	3.56	0.01	0.05	0.31	0.11
2016	0.41	2.65	1.07	2.20	2.20	3.39	0.01	0.01	0.26	0.08
2017	0.46	2.73	1.05	1.89	2.60	3.28	0.01	0.01	0.34	0.06
2018	0.45	2.16	1.02	1.49	2.50	3.78	0.03	0.01	0.31	0.10
2019	0.41	1.97	1.05	1.67	2.79	4.01	0.01	0.01	0.31	0.18
2020	0.47	1.33	1.02	1.94	3.29	4.72	0.03	0.01	0.27	0.23
2021	0.46	1.55	1.09	1.46	3.20	4.69	0.01	0.02	0.25	0.25
Avg 1-6	0.52	2.34	1.00	1.64	2.05	2.86	0.45	0.17	0.46	0.24
Avg 7-12	0.44	2.06	1.05	1.78	2.76	3.98	0.02	0.01	0.29	0.15
% Differ	85.49%	88.13%	105.00%	108.46%	134.64%	139.32%	4.11%	6.14%	63.74%	62.77%
	decrease	decrease	increase	increase	increase	increase	decrease	decrease	decrease	decrease

	Musical instruments	Arms and ammunition	Furniture	Toys, games and sports	Miscellaneous manufactur	Works of art	Simplified declaration of goods			
Year	'92	'93	'94	'95	'96	'97	'99			
2010	0.10	0.38	1.82	0.96	1.16	0.01	0.04			
2011	0.07	0.24	1.75	0.88	1.22	0.01	0.04			
2012	0.14	0.24	1.53	0.94	1.95	0.01	0.04			
2013	0.17	0.24	1.57	0.91	1.77	0.01	0.02			
2014	0.85	1.01	0.97	1.03	1.10	1.08	2.11			
2015	0.20	0.23	1.62	0.89	1.61	0.01	0.01			
2016	0.42	0.92	1.40	1.12	1.68	0.03	0.05			
2017	0.49	1.23	1.46	1.20	1.67	0.02	0.03			
2018	0.43	1.51	1.51	1.41	1.65	0.01	0.02			
2019	0.45	1.43	1.34	1.30	1.68	0.03	0.02			
2020	0.95	1.59	1.12	1.19	1.63	0.01	0.02			
2021	1.06	1.66	1.10	1.39	1.82	0.02	0.03			
Avg 1-6	0.26	0.39	1.54	0.93	1.47	0.18	0.38			
Avg 7-12	0.63	1.39	1.32	1.27	1.69	0.02	0.03			
% Differ	248.06%	357.12%	85.60%	135.69%	115.12%	9.91%	6.72%			
	increase	increase	decrease	increase	increase	decrease	decrease			

The Czech Republic- China Grubel-Lloyd Index from 2010 to 2021

CZE-CHN Grubel-Lloyd Index 2010-2021 (SITC)												
year SITC	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
0	0.11	0.23	0.32	0.26	0.22	0.22	0.29	0.49	0.62	0.61	0.51	0.43
1	0.85	0.53	0.75	0.45	0.72	0.53	0.81	0.84	0.80	0.91	0.98	0.64
2	0.73	0.87	0.74	0.65	0.58	0.54	0.64	0.47	0.48	0.29	0.36	0.37
3	0.09	0.04	0.22	0.72	0.89	0.31	0.51	0.46	0.28	0.30	0.77	0.07
4	0.00	0.00	0.00	0.01	0.00	0.00	0.29	0.00	0.00	0.00	0.02	0.07
5	0.46	0.39	0.40	0.39	0.42	0.44	0.41	0.46	0.42	0.41	0.39	0.24
6	0.35	0.31	0.33	0.34	0.28	0.25	0.26	0.27	0.23	0.21	0.19	0.20
7	0.12	0.14	0.16	0.19	0.18	0.14	0.17	0.18	0.14	0.11	0.12	0.12
8	0.10	0.13	0.17	0.20	0.19	0.22	0.20	0.21	0.22	0.21	0.20	0.20
9	0.17	0.00	0.09	0.01	0.00	0.00	0.00	0.11	0.18	0.22	0.01	0.15

CZE-CHN Grubel-Lloyd Index 2010-2021 (HS2)												
HS2	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	0.25	0.37	0.42	0.90	0.91	0.76	0.63	0.16	0.03	0.05	0.22	0.00
2	0.00	0.04	0.10	0.06	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00

