The Role of Integration in Dealing with Covid Pandemic of Vietnam'exports

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Abstract: *When telling the Covid pandemic, perhaps we all imagine an extremely difficult period for humanity. Vietnam is a small country with a large economic openness and is also seriously affected by this pandemic. However, Vietnam's international trade (export) did not decline during the pandemic period, on the contrary increased by more than 10% in 2020 and 2021. The article uses a gravity model with data exported to 163 countries, but no evidence of Covid's impact on exports could be found. ASEAN is still an important partner of Vietnam in international trade. However, when evaluating the role of FTA members in Vietnam's exports during the covid pandemic, the article do not find significantly statistic evidence.*

I.   INTRODUCTION

Vietnam has implemented economic reforms since 1986. Since then, Vietnam has continuously opened its doors, liberalized the economy, and integrated with the world. To implement economic liberalization, Vietnam has joined as an official member of the World Trade Organization (WTO) and signed many multilateral and bilateral free trade agreements.

Vietnam's integration process was marked with the first milestone being joining ASEAN in 1995, then Vietnam and ASEAN signed trade agreements with China in 2004, and with Korea in 2006. In 2007, Vietnam Nam officially joined the WTO, marking a new milestone in the process of economic integration and liberalization. Vietnam then signed an agreement with Japan, and together with ASEAN signed agreements with India, Australia, and New Zealand in 2010.

At the end of 2019, Covid.19 struck and no one or any country had time to react. An epidemic that has never appeared before, its serious impact is taking place on a global scale, causing extremely negative impacts on human life. The process of social block and border closure is taking place everywhere on a global scale, disrupting economic and social activities and seriously disrupting people's lives.

There are many studies related to the impact of Covid.19 on international trade, such as Liu et al. (2021) analyze the impact of Covid.19 on China's imports and find that China's imports decrease during the Covid period but exports increase and the impact of Covid.19 was not the same across industries. Espitia et al. (2021) identify the vulnerability for traders to partner shocks or domestic shocks when participating in global value chains. Le (2021) analyzes the impact of Covid.19 on international trade in OECD countries and finds that Covid.19 affects exporting countries negatively and positively on exporting countries and the extent of the impact. The negative effect is greater than the positive, causing the trade balance to be negatively affected. Jaffur et al. (2023) examine the impact of Covid.19 containment measures on Mauritius' international trade and find that both Mauritius's exports and imports are negatively affected by these measures. And the stricter the measures, the greater the impact. Cariola (2023) identifies the impact of restrictive measures and the number of deaths due to the impact of the Covid.19 pandemic on Italian trade. However, in the article, the author separately evaluates the impact of restrictive measures taken by Italy and by trading partners and finds that when Italian restrictive measures were issued, they did not affect trade of Italy, but on the contrary, if the partner implements restrictive measures, it will affect Italian trade. Other authors such as Evenett et al. (2022), Cengiz and Manga (2022) and Wang and Mo (2022) also analyze the influence of Covid.19 pandemics on the impact of international trade.

However, there are not many studies on the impact of Covid on international trade in relation to free trade agreements (FTAs). Nicita and Saygili (2021) conduct research on the impact of Covid.19 on exports. It compares the differences between developed countries and developing countries, between the levels of cooperation of members in trade agreements. The results indicate the role of FTAs in maintaining members' export flows. However, the article only uses data from 2020 and 2021, then compares export flows between countries that have signed FTAs with countries that have not signed FTAs. Not based on the interaction between covid events and FTAs over longer periods of time.

Faced with that situation, the question is whether the signed trade treaties will help Vietnam maintain normal international trade activities as before the pandemic? Does it bring any priority or advantage over the condition of an exogenous shock?

This article aims to evaluate Vietnam's export activities during the covid.19 pandemic and consider whether the signed trade agreements create advantages in conditions of exogenous shocks compared to Do countries not sign trade agreements?

