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In Fighting against Coronavirus Disease (COVID-19)

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Czech Response to the Post-Pandemic

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Abstract

Despite the strong interconnectedness and deep integration in the European economy, Czechia has been in comparison with Western European countries less impacted by the during the spring peak of Covid-19 pandemic. Moreover, the local situation has been thanks to the specific steps called as exemplary and seems to be managed successfully as well as within the whole Central and Eastern European region. The development in the second half of the year 2020 however showed different direction and Czechia has been facing higher numbers and return of restrictions to the region. The paper firstly gives an introduction on different government strategies in response to Covid-19. Like China, Czechia belongs to the countries that take strict protectionist measures with the immediate effect of reducing economic performance in order to stabilize the spread of the virus as much as possible and prevent the collapse of the public health system. The paper continues with development of the coronavirus situation in Czechia and analysis of the Czech government's steps. Special attention is given to the several measures that have been adopted and recognized as highly effective in slowing down the spread of infection (such as smart quarantine) in spring 2020. Because Czechia is an economy with minimal macroeconomic imbalances and strong financial stability for many years, it can be an advantageous factor in overcoming the consequences and recovering the economy. Next part of the paper thus analyses and compares the main economic indicators of the Czech economy before the coronavirus hit and presents experts' predictions about future development. The final part provides information on programs and incentives of the Czech institutions for re-boosting economic performance. The main data sources are Czech Statistical Office, Czech National Bank, governmental reports and press releases.

Keywords: COVID-19, Czechia, pandemic, smart quarantine

Introduction

Responses of national governments around the world towards the pandemic create a huge pressure on national economics but due to their interconnectivity via international trade and investment, tourism, even more on the world economy. In fact, the outbreak has initiated a “de-globalization” process by forcing governments to lock-down borders, preventing usual flows of goods, capital, and human mobility (Barua, 2020). Some countries, especially those with less confirmed cases, such as Belorussia, or Vietnam from non-European states, are more reserved in application specific restrictions or aid packages to the economy (La et. al, 2020). At the same time, due to a smaller hit of the virus, they have more time to improve their preparedness and plan measures in case of future emergency.

Czechia, similarly to Slovakia and Austria among the Central European region, however belong to countries that started strict protectionism measures with immediate effect on decrease of economic performance of the economy. The main aim has been to stabilize and slow down the spread of the virus as much as possible and to prevent the collapse of the national health system by avoiding overwhelm hospitals’ capacities. Since the first occurrence of the confirmed coronavirus case on March 1, Czech government and the Ministry of Health have gradually adopted restrictive measures and resolutions with a considerable impact on everyday life of the citizens. The state of emergency was declared on March 12 when there were only 116 confirmed cases. The strategy of Czech government has been similar to those in USA and Asian countries, China specifically (World Bank, 2020; World Health Organisation, 2020). It is a different approach that took for example Sweden or Netherlands, that apply protective measures only on the most vulnerable segments of population but otherwise the general strategy is to create autoimmunity by no stops of virus spread (Johnson et al., 2020; WHO, 2020).

Although the speech of the Czech Prime Minister in June claimed that there will be no more “full country” measures, with an increasing number of confirmed cases in August, the government put into practice some of them again a couple months later (Government of the Czech Republic, 2020). From September 1, masks became mandatory at healthcare and social service facilities, on public transit and in public offices and voting rooms in the whole country. The capacity of mass events remains the same, but a face mask is required to attend indoor events with more than 100 attendees. Due to even more significant increase of confirmed cases in the capital city, from September 9, Prague Hygiene made mandatory wearing masks also in shops and shopping centers however the deteriorating epidemiological development caused rapid adoption of new measures and since September 10 face masks became again necessary to wear in all indoor areas of buildings and in the common areas. Restaurants and bars in Prague

have to obey limited opening hours. Moreover, based on the available scientific findings and the decision of the Government Council for Health Risks, the Ministry of Health has shortened the period of quarantine and isolation from 14 to 10 days effective from September as one of the measures trying to soften the impacts on the economy (Government of the Czech Republic, 2020). Next, in the beginning of September, the Ministry of Health in cooperation with the Ministry of Education issued a methodology for ordering quarantine and closing and restricting operations in schools in connection with Covid-19. For instance, if more than 30% of teachers and children/students are confirmed to have a Covid-19 disease or in quarantine, there is a risk of the presence of possible sources of infection and other transmission of the disease so large that it is recommended to order the closure or restriction of the operation of the school or school facility (Ministry of Health, 2020a).

