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Double Taxation Treaties as a Catalyst for Trade Developments: A Comparative Study of Vietnam's Relations with ASEAN and EU Member States

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Abstract: Employing a panel gravity model and Generalized Least Squares (GLS) estimation technique, this study documents the effect of double taxation treaties on the bilateral trade of Vietnam with ASEAN member states, thereby making an extensive comparison with its EU partner countries. Our findings indicate the significant contributions of the tax treaties to Vietnam's trade performance, not exclusively with ASEAN but also with EU partner countries. Nevertheless, under some circumstances, the conclusion of tax treaties seems ineffective in strengthening export capacity or narrowing trade deficits for Vietnam. This is primarily due to the unidirectional movement of trade associated with tax treaty conditions, viz., imports from the advanced economies into Vietnam. Besides, the role of tax treaties as a dynamism of Vietnam's export growth remains opaque during recent years.

Keywords: double taxation treaty; trade; gravity model; ASEAN

1. Introduction

In foreign trade, the coexistence of multiple tax systems among countries generally results in the imposition of tax on a single income in two different countries. This phenomenon occurs since most countries exercise their taxing rights based on the following basic principles:

- (i) Those identified as residents of a country must fulfil their tax obligations in that country for all of their income regardless of the sources of income;
- (ii) Those identified as non-residents of a country must fulfil their tax obligations for all of their incomes arising therein. Methods to identify residents and sources of income vary across nations, and in some circumstances, a business entity or individual may be a resident of two or more countries. Double taxation could, therefore, be present in several means, for example, two or more countries may levy taxes on the global income of a single taxpayer, who is identified as the resident of these countries. In another case, a taxpayer's income which is recognized to generate in the territory of multiple countries must be taxed jointly by the related governments.

Clearly, such double taxing treatment can be a significant obstacle to the development of cross-border trade and investment, and as well be the root cause of income tax fraud. To overcome the issue, sovereign states (separate and distinct political entities) may enter into a reciprocal agreement under the name of "double taxation treaty" or "double taxation agreement". It is designed to avoid or minimise double taxation of the same income of an investor by both countries, thereby contributing to the elimination of trade barriers and advancing trade and investment cooperation and facilitation

between the contracting states. The agreement applies to direct taxes, viz. personal income tax, corporate income tax and property taxes. Among the central terms of the double taxation treaty refers to the separation of the taxing rights between the two countries as well as the empowerment for one of the two countries to tax in case tax exemption is applied. Once the taxing rights are clearly separated between countries, it is possible to rely on the tax regulation of the taxing country to ascertain the tax regime applicable to an income.

Together with the higher trends in globalisation and multilateralisation, today's double taxation treaties have a critical role to play in promoting cross-border trade and investment. As pointed out by [Braun and Zagler \(2014\)](#), over the past two decades, the number of double taxation treaties concluded has surpassed 3000, constituting up to 65% of the treaties worldwide, where the tendency for cooperation between developing and developed countries has become increasingly common. Since Vietnam's entrance to the World Trade Organization (WTO) in 2006 and subsequently, a series of bilateral and multilateral free trade agreements, foreign direct investment (FDI) attraction, as well as import and export activities of this country have recorded notable initial achievements towards comprehensive and sustainable socio-economic development. Over the period from 1992 to 2017, despite the successful conclusion of the tax treaties with a total of 77 trading partners, most of which are upper-middle-income and high-income economies, the benefits of the signed double taxation treaties, especially from foreign trade, to Vietnam seem negligible. This stresses the importance of critically re-assessing the tax treaties' implications for Vietnam throughout different stages of development. Our research objective is, thus, to gauge the impact of double taxation treaties on Vietnam's bilateral trade in general, imports and exports in particular with ASEAN (Association of Southeast Asian Nations) Free Trade Area (AFTA) trading partners by applying [Bergstrand \(1985\)](#)—generalized gravity model from 2001 to 2016. Besides, in gaining comprehensive insight into the tax treaties' effect, empirical results would also be compared among different trade blocs (AFTA, ASEAN+3 and the EU—European Union).

Our findings show that the significant contributions of the tax treaties to Vietnam's trade performance, not exclusively with ASEAN but also with EU partner countries. Nevertheless, under some circumstances, the conclusion of tax treaties seems ineffective in strengthening export capacity or narrowing trade deficits for Vietnam. This is primarily due to the unidirectional movement of trade associated with tax treaty conditions, viz., imports from the advanced economies into Vietnam. Besides, the role of tax treaties as a dynamism of Vietnam's export growth remains opaque during recent years. The tax treaties are somewhat ineffective in developing countries that have been caused by inexperienced negotiation or the shifting of tax revenue from developing to developed countries ([OECD 2015](#); [Kadet 2016](#); [Braun and Zagler 2017](#); [Zolt 2018](#)). However, a developing country would likely continue to enter the tax treaties for some reason such as attracting foreign investors or strengthening export capacity ([Zolt 2018](#)). Different from prior research focusing on the tax treaties between developed and developing countries; we would like to analyse the benefits and disadvantages of double taxation treaties on bilateral trade of Vietnam—a developing country with other developing countries, as well as developed countries in specific areas (ASEAN and EU). The rest of the paper is organised as follows: Section 2 discusses the literature review; Section 3 provides an overview of Vietnam's tax treaty signing situation and trade activities with ASEAN; the research methodology is presented in Section 4; Section 5 analyses the main findings and discussions; the last Section is the conclusion.

2. Impact of Double Taxation Treaties: What Does Literature Say?

2.1. Theoretical Background

Theoretical issues of double taxation treaty have been discussed openly in the existing literature, where inheritance and development over time are demonstrated. According to the neoclassical economic school of thought ([Rasmussen 2011](#); [Miller and Oats 2016](#)), double taxation is defined as the

phenomenon of a taxpayer being taxed on the same taxable income or capital in a given period of time by two or more states, whereby the total tax payable is higher than the taxable amount determined under domestic law. This definition merely reflects juridical aspects of double taxation, rather than referring to its economic perspective, i.e., two taxpayers might still be taxed on the same income by two different states. To remedy this shortcoming, [OECD \(2017\)](#) provides a clear and complete definition as follows: “International juridical double taxation is the imposition of comparable taxes in two or more states on the same taxpayer concerning the same subject matter and for identical periods, which causes the taxpayer to bear a greater tax burden than what would have been incurred under domestic tax law. In addition, in case two or more taxpayers are taxed on the same item, then double economic taxation occurs”.

