

Analysis of the Potential Impact of Covid 19 Pandemic on Vietnamese Export



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ABSTRACT: The Vietnam's export volume of goods and services has changed strongly, and achieved positive growth over the years. However, the emergence of the Covid-19 pandemic has caused a lot of serious consequences to all socio-economic fields of many countries in general and of Vietnam in particular. This research aims to identify and measure the potential impacts of Covid-19 pandemic on factors affecting export in Vietnam through application of quantitative method by REM (Random effect model). It has found that GDP of import nations, population, Covid 19 have positive relationship with export performance whereas FDI has negative effect. The results will be a solid foundation for making recommendations to boost Vietnam's exports in the new normal period after Covid 19.

KEYWORDS: Export, Covid-19 pandemic, GDP, FDI, Vietnam.

1. INTRODUCTION

Along with the change in foreign policy and international integration, Vietnam has become one of the countries with the highest export growth rates in the world. Vietnam's export products are relatively diverse with thousands of products ranging from raw products to processed products and high-tech products. Export volume in the period 2001-2020 has high growth, the export value increases by about 18.76 times, from 15 billion USD in 2001 to 281.5 billion USD in 2020 (Custom Office, 2020).

Actually, in 2020, the world witnessed negative influences of the Covid-19 pandemic on every socio-economic field, every major economy faced the deepest and worst recession in many decades. The occurrence of the Covid-19 epidemic has caused negative effects on economic activities, of which goods import and export were quite seriously affected. . These difficulties have made countries tend to use domestic products instead of imported products when implementing the measure of border closure to prevent epidemics. Therefore, many countries have used trade protection measures and technical barriers to strengthen the protection of domestic products, especially agricultural and aquatic products. In the context of a risky and unstable world economy, there existed a decline in global trade, and a drop in export activities of many countries compared to the previous year, Vietnam still maintained a positive export growth rate in 2020. The research "The impacts of Covid-19 pandemic on Vietnam's export" aims to point out the factors affecting export volume by qualitative and quantitative methods. The results of this research together with in-depth qualitative and quantitative studies will be a solid foundation for providing solutions to boost Vietnam's export in the future.

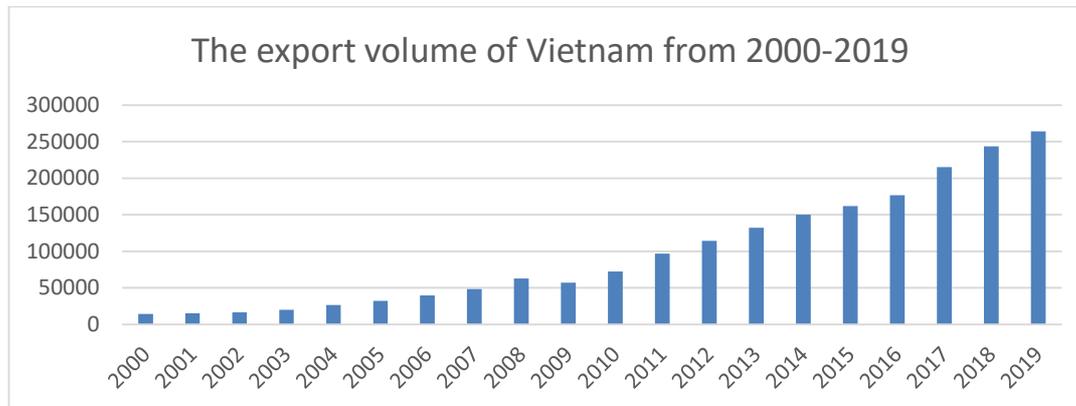
2. OVERVIEW OF VIETNAM EXPORT FROM 2000 TO 2020 AND ASSESSMENT OF THE IMPACT OF COVID – 19 ON VIETNAM EXPORT

In the period from 2000 to 2011, Vietnam has not stopped making efforts to integrate into the international economy, so export activities have continuously increased in output and expanded in scale. Export volume during this period has positively contributed to the country's socio-economic development (Doan, 2012). Vietnam's export volume in the period 2010-2014 grew in both size and growth rate (maintained at over 10%). In addition, export volume in the period 2016-2019 also grew significantly, from 176.58 billion USD in 2016 to 264.27 billion USD in 2019. On average, export volume increased by 13.1%/year (Total export volume, Bureau of Statistics, 2019). In 2020, under the impact of the Covid-19 pandemic, while the economies of many countries in the region and the world declined sharply, Vietnam is one of the rare countries that keeps a positive growth momentum. The growth rate for the

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whole year 2020 is 2.91%, although it is the lowest growth rate in the past 10 years, but is considered the highest in the world in the context of the economic crisis of countries. Positive contributions to economic growth include export activities (Vu, 2021).