To answer the research question, the article uses Vietnam's export data extracted from CEPII for all countries in the world and the gravity model. The analysis results show that when covid appeared and in the next two years, Vietnam's exports were not affected. Although the estimated results had a negative sign, the P_value was not significant. The trade agreement still creates basic advantages for Vietnam's exports. However, the estimated results of trade agreements under the condition Covid.19, this paper do not find the evidence that improves trade agreements giving Vietnam any advantage compared to countries that have not signed trade agreements.

The remainder of the article is structured as follows: Part 2 is Vietnam's economic integration process; Part 3 is data; Part 4 is the methods and results; and the last part is conclusions.

II.   VIETNAM'S ECONOMIC INTEGRATION PROCESS

Vietnam marked the first milestone in the economic integration process in 1995. At that time, it joined the ASEAN bloc. Then, along with ASEAN countries, Vietnam signed a series of FTAs with major partners including China (2004), Korea (2006), Japan (2008), India (2010), and Australia and New Zealand. Zealand (2010). In 2007 Vietnam became an official member of the WTO.

Vietnam's opening and integration process is also evaluated through the economic openness index. The economy's openness index is calculated as the import plus the export ratios compared to GDP. Since 2005, the openness of Vietnam's economy has increased steadily over the years. Especially during the few years of the Covid epidemic, Vietnam's openness not only did not decrease but also increased compared to previous years. This proves that Vietnam has truly integrated deeply into the world economy and the total import-export value compared to GDP is still increasing steadily, even in the context of the Covid epidemic raging everywhere in the world. Vietnam's integration level from 2005 onwards is provided specifically in Figure 1.
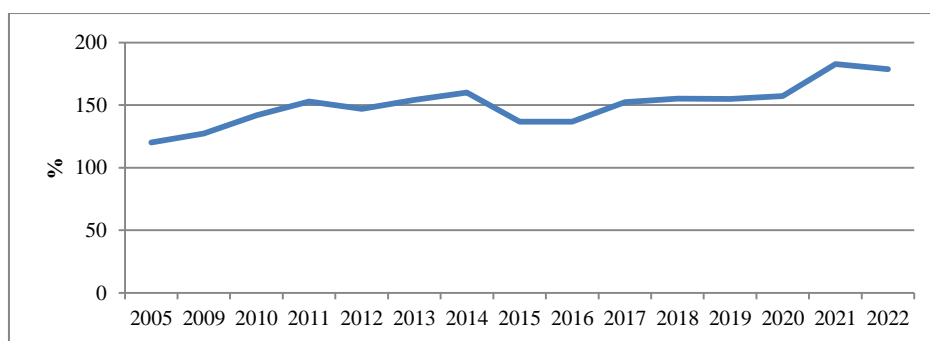

Figure 1. The openness index of Vietnam during 2005-2022

III.   DATA

Data to analyze the article comes from CEPII since 1995. This data includes two-way trade between countries around the world, including Vietnam. According to this data, Vietnam exports to many countries and territories. The number of countries and territories that Vietnam exports by 2021 is more than 170 countries and territories. In the article, Vietnam's export data to 163 countries and territories from 1995 to 2021 is used.

In addition, the article also uses GDP data of Vietnam and other countries as variables on the size of exporting and importing countries that affect Vietnam's export value also from CEPII. Data on FTA and ASEAN countries as well as the signing time of these FTAs are taken from the report of VCCI (Vietnam Chamber of Commerce and Industry).

Before estimating, we briefly review Vietnam's export growth since 1995 and the variables used in the model.

