MEASURING THE IMPACT OF NON-TARIFF MEASURES ON VIETNAM'S AGRICULTURAL AND FRUIT EXPORTS IN THE CONTEXT OF IMPLEMENTING NEW GENERATION FTAS: APPLYING THE GRAVITY MODEL

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ABSTRACT

In the context of increasingly deep international economic integration, Vietnam's exports in the period 2007-2023 have grown by nearly 600%, from 54.591 billion USD to 374.613 billion USD (World Bank, 2025). Vietnam is currently participating in 19 free trade agreements (FTAs), including three new-generation FTAs: CPTPP, EVFTA, and UKVFTA (Ministry of Industry and Trade, 2025). These FTAs bring many opportunities but also pose challenges, especially the increase in non-tariff measures (NTMs). Vietnam's agricultural products alone faced 12,009 measures in the field of animal and plant quarantine (SPS) in the period 2012-2018 (UNCTAD, 2025). This is particularly notable for fruits, which are perishable, subject to seasonal influences, and difficult to control residues. This study was conducted to measure the impact of NTMs on Vietnam's fruit and agricultural exports to 53 partner countries from 2007 to 2023 through gravity model analysis with data from the World Bank, UNCTAD, and the Ministry of Industry and Trade. In addition to traditional macroeconomic variables (GDP per capita, population, tariffs), the study added dummy variables to compare the differences between traditional and new-generation FTAs. The results show that NTMs are not entirely barriers, but in many cases have a positive impact, contributing to improving the quality of fruit export. The important contribution of this study is to provide empirical evidence on the dual role of NTMs in the context of new-generation FTAs – an aspect that has been little studied in Vietnam to date. The study suggests policy implications for enhancing SPS compliance capacity, improving quality inspection, supporting businesses to adapt to international standards, and simultaneously promoting advantages from new-generation FTA commitments.

1. Research Overview

International economic integration is taking place strongly. Vietnam's export value in the period 2007-2023 increased by nearly 600% from 54.591 billion USD to 374.613 billion USD (World Bank, 2025). The context of increasingly deep integration and cooperation between countries has led to the emergence of free-trade agreements (FTAs). Vietnam is currently participating in 19 FTAs, of which 17 are in effect, and 2 are under negotiation. Of the 17 FTAs in effect, there are 3 new generation FTAs, namely CPTPP - Comprehensive and Progressive Agreement for Trans-Pacific Partnership, EVFTA - Free Trade Agreement between Vietnam and the European Union and UKVFTA - Free Trade Agreement between Vietnam and the United Kingdom of Great Britain and Northern Ireland (Ministry of Industry and Trade, 2025). Vietnam benefits from tariff commitments and the great benefits that new-generation FTA bring, but it also faces many challenges. It is impossible not to mention the increase in non-tariff measures (NTMs) in the FTA. Non-tariff measures are created to ensure safety, hygiene, human health, and the protection of animals, plants, and the environment (UNCTAD, 2025).

According to the data table "Number of NTMs (Non-Tariff Measures) from lawsuits applied to Vietnam's exports" compiled by the Ministry of Industry and Trade from UNCTAD in the period 2012-2018, Vietnam's agricultural products are subject to 12,009 NTMs in the SPS sector. SPS or Sanitary and Phytosanitary Measures are animal and plant quarantine measures to protect human, animal, and plant health from the risks of epidemics, microorganisms, and toxic chemicals in food. Fruit and vegetable products are susceptible to quarantine factors from measures of this type because the characteristics of this type of product are perishable, affected by seasonality, susceptible to pests, and difficult to control uniformly. Furthermore, according to the 2023 Import-Export Report of the Ministry of Industry and Trade, the export value of agricultural, forestry, and fishery products in 2023 was 32.5 billion USD, an increase of 5.3% compared to 2022. The export value of agricultural and fruit products is 5.6 billion USD, an increase of 66.7% compared to 2022 (Ministry of Industry and Trade, 2024).

There are many studies on agricultural export activities worldwide, Vietnam's agricultural imports and exports, and the impact of non-tariff measures on Vietnam's agricultural imports and exports.

However, these studies only examine non-tariff measures and have not yet studied their impact in the context of new-generation trade agreements. This study aims to examine the impact of non-tariff measures on fruit and agricultural export activities in the context of strong new-generation free trade, thereby clarifying the level of impact of non-tariff measures on Vietnam's fruit and agricultural export activities to propose appropriate recommendations for the future.