September situation does not seem very optimistic as the number of new cases keep rising above 1,000 per day. For comparison, at the previous height of the pandemic in spring months, the daily number of cases reached a maximum of 377. Due to this development, several European countries, such as Germany, Switzerland, Denmark, Belgium or Slovakia, are placing Czechia on their lists of risk areas.

The paper focuses on the post-pandemic response of the Czech government and institutions. After introduction of the protectionist steps, the coronavirus situation in the second and third quarter of the year is presented. The development of the virus spread is linked to the special measures based on smart tools taken in order to control its spread. The paper analyses the main economic indicators of the Czech economy for year 2020 and its post-pandemic status based on key industries. The final part discusses support programs and incentives for re-boosting economic performance.

Smart Measures Limiting the Further Spread of the Virus

Czech government introduced several tools to control and minimize the spread of the virus. The most significant and efficient in time are smart quarantine, eRouška (eMask) and most recently, a so-called system of traffic lights with regional alert levels.

Smart quarantine has been outlined as a set of measures developed in cooperation between state institutions and ICT companies with an attempt at a rapid digital innovation in public administration, which tended to adopt digitalization only carefully and reluctantly before March 2020 (Kouřil & Ferenčuhová, 2020). As of May 1, after several weeks of regional

testing, the project has been applied actively nationwide. It operates with several sources of information to detect individuals who may have encountered the virus and become infected: (1) location data from mobile phone operators, (2) card payment data, (3) information from mobile contact tracing application eRouška (eMask), (4) location data from mobile map application Mapy.cz. While the first version of eRouška was intended primarily as an aid for hygienists in finding contacts, **eRouška 2.0**, available from September, is an anonymous warning system for citizens. The procedure of the smart quarantine is following:

I. A person who learns that he has contracted the COVID-19 threat is contacted by the regional hygienic station in order to hygienically identify as many risk contacts as possible in 5 days.

II. When the infected person gives an official consent, a "memorial map" based on the mobile data from the operators of the regional hygiene station is created.

III. No matter what the infected person remembers along with the hygiene of all potentially endangered contacts, the specially built call center keeps people informed and isolated in quarantine as quickly as possible.

IV. Subsequently, these people are quarantined and after 4-5 days visited by a two-member team, who takes samples. It is necessary to inform a tested person ideally within 48 hours about the result.

V. If the test is positive, the new infected person goes through the same process. Of course, again with his expected official consent.

A "Health Risk Board" of eight members with Czech Prime Minister in lead was established by the end of July. The board took over the project of the smart quarantine. The main aim is to make the technology more efficient by improving connection between IT systems and hygienic stations. According to data from June, only about every 50th person in Czechia used the application but according to a member of the crisis staff, 60 % of the population is needed for the application of smart quarantine to function properly (iDnes, 2020a). The under-average position of Czechia in terms of digital economy and society is also illustrated by the Digital Economy and Society Index (European Commission, 2020a). Czechia is the strongest in the integration of digital technologies, where its results exceed the European Union average. This is mainly due to good results in the field of e-commerce. Contrary the lowest score is in the field of digital public services.

In cooperation with the Institute of Health Information and Statistics, the Ministry of Health (2020b) has prepared a system of four alert levels to which certain framework

procedures, activities and anti-epidemic measures of the public health protection authorities are related. Alert levels range from 0 to 3 and due to its colour symbolism, the system is called a **set of traffic lights**.

