

Impact of Covid Pandemic on Foreign Exchange Reserves

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Abstract: The foreign exchange reserves are part of the central bank tools for maintaining the stability of the national legal tender. Several issues are of great importance when analysing the foreign exchange reserves. Firstly, the structure and size of the reserves is determined by the monetary policy of the central bank. Secondly, the monetary policy is different in regards with the applied exchange rate arrangement in the country as the central bank plays a significant role in maintaining the selected exchange rate. These issues are considered when reviewing the impact of the pandemic on the foreign exchange reserves.

The aim of the paper is to review the role of the foreign exchange reserves in pandemic and to analyse the opportunities for their future implementation. The statistical methods are applied to assess the present situation compared to the pre-pandemic period, and the data is from the Bank for International Settlements and the International Monetary Fund databases. The conclusion is that the foreign exchange reserves are necessary for the central banks and governments, especially in times of crises and in pandemic. They are applied as a “buffer” for maintaining the stability of the domestic currency and the whole national financial system. Moreover, in recent years the role of the foreign exchange reserves is reviewed as an additional tool of the governments and central banks for introducing new digital currencies on the market.

Keywords: foreign exchange reserves, covid pandemic, currencies, central bank, exchange rate arrangements

1. INTRODUCTION

The coronavirus pandemic has a tremendous impact over countries, their economies, and the way they function. It is expected that the influence will continue in future even if the disease is over. The financial markets and especially the foreign exchange one, are quite sensitive to the changes in the global environment. Usually, they are regarded as an indicator to the measures that the authorities and investors should consider. That rule was confirmed once more when the information about the instability in the healthcare system in China changed quickly in January 2020 and the lockdowns in Asia started. The so called “news effect” affected the markets and they reacted immediately, but without considering and even expecting the scale of the events.

In general, the real sector of the economy and some specific sectors were hit fiercely by the pandemic and some economies shrank by 25-40%. As stated in the Annual Report of the Bank for International Settlements (Bank for International Settlements, 2020) “the central banks acted as the first line of defense in order to stabilize the financial markets and the financial system and to preserve the flow of credit to firms and households”.

As for the currencies, their position on the markets was affected as well. There was a sharp currency depreciation for both the major and the emerging markets currencies. However, the currencies of the advanced economies restored quickly their stability on the market, while those of the developing and emerging market economies recovered slowly in April 2020 and later (OECD, 2020).

In times of crisis, the fiscal and foreign exchange reserves of a country are regarded as “buffers” for the stability of the financial system and the economy. Central banks are responsible for maintaining the stability of the national currency and in case of turbulence in the world economy and other external shocks, the foreign reserves are one of the tools for intervention on the markets.

The reserves do not exist independently from the external and internal environment of a country. Thus, not only the pandemic altered the view towards the reserves but also the influence of the related policies and the undertaken measures.

The external environment for the foreign exchange reserves include: 1. Risks and, 2. Governmental policies. The risks that are included in the Global Risks Report of the World Economic Forum represent to a certain

extent the expected or emerging obstacles and threats in the external business climate (World Economic Forum, 2021). The five categories of global risks, such as economic, technological, societal, environmental, and geopolitical, have signaled to the world the possible events and threats that we may encounter in future. And the pandemic is one of the societal risks that is analyzed in depth in the reports in recent years. But were we prepared for such a risk and threat? Well, the answer is No, due to the circumstances and the turbulence in the economic and social life worldwide.

Another factor in the external environment that affects the foreign exchange reserves are the governmental policies (e.g., healthcare, social, environmental, etc.). The pandemic had and still has an impact on other related policies and on the stability of the foreign exchange reserves. The lockdowns worldwide influenced different areas significantly, and predominantly the economic sectors related to the face-to-face communication such as sport (Borisov, 2019; Borisov, 2019a; Borisov, 2020) and tourism (Jarolímková and MIECAT Project Team, 2021; Vaníček, Šenková, and Jarolímková, 2021), where the opportunities for financing diminished sharply. The subsidies and governmental support were the main contributions for the affected sectors and it was considered as an opportunity to preserve them in times of pandemic. In such cases the fiscal policy (Nikolova and Angelov, 2021; Pancheva, 2015) and the balancing between economic growth and tax burden is an important tool for local and central governments.

