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Do Free Trade Agreements (FTAs) Really Increase Vietnam's Foreign Trade and Inward Foreign Direct Investment (FDI)?

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Authors' contributions

This work was carried out in collaboration between all authors. The corresponding author HCC designed the study, adjusted gravity models and wrote the first draft of the manuscript. Author TTNT managed the literature searches, performed the initial statistical compilations and estimated the coefficients of gravity equations. Author DTN expanded the literature search and collected the data. All authors read and approved the final manuscript.

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ABSTRACT

Free Trade Agreements (FTAs), the first stage of economic integration, can have possible impacts on member countries through foreign direct investment (FDI) and foreign trade. In this study, we attempt to evaluate the impacts of FTAs that Vietnam has engaged successfully recently on inward FDI and foreign trade of the country. To do this we construct three gravity models, employ a panel dataset of country pairs and the Hausman-Taylor (1981) estimation. The estimation results suggest that the opening up of the country's economy through the means of FTAs and the WTO has led to diverse FDI and foreign trade effects. Some FTAs have created "strong" trade and inward FDI but unevenly across individual agreements.

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JEL CLASSIFICATIONS

F13, F15, F21, C33

1. INTRODUCTION

The authors start by giving the definition of terms used in this research (e.g. FDI, foreign trade and comparative advantage etc.). The International Monetary Fund (IMF) defines foreign direct investment (FDI) as "cross border investment" in which an investor that is "resident in one country has control or a significant degree of influence on the management of an enterprise that is resident in another economy". [1] Foreign trade is the exchange of goods and services between the domestic sector of a given nation and its foreign sector (other nations or the rest of the world).[2] In foreign trade, a country is said to have a comparative advantage if it can produce one good at a relatively lower opportunity cost than other goods, compared with the production in another country.[3] Free Trade Agreement (FTA) is an agreement signed by two or more countries to establish a free trade area where commerce in goods and services can be conducted across their common borders without tariffs or hindrances. [4] Free trade agreements (FTAs) eliminate/reduce tariffs, quotas, non-tariff barriers, hindrances, and preferences on most goods and services traded between their member countries. Free trade area can be considered as the first stage of economic integration.[5] FTA often covers not only trade in goods and services but also other areas such as government procurement, intellectual property rights, competition policy, investment measures, etc. FTAs are closely related to the formation of trade blocs. According to reference for business, trading blocs are "relationships between countries, generally in the same region to facilitate free trade".[6] Members of FTAs do not have a common external tariff, which means they have different quotas and customs duties, as well as other policies with respect to non-members.[7] Most favored nation (MFN) status is an important part of FTAs. All countries with MFN status receive equal treatment without regard to wealth, politics or position. All benefits-including tariff reduction and tax assistance-applied to one country pertain to all countries that are most favored nations. FTAs open markets and expand opportunities for workers and businesses. They promote fair competition and encourage foreign governments to use open and fair rules and procedures as well as non-discriminatory business practices. FTAs strengthen the business environment by eliminating tariffs and including commitments on issues that concern all parties. [8] FTAs also benefit consumers, who will have increased access to less expensive and/or higher quality foreign goods as governments reduce or eliminate tariffs.

Countries signed/joined FTAs to promote free trade because free trade improves resource allocation, lowers prices for consumers, and leads to a more efficient production. An open trade regime also encourages the integration of an economy into the global trading system and increases imports of modern technology, which results in productivity improvements. The consuming point of participating economy will be beyond the production possibility frontier (PPF) and at a higher community indifferent curve showing the benefit the economy can get from

[1] *IMF, Balance of Payments and International Investment Position Manual 100 (6th edition 2009); Accessed 7 November 2014. Available: http://www.law.cornell.edu/wex/foreign_direct_investment.*

[2] *Also termed international trade when viewed from the perspective of the global economy, in which the nations of the world are players in the exchange game. Foreign trade is usually viewed from the perspective of the domestic sector of a given economy.*

[3] *The definition of terms are acquired/adopted from FOREIGN TRADE, Amos WEB Encyclonomic WEB* pedia. Accessed 17 November 2014. Available: http://www.AmosWEB.com, Amos WEB LLC, 2000-2013.*