3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00
4	0.76	0.24	0.21	0.12	0.79	0.68	0.36	0.24	0.25	0.12	0.27	0.09
5	0.05	0.00	0.00	0.00	0.00	0.04	0.03	0.24	0.52	0.47	0.16	0.21
6	0.00	0.00	0.00	0.00	0.09	0.12	0.11	0.03	0.04	0.14	0.00	0.01
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.01	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.91	0.01	0.40	0.01	0.16	0.26	0.34	0.97	0.83	0.82	0.92	0.75
12	0.99	0.87	0.87	0.76	0.95	0.93	0.75	0.65	0.67	0.60	0.62	0.65
13	0.96	0.86	0.84	0.94	0.90	0.75	0.78	0.67	0.81	0.98	0.72	0.63
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.01	0.00	0.00	0.28	0.00	0.00	0.00	0.02	0.07
16	0.00	0.00	0.00	0.00	0.00	0.04	0.48	0.87	0.80	0.10	0.00	0.00
17	0.00	0.00	0.00	0.00	0.01	0.00	0.30	0.01	0.03	0.01	0.03	0.01
18	0.03	0.04	0.00	0.04	0.00	0.82	0.99	0.53	0.13	0.17	0.15	0.91
19	0.10	0.21	0.23	0.24	0.37	0.56	0.80	0.61	0.68	0.82	0.35	0.10
20	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.01	0.03	0.00
21	0.00	0.01	0.00	0.00	0.03	0.01	0.25	0.76	1.00	0.98	0.71	0.42
22	0.51	0.80	0.28	0.21	0.39	0.37	0.63	0.71	0.76	0.71	0.63	0.86
23	0.23	0.08	0.08	0.04	0.21	0.17	0.12	0.10	0.14	0.03	0.21	0.10
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.05	0.02	0.03	0.01	0.02	0.01	0.04	0.04	0.02	0.07	0.07	0.03
26	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00

27	0.09	0.04	0.16	0.39	0.51	0.31	0.51	0.46	0.28	0.29	0.75	0.09
28	0.36	0.34	0.40	0.19	0.11	0.27	0.33	0.43	0.50	0.60	0.54	0.42
29	0.34	0.26	0.28	0.24	0.31	0.25	0.12	0.16	0.20	0.25	0.17	0.11
30	0.07	0.21	0.15	0.03	0.06	0.06	0.08	0.07	0.11	0.15	0.12	0.02
31	0.13	0.06	0.26	0.75	0.73	0.05	0.70	0.63	0.64	0.31	0.32	0.42
32	0.71	0.35	0.14	0.09	0.07	0.13	0.12	0.16	0.15	0.18	0.13	0.13
33	0.04	0.01	0.01	0.01	0.03	0.01	0.02	0.03	0.02	0.02	0.03	0.08
34	0.05	0.01	0.03	0.04	0.03	0.02	0.03	0.08	0.05	0.04	0.05	0.07
35	0.07	0.04	0.47	0.28	0.77	0.65	0.93	0.86	0.56	0.05	0.47	0.41
36	0.47	0.66	0.46	0.70	0.94	0.78	0.51	0.55	0.67	0.79	0.66	0.49
37	0.66	0.69	0.31	0.23	0.17	0.22	0.14	0.28	0.07	0.11	0.11	0.12
38	0.30	0.35	0.14	0.11	0.17	0.18	0.08	0.06	0.10	0.14	0.04	0.05
39	0.39	0.36	0.39	0.41	0.46	0.39	0.32	0.37	0.33	0.31	0.29	0.26
40	0.80	0.63	0.92	0.93	0.67	0.57	0.76	0.78	0.69	0.61	0.49	0.48
41	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.01	0.01
42	0.02	0.05	0.03	0.06	0.07	0.05	0.05	0.11	0.19	0.23	0.15	0.20
43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44	0.29	0.44	0.53	0.55	0.59	0.52	0.49	0.65	0.93	0.38	0.39	0.51
45	0.05	0.10	0.02	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.01	0.00
46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47	0.20	0.06	0.11	0.03	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.01
48	0.12	0.13	0.13	0.18	0.19	0.40	0.38	0.37	0.11	0.09	0.14	0.10
49	0.01	0.01	0.04	0.03	0.10	0.05	0.10	0.18	0.27	0.24	0.08	0.07
50	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.01