[Barbuta-Misu and Tudor \(2010\)](#) argue that greater economic integration might be associated with more complicated and unpredictable double taxation. At the turn of the 21st century, together with the great explosion of science and technology, there is a growing tendency for interference in economic activities among nations through the outward investment activities of multinational enterprises (MNEs), as well as free movements of labour. This gives rise to some issues, for instance, an individual who may have multiple nationalities, residing in a certain country but working in different countries, or a company headquartered in one country, but its branches and subsidiaries are established abroad. Profound transformations in the global economy have unquestionably had a huge impact on the formation of wealth and the source of income of individuals and corporations, thus leading to the phenomenon of double taxation.

In regard to the influence of double taxation, it might be an obstacle to the development of international trade. A trader is better off trading within the state boundaries and suffers tax in one country only. However, it is a widely accepted commercial reality that international trade is economically good for the countries concerned and that international trade should be encouraged. Thus, countries believing in the benefits of international trade would make every endeavour to provide a more conducive environment for cross-border trade by putting down rules to avoid or minimise double taxation. This requires countries to agree bilaterally and mutually on specific terms and rules of how income from international trade or cross-border transactions are treated by the two countries so that the final tax suffered will not be worse off than if the profits or gains are derived from similar non-cross-border transactions. Therefore, it is a typical development for two states to enter into a double taxation treaty, if the trade volume is expected to increase.

A double taxation treaty is set in pursuit of the following objectives:

First, delimitation of the taxing rights between the two contracting parties

For every single type of income and asset, the double taxation treaty ascertains the taxing rights between signatories for the avoidance of double taxation and the prevention of fiscal evasion, alongside the removal of tax barriers to foreign trade. On the other hand, the treaty also aims for the standardisation of definitions of tax terminologies between contracting states. The introduction of such uniform principles and procedures would thus facilitate the recovery of tax dues. Under the tax treaty, taxing rights are merely enforced on particular individual residents and are limited to a specified range of taxes. Besides, the tax treaty caps the tax rates applicable to certain income of non-residents of the source country, exempts or lowers the tax payable for residents of the contracting countries, or allows residents of a country to deduct taxes already paid in the other contracting country from their domestic tax obligation.

Second, prevention of fiscal evasion and fiscal avoidance

Double taxation treaty is inclined to hinder the evasion and avoidance of taxes on income and asset through the exchange of information on taxpayers as well as a legal framework for administrative co-operation and mutual assistance in tax matters between the two governments. Thanks to this, the tax treaty could potentially contribute to the development of economic relations between signatories.

Third, the equitable treatment of tax obligations

The treaty on double taxation guarantees the equitable treatment of taxation among taxpayers holding multiple citizenships in an identical situation. By setting out the types of taxable income and asset, as well as the delimitation of the taxing rights, the treaty could effectively prevent disputes between residents of the contracting parties.

Fourth, establishing a unified procedure for dispute settlement

Owing to tax treaties, the contracting states have reached agreement on a dispute resolution mechanism arising from the observance of the tax laws of each related party regarding cross-border transactions. Resolution of the disputes in association with the tax treaty is carried out based on a reciprocal agreement between the competent authorities of the two parties. This does not necessarily mean authorities of the two sides always reach a final consensus. Even in such cases, double taxation may still occur.

2.2. Empirical Evidence

There is a large and growing body of literature regarding double taxation treaties as well as its implications for relevant aspects, particularly foreign investment and international trade. First and foremost, the effect of double taxation treaty on investment has received considerable attention of the academics (e.g., [Azémar and Delios 2008](#); [Barthel et al. 2010](#); [Baker 2014](#); [Braun and Fuentes 2014](#); [Braun and Zagler 2014](#)). Specifically, in examining the association between tax competition and FDI, based on the evaluation of the interaction between Japan and host developing countries' tax systems between 1990 and 2000, [Azémar and Delios \(2008\)](#) found that some countries have proactively introduced the special preferential terms with great appeal for Japanese investors, during the process of negotiating taxation agreement with Japan. Empirical analysis reveals that despite fierce competition among developing countries in terms of tax systems, this does not mean Japanese investors could easily acquire the preferential corporate tax rate of 0% as committed by host countries under the agreement. Based on a dataset of developed to less-developed country-pairs and propensity score-matching approach, [Baker \(2014\)](#) demonstrates that double taxation treaties are ineffective in spurring investment from developed to less developed countries since numerous developed countries unilaterally provide large-scale bailout packages in the form of double taxation treaties for preventing tax evasion. This could help eliminate the major economic benefits and risks derived from the tax treaties to FDI location decisions of MNEs.

Although discussions on tax treaties' impact the investment attraction and take place in both directions, the overall results show that the tax treaties could trigger off FDI inflows. Utilising unpublished data on bilateral FDI flows between developed and developing economies, [Barthel et al. \(2010\)](#) conclude double taxation treaty is an important catalyst which could stimulate FDI into developing countries to increase by 29% on an annual basis. From the perspective of advanced countries, [Braun and Fuentes \(2014\)](#) investigate the impact expected by developing country partners when entering into the tax treaties with Austria using empirical methods and find that the formation of double taxation treaties with Austria could foster investment from Austria into middle-income countries. This is since double taxation treaties prove effective in (i) eliminating the double taxation; (ii) protecting legitimate rights of the potential foreign investors; (iii) creating advantages over domestic taxes through tax deductions, thereby favouring the attraction of FDI; (iv) combating fiscal evasion. Alternatively, based on [Blonigen \(2005\)](#), study concerning the determinants of overseas investment decisions of MNEs, taxation is found to be an external factor. Accordingly, he confirms that measures to eliminate double taxation could exert a profound influence on MNEs' investment motivation. Outside of tax policy, institutional quality, infrastructure conditions, and market efficiency should also be taken into account for financing decisions of the MNEs.

FDI inflows are crucial to trade development, as it helps segment manufacturing processes, thus contributing to the diversification of product mix and market structure for MNEs ([Braunschweig 2014](#)).

Based on fresh evidence suggesting that the double taxation treaties tend to encourage FDI inflows, the pass-through of the tax treaties into bilateral trade is reasonably predicted to be positive. It is theoretically possible that substitution and complementary effects exist in the nexus between international trade and foreign investment of an MNE. Accordingly, a surge in demand for intermediate goods in the vertical chain integration could create substitution and complementary effects through the trade-in final goods. In order to separate the two types of effects in the FDI-exports relationship, [Blonigen \(2005\)](#) examines disaggregated product-level data and finds that the complementary effect arises from the multi-product nature of the firm in the production chains, as well as the MNEs' expectations of the positive interaction between FDI and foreign trade ([Forte 2004](#)).

In summary, the potential effect of double taxation treaties on bilateral trade activities has so far not been studied to the same extent as on FDI flows, leaving a huge gap for those who wish to explore the full-range implications of the taxation treaties. This study, thus, analyses the contributions of the double taxation treaties signed by Vietnam to its bilateral trade activities with ASEAN rather than trying to revisit the tax treaties' impact on FDI flows like the current literature.