Education is another crucial area that was affected by the pandemic as the student presence in the universities was limited and the student mobility from home countries and regions to foreign ones was blocked. Supplementary businesses as restaurants, real estate, rental, etc., were affected as well. Nevertheless, education has continued functioning successfully based on the digitalization, entrepreneurship, and the effective relationship between universities and businesses (Tekev, 2015; Tekev, 2015a; Tekev, 2003) and in combination with the corporate social responsibility (Stoichkova, 2019; Stoichkova, 2020). Another point that motivates the society and each one of us to change is the attitude for adapting to the circumstances (Karamelska, 2019) which the pandemic definitely showed to us all.

The internal environment for the foreign exchange reserves is related to the economic and financial policies of the central banks and the ministries of finance. The main purpose of those policies is to manage the reserves and to maintain the stability of the domestic currency and the financial system (Nikolova, 2019). Some specific risks may influence the foreign exchange reserves (Fisher and Lie, 2004) such as financial risks, liquidity risk, credit risk, (Petkova, 2007; Petkova, 2010), foreign exchange risk (Nikolova, 2018), etc. Thus, the rules for the internal policies are more predictable than the external ones and the authorities may influence the direction of the reserves-related policies.

The characteristics of the reserves are part from the internal environment as it is quite important to balance all the policies and to manage the amount of that specific tool. When analyzing the foreign exchange reserves, several issues have to be discussed, especially in terms of pandemic and the challenges that emerged: 1. Size, 2. structure (composition), and 3. Exchange rate arrangement.

Historically, countries maintained large reserves in order to guarantee the fixed exchange rate arrangements and the Bretton Wood system that existed in the 50s, 60s and early 70s. That was the mechanism for reconstructing and rebuilding the Western European economies in the post-war period and gold was one of the major elements of the reserves (Stoichkova, 2020a). Today the official reserves consist predominantly of foreign currencies and financial instruments denominated in a foreign currency, but gold is still part of the reserves along with the SDRs (International Monetary Fund, 2013).

The aim of the paper is to review the role of the foreign exchange reserves in pandemic and to analyse the opportunities for their future implementation. The statistical methods are applied to assess the present situation compared to the pre-pandemic period, and the data is from the Bank for International Settlements and the International Monetary Fund databases.

2. CHALLENGES FOR FOREIGN EXCHANGE RESERVES DURING PANDEMIC

Size of the foreign exchange reserves. The foreign exchange reserves are managed by the central banks, and their major role is to preserve and maintain the stability of the domestic currency. In that way the whole financial and banking system is guaranteed against both external and internal shocks or changes in the environment. For example, during the global financial and economic crisis, there was a rise in the foreign exchange reserves in the countries, predominantly in the emerging and developing economies in Asia.

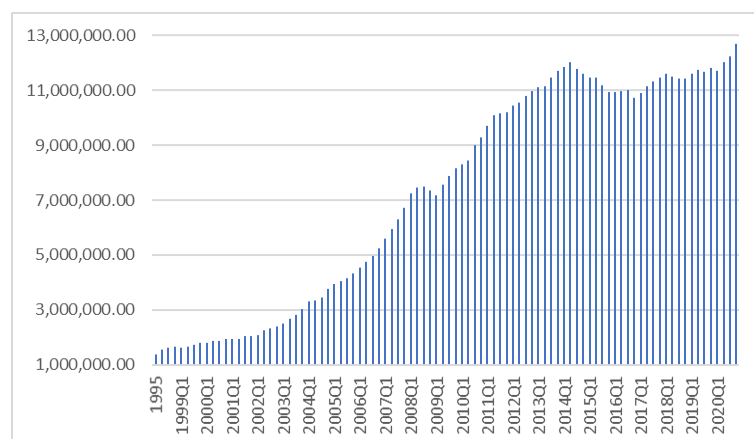
On the one hand, the reason for that is the instability in the world and attempt of the central banks to ensure enough resources for the post-crisis period. On the other hand, the increase is explained by the improvement of the credit rating and rise in confidence to the country by diminishing the costs for lending on the international markets. Thus, the overall price of the loan decreases as well (Romero, 2005).

One of the trends that was applicable and evident before the pandemic but continues during it, is the steady increase in the amount of the foreign exchange reserves worldwide (Fig. 1) by 4-6% per year including gold. At the beginning of the pandemic the amount of the reserves rose further in order to secure resources for the post-pandemic period of the countries like the global financial crisis situation as mentioned above.