Figure 1: The export volume of Vietnam from 2000-2019



Source: General Statistics Office of Vietnam, 2021

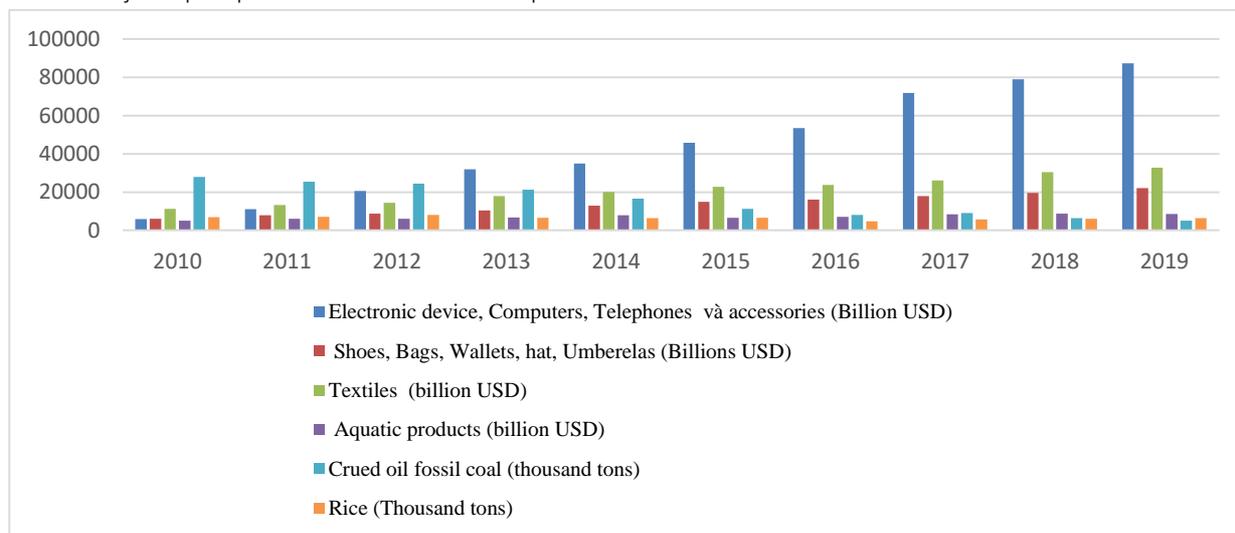
Assessment of Export Situation of Vietnam by Economy Areas from 2000 To 2020

The years 2000-2006 was 19.3%, export volume of Vietnam is only behind China in the region. Exports have increased from a small share of gross national income (24% of GDP in 1991) to 64.9%, ranking fifth among Southeast Asian countries, sixth in Asia and eighth in the world. . In 2007, the business community with foreign direct investment had trade surplus mainly through import and export (FDI) activities. In the first 11 months of 2019, export activity remained high. Export volume was estimated at 241.42 billion USD in the first 11 months of 2019, up 7.8% over the same period in 2018. According to experts, the domestic economic sector is a bright spot in the difficult context. Currently, with an export volume of 60.80 billion USD, it is a remarkable effort. In addition, although the Covid-19 epidemic continues to adversely affect import and export activities, the trade balance of goods in 8 months still had a trade surplus of 11.9 billion USD, proving that the Government and the business community of Vietnam have very cautious in facing difficulties to maintain the country's development momentum (Son, 2020).

Assessment of Export Situation of Vietnam by Industry from 2000 To 2020

In the period 2000-2006, Vietnam's export structure changed in a positive direction. Although the proportion of agricultural - forestry - fishery products decreased slightly from 24.3% in 2001 to about 20.5% in 2006, other groups still increased steadily. From 2006 to 2010, some items with high export volume in this period were: Textile and garment ranked first with an average of 8.6 billion USD/year, a sharp increase compared to 3.5 billion USD of the period.