Vietnam's total export value has increased steadily over the years, with a very impressive increase in value. During the entire research period, only in 2009 did Vietnam have negative export growth. Year 2009 was the year of the global financial crisis, causing Vietnam's exports to decrease by 8.9% compared to the previous year. The details of export value and export growth are provided in Figure 2.
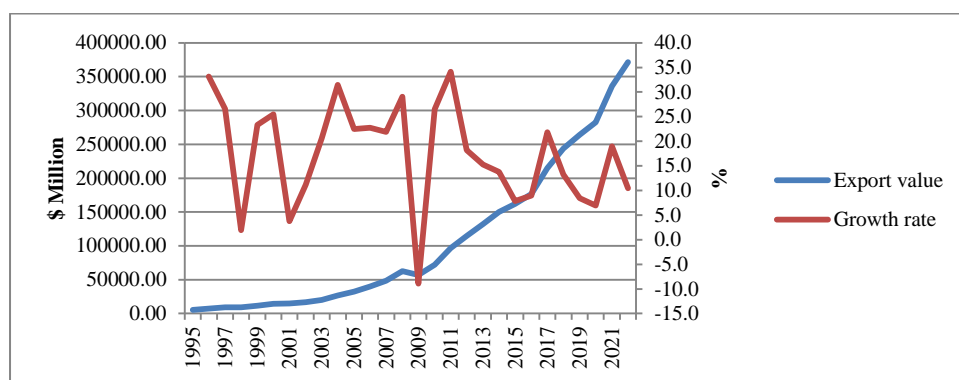
Figure 2. The export value and export growth during 1995-2021

A summary of the variables used in the model is provided in table 1, where X is the value of Vietnam's exports to countries and territories. GDP is the gross domestic production of exporting country i (Vietnam) and of exporting countries and territories from Vietnam. The export and GDP values in the table are taken as natural logarithms. The estimated sample has 4,301 observations.

Table 1. The summary of variables

Variable	Obs	Mean	Std. Dev.	Min	Max
lnX	4,301	9.71	3.11	0.08	18.42
lnGDP_i	4,301	18.37	0.88	16.85	19.71
lnGDP_j	4,301	17.09	2.36	9.65	23.86
covid	4,301	0.07	0.26	0.00	1.00
FTA	4,301	0.04	0.19	0.00	1.00
ASEAN	4,301	0.04	0.21	0.00	1.00

IV.   METHOD AND RESULTS

4.1. Data

To analyze the impact of Covid.19 as well as the role of trade agreements in overcoming the shock of Vietnam's exports, this article uses a gravity model with the importing country and Vietnam.

The article first examines the impact of Covid.19 on Vietnam's exports during the Covid period with the following model:

$$X_{ijt} = \beta_0 + \beta_1 GDP_{it} + \beta_2 GDP_{jt} + \gamma_j + \delta_t + \epsilon_{ijt} \quad (1)$$

Trong đó: X_{ijt} là giá trị xuất khẩu của nước i (Việt nam) sang các nước và vùng lãnh thổ (j) vào năm t. GDP_{it} là giá trị của tổng sản phẩm trong nước của nước i năm t; GDP_{jt} là giá trị của tổng sản phẩm trong nước của nước j năm t; γ_j is country-fixed effect; δ_t is year-fixed effect; ϵ_{ijt} is the error term.

The estimated results show that both the size of the exporters and importers impacts positively on the Vietnamese export flow as providing in Column 2 of Table 2. Now we add the Covid variable. This variable will capture the effect of Covid.19 pandemic on Vietnam's export. $COVID_{20-21}$ takes the value of one if years are 2020 and 2021, zero otherwise. And the model now becomes as function 2.

$$X_{ijt} = \beta_0 + \beta_1 GDP_{it} + \beta_2 GDP_{jt} + \beta_3 COVID_{20-21} + \gamma_j + \delta_t + \epsilon_{ijt} \quad (2)$$

The estimated result is presented in column 3 of Table 2. Although the coefficient is negative but the P_value is greater than 0.1; therefore, we do not have a clue to confirm the effect of Covid.19 on the export value.

The impact of Covid.19 on Vietnam's exports may be different in 2 years, so the article separates the impact of Covid.19 for each year by instead of $COVID_{20-21}$, equation 2 will change into $COVID_{20}$ and $COVID_{21}$ variables; the variables $COVID_{20}$ and $COVID_{21}$ take the value 1 if year is 2020 and 2021, respectively, and zero otherwise. And the estimated model will become model 3

$$X_{ijt} = \beta_0 + \beta_1 GDP_{it} + \beta_2 GDP_{jt} + \beta_3 COVID_{20} + \beta_4 COVID_{21} + \gamma_j + \delta_t + \epsilon_{ijt} \quad (3)$$

The estimation results of model 3 are presented in column 4 of Table 2. The estimation results show that the size of exporting and importing countries still has a positive impact on export flows. The estimated

value still has a negative sign but is not statistically significant. That is, there is no evidence to confirm that Covid.19 affects Vietnam's exports in 2020 and 2021.