- Level 0 (white): Zero or negligible risk - The lowest level of risk when the disease contagion has been reported abroad but none or rare in the country itself.
- Level 1 (green): Occurrence of infection in Czechia without community transmission - The level is characterized by sporadic cases of transmission, local epidemic centers or local clusters.
- Level 2 (yellow): Incipient community transmission in Czechia - Occasional cases with an unclear source of contagion appear and among persons who did not visit an affected area.
- Level 3 (red): Growing or persisting community transmission in Czechia - The highest warning level with daily incidence of cases within community transmission, moreover a consistent rising or persisting trend can be observed.

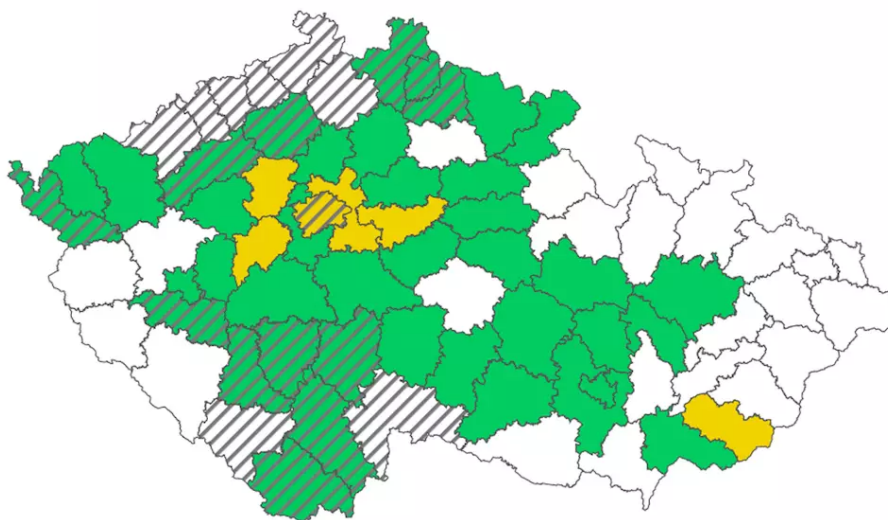
A framework of procedures and activities which the public health protection authorities should perform within the system of preparedness and reaction to the threat of the epidemic spread of Covid-19 is defined for each level. These, for example, include the activation of crisis task forces and crisis hotlines, management of the capacities of testing points and laboratories or activation of the Intensive care dispatching centre and involvement of the Czech Army. A key part of the system is constituted by procedures relating to in-patient care, these include triage on entry, reprofiling of beds or earmarking of staff for the provision of care to Covid-19 patients (Ministry of Health, 2020b).

Above mentioned measures aim at tracing the contacts of infected persons and avoiding further spread. The responsible hygienic stations had the capacity of tracing a maximum of 400 new cases daily but from September 1, their capacity increased up to 750 new cases per a day. This extension is a reaction to the growing number of confirmed cases since August. Related to the issue of capacity, the Ministry of Health comes up with an idea of self-reporting, where Covid-19 patients fill out a list of possible contacts themselves rather than through health officials. Quarantine will not be needed for all of those contacts, provided both parties wore a face mask when they met.

For several weeks after the introduction of the set of traffic lights, the districts in Czechia remained largely white. Since the end of August, regions however started to be marked in green

colour without a risk of community transmission but with local outbreaks. The capital of Prague then was the first region to be moved from low-risk green to medium-risk orange in the Czech Health Ministry's regional risk map. In the first week of September, about 30 % of those infected in Prague had an unknown source of the infection. The number of orange areas and green districts have increased again after the first week of September (Ministry of Health, 2020c). Generally, Prague continues to be the country's most-affected locality. The version of the regional risk map from middle September is displayed on Figure 1.