3. Vietnam's Tax Treaty Signing Situation and Trade Activities with ASEAN

3.1. Vietnam's Tax Treaty Signing Situation

Recognizing the necessity for the bilateral and multilateral co-operation agreements in the context economic renovation (commonly known as 'Doi Moi') and the open-door policy, since the early 1990s, Vietnam has actively negotiated and successfully concluded 'the agreements for the avoidance of double taxation and the prevention of fiscal evasion with respect to taxes on income' with a total of 77 countries and territories, of which, 37 are in Europe, 21 in Asia-Pacific, 6 in the Americas (including the United States and Canada), 5 in Africa and 8 in the Middle East. As can be seen, Europe and Asia-Pacific are the two most important regional markets for which Vietnam is heading. In the ASEAN region, Vietnam entered into the double taxation treaties with all member states, where the latest agreement was reached with Cambodia by the end of March 2018 (see [Table 1](#)).

Table 1. List of Vietnam's double taxation treaties with ASEAN member countries.

No.	Double Taxation Treaty	Signing Date	Effective Date
1	Vietnam–Thailand	23 December 1992	29 December 1992
2	Vietnam–Singapore *	2 March 1994 12 September 2012	9 September 1994 11 January 2013
3	Vietnam–Malaysia	7 September 1995	13 August 1996
4	Vietnam–Laos	14 January 1996	30 September 1996
5	Vietnam–Indonesia	22 December 1997	10 February 1999
6	Vietnam–Myanmar	12 May 2000	12 August 2003
7	Vietnam–Philippines	14 November 2001	29 September 2003
8	Vietnam–Brunei	16 August 2007	1 January 2009

* Vietnam and Singapore have passed a protocol to their double taxation treaty, which came into effect in 2013 and amended some of the restrictive provisions. Source: Vietnam Chamber of Commerce and Industry (VCCI)'s WTO Center.

According to the [Action Aid \(2017\)](#), most FDI providers already entered into the tax treaties with Vietnam. These partners account for 91% in terms of FDI project number and 84% in terms of registered investment capital in Vietnam. Of the top 32 major FDI providers, 26 have signed the tax treaty with Vietnam and 10 had had double taxation treaties since the 1990s, when Vietnam was in the early stage of attracting FDI.

Compared with other developing economies, the treaties of Vietnam are generally more protective of its taxing right with some exceptions. A double taxation treaty is established when a country has or exercise the right to tax income of an individual or a foreign company within its boundaries (source taxation) or to tax income of a resident when he or she resides abroad (residence taxation). In principle, restrictions on source taxation apply to both parties to the tax treaty. However, in the case of capital flows take place in one direction, for instance, from developed to developing countries, these restrictions could be detrimental to the counterparty of developing countries.

Action Aid’s international tax treaties dataset (which compares the critical provisions of 519 tax treaties) evaluates every single treaty using a ‘source index’ scoring system ranging between 0 and 1, where a higher value indicates the developing country has preserved more taxing rights under the treaty. Vietnam’s taxation agreements with G20 members yield a higher average source index than many other developing countries (which implies more protective taxing right for Vietnam). Over time, Vietnam’s tax treaties have become more protective, manifested through the upward trend in the source index. Despite this general trend, some original treaties concluded in the 1990s are relatively restrictive on Vietnam’s right to tax foreign investment. Considering Vietnam’s tax treaties with high-income countries, the treaty with the United Kingdom is the most restrictive with 0.16 points, followed by Singapore with 0.18 points and France with 0.19 points, though Vietnam and Singapore have negotiated a protocol to their tax treaty which became active from 2013 and amended several restrictive terms. Besides, the double taxation treaties with the top 4 FDI providers to Vietnam, including Republic of Korea, Japan, Singapore, and Taiwan, are among 25% of Vietnam’s most restrictive treaties, with each having a source index lower than 0.52 (see Figure 1).

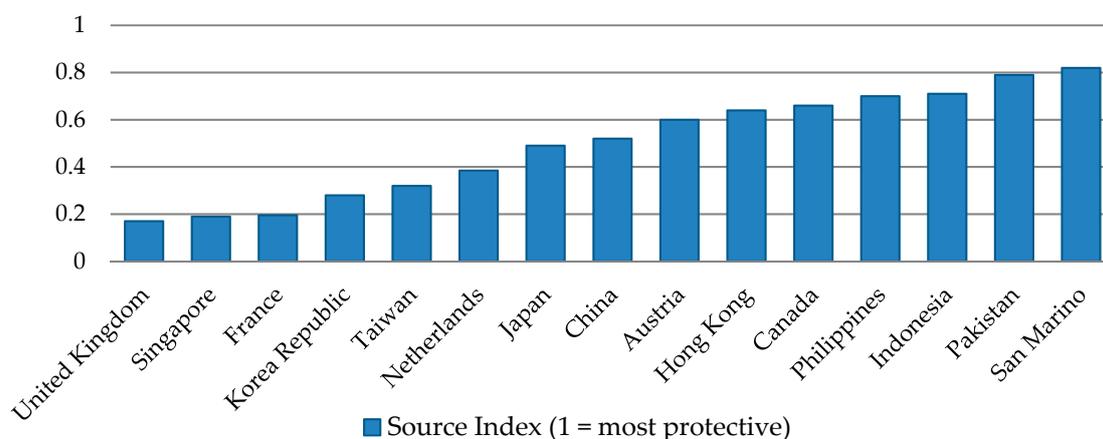


Figure 1. Degree of protection of taxing rights of Vietnam against foreign companies in tax treaties. Source: Action Aid Tax Treaties Dataset. Notes: Dataset analyses treaties between 1970 and 2016. It includes re-negotiated treaties but ignores protocols other than those concluded at the time of the original treaty.

3.2. Bilateral Trade between Vietnam and ASEAN during 2001–2016

As illustrated in Figure 2, Vietnam has always been facing a trade deficit with ASEAN over the past 16 years. However, as exports to ASEAN grow faster than imports from this region (Figure 3), Vietnam’s trade deficit (as well as trade deficit rate) with ASEAN has been gradually narrowing. Specifically, the year 2001 saw a deficit of 1.62 billion USD (the United States Dollar) with a trade deficit rate of 61.2%; the deficit in 2010 recorded 6.1 billion USD with a trade deficit rate of 63.5%; the deficit in 2015 reduced to 5.6 billion USD with a trade deficit rate of 76.5%; the year of 2016 witnessed a rebound in the trade deficit to 6.7 billion USD due to a decreasing in exports from 18.2 billion in 2015 to 17.4 billion USD in 2016 whilst imports moving up to 24.1 billion USD in compared to 23.8 billion USD in 2015. Between 2009 and 2013, as exports grew faster than imports, Vietnam’s trade deficit

position has improved markedly. This somewhat marks the initial success of Vietnam in pursuit of export promotion strategies during recent years.