To evaluate the role of Vietnam's trade agreements in the context of exogenous shocks such as the case of the Covid.19 pandemic, from model 3 we add two dummy variables: FTA variable and ASEAN variable. The ASEAN variable takes the value of 1 if the importing country is an ASEAN country including: Thailand, Singapore, Malaysia, Myanmar, Cambodia, Laos, Philippines, Brunei, Indonesia; The variable FTA takes the value of 1 if the importing country is China, Korea, Japan, India, Australia, and New Zealand at which they signed FTA with ASEAN. These are countries that have signed FTAs with Vietnam for over 10 years and are traditional trading partners of Vietnam. The estimation model used is model 4 as follows:

$$X_{ijt} = \beta_0 + \beta_1 GDP_{it} + \beta_2 GDP_{jt} + \beta_3 COVID_{20-21} + \beta_4 FTA_{jt} + \beta_5 ASEAN_{jt} + \gamma_j + \delta_t + \epsilon_{ijt} \quad (4)$$

The estimation results of model 4 are provided in column 5 of Table 2. With the above estimation results, it can be seen that ASEAN has been an important export partner of Vietnam for many years. Although many studies show that FTAs are only effective for a period of 10-15 years. After that period of time, the impacts of the FTA gradually decreased and were almost zero. However, Vietnam joined ASEAN from 1995 to present, the latest participating country to sign the ASEAN agreement was Cambodia in 1999, but ASEAN is still an important trade member with Vietnam, a major and traditional trading partner of Vietnam. The remaining FTA countries also have a signing period of over 10 years, and with the estimated results as in model 4, the estimated coefficient is not statistically significant, meaning no evidence is found to confirm that Vietnam Exports to these FTA countries outperform other countries.

Finally, we will consider whether in Covid.19 conditions, countries that sign FTA will create advantages over countries that do not sign trade agreements to overcome this shock. The research will add two new variables to model 4, the interaction variables between FTA and Covid.19 and ASEAN and covid.19 as in model 5.

$$X_{ijt} = \beta_0 + \beta_1 GDP_{it} + \beta_2 GDP_{jt} + \beta_3 COVID_{20-21} + \beta_4 FTA_{jt} + \beta_5 ASEAN_{jt} + \beta_6 FTA_{jt} COVID_{20-21} + \beta_7 ASEAN_{jt} COVID_{20-21} + \gamma_j + \delta_t + \epsilon_{ijt} \quad (5)$$

The interaction variable will help us see that, in the presence of Covid.19, will the countries signing the FTA agreement help Vietnam reduce its impact? That is, will exports to those countries increase in the presence of covid.19 compared to the case without Covid and compared to countries that have not signed agreements.

The estimation results are provided in column 6 and column 7 of Table 2. Through the estimation results, we can see that these quantified coefficients are not statistically significant, meaning the article did not find evidence to prove that that FTAs will help Vietnam increase exports in the context of Covid.19.

Covid.19 is a pandemic that has never occurred in modern human history. When it happens, all countries and territories are not proactive in dealing with it, or in other words, they all face many difficulties. Activities related to socio-economic life have been seriously disrupted, so the countries themselves do not know how to solve their problems in the context of both a closed borders and social block within each country. Therefore, to support or have an advantage in the export process to FTA member countries is also difficult.