In 1995 the total reserves in the world amounted 1,389,816 million US dollars, while in the fourth quarter of 2020 the reserves were 12,700,750 million US dollars. In other words, the official foreign exchange reserves for the last 25 years have increased dramatically. During the different quarters of 2020, the trend continued, and it is expected that during 2021 this attitude towards the reserves will be preserved by all types of economies (developed, developing and emerging markets).

Due to the Asian crisis in the 90s and then the global financial crisis, and the European debt crisis, the emerging markets and developing economies have taken measures towards the increase of the reserves. In the present situation where the pandemic is expected to cause a serious economic crisis in the post-pandemic period, it is not a surprise that central banks focused more on the reserves as a buffer.

Figure 1: Total Foreign Exchange Reserves in the world, 1995-2020 Q4



Source: International Monetary Fund Database, 2021

The currency (structure) composition of the foreign exchange reserves is related to the activities (trade, economic, etc.) of the country and relation of the domestic currency to other key currencies (Ito and McCauley, 2019). Thus, the trade and financial flows determine to a great extent the reserves structure.

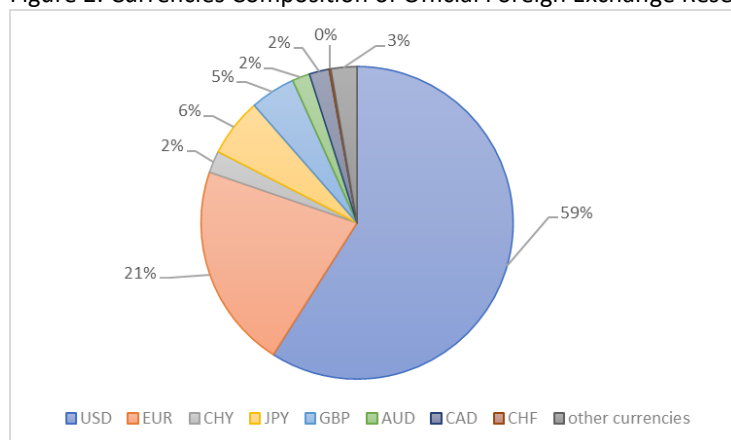
According to the Bank for International Settlements (Bank for International Settlements, 2021) the major currencies that dominate the foreign exchange market are the US dollar, euro, Japanese yen, emerging market currencies, UK pound, Australian dollar, Canadian dollar, Swiss franc, etc. These are the currencies that participate actively in the composition of the reserves worldwide.

Figure 2 describes the currency composition worldwide and as shown the US dollar is the leading currency in the foreign exchange reserves with 59% share. However, there is a decreasing trend for the presence of the US dollar in the reserves in recent years. The reason for that are the increasing activities among the emerging markets and their attempt to avoid the exchange rates differences and additional costs when applying cross currency rates. For example, the share of the US dollar in the official reserves in the 90s and in the beginning of the 21st century was around 70% and above that.

The Chinese yuan (renminbi) with 2.25% share and the Japanese yen with 6% share in the world reserves have been enlarging steadily their presence in the currency composition of the foreign exchange reserves. That is explained with the intention of the central banks worldwide to continue diversification of their reserves in

order to be less sensitive to the changes on the foreign exchange market to only one currency such as the US dollar.

Figure 2: Currencies Composition of Official Foreign Exchange Reserves, 2020 Q4



Source: International Monetary Fund Database, 2021

Another explanation for the change in the currency composition of the reserves are the exchange rate fluctuations of the domestic currency to the major world currencies. In case the domestic currency varies less or is fixed, then the central bank most probably will include it in the composition of the official reserves. The reasons are the following: 1. Costs from the exchange rate fluctuations are higher when the currency is volatile to the domestic one; 2. Foreign exchange risk increases in cases of more fluctuations on the market between the domestic and the foreign exchange currencies. Thus, central banks would prefer foreign currencies with less risk and costs in their foreign reserves rather than riskier ones.

Exchange rate arrangement and the foreign reserves. There are two major types of exchange rate arrangement that are classified by the International Monetary Fund (International Monetary Fund, 2020): fixed (pegged) and floating. When the types of exchange rate arrangements and foreign reserves are analysed in detail then it is obvious that central banks with a fixed exchange rate need the reserves in order to maintain the stability of domestic currency and the exchange rate itself.

However, there is one special case, and that is the currency board arrangement where the foreign reserves have to cover 100% at minimum the domestic currencies. In that case, the foreign reserves should consist predominantly of the selected reserve currency or basket of currencies.