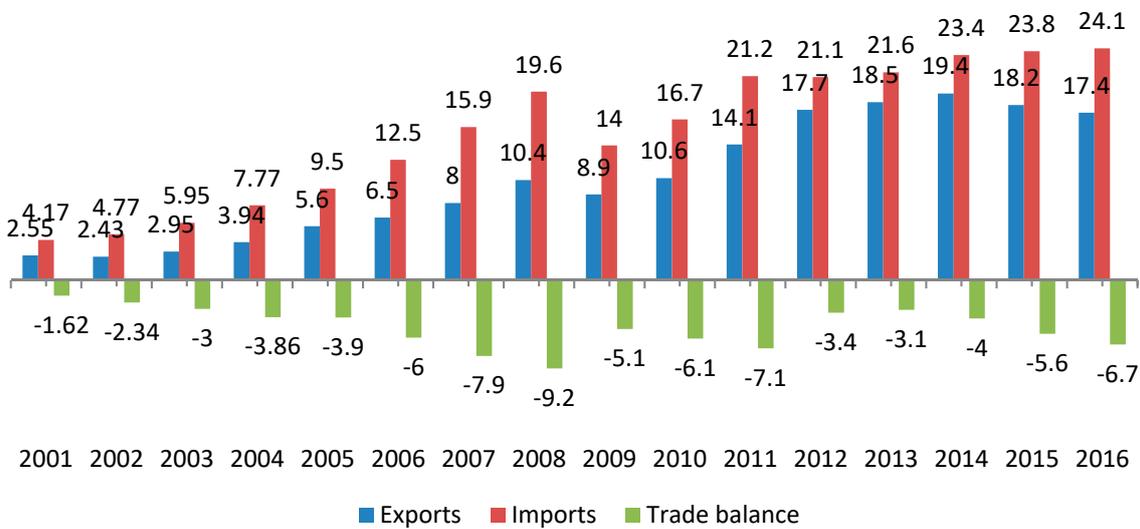


Figure 2. Exports, imports and trade balance between Vietnam and ASEAN, 2001–2016 (in billions of USD). Source: Vietnam Customs from www.customs.gov.vn/.

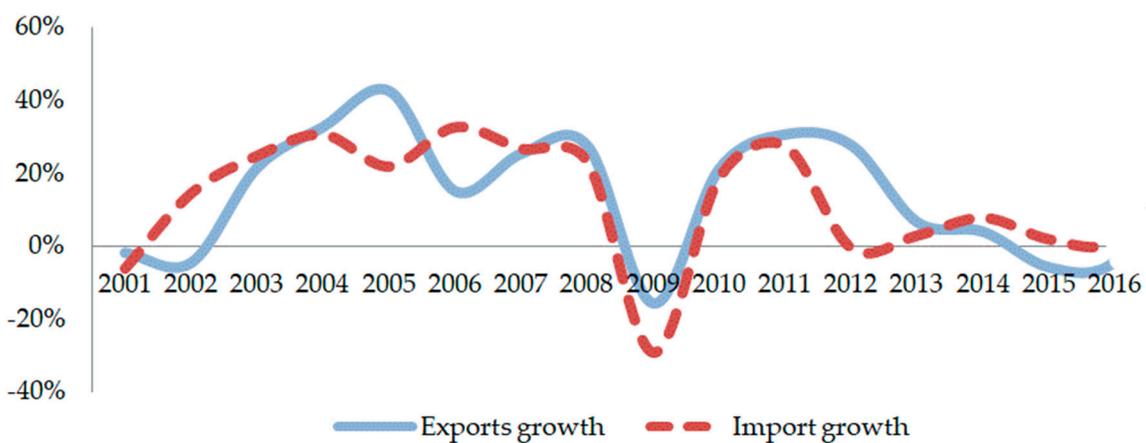


Figure 3. Vietnam’s exports and imports with ASEAN (annual growth), 2001–2016. Source: Authors’ calculations using Vietnam Customs dataset from www.customs.gov.vn/.

In respect of intra-bloc trade, Vietnam focuses on trade with three key partners, namely, Thailand, Singapore and Malaysia. According to Vietnam Customs statistics, the trade value of Vietnam with ASEAN reached ‘top four’ in 2016 with 11.8% of the total import-export values of Vietnam after China, EU and the US.

4. Methodology

4.1. Gravity Equations

Since being introduced by Tinbergen (1962), the gravity model has become a widespread practical instrument for clarifying the origins, features, and movements of bilateral trade between nations as well as the role of bilateral or regional trading arrangements in trade promotion (Van Bergeijk and Brakman 2010). Derived from Newton’s law of universal gravitation, the reduced-form gravity model is formulated on the assumption that bilateral trade is subject to the economic size (measured by GDP—Gross Domestic Product or GNI—Gross National Income)

of trading countries and their geographical distance. The inclusion of solely geographical distance as a ‘multilateral resistance’ indicator seems rather unconvincing, as, in effect, there remain possible alternatives having an adverse effect on trade, for instance, tariffs, exchange rate movement, and border effect. In an extension of this approach, [Sattinger \(1978\)](#) and [Bergstrand \(1985\)](#) developed the generalised form of the gravity model, where the trade between pairs of countries is a function of incomes (Y_i và Y_j), the geographical distance between the economic centres of the two countries (D_{ij}), the ‘bilateral resistance’ components and the formation of free trade agreements (A_{ij}) (see Equation (1)).

$$X_{ij} = G \times Y_i^{\beta_1} \times Y_j^{\beta_2} \times D_{ij}^{\beta_3} \times A_{ij}^{\beta_4} \tag{1}$$

Admittedly, the merits of the gravity model are not only in its coverage of the factors belonging to both exporting and importing countries but in its adaptable capability in assessing policy effectiveness. Besides, as indicated by [Kahouli and Omri \(2017\)](#), experiments with the gravity model on a large-scale sample could yield more robust results than with others since it deals with data between pairs of countries.

By modifying the gravity specification to fit the distinct characteristics of Vietnam’s bilateral trade flows as suggested by [Limão and Venables \(2001\)](#); [Carrère \(2006\)](#); [Braunschweig \(2014\)](#); [Nho et al. \(2014\)](#); [Nguyen \(2018\)](#), we construct Equation (2) as follows.

$$\ln T_{ij,t} = \beta_0 + \beta_1 \ln Y_{i,t} + \beta_2 \ln Y_{j,t} + \beta_3 \ln N_{j,t} + \beta_4 \ln D_{ij} + \beta_5 \ln Rer_{i/j,t} + \beta_6 \text{Border} + \beta_7 \text{Landlocked}_j + \beta_8 \text{Bloc} + \beta_9 \text{Dtt}_{ij,t} + \varepsilon_{ij,t} \tag{2}$$

Regression analysis is carried out in turns with three dependent variables (in log form), incorporating bilateral trade flows (exports + imports) between Vietnam and partner country j (T_{ij}), export value of Vietnam to country j (X_{ij}) and import value from country j into Vietnam (M_{ij}). The explanatory variables are defined as follows.