2. Research Methods

The gravity model in economics was first used by Jan Tinbergen in 1962 and later became widely popular for analysing trade flows between countries, forecasting trade turnover between countries, evaluating the effectiveness of free trade agreements, and analysing the impact and influence of policies, institutions, and non-tariff barriers on trade. In which trade between two countries is proportional to the economic scale and inversely proportional to the distance between them. The basic form of the gravity model is as follows:

$$T_{ij} = G \cdot \frac{GDP_i^{\alpha} \cdot GDP_j^{\beta}}{D_{ij}^{\gamma}}$$

Figure 1: Tinbergen's basic gravity model

Source: (Jan Tinbergen, 1962)

T_{ij} : Is the value of trade between country i and j
GDP_i , GDP_j : The economic size of the two countries
D_{ij} : Economic distance or geographical distance between two countries
α, β, γ : are coefficients measuring the impact of factors.

Later, Hans Linnemann laid an important foundation in using the gravity model in analysing international trade by adding factors such as population, borders, etc.

The gravity model shows that the relationship between export factors is positively affected by factors such as the gross domestic product of the importing country, while the gross domestic product and distance are negatively affected by them. Bergstrand's (1985) empirical research provided a theoretical basis to demonstrate why the volume of trade between countries is directly proportional to economic size and inversely proportional to distance.

In recent years, many studies have applied the gravity model to study the export activities of

agricultural products. For example, the study "Determinants of Albanian agricultural export: The gravity model approach" by Braha et al. (2017) uses a gravity model and panel data from 1966 to 2013 covering 43 agricultural import partners of Albania. This study used an extension of McCallum's (1995) gravity model to add variables to capture the economic, cultural, and institutional factors related to Albanian agricultural export output. Together with the study "Determinants of Albanian agricultural export: The gravity model approach" is the study of Nazir Muhammad Abdullahi và c.s. (2021) on the topic of agricultural fruit exports, with a specific fruit being cocoa, "Nigeria's cocoa exports: a gravity model approach", and uses panel research data from 1995 to 2018, including 36 cocoa-importing partners from Nigeria. The results of both studies indicate that factors such as a common language, a shared border, macroeconomic variables (e.g. exchange rate and inflation), and institutional and trade-related variables have varying degrees of influence on the trade flow of agricultural products and fruit exports. The study "Impact of Non-Tariff Barriers on Egyptian Agricultural Trade" (Halah E. M. Bassiony, 2012) specifically analyses the effects of non-tariff measures (NTMs) on Egypt's agricultural trade with the European Union (EU). This study uses the gravity model and the NTBs index (INTB) to assess the impact of non-tariff measures on three commodity groups under the Harmonised System code: vegetables (HS07), fruits (HS08), and cotton (HS52). The results show that NTMs have a particularly strong impact on products with competitive advantages in vegetables and fruits exported from Egypt to the EU. The study also emphasises that instead of considering NTMs an obstacle, it is necessary to adapt and use them as a motivation for businesses to improve product quality to meet export standards. This study is a premise for the author's research when using the Harmonised System (HS) code as a research object, covering only the agricultural fruit industry. Many studies in the country have used gravity models to study the impact of free trade agreements on the export and import of agricultural and fruit products in Vietnam. Such as the study "How Free Trade Agreements Affect Exports and Imports in Vietnam" by Nguyen Thi Hoang Oanh (2017) to analyse the impact of trade agreements on Vietnam's import and export activities based on Timbergen's traditional gravity model and additional dummy variables for free trade agreements. The study uses data on both Vietnam's export and import values to 181 partners of Vietnam in bilateral and multilateral agreements in the period 1995-2016. The study shows that free trade agreements impact Vietnam's import and export values, with bilateral agreements having the most obvious impact. The study on foreign goods imports into Vietnam uses a gravity model to measure the impact of non-tariff measures to clearly see the flow of agricultural import values into Vietnam. The study "Measuring the impact of non-tariff measures on Vietnam on agricultural exports" uses an extended version of the structural gravity model from the study of Anderson and Yotov (2010, 2012) with goods with HS codes 1-24, and includes the direct NTM variable as an explanatory variable and dummy variables representing the existence of free trade agreements.