For the floating exchange rate arrangement there is not a specific rule for maintaining particular quantity from specific currencies. Of course, countries that have adopted the floating exchange rate arrangement need reserves as well. The central banks in some cases have to intervene in order to support the domestic currency and to preserve the stability of the financial system. Moreover, maintaining a huge size of foreign reserves presents the capability of preserving the selected exchange rate arrangement in order to meet the disbalances in the balance of payments of the country. And it guarantees the functioning of the money, capital and foreign exchange markets. (Sunner, 2017).

Several methods for measuring the foreign exchange reserves are applicable. For determining the optimal size of the reserves is used the rule of the Greenspan-Guidotti, by which the foreign reserves are a percentage of the short-term debt. According to that rule the ratio of the short-term debt to the foreign reserves should be 100% (Brussiere and Fratzschermay, 2002). Usually, countries maintain the largest share of their reserves in the currency in which they have the highest share of external debt (Cagoz, Sull, Wang and Dychala, 2019).

4. CONCLUSION

Foreign exchange reserves are necessary for the central banks and governments, especially in times of crises and in pandemic. They are applied as buffers for maintaining the stability of the national currency and the whole national financial system. Moreover, in recent years the role of the foreign exchange reserves is

reviewed as a supplementary tool of the governments and central banks for introducing new digital currencies on the market.

Challenges for the central banks in managing the official foreign reserves during the pandemic can be summarized as follows:

- ✓ Difficulties in forecasting the external and in some cases the internal environment and in that way the risks and policies that will affect directly the reserves;
- ✓ The size of the reserves depends on the exchange rate arrangement and the economic and financial policies in a country;
- ✓ The more diversified in currency composition are the reserves, the less vulnerable to the environment they will be.

In fact, the central banks that maintain large size of a certain currency may influence the markets by selling or buying those amounts, affecting the exchange rate for that particular currency in the short run. The foreign exchange reserves and their role for the stability of the national currency is in focus for both the developing and developed countries due to the pandemic.

In times of crisis, only the well-managed foreign exchange reserves may prevent the turbulence against the national currency, because the external environment is difficult to forecast and the internal environment is the one the authorities should focus on in order to prevent the uncertainty.

REFERENCES

- Bank for International Settlements (2020). Annual Economic Report 2020, <https://www.bis.org/publ/arpdf/ar2020e.pdf>.
- Bank for International Settlements (2021). Foreign Exchange Statistics, https://www.bis.org/statistics/about_fx_stats.htm?m=6%7C381%7C674
- Borisov, K. (2019). Sources of Financing Sports under market Economy, In: Yearbook of University of Agriculture and Rural Development, Plovdiv, Volume VII, 2019, pp. 255-286, ISSN 1314-9113 (print), ISSN 2535-0609 (on-line), <http://science.uard.bg/index.php/yearbook/issue/view/35/showToc>, in Bulgarian.
(Борисов, К. (2019). Осигуряване на източници за финансиране на спорта в условия на пазарна икономика, В: Годишник на Висшето училище по агробизнес и развитие на регионите, Пловдив, Том VII, 2019, с. 255-286, ISSN 1314-9113 (print), ISSN 2535-0609 (on-line), <http://science.uard.bg/index.php/yearbook/issue/view/35/showToc>).
- Borisov, K. (2019a). The Economic Significance of Sport, In: Conference Proceedings XII. International Balkan and Near Eastern Congress Series on Economics, Business and Management, Plovdiv, Bulgaria, April 20-21, 2019, pp. 56-59, ISBN 978-619-203-259-3, http://www.ibaness.org/conferences/plovdiv_2019/ibaness_plovdiv_proceedings_draft_7.pdf.
- Borisov, K. (2020). Financing of Sports by Municipalities, In: Conference Proceedings XIV. International Balkan and Near Eastern Congress Series on Economics, Business and Management, Plovdiv, Bulgaria, September 26-27, 2020, pp. 315-322, ISBN 978-619-203-289-0, http://www.ibaness.org/conferences/plovdiv_2020/ibaness_plovdiv_proceedings_draft_5.pdf
- Brussiere, M. and A. Fratzscher. (2002). Towards a New Early Warning System of Financial Crises, Working Paper No. 145, European Central Bank, ISSN 1561-0810, <https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp145.pdf>.
- Cangoz, M., O. Sulla, Ch. Wang and Ch. Dychala. (2019). A Joint Foreign Currency Risk Management Approach for Sovereign Assets and Liabilities, Policy Research Working Paper No. 8728, World Bank Treasury, World Bank Group, <http://www.worldbank.org/research>
- Fisher. S. and M. Lie. (2004). Asset allocation for central banks: optimally combining liquidity, duration, currency and non-government risk, Risk Management for Central Bank Foreign Reserves, European Central Bank.
- International Monetary Fund (2021). IMF Database on Foreign Exchange Reserves, <https://data.imf.org/?sk=E6A5F467-C14B-4AA8-9F6D-5A09EC4E62A4>, viewed May 2021.
- International Monetary Fund. (2013). International Reserves and Foreign Currency Liquidity: guidelines for a data template – Washington, D.C.: International Monetary Fund, ISBN: 9781484324318 (Web PDF), <https://www.imf.org/external/np/sta/ir/IRProcessWeb/pdf/guide2013.pdf>.