Fig 1: Regional coronavirus risk map of Czechia (status September 14, 2020)



Note: White colour - zero or negligible risk; green colour - occurrence of infection without community transmission; yellow colour - incipient community transmission; hatched area - valid epidemiologic measures
Source: Edited from the Ministry of Health (2020c)

The Ministry of Health, in cooperation with the Czech Vaccinologic Society of the Czech Medical Association and the National Immunization Commission of Czechia, prepared the National Vaccination Strategy against Covid-19. It will be implemented into common practice and used in the organization of vaccination after registration and availability of the vaccine in Czechia. In the first stage, the most vulnerable will be vaccinated, i.e. chronically ill patients and persons aged 65 and over, health care workers and public health workers performing epidemiologically serious activities, as well as workers and clients in social services. In the first wave, there are approximately 3.5 million Czech citizens (Ministry of Health, 2020d).

Situation of Czech Economy

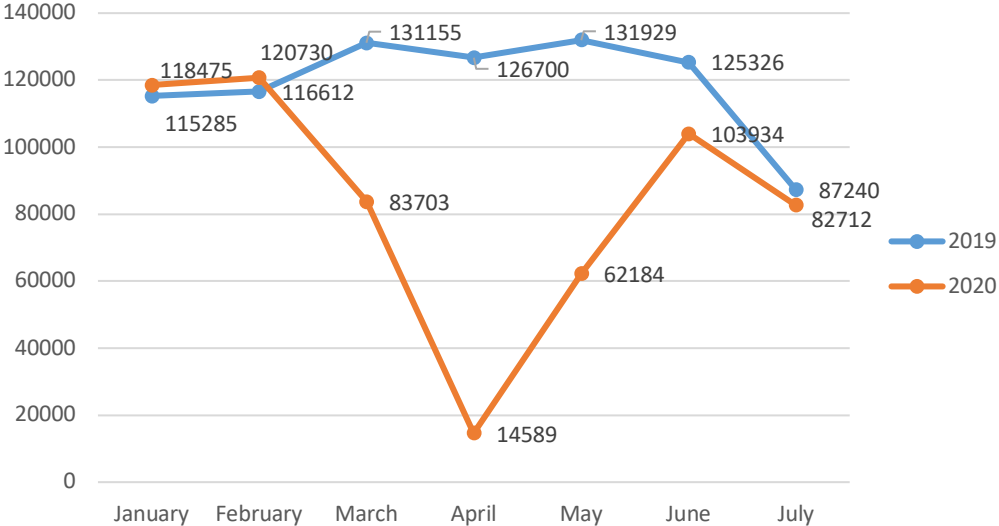
Czechia is a small open market economy not suffering from excessive imbalances of internal or external character and also with sufficient financial stability. For the last six years, Czech economy maintained GDP growth, the Czech National Bank strictly adhered to the set inflation target, and inflation fluctuations occurred mainly due to changes in oil prices. In terms of the situation in the labour market, the average unemployment rate within 27 European Union member states was 6.7%, with Czechia's at 2% in 2019 (Czech Statistical Office, 2020a). The trade balance has been in surplus for a long time. However, already in 2019, Czechia recorded a gradual slowdown in economic performance as it was expected. One of the reasons was the impact of its interconnectedness with the United Kingdom and a case of Brexit and secondly with Germany, affected by decrease in global demand for cars.

The impact of the pandemic situation on the European Union economy is symmetrical and affecting all Member States, however, the extent of the economic slowdown in 2020 varies greatly. Statistics from post-socialist Central and Eastern European countries generally show smaller decline compared to Western countries. Moreover, several international media called the local development as "successful". The economic recovery of individual Member States generally depends on three factors: (a) the development of the pandemic in a given country; (b) the structure of the economics; (c) the ability to respond by adopting stabilization measures. More stabilized situation and less infected cases in the first half of 2020 provided countries in Central and Eastern Europe with time to react and prepare for the so-called "second wave" of pandemic.