Thắng (2019) examines "the impact of non-tariff measures on Vietnam's exports. Research on the impact of non-tariff measures on Vietnam's export activities. This study uses the extended gravity model for non-tariff measures of Gourdon (2014). The research period was from 1999 to 2017 for 28 countries, accounting for 82% of Vietnam's total export value during the research period.

The author's domestic and international draft studies use the gravity model to analyse the flow of agricultural products imported and exported in the context of bilateral and multilateral free trade. However, most of them focus on agricultural products without paying specific attention to the fruit and agriculture industry. The author finds that the scope, framework, and level of implementation, along with the clear differences between trade agreements and new-generation trade agreements, have some differences. As mentioned above, given the urgency of the fruit and agricultural industry, there has been no research on the impact of non-tariff measures on Vietnam's fruit and agricultural export activities. For these reasons, the author is motivated to research this topic, and from this topic, the author will research the impact of economic factors in general and the impact level of non-tariff measures in particular at each stage through the quantitative method using the gravity model. Based on the research outline and theoretical foundations, the author uses the gravity model to assess the impact of non-tariff measures on Vietnam's exports. The variables in the study include the available measurement variables in the model and the added dummy variables for free trade agreements. The author proposes the following gravity model:

$LnEXPORT = lnGDPE + lnGDPVN + lnDIST + lnTARIFF + PreNTM + CovNTM + FreqNTM + BORDER + FTA3 + LOG\_INDEX + \varepsilon$

Where,

LnEXPORT : Export value of Vietnam's agricultural and fruit products to partner countries in the period 2007-2023.

lnGDPE : Gross domestic product of Vietnam's fruit and agricultural product import partner countries in the period 2007-2023.

lnGDPVN : Vietnam's gross domestic product in the period 2007-2023.

lnDIST : Geographical distance as the crow flies from the capital Hanoi to the capitals of partner countries.

lnTARIFF : Import tariffs applied by partner countries on Vietnam's fruit and agricultural products exported in the period 2007-2023.

PreNTM : Index showing the prevalence of non-tariff measures on Vietnam's fruit and agricultural exports.

CovNTM : Index showing the coverage level of non-tariff measures for Vietnam's fruit and agricultural products exports.

FreqNTM : Index showing the frequency of application of non-tariff measures on Vietnam's fruit and agricultural products exports.

FTA3 : The variable takes the value of 1 if the partner country participates in a new generation free trade agreement with Vietnam, otherwise it is 0.

LOG_INDEX : An index that shows how efficient a country is in operating logistics and supply chains.

ε : error

Table 1: Sign expectations for the results of the variables and data sources of the study

Variable name	Expectations	Reference research	Source of collection
Gross domestic product of Vietnam's fruit and agricultural product import partner country	+	(Hans Linnemann, 1966), (Kushtrim Braha và c.s., 2017)	World Bank
Vietnam's gross domestic product	+	(Erdem & Nazlioglu, 2008) và (Kushtrim Braha và c.s., 2017)	World Bank
Geographical distance from the country importing agricultural and fruit products to Vietnam	-	(James E. Anderson & Eric Van Wincoop, 2003) và Tinbergen (1962)	Law Library
Import tariffs applied by importing countries on Vietnam's fruit and vegetable exports	-	(Nguyen Thi Hoang Oanh, 2017)	WTO Center
Index showing the prevalence of non-tariff measures on Vietnam's fruit and agricultural exports	-	(Đoàn Ngọc Thắng, 2019)	CEPII
Index showing the coverage level of non-tariff measures for Vietnam's fruit and agricultural products exports	-	(Đoàn Ngọc Thắng, 2019)	CEPII
Index showing the frequency of application of non-tariff measures on Vietnam's fruit and agricultural products exports	-	(Đoàn Ngọc Thắng, 2019)	CEPII
The country shares a border with Vietnam	+	(Kushtrim Braha và c.s., 2017) và (Hans Linnemann, 1966)	Law Library
Countries participating in new-generation free trade agreements with Vietnam	+	Balassa's (1961) economic integration level theory and the theory of NTM	WTO Center
An index that shows how efficient a country is in operating logistics and supply chains.	+	(Huynh & Hong, 2022)	World Bank