Figure 2: some major export products of Vietnam in the period 2010-2019



Source: General Statistics Office of Vietnam, 2021

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From 2010 to 2019, in terms of export product structure, Vietnam had a positive shift in the structure of exports in the direction of reducing the proportion of fuel exploitation products and increasing the proportion of commodity groups. Industrial production and processing. Accordingly, the proportion of fuel extraction products gradually decreased from 11% in 2010 to 6% in 2019. According to inter-ministerial data (in 2020), export volume in 2020 is estimated at 280 billion USD, increased by 5.9% over the previous year; trade surplus reached about 19.1 billion USD. 8 items achieved export volume of more than 10 billion USD and 31 items reached over 1 billion USD.

3. MODEL EXAMINING THE EFFECT OF COVID 19 PANDEMIC ON THE EXPORT OF VIETNAM

3.1. Model and hypothesizes

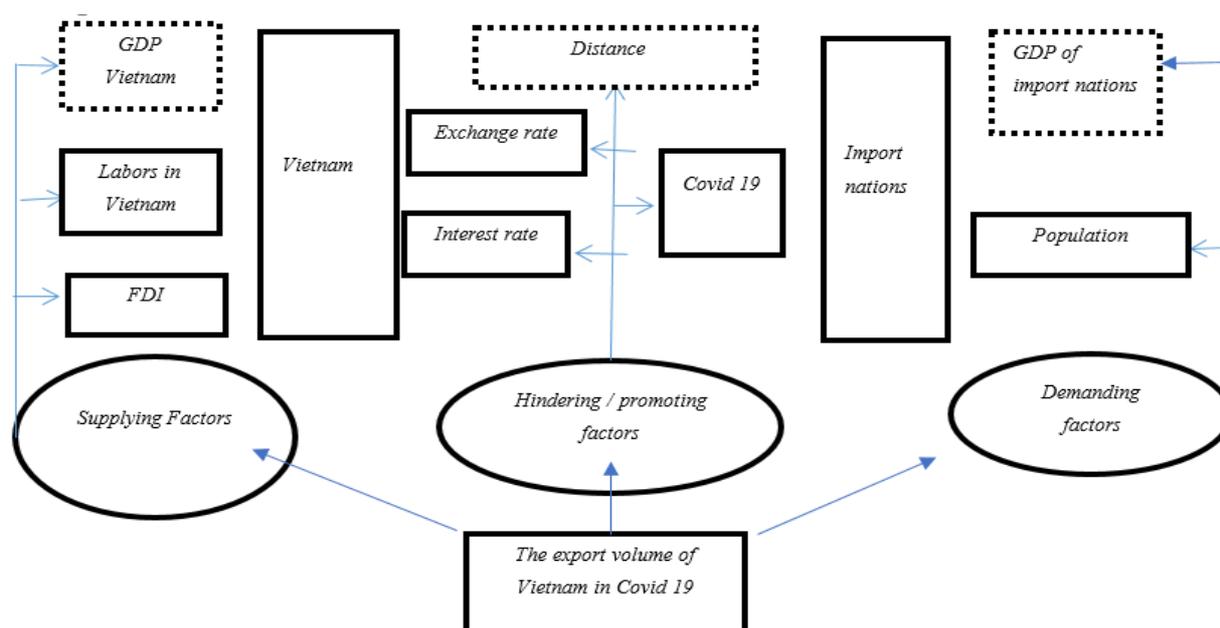
In foreign studies, in Akblaev et al.'s (2020) study on the effects of the Covid 19 pandemic, in chapter seven the authors pointed out factors affecting or driving exports, which countries have to suspend exports and products that are temporarily suspended from export. The study assessed these impacts on the economy on many aspects such as exports, employment, and supportive policies of countries during the pandemic (AkbulaeV, et al, 2020).

In the study by Vitenu-Sackey and Richard Barfi (2021), the authors assessed the impact of the pandemic on poverty reduction and global GDP by looking at the heterogeneous effects of each country. Research data were collected from 170 countries, and the study used econometric panel techniques such as OLS and squared regression to analyze variables. Variables included in the study include total COVID-19 cases, total deaths, rigor index, human development index, and gross domestic product per capita. The results of the study have shown that the severe condition of many people and the rise of this disease have negatively affected poverty reduction and economic growth (Sackey and Barfi, 2021).

For domestic studies, the research of Prof. Dr. Nguyen Quang Thuan (2020) assessed the impact of the COVID-19 pandemic on the world economy in general and Vietnam's economy in particular. The author has pointed out that the COVID-19 pandemic has strongly affected the global value chain, foreign direct investment (FDI), financial system, import and export volume, labor situation, etc. The results of the study show that COVID-19 has had an impact on increasing poverty and near-poor rates in terms of income and temporarily reducing incomes of households and workers, negatively affecting economic growth. , commercial activities, labor, employment and income of employees (Nguyen, 2020).