- $\ln Y_{i,t}$ and $\ln Y_{j,t}$: denote logs of the per capita GDP of Vietnam and country j at time t , respectively (in constant 2010 USD);
- $\ln N_{j,t}$: refers to a log of the population of country j at time t . It is noteworthy that both Y_j and N_j indicators showcase the market capacity of the trading partner;
- $\ln D_{ij}$: is the log of great circle distance¹ (in kilometres) between the capital cities of Vietnam and country j , which represents the trade costs of Vietnam;
- $\ln Rer_{i/j,t}$: denotes the log of real exchange rate of VND (Vietnamese dong) against trading partner j ’s currency, measured based on the nominal exchange rate adjusted for the effect of the price index. The formula for this indicator is as follows.

$$Rer_{i/j} = \frac{Ner_{i/\$}}{Ner_{j/\$}} \times \frac{CPI_j}{CPI_i} \tag{3}$$

where $Ner_{i/\$}$ and $Ner_{j/\$}$ are the nominal exchange rate of VND and j ’s currency vis-à-vis USD, i.e., the value of each currency in exchange for a single dollar; CPI_i and CPI_j refer to the consumer price index of Vietnam and country j . For each pair of countries, the Rer is normalized by setting 2001 as the base year (2001=100). Besides, it is worth noting that a rise in the $Rer_{i/j}$ refers to the depreciation of VND against partner currency;

- **Border**: a dummy variable capturing the border effect, taking the value of 1 if Vietnam and j share a common land border, 0 otherwise;
- **Landlocked_j**: a dummy variable for landlocked trading partner, taking the value of 1 if country j does not have direct access to the sea, 0 otherwise. In theory, being entirely enclosed by land

¹ The minimum geographical distance on the surface of the earth.

would be detrimental to these partner countries in developing international trade by sea, thereby inhibiting their economic development;

- Bloc: a set of dummies representing the regional trade agreement effect, which encompass three separate cases as follows.
 - ASEAN: receives the value of 1 if country j is a member of ASEAN and participates in ASEAN Free Trade Area (AFTA), 0 otherwise;
 - ASEAN+3: receives the value of 1 if country j join the comprehensive partnership agreement between ASEAN and the ‘plus three’ nations, namely, China, Japan and Republic of Korea, 0 otherwise;
 - EU: receives the value of 1 if country j is a member of the EU, 0 otherwise;
- $Dtt_{ij,t}$: a dummy variable denoting the existence of tax treaty, taking the value of 1 if country j has successfully concluded the double taxation treaty with Vietnam, 0 otherwise;
- t denotes for the time.

Besides, to address the question of how different trade blocs could affect the nexus between bilateral trade and double taxation treaties, we propose adding an interaction term between trade bloc and tax treaty to the trade gravity function. Thus, Equation (4) is given by:

$$\ln T_{ij,t} = \beta_0 + \beta_1 \ln Y_{i,t} + \beta_2 \ln Y_{j,t} + \beta_3 \ln N_{j,t} + \beta_4 \ln D_{ij} + \beta_5 \ln Rer_{i/j,t} + \beta_6 \text{Border} + \beta_7 \text{Landlocked}_j + \beta_8 \text{Bloc} + \beta_9 \text{Dtt}_{ij,t} + \beta_{10} \text{Bloc} \times \text{Dtt}_{ij,t} + \varepsilon_{ij,t} \quad (4)$$

where

- $\text{Bloc} \times \text{Dtt}_{ij,t}$: denotes the interaction term between trade bloc and tax treaty;
- Other variables are in Equation (2).

4.2. Data

This study examines the effect of tax treaties on Vietnam’s trade activities using annual-based panel data of 67 top trading partners of Vietnam within a 16-year timescale from 2001 to 2016. Data are obtained from a diverse range of sources, specifically:

- Data on bilateral trade volume (including exports and imports) of Vietnam with each trading partner are collected from the International Trade Center (ITC) database;
- Data on per capita GDP and population are extracted from the World Development Indicators (WDI);
- Distance between trading partners is calculated based on the ‘great circle distance between capital cities’ database (www.chemical-ecology.net).
- Data on exchange rate of each currency against USD and CPI—Consumer Price Index (used to work out the real exchange rate) are obtained from the International Financial Statistics (IFS).
- Data on the membership of AFTA, ASEAN+3 and the EU are recorded from the official websites of these organisations (asean.org and europa.eu). The list of double taxation treaties of Vietnam is updated from the website of Vietnam’s General Department of Taxation (www.gdt.gov.vn).

Summary statistics for variables in the model are presented in Table 2.

Table 2. Summary statistics of variables (number of observations: 1072).

Variables	Unit	Mean	Std. Dev.	Min	Max
Bilateral trade between Vietnam and j (T_{ij})	USD thousand	2,276,979	6,173,491	20	7.20×10^7
Exports from Vietnam to j (X_{ij})	USD thousand	1,092,218	2,896,238	10	3.85×10^7
Imports from j into Vietnam (M_{ij})	USD thousand	1,184,762	3,942,454	3	5.00×10^7
GDP per capita of Vietnam (Y_i)	USD	1233	285	800	1735
GDP per capita of j (Y_j)	USD	26,717	22,364	382	111,968
Population of j (N_j)	People	7.42×10^7	2.17×10^8	284,968	1.38×10^9
Distance between Vietnam and j (D_{ij})	km	7328	3931	482	18,958
Real exchange rate of VND per foreign currency ($Rer_{i/j}$)		383	2470	1.97	31,947
Border effect (Border)		0.05	0.21	0	1
Landlocked country (Landlocked _j)		0.11	0.31	0	1
Trade bloc (Bloc)	Including 3 dummies as follows.				
• ASEAN		0.13	0.34	0	1
• ASEAN+3		0.18	0.38	0	1
• EU		0.37	0.48	0	1
Tax treaty effect (Dtt_{ij})		0.55	0.50	0	1

5. Results and Discussions

5.1. Empirical Results

Tables 3–5 summarise estimation results of the gravity model on bilateral trade, exports and imports of Vietnam using Generalized Least Squares (GLS) method to obtain unbiased estimation due to the problem of heteroskedasticity in the data.

Table 3. Estimation results on Vietnam’s bilateral trade flow.