Source: Author

The author uses data from 53 countries over 17 years, from 2007 to 2023. These 53 countries have established partner relationships with Vietnam through 16 free trade agreements (FTAs) and new-generation FTAs between 2007 and 2023. The 53 countries are Armenia, Australia, Austria, Belarus, Belgium, Brunei, Bulgaria, Cambodia, Canada, Chile, China, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong (China), Hungary, India, Indonesia, Ireland, Italy, Japan, Kazakhstan, Kyrgyzstan, South Korea, Latvia, Laos, Lithuania, Luxembourg, Malaysia, Malta, Mexico, Myanmar, Netherlands, New Zealand, Peru, Philippines, Poland, Portugal, Romania, Russia, Singapore, Slovakia, Slovenia, Spain, Sweden, Thailand, United Kingdom, and Northern Ireland.

This study uses panel data to match the country and time variables. In data processing with the STATA analysis application, the author performed the following data processing steps: (1) Used a log-transform (log) to convert data into a normal distribution to help the linear model work better when there is a large difference in variables carrying economic indicators between countries. (2) Checking the correlation between variables to determine whether the model has multicollinearity. (3) Testing multicollinearity (VIF) to determine the level of multicollinearity of variables and consider eliminating variables if there is a high level of multicollinearity that cannot be controlled. (4) To verify heteroscedasticity and autocorrelation, the author uses the accompanying command when running the regression model, which is vce' (clustercountry_id). Thus, the two phenomena of heteroscedasticity and autocorrelation, which negatively affect the results of the regression model, can be overcome.

After preparing the necessary steps for the regression model. All tests are at a safe level, and the proposed variables can be directly run with the regression model.

Figure 2: Descriptive statistics

Variable	Obs	Mean	Std. dev.	Min	Max
country_id	901	27	15.30555	1	53
lnEXPORT	901	7.306121	3.655004	0	15.13749
lnGDPE	901	26.22466	1.754341	22.05894	30.5148
lnGDPVN	901	26.12877	.4963931	25.07244	26.78639
lnDIST	901	8.646056	.9154075	5.438079	9.798127
lnTARIFF	901	.0569187	.0568961	0	.2623643
PRENTM	901	39.49501	30.05745	0	66
COV_FREQ	901	.6381798	.480794	0	1
NTM_FTA3	901	11.43951	24.68558	0	66
BORDER	901	.0566038	.2312123	0	1
FTA3	901	.1786903	.3833056	0	1
FTA3_lnEXP~T	901	1.465796	3.421273	0	12.94942
LOG_INDEX	901	3.330499	.5401445	1.86	4.3

Source: Author

Figure 3: Regression model results

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Random-effects GLS regression              Number of obs    =      848
Group variable: country_id                 Number of groups =       53

R-squared:                                 Obs per group:
     Within  = 0.1713                                  min =       16
     Between = 0.5915                                  avg =     16.0
     Overall = 0.5108                                  max =       16

                                           Wald chi2(11)    =   281.98
corr(u_i, X) = 0 (assumed)                 Prob > chi2      =   0.0000

                               (Std. err. adjusted for 53 clusters in country_id)

                           Robust
    lnEXPORT | Coefficient  std. err.      z    P>|z|     [95% conf. interval]

      lnGDPE |   1.079357   .1658636     6.54   0.000     .7558378    1.402875
     lnGDPVN |   .6476962   .2582855     2.51   0.012     .1414658    1.153926
      lnDIST |  -.6287477   .3690841    -1.70   0.088    -1.352139    .0946439
    lnTARIFF |  -4.053042   4.174326    -0.97   0.332    -12.23457    4.128487
    L1PRENTM |    .087157   .0468236     1.86   0.063    -.0046155    .1789296
   L1COV_FREQ|   -5.26811   2.934998    -1.79   0.073    -11.0206      .48438
    NTM_FTA3 |  -.1126135   .0708181    -1.59   0.112    -.2514145    .0261875
      BORDER |   2.345403   .8174305     2.87   0.004     .7432692    3.947538
        FTA3 |   5.633954   4.618479     1.22   0.222    -3.402418    14.67033
 FTA3_lnEXPORT|  .1945131    .071588     2.72   0.007     .0542032     .334823
   LOG_INDEX |   .5635799   .4555668     1.24   0.216    -.3293146    1.456474
       _cons |  -34.31003   6.581165    -5.21   0.000    -47.20888   -21.41119

     sigma_u |   1.5680516
     sigma_e |   1.4706536
         rho |   .53281956   (fraction of variance due to u_i)
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Source: Author

3. Results and Discussion

RE regression model with cluster according to 53 countries from 2007 to 2023, a total of 901 observed variables. The important regression indexes are: Within, Between and Overall.