In terms of the structure of Czech economy, the automotive industry is a crucial industry, accounting for about 10% GDP of the national economy (CzechInvest, 2020a). Czechia has a long history of leadership in this field and cars and spare parts make up a massive 20 % of Czech exports and hosts nine automobile and production plants which demonstrates the importance for the economy of Czech size. From January to July 2020, a total of 589 339 motor vehicles were produced, ie 29.7% less than in the first seven months of last year (Automotive Industry Association, 2020). Due to the multiplicity of the automotive industry, the downturn in production that is to be around 20 % in 2020 in Czechia has a multiplier effect on the broader economy. According to the CzechInvest agency (2020a), around 800 companies are involved in the automotive industry. Upstream businesses such as steel, chemicals and textiles, as well as downstream industries such as ICT, repair and mobility services all feel the impact of stunted demand and market paralysis. As with so many industries, automotive is only expected to return to pre-crisis levels in the second half of 2021. Full recovery could even come as late as 2022.

Figure 2 illustrates the data of car production in first half of the years 2019 and 2020. It clearly shows the massive drop in production from March to May 2020 when the pandemic measures weigh on the economy.

Fig 2: Car production in Czechia (2019/2020)



Source: Edited from Automotive Industry Association (2020)

As 80% of automotive production is exported, the industry is not affected only by the decline in the local market, but also by the cessation of the economies of the target countries, especially Germany, France, United Kingdom and Slovakia (CzechInvest, 2020a). Cars, automotive parts and accessories to other machines as well are frequent export items to Germany. As already mentioned, the condition of the German economy is crucial for Czech companies which are often subcontractors of the German ones. Car production in Germany will fall by 26 % this year to 3.4 million cars, the lowest level since 1974. The German economy recorded a GDP downturn 9.7 % in the second quarter from the previous three months due to the coronavirus crisis (Euronews, 2020).

Foreign trade plays a crucial role in the economy as well. In April, Czechia's foreign trade showed a deficit of CZK 26.9 billion, which was a year-on-year result of CZK 42.9 billion worse. The trade balance was thus the lowest since the country's accession to the European Union. Its overall amount was mainly affected by the decline in automotive trade. The closure of borders, the shutdown of production and the interruption of companies had the effect of reducing the positive balance of trade in motor vehicles. The effects of measures against the spread of coronavirus had a significant effect on trade but since spring, exports of goods have

been almost returning to last year's level. In June, foreign trade in goods recorded the historically significant high trade surplus of CZK 34.1 billion due to reduced imports. Based on data of the Czech Statistical Office (2020b), the situation in Czech industry began to stabilize slowly in June after a previous slump caused by the coronavirus crisis as the production gradually began to return to pre-pandemic levels in a number of industrial enterprises. Compared to May, industrial production was encouraged by the resumption of car production, which also helped manufacturers of parts for the automotive industry. The result of foreign trade was also positively affected mainly by the growth of the surplus in car trade by CZK 9 billion and a smaller deficit in trade in oil and natural gas. Foreign trade with the European Union ended in June with a surplus of CZK 67.1 billion, which was CZK 13.1 billion higher year-on-year. The trade deficit with countries outside the union fell by CZK 4.3 billion to 31.4 billion (Czech Statistical Office, 2020b).

According to the Czech National Bank (2020a), although the quarantine measures have been almost fully lifted, reduced external demand, a marked rise in unemployment and worse overall perceptions of the economic situation among Czech firms and households will have an adverse effect on the economy in the months ahead.

Restrictions have also affected freedom of movement, affecting a labour market via intra-EU labor mobility (Robin-Olivier, 2020). In light of widespread border checks or even border closures, the circulation of workers was partly abolished. Czechia reports thousands of vacant jobs that are missing from Ukrainians who hurried home during the state of emergency. Subsequently, the cost of labor is rising. In Czechia, Ukrainians most often work in construction, services, gastronomy and hospitality. Currently there is a large number of foreign people in the visa process and the employers only hope that the borders will not close again. Apart from Slovaks, according to long-term statistics, Ukrainians are the largest group of foreign workers in Czech companies. An estimated 135,000 of them worked in Czechia before the pandemic (Seznam Zprávy, 2020). On the other side, many Czech citizens commuting to Austria or Germany, often in home-care sector, are affecting as well. It is likely that the economic downturn and changing labor markets, will continue to influence the shape and intensity of labor mobility within the European Union, including the distribution of its costs and benefits at individual and national levels.