In another study, in his research, Dr. Bach Hong Viet (2020) analyzed the impact of the COVID-19 pandemic on economic growth and sustainable development in Vietnam. The author has pointed out that trade, investment, tourism, production and business activities in the world have stalled. Facing that situation, all countries have to launch domestic economic support packages (Bach, 2020).

Based on the research reviews of Akblaev et al. (2020), Vitenu-Sackey and Richard Barfi (2021); Prof. Dr. Nguyen Quang Thuan (2020); Dr. Bach Hong Viet (2020), we set up a research model for the topic of the current situation of Vietnam's export volume in the context of the Covid 19 pandemic and some solutions, specifically the research model as shown in the figure below. Here:



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To evaluate the impact of the export of Vietnam in the Covid 19 pandemic, researchers added the dummy variable to the model. The dummy variable equals 1 when the Covid pandemic occurred, in contrast, its value equals 0 before the Covid pandemic occurred. Moreover, the dependent variable is the export rate of Vietnam and independent variables containing GDP of import nations, exchange rate, the population of import nations, GDP of Vietnam, the number of laborers in Vietnam, and FDI-foreign developing investment. Researchers used panel data in the period from 2000 to 2020 of the top 10 countries which have the highest FDI to Vietnam and have the highest export rate from Vietnam (namely, Korea, China, Japan, Singapore, Malaysia, Thailand, UK, Netherlands, USA, Australia). Additionally, data were gathered from reliable sources such as the General Statistics Office, Ministry of Trade, Custom Office, and World bank.

The equation of the model is described below:

$$EXP_{vi} = GDP_v + Lb_v + FDI_v + Er_{vi} + Irv + GDP_i + PP_i + COVID$$

Variables	Meaning	Examined hypothesizes
<i>EXP_{vi}</i>	The export rate of Vietnam	Dependent variable
<i>GDP_v</i>	GDP of Vietnam	<i>H1: The relationship between the export rate of Vietnam and GDP of Vietnam is significant</i>
<i>Lb_v</i>	Labors in Vietnam	<i>H2: The relationship between The export rate of Vietnam and the number of labors in Vietnam is significant</i>
<i>FDI_v</i>	Foreign developing investment	<i>H3: The relationship between the export rate of Vietnam and foreign developing investment is significant</i>
<i>Er_{vi}</i>	Exchange rate to USD	<i>H4: The relationship between the export rate of Vietnam and the exchange rate to USD is significant</i>
<i>Irv</i>	Interest rate	<i>H5: The relationship between the export rate of Vietnam and the interest rate is significant</i>
<i>GDP_i</i>	GDP of import nations	<i>H6: The relationship between the export rate of Vietnam and GDP of import nations is significant</i>
<i>PP_i</i>	The population of import nations	<i>H7: The relationship between the export rate of Vietnam and population import nations is significant</i>
<i>COVID</i>	Covid 19 pandemic	<i>H8: The relationship between the export rate of Vietnam and population import nations is significant</i>

3.2. Methodology

The aim is to analyze the influence of factors such as GDP, exchange rate, interest rate, the population of the importing country, number of workers in Vietnam and FDI source on export volume of Vietnam in the context of Covid 19 through econometrics researchers tested the fixed effect of FEM and random REM to evaluate the correlation of the model.

Research data are collected by year, in the period from 2000 to 2020. Details of research data sources are taken from the website of the General Statistic Office, World bank, IMF database. Based on the collected data sources, the author conduct synthesis on Microsoft Excel software. Through the test, the author will determine the degree of correlation between the variables, consider the fit through REM test analysis (if the P-value > 0.05, there is no difference in variance and vice versa). P-value < 0.05, there is a difference in variance). Regression analysis method through statistical software Stata 14 was used. In addition, the study will determine the influence of the factors through the coefficient $P > |z|$, the factor has the coefficient $P > |z|$ the larger, it can be commented that that factor has a higher degree of influence than other factors in the research model.

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3.3. Result

Table 1 Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
expvi	210	916946.3	6571238	227.3	7.71e+07
gdp_i	210	30767.5	19669.87	959.3725	68150.11
erUSD	210	5210.837	14534.68	.683075	68150.11
poplation	210	2.02e+08	3.89e+08	4027887	1.40e+09
covid	210	.0571429	.23267	0	1
gdpv	210	1431.338	793.4908	390.0933	2715.276
vnlabours	210	47769.49	5883.078	37075.3	54659.2
fdiv	210	20810.46	16896.47	1913.985	71726.8
irv	210	21378.56	16384.79	2762.8	71726.8

Source: Calculating result from Stata 14

As we can see obviously that it has 210 observations of each variables and the correlation among variables is high so these variables can be used because values in table 2 are higher than 50%.