Within = 0.17: Independent variables explain 17% of the variation of the dependent variable (lnEXPORT) by country at each specific time.

Between = 0.59: Independent variables explain 59% of the variation of the dependent variable (lnEXPORT) on all observed variables.

Overall = 0.51: The regression model explains 51% of the variation of the dependent variable (lnEXPORT) overall.

The variable lnGDPE explains the relationship between the gross domestic product of the importing country and the value of Vietnam's agricultural exports. The regression results show that the GDP variable is positive, meaning that when the gross domestic product of the importing country increases by 1%, the export value of Vietnam's agricultural and fruit products increases by 1.07%. The results are consistent with the theoretical basis, study outline, and expected sign table.

The variable lnGDPVN explains the proportional relationship between Vietnam's gross domestic product and the agricultural product export value.

The regression results show that the GDP variable is positive, meaning that when the average income per capita of the exporting country increases by 1%, the export value of Vietnam's agricultural and fruit products increases by 0.64%. This result reflects the scale of the developing economy, which has a causal relationship with the export value of agricultural and fruit products. The results are consistent with the theoretical basis, the outline of the studies and the expected sign table.

The variable lnDIST represents the distance from the country importing Vietnam's agricultural and fruit products. The variable lnDIST in the model has a positive sign; thus, when the distance from the importing country to Vietnam increases by 1%, the export value of Vietnam's agricultural and fruit products decreases by 0.62%. The results are consistent with the author's hypothesis and consistent with the experiment of James E. Anderson and Eric Van Wincoop (2003) và Tinbergen (1962) confirmed the inverse relationship between distance and export value, where the longer the distance, the greater the transportation cost, reducing the competitiveness of export goods, thereby reducing the export value of Vietnamese agricultural and fruit products.

The variable lnTARIFF represents the tariff rate applied by the country importing agricultural and fruit products from Vietnam to Vietnam. The variable lnTARIFF in the model has a negative sign. That is, when the tariff applied to Vietnam's agricultural and fruit products increases by 1%, the export value of these agricultural and fruit products decreases by 4.05%. Basically, the import tax applied to goods increases the price of goods; therefore, the higher the tax, the higher the price of goods, and the lower the demand for that export product. The author's results are similar to the experiment of Nguyen Thi Hoang Oanh (2017) and the theoretical basis of the gravity model. However, since the p-value > 0.05, the tariff variable has not had a significant impact on the regression model. This can be explained by the fact that in the period 2007-2023, 53 countries with partnerships in free trade agreements with Vietnam reduced tariffs to very low levels or even cut tariff barriers; some remaining countries applied taxes according to the Most Favoured Nation law, however, the tax rate on Vietnam's fruit and agricultural products exported was very low. Replacing tariff barriers are non-tariff barriers and measures. Therefore, at this time, tariff barriers are no longer too important and have too much of an impact on the export trade process.

The dummy variable BORDER represents countries that share a common border with Vietnam and countries that do not share a common border. The dummy variable BORDER is positive. This means that countries that share a common border with Vietnam have 234% higher fruit and agricultural export values than those that do not share a common border with Vietnam. The results are consistent with the group's hypothesis and experiments and studies on the extended gravity model, such as those by Braha et al. (2017) and Linnemann (1966). When countries share borders, trade transactions with each other reduce transaction and transportation costs, thereby reducing the cost of imported goods. Furthermore, the transportation route is shorter, which is beneficial for preserving goods, especially agricultural products and fruits that are easily damaged if not preserved properly. This helps buy fresh agricultural products and fruits at low prices and in larger quantities.

The variable LOG_INDEX represents a country's efficiency in logistics and supply chain operations. This index shows the level of infrastructure development in the importing country. The specific factors in LOG_INDEX that affect the export of agricultural products and fruits from Vietnam to importing partner countries are customs clearance efficiency, transport infrastructure, and high-quality logistics services. The P-value of the variable is not statistically significant in the regression. Looking back at the descriptive statistics table, it can be seen that the lowest and highest indexes of this variable are 1.84 and 4.3, respectively. In addition, the standard deviation of this variable is only 3.33, which is neither too high nor too low. The above numbers describe the level of infrastructure development of the countries, which is not too different, leading to the influence of the variable LOG_INDEX on the export value of agricultural products and fruits becoming faint and not having a significant impact on the regression model.

