



# Reshaping Global Supply Chain: The US-China Trade War, China's Zero Covid Policy, and Vietnam's Trade Boom

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## Abstract

The escalating tensions between the United States and China, together with the stringent Zero Covid policy enforced by the Chinese government, have been actively **reshaping global supply chains** in the past several years. Our project is positioned to examine these two effects on Vietnam's trade engagement. To facilitate our investigation, we **compiled export and import data of Vietnam's top 20 trading partners**, spanning monthly and yearly intervals. We then explore potential correlations between the US-China trade war, China's lockdown policy, and the trade surge witnessed in Vietnam. Our empirical findings indicate: **[a]** Both the US-China trade war and China's Zero Covid policy enhance Vietnam's trade with the rest of the world if the two effects are tested separately; **[b]** If tested simultaneously, the US-China trade war remains **statistically significant** whereas China's Zero Covid policy does not, which suggests that the **former has a more persistent, larger effect than the latter**. Scholars and policymakers will discern the relevance of our project in terms of its capacity to elucidate the forces reshaping global supply chains and the dynamics affecting export-led economies, such as China and Vietnam, throughout their enduring evolution.

## Literature Review and Hypotheses

- **Determinants of Trade Potential**
  - The economic and market size of foreign trading partners, distance, and similar culture (Binh et al., 2014),
  - Exchange rate (Narayan & Nguyen, 2016)
- **Geopolitical factor**
  - Positive influence on Trade because of One Belt One Road Policy by Chinese Government (Foo et al., 2020).
- **Impact of Vietnamese Government Policy on its manufacturing during Pandemic**
  - Support according to size and previous historical performance (Dabra-Norris et al., 2022)

So, accordingly we came up with three hypotheses to answer our questions:

**Hypothesis 1:** The US-China Trade War has a **significant, positive impact** on Vietnam's Trade engagement with the rest of the world.

**Hypothesis 2:** China's Zero-Covid Policy has a **significant, positive impact** on Vietnam's Trade engagement with the rest of the world.

**Hypothesis 3:** Of these two factors, which one has the **primary impact** on Vietnam's Trade engagement with the rest of the world?

## Data and Graph

Data collection and cleaning were carried out based on the literature review and hypothesis. The data for the research were collected from different sources: **International Financial Statistics from IMF, International Trade Center and World Development Indicator by World Bank**. We collected the **annual data of exports and imports** of Vietnam to get Trade Volume. Data collection and cleaning were carried out based on the literature review and hypothesis. We also collected the **annual GDP (constant for 2015\$)** and **GDP per capita (constant for 2015\$) of Vietnam's Top 20 trading partners**. The distance between Vietnam and its top 20 partners were also collected. All these data were based on 2001-2022 annual data except the distance between the countries. After the data collection and cleaning, we created graphs to find the trend of the trade pattern.



Figure 1 is a chart showing the **trade volume of Vietnam with its top 20 trading partners in 2022**. It shows that trade of more than 300 billion USD happened with US and China (more than the rest of the 18 from top 20 trading partners), suggesting that Vietnam's relies heavily with its **trade with the US and China**. So, any geopolitical factors relating to the US and China could affect Vietnam's trade pattern.

Figure 2 demonstrates **Vietnam's annual trade volume from 2001-2022**. The general trend of the graph shows that it is **positive and increasing** annually. But we can see a steep jump in 2017 and during this time we can see that exports are more than imports and the trend for exports being more than the import begins. There is a steep jump in 2021 as well.

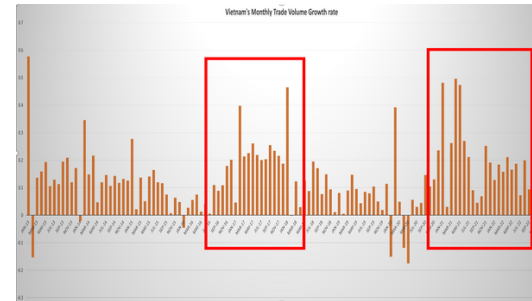
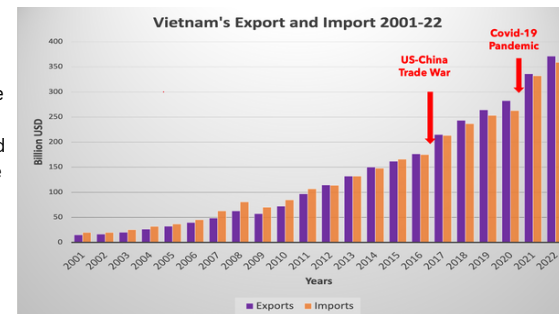


Figure 3 shows the **monthly trade volume growth rate of Vietnam on a year-to-year basis**. Even in this graph, the growth rates spiked during 2017 and 2021.