51	0.09	0.07	0.47	0.42	0.24	0.99	0.62	0.61	0.70	0.28	0.10	0.11
52	0.04	0.21	0.19	0.06	0.01	0.02	0.04	0.04	0.12	0.07	0.05	0.03
53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
54	0.04	0.02	0.07	0.00	0.00	0.00	0.01	0.02	0.01	0.01	0.03	0.03
55	0.00	0.20	0.66	0.07	0.00	0.00	0.00	0.01	0.03	0.01	0.02	0.01
56	0.46	0.64	0.56	0.84	0.99	0.78	0.45	0.29	0.22	0.24	0.25	0.20
57	0.06	0.00	0.00	0.00	0.01	0.04	0.01	0.02	0.02	0.05	0.12	0.15
58	0.04	0.11	0.02	0.03	0.04	0.13	0.42	0.39	0.67	0.44	0.07	0.04
59	0.11	0.06	0.04	0.08	0.13	0.30	0.27	0.27	0.28	0.22	0.24	0.17
60	0.04	0.04	0.07	0.05	0.03	0.01	0.03	0.02	0.00	0.00	0.00	0.01
61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
63	0.01	0.00	0.00	0.01	0.00	0.01	0.02	0.03	0.01	0.01	0.01	0.00
64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01
65	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
66	0.01	0.01	0.03	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.03	0.01
67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
68	0.12	0.08	0.09	0.15	0.15	0.17	0.15	0.16	0.17	0.26	0.21	0.15
69	0.08	0.16	0.10	0.19	0.23	0.20	0.30	0.52	0.43	0.42	0.34	0.31
70	0.37	0.37	0.46	0.65	0.47	0.54	0.51	0.59	0.52	0.49	0.37	0.37
71	0.05	0.04	0.02	0.01	0.02	0.01	0.01	0.01	0.04	0.03	0.03	0.04
72	0.69	0.54	0.33	0.41	0.24	0.20	0.20	0.23	0.14	0.28	0.74	0.42
73	0.31	0.26	0.22	0.24	0.24	0.20	0.27	0.27	0.23	0.18	0.20	0.20
74	0.47	0.73	0.71	0.83	0.99	0.77	0.66	0.85	0.68	0.69	0.59	0.60

75	0.15	0.12	0.50	0.55	0.47	0.59	0.10	0.03	0.06	0.77	0.48	0.26
76	0.22	0.30	0.16	0.12	0.10	0.07	0.08	0.06	0.05	0.04	0.05	0.08
78	0.00	0.00	0.05	0.05	0.00	0.00	0.02	0.00	0.00	0.08	0.65	0.18
79	0.96	0.92	0.70	0.48	0.08	0.09	0.16	0.26	0.20	0.18	0.32	0.22
80	0.24	0.07	0.17	0.18	0.25	0.28	0.00	0.23	0.34	0.58	0.83	0.52
81	0.02	0.00	0.00	0.00	0.00	0.02	0.03	0.02	0.01	0.01	0.02	0.01
82	0.06	0.06	0.05	0.11	0.15	0.20	0.15	0.09	0.08	0.14	0.07	0.08
83	1.00	0.93	0.85	0.80	0.67	0.53	0.34	0.32	0.32	0.35	0.33	0.21
84	0.12	0.11	0.14	0.15	0.16	0.14	0.18	0.19	0.19	0.14	0.14	0.14
85	0.08	0.13	0.16	0.17	0.16	0.10	0.11	0.13	0.09	0.08	0.09	0.10
86	0.22	0.35	0.33	0.28	0.44	0.13	0.37	0.44	0.35	0.89	0.38	0.34
87	0.87	0.80	0.74	0.99	0.86	0.89	0.91	0.76	0.52	0.42	0.40	0.25
88	0.65	0.62	0.46	0.15	0.97	0.88	0.77	0.94	0.97	0.56	0.62	0.52
89	0.02	0.04	0.22	0.01	0.02	0.11	0.03	0.07	0.05	0.01	0.03	0.04
90	0.52	0.59	0.80	0.86	0.75	0.79	0.77	0.79	0.85	0.82	0.77	0.70
91	0.07	0.09	0.01	0.02	0.01	0.00	0.02	0.00	0.01	0.00	0.01	0.00
92	0.20	0.27	0.52	0.42	0.48	0.47	0.48	0.44	0.50	0.40	0.32	0.29
93	0.00	0.07	0.01	0.04	0.00	0.02	0.05	0.05	0.02	0.01	0.18	0.01
94	0.19	0.25	0.27	0.25	0.33	0.27	0.29	0.34	0.21	0.14	0.16	0.09
95	0.08	0.11	0.18	0.25	0.23	0.35	0.23	0.17	0.19	0.24	0.25	0.30
96	0.02	0.01	0.08	0.07	0.07	0.07	0.09	0.15	0.16	0.15	0.08	0.03
97	0.77	0.82	0.21	0.50	0.35	0.91	0.78	0.87	0.81	0.83	0.11	0.78
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
99	0.00	0.00	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Panel Regression Result