Hence, researchers applied the REM (RANDOM-EFFECTS MODEL) to test the influence of variables and predictors variables based on the Hausman technique. In addition, this model is suitable to evaluate with the dummy variables.

Table 2: Hausman Test

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Test: Ho: difference in coefficients not systematic

      chi2(7) = (b-B)' [(V_b-V_B)^(-1)] (b-B)
              =      10.81

      Prob>chi2 =      0.1473 (V_b-V_B is not positive definite)
    
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Source: Calculating result from Stata 14

As we can see that the P-value (Prob>chi2 = 0.1473) is higher than 0.05 so the REM model is the most effective model. Further, the REM model is completely suitable because there are no heteroscedasticity and autocorrelation in this model (appendix1,2). Based on the REM model, this table illustrates evaluation relationships between the dependent variable and other independent variables. In this REM model, the P-value is lower than 0.05 (Prob > F = 0.0000) and the R-squared = 0.5964 (represents that 59,64% of the variance for a dependent variable (Export volume) is explained by independent variables in a regressive model) then some important notes could be made: The positive significant relationship between the export volume of Vietnam and (i) GDP of import nations; (ii) population of import nations; (iii) Covid 19 pandemic. On the other hand, the relationship between FDI and the export volume of Vietnam is meaningful but negative. Other dependent variables do not impact the export volume of Vietnam because their P-values are higher than 0.05 so the relationship between these variables and the export volume is not meaningful.

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Table 3: REM Regression result

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Random-effects GLS regression              Number of obs   =       210
Group variable: countries1                Number of groups =       10
R-sq:                                      Obs per group:
    within = 0.3474                        min =           21
    between = 0.5964                       avg =          21.0
    overall = 0.3547                       max =           21
corr(u_i, X) = 0 (assumed)                Wald chi2(8)    =      110.50
                                           Prob > chi2     =       0.0000
-----+-----
      expvi |      Coef.   Std. Err.      z    P>|z|    [95% Conf. Interval]
-----+-----
      gdp_i |    43.5024   22.75348    1.91  0.046   -1.093597   88.09839
      erusd |   -23.70693  26.87754   -0.88  0.378   -76.38593   28.97207
  population |   .0027386   .0010509    2.61  0.009    .0006789   .0047983
      covid |   1.50e+07   1968540    7.61  0.000   1.11e+07   1.88e+07
      gdpv_i |  -187.7947   1968.267   -0.10  0.924   -4045.528   3669.938
  vnlabours |   -18.5279   256.987    -0.07  0.943   -522.2131   485.1573
      fdiv_i |  -123.1541   68.00928   -1.81  0.030   -256.4498   10.14167
      irv_i |   120.5743   74.04435    1.63  0.103    -24.55    265.6985
      _cons | -569046.2   9569842   -0.06  0.953   -1.93e+07   1.82e+07
-----+-----
      sigma_u |           0
      sigma_e |  5319129.8
      rho     |           0   (fraction of variance due to u_i)
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Source: Calculating result from Stata 14

4. DISCUSSION AND RECOMMENDATION

4.1. Discussion

Based on the results of the REM model test, the author concludes that the GDP of the importing country, the population of the partner country and Covid 19 have a positive impact on Vietnam's export volume, but the capital FDI has a negative impact on Vietnam's export volume. According to research by Mahadika, Kalayci and Altun (2017) on the relationship between GDP and population of importing country and export volume of exporting country. First, the authors have shown that the GDP of the importing and exporting country will partially reflect the trade balance of the two countries as well as to assess the trade deficit or trade surplus of that country (Mahadika, et al, 2017).). In addition, in fact, GDP affects Vietnam's exports to partner countries. This means that the higher the economic growth of other countries, the more Vietnam tends to export to these partner countries. Next in this study, the authors also show that the population of importing countries increases, thus increasing the demand for goods, thus leading to an increase in export goods, making export volume more difficult. Exports of the exporting country increased (Mahadika, et al, 2017). In fact, our main partner countries such as China, the US or Europe have significant population growth that makes the demand for goods increase, so Vietnam tends to export a lot of goods. Into these markets. Especially during the Covid 19 pandemic, while these partner countries have not yet controlled the epidemic, causing production to stagnate and domestic goods not being able to meet the needs of the people, Vietnam has taken preventive measures. Very good service and economic stability make the production of goods take place almost continuously and smoothly. Therefore, even during the pandemic, the proportion of Vietnam's exports to these partner countries in 2020 will still grow steadily, specifically, the proportion of exports to China will increase by 17.9% compared to 2019, similar to the US. Increased by 25.7%, (GSO, 2020).