Explanatory Variables	ASEAN		ASEAN+3		EU	
	Equation (2)	Equation (4)	Equation (2)	Equation (4)	Equation (2)	Equation (4)
$\ln Y_i$	2.82 ***	2.80 ***	2.84 ***	2.83 ***	2.83 ***	2.86 ***
$\ln Y_j$	1.06 ***	1.07 ***	1.02 ***	1.02 ***	1.02 ***	1.02 ***
$\ln N_j$	1.03 ***	1.02 ***	1.01 ***	1.00 ***	1.01 ***	1.01 ***
$\ln D_{ij}$	-1.17 ***	-1.16 ***	-1.20 ***	-1.19 ***	-1.33 ***	-1.37 ***
$\ln Rer_{i/j}$	0.19 ***	0.19 ***	0.19 ***	0.19 ***	0.19 ***	0.21 ***
Border	1.14 ***	1.31 ***	0.98 ***	1.06 ***	1.08 ***	1.07 ***
Landlocked	-0.36 **	-0.39 ***	-0.34 **	-0.35 **	-0.37 **	-0.42 ***
Bloc	0.62 ***	0.15	0.45 ***	0.13	-0.05	-0.31 **
Dtt_{ij}	0.24 **	0.20 *	0.25 **	0.22 **	0.31 ***	0.15
$Bloc \times Dtt_{ij}$		0.60 **		0.37		0.46 **

Notes: Dependent variable $\ln T_{ij}$ —log of bilateral trade flows between Vietnam and country j. Equations (2) and (4) are estimated sequentially with three separate cases of the regional trade agreements (Bloc). *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table 4. Estimation results on Vietnam’s exports.

Explanatory Variables	ASEAN		ASEAN+3		EU	
	Equation (2)	Equation (4)	Equation (2)	Equation (4)	Equation (2)	Equation (4)
$\ln Y_i$	3.18 ***	3.18 ***	3.19 ***	3.21 ***	3.11 ***	3.12 ***
$\ln Y_j$	0.97 ***	0.97 ***	0.92 ***	0.92 ***	0.89 ***	0.89 ***
$\ln N_j$	1.06 ***	1.06 ***	1.03 ***	1.04 ***	1.06 ***	1.06 ***
$\ln D_{ij}$	-0.84 ***	-0.84 ***	-0.93 ***	-0.94 ***	-1.14 ***	-1.16 ***
$\ln Rer_{i/j}$	0.26 ***	0.26 ***	0.25 ***	0.26 ***	0.22 ***	0.24 ***
Border	1.30 ***	1.24 ***	1.11 ***	1.00 ***	1.17 ***	1.17 ***
Landlocked	-0.28 *	-0.27 *	-0.26 *	-0.24	-0.40 **	-0.44 ***
Bloc	0.85 ***	0.99 ***	0.43 **	0.87 ***	0.32 ***	0.15
Dtt_{ij}	0.13	0.14	0.16	0.20 *	0.17	0.06
$Bloc \times Dtt_{ij}$		-0.18		-0.50		0.31

Notes: Dependent variable $\ln X_{ij}$ —log of export volume of Vietnam to country j. Equations (2) and (4) are estimated sequentially with three separate cases of the regional trade agreements (Bloc). *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table 5. Estimation results on Vietnam’s imports.

Explanatory Variables	ASEAN		ASEAN+3		EU	
	Equation (2)	Equation (4)	Equation (2)	Equation (4)	Equation (2)	Equation (4)
$\ln Y_i$	2.31 ***	2.26 ***	2.33 ***	2.30 ***	2.35 ***	2.37 ***
$\ln Y_j$	1.45 ***	1.47 ***	1.40 ***	1.39 ***	1.40 ***	1.40 ***
$\ln N_j$	1.14 ***	1.13 ***	1.11 ***	1.09 ***	1.11 ***	1.11 ***
$\ln D_{ij}$	-1.47 ***	-1.44 ***	-1.51 ***	-1.50 ***	-1.67 ***	-1.70 ***
$\ln Rer_{i/j}$	0.18 ***	0.18 ***	0.18 ***	0.18 ***	0.21 ***	0.22 ***
Border	1.59 ***	2.02 ***	1.35 ***	1.61 ***	1.52 ***	1.51 ***
Landlocked	-0.42 **	-0.49 ***	-0.38 **	-0.43 **	-0.37 **	-0.41 **
Bloc	0.93 ***	-0.25	0.68 ***	-0.28	-0.25 *	-0.40 **
Dtt_{ij}	0.58 ***	0.46 ***	0.59 ***	0.51 ***	0.71 ***	0.61 ***
$Bloc \times Dtt_{ij}$		1.51 ***		1.11 ***		0.28

Notes: Dependent variable $\ln M_{ij}$ —log of import value of country j into Vietnam. Equations (2) and (4) are estimated sequentially with three separate cases of the regional trade agreements (Bloc). *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

A glance at the result tables reveals the regression coefficients of the fundamental variables of the trade gravity model, incorporating the economic capacity of Vietnam and partner countries (Y_i and Y_j), the market size of partner countries (N_j) and the multilateral resistance are statistically significant at 1%. Aside from that, the impact direction of those augmented factors encompassing the real exchange rate ($Rer_{i/j}$), the border effect (Border) and the landlocked country (Landlocked) endorse most previous studies. Specifically, a rise in:

- (i) the per capita incomes of Vietnam and its partners.
- (ii) the population of the partner countries.
- (iii) the downfall of VND, could foster the bilateral trade of Vietnam. Such positive tendency is also reflected through the effect of both sharing a common border and signing a double taxation treaty.

As regards the role of regional trade agreements, while trade turnover of Vietnam with ASEAN member states as well as the ‘plus three’ partner countries under ASEAN+3 is well above average in the sample, the trade results with the EU member states remain below the average (except for exports). On the other hand, based on the coefficient of the interaction term ($Bloc \times Dtt_{ij}$), we find that the signing of double taxation treaties tends to: (i) promote Vietnam’s trade development with ASEAN and EU member countries; (ii) stimulate the import turnover from ASEAN and the ‘plus three’ partners under ASEAN+3 into Vietnam; (iii) have little or no effect on export promotion programs of Vietnam. Finally, geographical distance and the landlocked characteristic of trading partners are recognized as major multilateral resistance indicators to the development of Vietnam’s trade activities.

5.2. Discussions

From the empirical analysis of the impact of double taxation treaties on Vietnam’s bilateral trade in general, exports and imports in particular with ASEAN over 16 years, notable conclusions can be drawn as follows.

First, the growth in the per capita incomes of either Vietnam or its trading partners could contribute to bilateral trade expansion (including both exports and imports); however, the effect from Vietnam’s side still plays a decisive role. Likewise, market size (as characterised by the population) of the trading partner is found to have a significant positive impact on the two-way merchandise trade. These findings are entirely compatible with those of Bergstrand (1985); Novy (2013); Nho et al. (2014); Nguyen (2018), accordingly, bilateral economic capacities and market size are deemed key drivers of external trade development. Developed countries with massive industrial production could boost exports of goods to emerging markets without difficulty, and at the same time, their high-income levels could also fuel demand for imports of goods from developing countries.