The distinct points in the graphs correlate with the timeline of the US-China trade war and the Covid-19 pandemic.

## Model, Statistical Analysis and Results

Based on the data from 2001-2022, the Pooled OLS models are reported in Table 1. Table 1 shows the results of whether the US-China trade war and the COVID-19 pandemic affected the Trade Volume of Vietnam. For that, the estimation was based on the **Gravity model**. The **dependent variable for this model is the trade volume**. The **independent variables are GDP (constant for 2015\$) and GDP per capita (constant for 2015\$)** of Vietnam's top 20 trading partners. The distance between Vietnam and its top 20 trading partners is also an independent variable. Two **dummy variables are taken: one each for the trade war and the pandemic**.

The dummy for trade war takes the value of 0 until 2017 and 1 for ,2018 and after, the dummy for pandemic takes the value of 0 until 2019 and 1 for 2020 and after. The regression analysis is carried out **four times**; where in the first analysis, both the dummy variables are omitted, in the second one dummy for trade war is included and dummy for pandemic is omitted, in the third one, dummy for trade war is omitted and dummy for pandemic is included, in the final analysis, both the dummies are included. The regression analysis is run by the formula and the results are reported below:

$$\ln(\text{Trade Volume}) = \theta + \alpha \ln(\text{GDP per capita}) + \beta \ln(\text{GDP}) + \gamma \ln(\text{Distance}) + \pi_1 D_{war} + \pi_2 D_{covid} + \epsilon$$

Variables	Pooled Model			
	1	2	3	4
Dependent variable: ln(Trade Volume)				
ln(GDP per capita const. 2015\$)	0.334*** (0.041)	0.300*** (0.036)	0.314*** (0.038)	0.300*** (0.0359)
ln(GDP const. 2015\$)	0.919*** (0.038)	0.873*** (0.033)	0.892*** (0.035)	0.873*** (0.034)
ln(Distance)	-1.306*** (0.059)	-1.240*** (0.052)	-1.267*** (0.055)	-1.240*** (0.052)
Dummy for US-China Trade War		1.116*** (0.093)		0.989*** (0.136)
Dummy for Covid-19 Pandemic			1.089*** (0.120)	0.213 (0.166)
Constant	5.001*** (0.818)	5.754*** (0.714)	5.451*** (0.753)	5.755*** (0.713)
Number of Observation	440	440	440	440
Adjusted R <sup>2</sup>	0.610	0.705	0.671	0.706

\*\*\*, \*\*\*, \*\* represent statistical significance at 10%, 5%, 1% level, respectively  
Pooled OLS Model on the effect of US-China Trade War and Covid-19 Pandemic to Vietnam's Trade Volume

The evidence shows that GDP, GDP per capita and distance are **statistically significant at 1% significance level** which suggests that economic size, income level of countries and distance matters when it comes to determining the trade volume. The dummy variables also shows that they are **statistically significant at 1% significance level** if examined separately suggesting that both **trade war and pandemic have a positive impact in changing the Vietnam's Trade pattern**. But, the most interesting results is that when both dummies are included, dummy for trade war is statistically significant at 1% significance level whereas dummy for pandemic is not statistically significant at 1%,5% or 10% significance level suggesting that comparatively, the **trade war has a primary impact** on having a positive impact on Vietnam's trade pattern.

## Conclusion

The analysis shows that both US-China trade war and the pandemic have **positive impact** on Vietnam's trade pattern. But, when the trade war and the pandemic is compared, the trade war has a primary impact on Vietnam's trading pattern. This suggests that **geopolitical factors have more significant influence on a country's trading behavior than a public health crisis**. But, public health crisis should not be completely discarded as it also has some kind of influence on a country's trading behavior.

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