According to the calculation of the test model, FDI capital has a negative impact on Vietnam's export volume, but according to research by Nguyen Phu Tu and Huynh Cong Minh (2010), the two authors show that FDI capital have a positive impact on Vietnam's export volume. Specifically, in the report of the Asian Development Bank, in terms of exports, the FDI sector accounts for more than 70% of total exports (Asian Development Bank. 2021). In fact, in terms of export volume, Samsung alone contributed 25% of export volume (Huong, 2021).

According to the initial hypothesis, the author hypothesizes that the Covid 19 epidemic will have a negative impact on Vietnam's export volume, but according to the test calculation of the REM model, Covid 19 is a positive factor. to the growth of Vietnam's

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export volume. Specifically, in the research of author Bach Hong Viet (2020), research has shown that in the context of the pandemic when countries are still struggling to fight the epidemic, Vietnam has well controlled the Covid 19 epidemic, making the situation worse. The economic model as well as the production of goods is always smooth and stable, creating a foundation for increasing export volume. In fact, according to the report of the General Department of Customs on Vietnam's export situation in 2020, the total export value reached 282.65 billion USD, up 7.0%, equivalent to 18.39 billion USD increase compared to with the previous year (Vietnam Customs, 2021).

4.2. Recommendation

In the context of COVID-19 epidemic's complicated situation, Vietnam's import and export volume in 2020 still reached 543.9 billion USD, an increase of 5.1% compared to 2019, Vietnam continued to remain the balance of trade, recorded an export surplus for 5 consecutive years. Therefore, in order to make export activities be more smoothly next year, along with the recovery of markets, the Ministry of Industry and Trade should focus on synchronously and effectively implementing FTAs and CPTPP, RCEP agreements to expand export markets; effectively control imports; diversify export markets and products; restructure export industries more effectively. It is because such agreements continue to be a driving force for exports, a great opportunity to promote the recovery process in Vietnam, especially in the commercial sector.

In addition, the export volume of agricultural, forest and aquatic products and products in the processing industry group such as phones and components, machinery and equipment is having high prospects. Therefore, it is necessary for Vietnam to promote the development of high technology to create more products with higher added value as well as to open the export door of these products thanks to the effect of FTAs.

Moreover, the FDI sector - due to the negative impact of the COVID-19 pandemic on the world economy, disrupting global and regional supply chains, the domestic economic sector saw a decrease in investment growth but the increase in export volume is still relatively good. For this sector, the Government should have supportive policies such as tax exemption, reduction, social insurance payment extension, interest rate reduction for domestic enterprises in the situation of difficulties and negative shocks from outside.

5. CONCLUSION

In 2020, under the impact of the Covid-19 pandemic, while the economies of many countries in the region and the world suffered a sharp decline, Vietnam is one of the rare countries that can maintain positive growth. The growth rate for the whole year of 2020 is 2.91%, although it is the lowest growth rate in the past 10 years, it is in the group of highest growth rate in the world. Contributing positively to economic growth must include import and export activities. Compared to 2019, the export growth rate in 2020 is lower, but it is still considered the most stable growth in all economic activities. Export of many key products is still a positive contributor to export volume. Therefore, this research aims to identify and measure the impact of the Covid-19 pandemic on Vietnam's export volume as well as to make recommendations for policymakers to promote Vietnam's exports in the coming time. As a result, the research found that four factors were having significant effects on the export rate of Vietnam, including foreign developing investment (FDI), GDP of import nations, the population of import nations, and the Covid-19 pandemic. The export rate of Vietnam also had a significant effect on the national GDP. Besides, the relationships between the number of labor in Vietnam, the exchange rate to USD, the interest rate and the export rate of Vietnam were not significant.

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APPENDIX

Appendix 1: Breusch and Pagan Lagrangian multiplier test for random effects

Test: $\text{Var}(u) = 0$ $\chi^2(1) = 0.00$

Prob > $\chi^2 = 1.0000$

Appendix 2: Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation $F(1, 9) = 0.080$

Prob > F = 0.7831