Second, in line with previous studies (Bergstrand 1985), the geographical distance (a “multilateral resistance” component) is found to have a significant and negative impact on bilateral trade flows,

whereby a 1% increase in the distance from Hanoi (the capital city of Vietnam) to a trading partner’s economic centre would lead, on average, to a 1.15% fall if this partner belongs to the ASEAN or a 1.45% fall if this partner belongs to the EU.

Third, exchange rates play a critical part in regulating trade flows. Empirical results reveal that an increase in the real exchange rate, otherwise a depreciation in the value of VND, tends to promote Vietnam’s trade growth. According to Miles (1979); Warner and Kreinin (1983), the downfall of the domestic currency would have a significant impact on both export and import prices, thus affecting the competitiveness of exports. In order to boost exports, since 2001, Vietnam has constantly strived to maintain a competitive exchange rate of VND against foreign currencies under the fixed regime (within a low bandwidth, from ±1% to ±3%). Although depreciated by nearly 20% during the Asian currency crisis, the value of VND has gradually improved with a far slighter decline since then (Figure 4). In order to enhance trade competitiveness in the context of an ever-growing number of regional trade agreements and burgeoning trade wars, since 2016, Vietnam has decided to move to a managed floating regime with the introduction of the ‘reference central rate’ of VND per USD². It is strongly believed that this move to currency basket peg could help maintain monetary stability and the flexibility in monetary policy management, under which, the objective of VND devaluation could be reached in sequence, with negative external shocks being avoided.

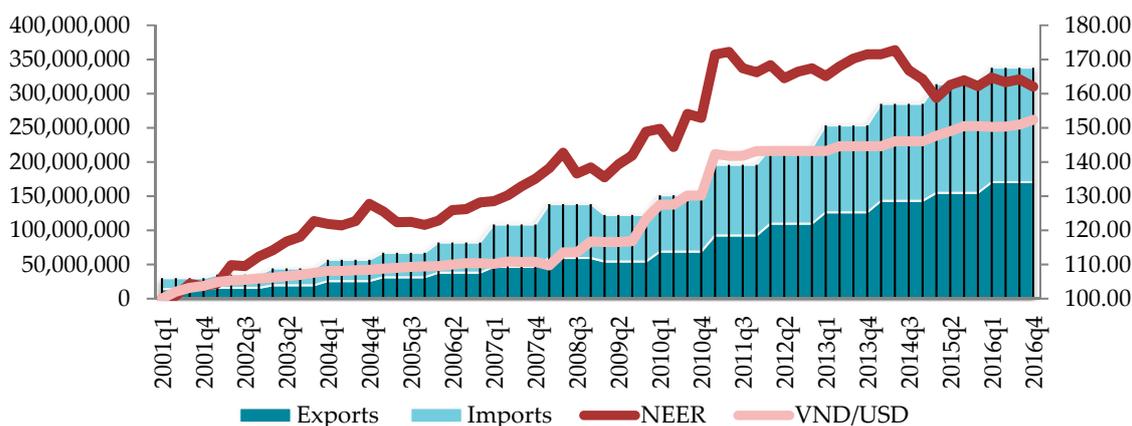


Figure 4. Exchange rate, exports and imports of Vietnam, 2001–2016. Source: Authors’ calculations using data from International Trade Centre (ITC) Trade Map, International Monetary Fund (IMF) International Financial Statistics (IFS) and Vietnam’s Ministry of Finance (MOF). Notes: Exports and imports of Vietnam (left axis: thousands of USD). VND/USD exchange rate and nominal effective exchange rate (NEER) of VND against a basket of 8 most important trading partner currencies (right axis: index).

Fourth, the border effect contributes enormously to the development of Vietnam’s bilateral commercial activities. Accordingly, sharing a border allows partner countries to benefit from trade with Vietnam, approximately 1–2% greater than countries with no border. Notably, during recent years, China has been emerging as Vietnam’s largest export and import markets thanks to distinguishing advantages in terms of geographical closeness and cultural identity between the two countries.

Fifth, the landlocked characteristic of trading partner turns out to be a multilateral resistance term in the trade gravity specification. This finding coincides with Carrère’s (2006) study, whereby being entirely enclosed by land might hinder the trading countries from approaching the global market by sea, which could be seriously detrimental to their economic development.

² The central reference rate is pegged to three benchmarks: (i) demand and supply of VND; (ii) the exchange rates for a basket of 8 major trading partner currencies, including USD, EUR, CNY, THB, JPY, SGD, KRW and TWD; (iii) adjustments to balance macroeconomic needs.

Sixth, in regard to the existence of bloc trade, whilst AFTA and ASEAN+3 comprehensive partnership framework (where Vietnam is a member) make a comprehensive contributions to Vietnam's bilateral trade activities in general, exports and imports in particular, the influence of the EU as a political and economic union is reflected in stimulating exports of goods from Vietnam to EU member states and restricting the imports of goods from the EU into Vietnam, thereby improving the trade deficit for Vietnam. AFTA was officially established in 1992 with the primary goals of enhancing ASEAN's competitive edge as a production base in the global market. An essential step of the AFTA agreement is to facilitate intra-regional trade by removing tariff and non-tariff barriers on a common path, taking into account varied development stages of its member states. As a result, a Common Effective Preferential Tariff (CEPT) scheme was introduced. As committed, members must bring down tariffs to 0–5% within 10 years, specifically: Brunei, Indonesia, Malaysia, Philippines, Singapore, and Thailand must complete tariff reductions by 2003 (extended to 2010), for Vietnam by 2006 (extended to 2015, with flexibility until 2018). Fukase and Martin (1999) argue that the implementation of CEPT scheme contributes to the shift of intra-ASEAN manufacturing structure so that highly developed countries (including Singapore, Malaysia, and Thailand) would spur investment in labour-intensive sectors, concurrently benefit from AFTA's preferential tax rates. Additionally, AFTA also boosts FDI attraction from the three strategic partners under ASEAN+3 into Vietnam in sectors that can make full use of the collective resources of ASEAN and low-cost labour of Vietnam. Such movements would facilitate Vietnam's access to both ASEAN and ASEAN+3 markets. Compared with the EU partner countries, the improvement in bilateral trade flows of Vietnam with ASEAN and ASEAN+3 appears far more impressive since Vietnam's foreign policy during recent years focused on promoting strategic economic and political relations within ASEAN region, in addition to the particular advantages in terms of geographical and cultural proximity or the history of trade.

Seventh, the regression results of the trade effect of tax treaties moderated by the trade blocs suggest that double taxation treaties tend to facilitate Vietnam's two-way trade with member countries of AFTA and the EU. However, when 'peeling off' the story, we find that trade flows generated by the tax treaties' effect are primarily one-way, viz., imports from developed countries into Vietnam.