$\ln T_{ij}$	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
$\ln \ln D_{ij}$	-.814	.337	-2.41	.016	-1.475	-.153	**
$\ln O_t$	-.146	.036	-4.02	0.000	-.217	-.074	***
$\ln(P_i P_j)$	.542	.235	2.31	.021	.081	1.003	**
$\ln Y_i$	.659	.108	6.09	0.000	.446	.871	***
$\ln Y_j$	.814	.065	12.57	0.000	.687	.941	***
contig	12.189	1.042	11.70	0.000	10.144	14.233	***
fta	-.141	.06	-2.35	.019	-.258	-.023	**
iso3_d : base ALB							
ARE	.156	.282	0.55	.581	-.398	.71	
ARG	-1.78	.243	-7.34	0	-2.256	-1.304	***
ARM	.33	.327	1.01	.314	-.312	.972	
AUS	-.585	.458	-1.28	.202	-1.484	.313	
AUT	-2.147	.228	-9.40	0	-2.595	-1.699	***
AZE	1.797	.155	11.59	0	1.493	2.101	***
BEL	9.965	1.161	8.58	0	7.687	12.242	***
BGD	-1.291	.345	-3.74	0	-1.969	-.613	***
BGR	1.257	.261	4.82	0	.745	1.769	***
BHR	-.285	.634	-0.45	.653	-1.529	.959	
BIH	.709	.228	3.11	.002	.261	1.156	***
BLR	-.098	.337	-0.29	.771	-.76	.563	
BRA	-2.493	.313	-7.97	0	-3.107	-1.88	***
CAN	-1.905	.197	-9.67	0	-2.292	-1.519	***
CHE	9.323	1.188	7.85	0	6.992	11.654	***
CHL	-.856	.417	-2.05	.04	-1.675	-.037	**
CHN	7.88	.828	9.52	0	6.255	9.505	***
CIV	-1.019	.158	-6.44	0	-1.33	-.709	***
CMR	-1.88	.17	-11.05	0	-2.214	-1.546	***
COL	-2.105	.171	-12.30	0	-2.441	-1.769	***
CRI	1.207	.625	1.93	.054	-.02	2.434	*
CYP	1.464	.472	3.10	.002	.537	2.39	***
DEU	-3.014	.664	-4.54	0	-4.315	-1.712	***
DNK	9.631	1.277	7.54	0	7.125	12.136	***
DOM	-2.049	.404	-5.08	0	-2.841	-1.257	***
DZA	-2.132	.464	-4.60	0	-3.042	-1.223	***
ECU	-.788	.382	-2.07	.039	-1.537	-.039	**
EGY	-1.813	.531	-3.42	.001	-2.854	-.772	***
ESP	9.212	1.124	8.19	0	7.006	11.419	***