- International Monetary Fund. (2020). Annual Report on Exchange Arrangements and Exchange Restrictions 2019, Washington, DC: IMF, ISSN (Online) 0250-7366, <https://www.imf.org/en/Publications/Search?series=Annual%20Report%20on%20Exchange%20Arrangements%20and%20Exchange%20Restrictions&when=During&year=2020>
- Ito, H. and McCauley, R. (2019). The currency composition of foreign exchange reserves, BIS Working Papers No 828, Monetary and Economic Department, Bank for International Settlements, December 2019, <https://www.bis.org/publ/work828.pdf>
- Jarolímková, L. and MIECAT Project Team. (2021). Interpretation of European Cultural Heritage in Tourism, Guidelines, Prague University of Economics and Business, Oeconomica Publishing House – Prague 2020, ISBN 978-80-245-2392-7, https://www.researchgate.net/publication/348634655_Guidelines_Interpretation_of_European_Cultural_Heritage_in_Tourism.
- Karamelska, T. (2019). Religiozno motivirani naglasi v bulgarskoto obshtestvo, V: Sbornik "European tsennosti: Novata konstelatsia", Sastavitelsto i nauchna redaktsia George Fotev, Nov bulgarski universitet, pp. 449-457, ISBN: 978-619-233-065-1)
(Карамелска, Т. (2019). Религиозно мотивирани нагласи в българското общество, В: Сборник „Европейските ценности: Новата констелация“, Състав. и науч. ред. Георги Фотев, Издателство на Нов български университет, с. 449-457, ISBN: 978-619-233-065-1).
- Nikolova, I. (2018). Foreign Exchange Risk in Economy: Theoretical and Practical Dimensions, Publishing House of New Bulgarian University, ISBN 978-619-233-028-6.
(Николова, И. (2018). Валутният риск в икономиката: теоретични и практико-приложни измерения, издателство на Нов български университет, ISBN 978-619-233-028-6)
- Nikolova, I. (2019). Foreign Exchange Reserves and Economic Policy Implementation, Yearbook "Economics Nd Business", Department of Economics, New Bulgarian University, ISSN 2534-9651, pp. 148-154, <http://eprints.nbu.bg/4316/>.
(Николова, И. (2019) Международните валутни резерви и прилагането на икономическата политика, Годишник „Икономика и бизнес“ на департамент „Икономика“, Нов български университет, ISSN 2534-9651, с. 148-154, <http://eprints.nbu.bg/4316/>)
- Nikolova, V. and Angelov, A. (2021). Causality between Government Expenditure and Economic Growth in Bulgaria, Romania, Slovenia, Croatia, and Greece, 68th International Scientific Conference on Economic and Social Development, Aveiro, Portugal, 24-25 May 2021, https://www.researchgate.net/publication/352006379_Nikolova_V_Angelov_A_2021_Causality_between_government_expenditure_and_economic_growth_in_Bulgaria_Romania_Slovenia_Croatia_and_Greece_Economic_and_Social_Development_Book_of_Proceedings_68th_International_Scientific_Conference_on_Economic_and_Social_Development
- OECD. (2020). COVID-19 and the global capital flows, OECD Policy Responses to Coronavirus (COVID-19), July 2020, <https://www.oecd.org/coronavirus/policy-responses/covid-19-and-global-capital-flows-2dc69002/>
- Pancheva, S. (2015). Danachno schetovodstvo, Chast 1, Avangard Prima, Sofia, ISBN 978-619-160-540-8, in Bulgarian.
(Панчева, С. (2015). Данъчно счетоводство, Част 1, Авангард Прима, София, ISBN 978-619-160-540-8.)
- Petkova, I. (2007). Finanzinstrumente und Maerkte: Ausgewaehlte Entwicklungen, ISBN 978-954-874-504-8.
- Petkova, I. (2010). Alternativni investitsii, Izdatelstvo na VUZF, ISBN 978-954-925-807-3.
(Петкова, И. (2010). Алтернативни инвестиции, Издателство на ВУЗФ, ISBN 978-954-925-807-3).
- Romero, A. (2005). Comparative Study: Factors that Affect Foreign Currency Reserves in China and India, Illinois Wesleyan University, Economics Department, Honors Projects Paper 33, http://digitalcommons.iwu.edu/econ_honproj/33
- Stoichkova, O. (2019). Culture Financing Models, In: Conference Proceedings XII. International Balkan and Near Eastern Congress Series on Economics, Business and Management, Plovdiv, Bulgaria, April 20-21, 2019, pp. 453-459, ISBN 978-619-203-259-3, http://www.ibaness.org/conferences/plovdiv_2019/ibaness_plovdiv_proceedings_draft_7.pdf.
- Stoichkova, O. (2020). Corporate Social Responsibility in Bulgarian Higher Education, In: New Knowledge, Journal of Science, Volume 9, No1 (2020), pp. 7-10, ISSN 2367-4598 (Online) and ISSN 1314-5703 (Print), <http://science.uard.bg/index.php/newknowledge/issue/view/39/showToc>, in Bulgarian.
(Стоичкова, О. (2020). Корпоративната социална отговорност във висшето образование в България, В: Сп. „Ново знание“, Том 9, No1 (2020), с. 7-10, ISSN 2367-4598 (Online) and ISSN 1314-5703 (Print), <http://science.uard.bg/index.php/newknowledge/issue/view/39/showToc>)