Table 2. The estimated outputs of the models 1-5

VARIABLES	(1) lnX	(2) lnX	(3) lnX	(4) lnX	(5) lnX	(6) lnX
lnGDP_i	0.785***	0.785***	0.785***	0.785***	0.787***	0.787***
	(0.0668)	(0.0668)	(0.0668)	(0.0668)	(0.0669)	(0.0669)
lnGDP_j	1.261***	1.368	1.304***	1.368	1.342	1.342
	(0.0607)	(2.215)	(0.0615)	(2.215)	(2.215)	(2.215)
$COVID_{20-21}$		-0.307		-0.307	-0.229	-0.229
		(6.271)		(6.271)	(6.272)	(6.272)
$COVID_{20}$			-0.125			
			(0.120)			
$COVID_{21}$			-0.121			
			(0.123)			
FTA				0.224	0.201	
				(0.493)	(0.494)	
ASEAN				2.650***	2.661***	
				(0.437)	(0.437)	

ASEAN*COVID					-0.269	-0.269
					(0.296)	(0.296)
FTA* COVID					0.138	0.138
					(0.327)	(0.327)
Constant	-27.52***	-29.32	-28.23***	-29.32	-28.92	-28.92
	(1.100)	(37.26)	(1.120)	(37.26)	(37.26)	(37.26)
Observations	4,313	4,313	4,313	4,313	4,313	4,313
R-squared	0.892	0.892	0.892	0.892	0.892	0.892

*Note: Standard errors are in parentheses; * Significant at 10%, ** Significant at 5%; *** Significant at 1%. Coefficient estimates of importer fixed effects and year-fixed effects are not reported for brevity; X is export value; ln is the natural logarithm.*

V. CONCLUTIONS

Vietnam is a country with great openness and deep economic integration by participating in the WTO and becoming a member of many trade agreements around the world. Reducing import taxes not only creates motivation for domestic production capacity to develop through fierce competition with imported products but also creates conditions for exporting goods to become easier. The process of deep integration also causes impacts on Vietnam's export process when importing and exporting countries encounter shocks, especially the shock of the covid pandemic. This will cause Vietnam to face many difficulties in the process of exporting goods.

However, Vietnam's exports are a bright spot in economic activity. Export value will still grow by more than 6.9% in 2020 and 18.9% in 2021. Although Coivd.19 caused many difficulties for economic activities, Vietnam's exports still grew spectacularly. Exports to countries that have FTAs with Vietnam are still growing well, especially ASEAN countries. However, in conditions of huge exogenous shocks like Covid.19, FTA members also face many difficulties in maintaining normal economic activities.

REFERENCES

[1]. Cariola, G. (2023), "Trade in the time of COVID-19: an empirical analysis based on Italian data", *Working Papers*, Banca D'italia.

[2]. Cengiz, O., & Manga, M. (2022), "Impact of COVID-19 pandemic on exports: New evidence from selected European union countries and Turkey", *Asia-Pacific Journal of Regional Science*, Vol. 6, No. 3, p. 1195-1219

[3]. Espitia A, Mattoo A, Rocha N, Ruta M and D Winkler (2021), "Pandemic trade: COVID-19, Remote Work and Global Value Chains", *Policy Research Working Paper* no. WPS 9508. World Bank

[4]. Evenett, S., Fiorini, M., Fritz, J., Hoekman, B., Lukaszuk, P., Rocha, N., & Shingal, A. (2022), "Trade policy responses to the COVID-19 pandemic crisis: Evidence from a new data set", *The World Economy*, Vol. 45, No. 2, p. 342–364.

[5]. Jaffur, Z Khan, Tandrayen-Ragoobur, V. and Seetanah, B. (2023), "An Empirical Analysis of the Impact of COVID-19 on Trade: Evidence from a Small Island African Economy," *Journal of African Trade*, Vol. 10, No. 1, p. 79-92

[6]. Le Thi Ha (2021), "Impacts of COVID-19 Pandemic on International Trade in Goods of OECD Countries", *VNU Journal of Economics and Business*, Vol. 1, No. 2, p. 11-24

[7]. Liu X, Ornelas E, Shi H. (2021), "The trade impact of the COVID-19 pandemic", *World Econ* .doi: 10.1111/twec.13279.

[8]. Nicita, A., Saygili, M. (2021), "Trade Agreements and Trade Resilience During COVID-19 Pandemic", *UNCTAD Research Paper* No. 70 UNCTAD/SER.RP/2021/13

[9]. Wang, R., & Mo, Y. (2022), "The impact of COVID-19 on global import and export trade", *Review of Business*, Vol. 42, No. 1, p. 19-40.