EST	1.732	.28	6.18	0	1.183	2.282	***
FIN	.465	.225	2.06	.039	.023	.907	**
FRA	8.549	.826	10.34	0	6.927	10.17	***
GBR	8.478	.88	9.64	0	6.751	10.204	***
GEO	.852	.262	3.24	.001	.337	1.367	***
GHA	-2.097	.165	-12.73	0	-2.42	-1.773	***
GRC	-.432	.253	-1.71	.088	-.928	.064	*
HKG	.586	.516	1.14	.256	-.427	1.598	
HRV	.4	.4	1.00	.317	-.384	1.184	
HUN	10.954	1.039	10.54	0	8.916	12.993	***
IDN	-2.179	.324	-6.72	0	-2.815	-1.543	***
IND	-3.183	.87	-3.66	0	-4.89	-1.477	***
IRL	.733	.218	3.37	.001	.306	1.16	***
IRN	-3.768	.415	-9.08	0	-4.582	-2.954	***
IRQ	-2.532	.279	-9.06	0	-3.08	-1.983	***
ISL	2.144	.807	2.66	.008	.562	3.727	***
ISR	.342	.186	1.84	.066	-.023	.708	*
ITA	8.827	.862	10.24	0	7.136	10.517	***
JOR	-.871	.138	-6.31	0	-1.142	-.6	***
JPN	8.176	1.432	5.71	0	5.366	10.986	***
KAZ	.239	.151	1.59	.113	-.057	.534	
KEN	-2.38	.186	-12.82	0	-2.744	-2.015	***
KHM	.942	.381	2.47	.014	.193	1.69	**
KOR	9.745	1.608	6.06	0	6.591	12.9	***
KWT	-1.058	.378	-2.80	.005	-1.8	-.316	***
LAO	-1.049	.518	-2.03	.043	-2.065	-.033	**
LBN	-.76	.178	-4.26	0	-1.11	-.41	***
LBY	-2.344	.154	-15.22	0	-2.646	-2.041	***
LKA	-1.016	.253	-4.01	0	-1.513	-.519	***
LTU	1.401	.188	7.45	0	1.032	1.77	***
LUX	1.057	.323	3.27	.001	.423	1.691	***
LVA	1.232	.181	6.79	0	.876	1.588	***
MAR	-.639	.322	-1.98	.048	-1.271	-.007	**
MDA	.786	.154	5.11	0	.484	1.088	***
MEX	-1.088	.241	-4.52	0	-1.56	-.616	***
MKD	1.957	.167	11.72	0	1.629	2.285	***
MLT	1.613	.574	2.81	.005	.488	2.739	***
MMR	-2.875	.192	-15.01	0	-3.251	-2.5	***
MNE	.87	.354	2.46	.014	.176	1.565	**
MOZ	-.368	.292	-1.26	.209	-.941	.206	
MYS	10.235	1.778	5.76	0	6.747	13.723	***
NGA	-3.821	.498	-7.67	0	-4.799	-2.844	***
NLD	9.778	1.066	9.18	0	7.687	11.869	***

NOR	-.262	.272	-0.96	.335	-.796	.272	
NZL	.211	.845	0.25	.803	-1.448	1.869	
OMN	-.601	.448	-1.34	.18	-1.481	.279	
PAK	-2.568	.502	-5.12	0	-3.552	-1.584	***
PAN	-.563	.664	-0.85	.396	-1.865	.739	
PER	-1.741	.276	-6.32	0	-2.282	-1.201	***
PHL	-.946	.195	-4.85	0	-1.328	-.563	***
POL	-1.968	.302	-6.51	0	-2.561	-1.375	***
PRT	.387	.169	2.28	.023	.055	.719	**
PSE	-2.062	.251	-8.23	0	-2.554	-1.57	***
QAT	-.64	.539	-1.19	.235	-1.697	.416	
ROU	10.13	1.166	8.69	0	7.843	12.418	***
RUS	8.571	.855	10.03	0	6.894	10.248	***
SAU	-1.668	.216	-7.73	0	-2.091	-1.244	***
SEN	-1.38	.22	-6.27	0	-1.812	-.948	***
SGP	1.368	.615	2.22	.026	.162	2.574	**
SLV	.525	.579	0.91	.364	-.611	1.661	
SRB	.768	.369	2.08	.038	.043	1.493	**
SVK	0	.	.	.	.	.
SVN	10.896	1.396	7.80	0	8.156	13.635	***
SWE	9.818	1.313	7.47	0	7.241	12.395	***
THA	9.507	1.56	6.09	0	6.446	12.568	***
TUN	-.065	.247	-0.26	.794	-.55	.42	
TUR	8.627	1.016	8.49	0	6.634	10.621	***
UKR	9.57	.999	9.58	0	7.61	11.53	***
USA	7.051	1.133	6.22	0	4.827	9.275	***
UZB	-1.493	.18	-8.27	0	-1.847	-1.139	***
VNM	9.279	1.487	6.24	0	6.361	12.198	***
ZAF	0	.	.	.	.	.
Constant	-27.208	2.968	-9.17	0	-33.031	-21.385	***

Mean dependent var	12.940	SD dependent var	2.116
R-squared	0.972	Number of obs	1224
F-test	372.022	Prob > F	0.000
Akaike crit. (AIC)	1125.467	Bayesian crit. (BIC)	1672.224

*** $p < .01$, ** $p < .05$, * $p < .1$