- Stoichkova, O. (2020a). The Role of Gold in Conditions of Economic Crisis, In: Conference Proceedings XIV. International Balkan and Near Eastern Congress Series on Economics, Business and Management, Plovdiv, Bulgaria, September 26-27, 2020, pp. 419-424, ISBN 978-619-203-289-0, http://www.ibaness.org/conferences/plovdiv_2020/ibaness_plovdiv_proceedings_draft_5.pdf.
- Sunner, D. (2017). Trends in Global Foreign Currency Reserves, Bulletin, September Quarter 2017, Reserve Bank of Australia, ISSN 1837–721 (Online), <https://www.rba.gov.au/publications/>.
- Tekev, G. (2003). Strategia za upravljenieto: centralizatsia I dezentralizatsia v Nov balgarski univestitet, Yearbook of Department of Economics and Business Administration "Economics, Psychology, Management, Business", ISBN 954-535-329-5, in Bulgarian.
(Текев, Г. (2003). Стратегия на управлението: Централизация и децентрализация в Нов български университет, В: Годишник на Департамент "Икономика и бизнесадминистрация" -"Икономика, психология, управление, бизнес", ISBN 954-535-329-5.)
- Tekev, G. (2015a). Universitetat I biznesat имат общи задачи, Economics Journal, No 49 (2015), ISSN 1314-376X, <https://www.economic.bg/bg>, in Bulgarian.
(Текев, Г. (2015а). Университетът и бизнесът имат общи задачи, сп. Икономика, бр. 49/ 2015, ISSN 1314-376X, <https://www.economic.bg/bg>)
- Tekev, G. (2015). Savremenni formi na organizatsia I upravljenie na universitetskata institutsia. Prehodat kam predpriemachеско-mreјovi universitet, Nov balgarski universitet, <http://eprints.nbu.bg/>.
(Текев, Г. (2015). Съвременни форми на организация и управление на университетската институция. Преходът към предприемаческо-мрежови университет, Нов български университет, <http://eprints.nbu.bg/>.)
- Vaniček, J., Šenková, A., and Jarolímková, L. (2021). Tourism and the COVID19 Global Pandemic – Analysis of Opinions of Czech and Slovak Tourism Students, SHS Web of Conferences 92, 010(2021) Globalization and ts Socio-Economic Consequences 2020, <https://doi.org/10.1051/shsconf/20219201054> and https://www.researchgate.net/publication/348460103_Tourism_and_the_COVID-19_Global_Pandemic_-_Analysis_of_Opinions_of_Czech_and_Slovak_Tourism_Students
- World Economic Forum. (2021). The Global Risks Report 2021, Insight Report, 16th edition, <https://www.weforum.org/reports/the-global-risks-report-2021>, viewed June 2021.