In the third quarter, including July, August and September, the Czech economy is heavily reliant on tourism, which is still in a slump. In July 2020, Prague airport experienced a 87 % decrease year-on-year. At the same time, July was the first month that was no longer marked by coronavirus measures and when, with the opening of safe European destinations, air carriers

began to return to Czechia to a greater extent (iDnes, 2020b). Data on post-pandemic tourism from Czech Statistical Office (2020c) however indicates that a quick recovery from the drop in GDP is not expected. The most significant year-on-year drop in tourism occurred in April, when strict restrictive measures against the spread of covid-19 were in full swing. The number of guests fell by 98.9 %. The drop in attendance continued in May, when it reached 94.1 %. The year-on-year decline did not slow down until June, when 60.8 % fewer guests came year-on-year. The situation of course varies across the regions. Prague itself, the most affected region in this regard, lost 94% of its tourists. Although tourism accounts for only about 3 % of the domestic economy, indirectly, the loss of foreign tourists means reduced demand in other sectors as well affecting the job market, especially in summer months. Together with the hard effect on the tourism economy, the development of the congress, event and trade fair industries in Czechia were paralyzed as well. According to the study of Czech Tourism (2020), the total consumption in the sector will decrease due to pandemic to CZK 27.1-39.3 billion, while in normal situations it would range from CZK 99-131.5 billion. At the same time, this means a drop in sales in multiplication from the original CZK 196.5-260.5 billion to only CZK 52.9-77.2 billion (Czech Tourism, 2020).

The drop in Czech GDP was lower than expected but still the biggest since 1993. The GDP in the second quarter of 2020 fell by 8.4% compared to the first three months of 2020, and by 10.7% compared to the second quarter of 2019. Although the prognosis of the Ministry of Finance in April 2020 was a decline of Czech economy by 5,6 % in 2020, according to data from August (Czech National Bank, 2020b), the economy is expected to drop by 8.2 % this year overall. Based on the Czech National Bank's report, the economy will grow by 3.5 % in 2021 and it should not reach 4% growth until 2022 (Czech National Bank, 2020b).

Re-boosting the Economy

During past months since the pandemic hit the world and European continent, both the executive branch of the European Union and the Czech government introduced several measures and support programs for businesses and employees. The European Commission has approved a Czech wage subsidy scheme of CZK 22.9 billion, which provides support to companies affected by the coronavirus pandemic. The scheme was approved under the Temporary State Aid Framework open till December 2020 (European Commission, 2020b). The aim of the scheme is to reduce employers' costs, prevent redundancies and help employees not to have to interrupt their employment during the period for which support is provided.

Czech government's programs then include tax relief; support for self-employed persons; interest-free loans COVID I., II. and III; support for maintaining employment; free use of data boxes; support for farmers, foresters and food producers and measures for employees. For instance, there is a transport support package that defer toll and road tax payments to truckers. Or next, the liberation package, which removes entrepreneurs' June advances on personal and corporate income tax, introduces the institute of retroactive tax loss, postpones the deadline for filing a tax return for real estate acquisition tax, removes value added tax on goods that are delivered free of charge, solves road tax accessories, etc. (Government of the Czech Republic, 2020; Ministry of Industry and Trade, 2020).