The variable PreNTM represents the prevalence of non-tariff measures in the total number of agricultural products with the HS08 code. That is, when the prevalence of non-tariff measures increases by 1, the export value of Vietnam's agricultural products increases by 8%. In essence, NTMs reduce trade flows. However, this may not be certain. The fact that exported agricultural products meet the coverage of NTMs shows their quality and ability to meet the quality and technical requirements of the products. This directly affects the psychology of buyers, thereby strengthening

their confidence in Vietnamese standard agricultural products. Some studies reinforce this argument, such as Hien and Huyen (2022), Thipphavong và c.s. (2022).

The variable COV_FREQ (COVNTM and FREQNTM) shows the coverage level and frequency of application to the total quantity of agricultural and fruit products with the HS08 code of NTMs. The author combined the two variables into one because the values of the two variables were almost identical to avoid the phenomenon of autocorrelation and multicollinearity affecting the final results. Thus, when the coverage level of non-tariff measures and the frequency of application of non-tariff measures increase by 1, the value of agricultural exports decreases by 52%. These two variables have a direct negative impact on Vietnam's agricultural export industry. In other words, the coverage level of measures in the entire agricultural and fruit industry is such that every product is subject to at least one non-tariff measure. Therefore, the issuance of unfavourable policies related to non-tariff will directly affect the export of agricultural and fruit products through the reduction of export value with the variable COVNTM and the inevitable frequency of application of FREQNTM. The results are consistent with the hypothesis proposed by the author of the research outline.

The variable NTM_FTA3 was created to show the general impact of the three representative variables of NTM, PreNTM, CovNTM, and FreqNTM, to have the clearest view of the level of influence of NTM on Vietnam's agricultural and fruit exports. However, the p-value index only approaches the 10% confidence level; therefore, the aggregate variable cannot provide the most accurate explanation of the general impact of NTM on Vietnam's agricultural export activities. Although initially, this variable had a negative relationship with the variable lnEXPORT of -0.11. There may be many factors that the author has not found to further strengthen the relationship and level of influence of the general variable NTM on EXPORT.

The p-value of the dummy variable FTA3 is insufficient to strengthen the hypothesis proposed by the author. However, the author created an additional intermediate variable, FTA3_lnEXPORT. In the context of Vietnam's increasingly deep participation in new-generation free trade agreements, it is not enough to consider the average impact or whether there is an impact; specific market characteristics must also be considered. The FTA3 variable was created by the author to test the

individual impact of new-generation FTAs on Vietnam's fruit and agricultural export activities, while the FTA3_lnEXPORT variable reflects the possibility of cumulative effects depending on the FTA's trade scale. If only considered at the overall level, the FTA3 variable has not created significant meaning. However, the intermediate variable FTA3_lnEXPORT is different; this variable shows that the impact of new-generation FTAs on Vietnam's markets with a large export scale is even greater. In other words, the countries to which Vietnam exports will export even more strongly.

4. Conclusion

According to the data from the regression results, the independent variables lnGDPE, lnGDPVN, DIST, and BORDER are all statistically significant and have an impact relationship according to the expected sign of the variable lnTARIFF; although the expected sign is correct, it is not statistically significant in the research group period with the subjects. Thus, this study clarifies the impact of each variable representing NTMs–PreNTM, CovNTM, and FreqNTM–in relation to the export value of agricultural products in Vietnam in the context of new-generation free trade. The dummy variable FTA3 and the intermediate variable FTA3_lnEXPORT explain the positive impact of the new-generation free trade agreement with participating and non-participating countries.

In addition, Vietnam needs policies, seminars, and talks to improve the professional knowledge of farmers growing fruit and vegetables. Support to improve input and output standards for export enterprises is also needed. This study focused only on fruit agricultural products and did not analyse fluctuations in macroeconomic and political factors. The research group has not delved into the level of influence and impact of non-tariff measures on each specific agricultural product. The author would like to send the research direction to future studies.

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