Vietnam has concluded double taxation treaties with 77 countries, surpassing the number signed by Laos, Cambodia, Myanmar or the Philippines. Theoretically speaking, a tax treaty could benefit Vietnam's economy directly from the attraction of FDI or indirectly from the facilitation of international trade. Nevertheless, according to Action Aid (2017), when Vietnam rolls out 'red carpet' for foreign investors and MNEs through the introduction of double taxation treaties and special tax incentives. This may reinforce inequalities in investment (between domestic and foreign enterprises) and commercial activities (between developed and developing countries). This can be explained as follows: Tax incentives being equal between host countries, merchandise imported from developed countries with rigorous quality standards and tax advantages from signing treaties could without difficulty approach and dominate the emerging markets. Conversely, stringent technical barriers to trade, set up by developed countries, could be useful in restricting imports from emerging countries. Besides, it is also possible to interpret the 'imports dominance' effect of tax treaties based on the analysis of the 'transfer mispricing' dynamism among foreign-invested enterprises'. Specifically:

- According to Vietnam Chamber of Commerce and Industry (VCCI) statistics, the period of 2011–2016 saw a marked increase in the proportion of foreign-invested enterprises whose report losses (to relieve the tax burden), of which the net loss margin of wholly foreign-invested enterprises always outweighs that of joint venture enterprises (Figure 5 will provide an overview on shares of domestic and foreign direct investment enterprises to trade volume of Vietnam, and Table 6 will give a snapshot of the business performance of FDI enterprises in Vietnam from 2001–2016 due to a limited data source and assessment). This situation arises since, in comparison

to other developing economies, Vietnam’s tax treaties tend to safeguard its taxing right to a higher degree against developed countries from ASEAN or the EU³.

- In principle, in order to record a net loss in the income statement, foreign-invested enterprises may be in “cahoots” with their foreign affiliation under common ownership or control to increase the cost of importing materials and/or reduce the export price. Alongside the preferential treatment brought by tax treaties, some accounting adjustment of foreign-invested enterprises, for instance, to increase the input costs and/or lower export revenues, may result in (i) the ‘imports dominance’ effect and (ii) net losses in business. Under the circumstances, enterprises have benefitted from ‘double non-taxation’. A report by IMF (2019) shows that the MNEs can “shift their profits to lower tax jurisdiction” if the developing countries have not much experienced and effective provision to protect against. Somehow, developing with less power negotiation will accept the bilateral tax treaties—even that country cannot benefit from the agreement—due to economic reason such as increasing FDI inflow or diplomatic issues (see more detail in Zolt 2018; IMF 2014, 2019; OECD 2015).

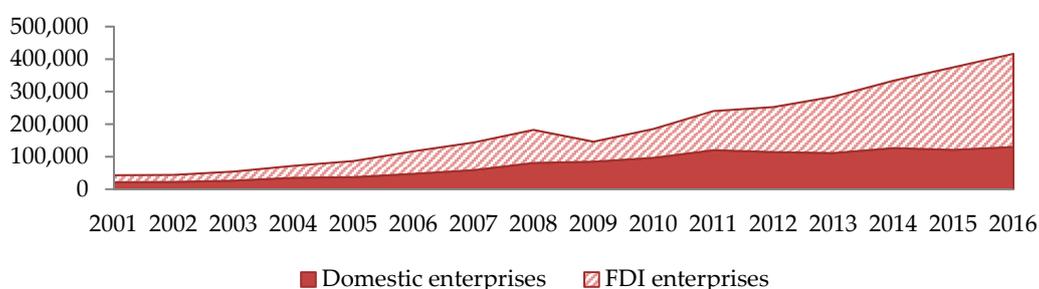


Figure 5. Share of foreign direct investment (FDI) enterprises to the trade volumes of Vietnam, 2001–2016 (in billions of USD). Source: General Statistics Office of Vietnam (GSO) website <https://www.gso.gov.vn/>.

Table 6. Business performance of foreign direct investment (FDI) enterprises in Vietnam, 2011–2016.

Time	Percentage of Enterprises Raising Investment Capital	Percentage of Enterprises with Increased Labour Force	Percentage of Enterprises Reporting Profits	Percentage of Enterprises Reporting Losses	Average Total Revenue (Millions of USD, Constant 2010 Prices)	Average Total Cost (Millions of USD, Constant 2010 Prices)
2011	4.8	28.4	57.7	24.8	1.36	1.08
2012	5.2	31.0	60.4	27.5	1.54	0.97
2013	5.1	30.0	63.6	24.1	1.45	0.94
2014	16.1	62.4	57.9	34.2	1.14	0.71
2015	11.4	62.4	55.1	37.6	0.69	1.42
2016	11.0	63.3	59.0	33.4	0.73	0.49

Source: Vietnam Chamber of Commerce and Industry (VCCI).

6. Conclusions

By employing the extensive dataset of 67 largest trading partners of Vietnam over the period of 2001–2016 in conjunction with the gravity-based approach and GLS analysis techniques, the study confirms the positive contributions of the double taxation treaties to Vietnam’s bilateral trade with not only ASEAN but EU member states, which has not yet been clarified in the previous literature. In a particular situation, however, the signing of tax treaties may not be really useful in enhancing export capacity or relieving trade deficits for Vietnam. The reason, as revealed in our empirical analysis of

³ Based on Action Aid’s (2017) calculations, Vietnam’s average source index reaches 0.56 while the average across all developing countries is just 0.45.

Vietnam's exports and imports, is that bilateral trade under the influence of tax treaties has been moving primarily in one direction, specifically, imports from developed countries into Vietnam. Meanwhile, the role of tax treaties as a dynamism of Vietnam's export growth seems unclear during recent years. Our judgment is based on a detailed analysis of the technical barriers effect of developed partner countries and the 'transfer mispricing' behaviour of foreign-invested enterprises.

Based on the theoretical arguments and empirical findings, Vietnamese government may consider adopting a comprehensive open-door policy to further promote exports in terms of value and quality of the goods, with not only member states within ASEAN and ASEAN+3 but developed countries in the EU. Aside from that, in coping with the invasion of imported goods as a consequence of strengthening bilateral co-operation through free trade agreements, Vietnam should focus its efforts on discussion and passing of a protectionism strategy on specific commodities during each stage of development. As recommended by IMF (2019), prior to entrance to a negotiation, developing countries should first strengthen its tax environment and economic development policies; then they "would be well-advised to sign treaties only with considerable caution". This guarantees that developing countries such Vietnam can benefit from the agreement instead of focusing only on FDI attraction, or "getting nothing for something", according to Zolt (2018). It could be the future stage to analyze the effects of double taxation treaties on FDI or financial aids.

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