One of the key support packages is called the Antivirus program. Since March, the Antivirus program has been developed as a sufficiently massive, but also targeted, program to maintain employment. Given that there is still a danger of further regional or national waves of coronavirus crisis, it is still of great importance. Antivirus A is designed for businesses with forced traffic restrictions and quarantined employees. In the B regime, the state contributes to the compensation of employees' wages in enterprises that were indirectly affected by the coronavirus crisis. For example, through a decline in sales or supply of inputs. The Antivirus program contributed to the fact that the unemployment rate is still within acceptable limits. Only 7.3 % of newly unemployed persons after March 1st came to the Labor Office of the Czech Republic from companies that used the Antivirus Program. The remaining 92.7% of the newly unemployed come from companies that have not joined Antivirus at all. The risk of losing a job in companies involved in Antivirus was thus much lower than in companies that did not join the program (Ministry of Labour and Social Affairs, 2020a,b). By the end of August, the Czech government extended the program till October.

In terms of boosting the cultural and creative sectors that along with the tourism industry are among the most affected by the current coronavirus crisis, the government firstly announced the Culture Renewal Package. The government budget reserve will release CZK 770 million to support non-state art entities and up to CZK 300 million to rehabilitate the impact on contributory organizations of the Ministry of Culture, depending on whether the restrictions adopted by the government will continue after May 31st. The money will be used, for example, to make art accessible through digital technologies, to support regional culture and other independent artistic entities. Secondly, the government approved a subsidy program COVID-Kultura (COVID-Culture) in August, which was prepared in cooperation by the Ministry of Industry and Trade and the Ministry of Culture. It aims to help entrepreneurs in the cultural and creative industries. Organizers of cultural events who had to cancel or move planned events due

to the coronavirus epidemic can apply for the subsidy. So far, during the first 14 days when the ministry started accepting the applications since August 18th, it has been applied for the value of CZK 38,8 million (CzechInvest, 2020b; České noviny, 2020).

There are also several program supporting the innovative projects and development of new technology solutions: the Country For Future program for innovative projects focuses on the areas of national start-up and spin-off environments, digitization and smart investments and, among other things, supports the facilitation of robotics, automation and innovation in companies with an emphasis on SMEs in accordance with defined Industry 4.0 standards and key trends in promising industries. Next, Czech Rise Up program - Smart measures against COVID-19 supports the production of medical devices and the development and deployment of new technologies to combat coronavirus infection. Czech Rise Up II. is opposed to the completion of industrial research, experimental development, clinical research phases, patent validation and similar intangible assets or conformity assessment and certification including process innovations for efficient production (Ministry of Industry and Trade, 2020).

Conclusion

Since 2019, rising tensions in international trade, unresolved case of Brexit and a significant decline in demand for cars could be observed and these circumstances resulting in the slowdown in both global economic growth and Czech growth. The global economy gets a massive hit from the impact of the COVID-19 pandemic, especially through its rapid “globalization”. The pandemic crisis is different in that it did not come from the world of finance, but came from outside the economy, and its effects are not widespread, because there are a number of sectors that are affected, such as automotive and tourism, and a number of sectors that are prospering, such as e-commerce and digital services.

Czech government along with the rest of the world has put together large-scale rescue packages to ensure the survival of the economy. These support packages are larger than their equivalents in the 2008 financial crisis. It is important to realize that the measures that worked in the financial crisis in 2008 will not be same effective in case of 2020. The current measures needed to contain the pandemic will remain in force until a vaccine has been found.

Due to a substantial disruption of global economic activity and especially in the global value chain and an effort to increase resilience to foreign supply shocks by shortening these value chains, the region of Central and Eastern Europe could benefit as there is going to be a

trend of moving industrial production from the West to the East of the continent. With average labour costs around one third of that in Western Europe, an educated and skilled workforce and relatively good infrastructure, post-pandemic relocation of supply chains could be an opportunity for the Central and Eastern European region.

As of today, the pandemic end remains uncertain in all continents although the “first wave” of the virus spread was successfully controlled in the Central and Eastern European countries, Czechia including. A half year later after its peak, Czechia is very intensive at the moment, with several restrictive measures in practice coping with the “second wave”. The turning point is when intensive care units start to fill up and hospitals are not catching up but as of September 2020, this is not the scenario in Czechia.

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