[4] *See Free Trade Agreement. Accessed 1 January 2015. Available: http://www.businessdictionary.com/definition/free-trade-agreement.html; See also WTO (2009), Regional Trade Agreements. Accessed 1 January 2015. Available: Http://Www.Wto.Org/English/Tratop_E/Region_E/Region_E.Htm.*

[5] *The others are Customs Union (the second stage), Common Market (the third stage), Economic Union (the fourth stage), and Political Union (the last/fifth stage). To develop a free trade area, participating nations must develop rules for how the new free trade area will operate. What customs procedures will each country have to follow? What tariffs, if any, will be allowed and what will their costs be? How will participating countries resolve trade disputes? How will goods be transported for trade? How will intellectual property rights be established and managed? The goal is to create a trade policy that all countries in the free trade area agree.*

[6] *See Explanation of Free Trade Agreements. Accessed 2 January 2015. Available: http://smallbusiness.chron.com/explanation-trade-agreements-1068.html.*

[7] *Ibid.*

[8] *Ibid [1].*

foreign trade with partner as indicated in Racardian and Heckscher-Ohlin Models.[9]

In the context of rapid globalization and international economic integration, Vietnam is not an exceptional case. In the 1980s, Vietnam was one of the poorest countries in the world, dealing with internal difficulties such as super inflation, poverty, and an economic crisis. To stimulate economic development, control inflation, and catch up with other countries in the region that were rapidly advancing, Vietnam started transforming its centrally planned economy into a market-economy since 1986, which is the so-called Renovation Policy ("Doi moi" in Vietnamese). The country started opening "the door" to the World in the early 1990s. Since the end of the embargo of the United States in February 1994, Vietnam has engaged successively in several regional free trade agreements and international organizations (see Fig. 1 below).

Theoretically, one can classify the economic impacts of a FTA into two groups: "Static Effects" and "Dynamic Effects". The "Static Effects" include the "Trade Creation" and "Trade Diversion". "Trade creation is defined as the replacement of higher cost domestic production by lower cost sources of supply within the new union". "Trade diversion means that trade has been diverted by discriminatory tariffs from a low-cost external source to higher cost source within the new union". The "Dynamic Effects" consist of three main effects in the long-term. First, the increased size of the domestic market, now including other member countries, will enable producers to exploit economy of large-scale production, leading to an expansion into the international market (trade expansion). Second, there will be increase in competitive pressure on inactive industries.[10] Third, it will stimulate investment.[11] This raises the research question that do free trade agreements really increase Vietnam's foreign trade and inward FDI?

From this approach, this study will evaluate the possible impacts of important FTAs that Vietnam has joined recently on foreign trade and inward FDI of the country. To do this, the authors will employ gravity model and a panel data set during 1995-2011 that covers bilateral trade and FDI flows between Vietnam and its 17 major/stable trading and FDI partners using the Hausman-Taylor (1981) estimation. The remainder of this study is organized as follows. Section 2 will first provide a literature survey on the impacts of FTAs on their member countries. Section 3 follows this by giving an analysis on Vietnam's recent foreign trade and FDI inflows into the country. Section 4 details the gravity models and decrypts the data set. Section 5 discusses the empirical estimation results. The final section refers to concluding remarks and recommendations.

2. A BRIEF LITERATURE REVIEW ON THE IMPACTS OF FTAS ON THEIR MEMBER COUNTRIES

Tinbergen [5] was the first attempt to examine the effects of FTA on trade, and he found significant positive effects among members of the British Commonwealth but insignificant for the Benelux FTA. In the 1970s and 1980s several studies analyzed the effects of major regional trade agreements and schemes, such as the EEC (European Economic Community), EFTA (European Free Trade Association) and LAFTA (Latin America Free Trade Agreement) such as [6] and [7], etc. In order to capture the effects of the FTAs on trade flows, they added a dummy variable, which takes the value of unity if country pairs belong to the same FTA, to the standard gravity model. This dummy variable method has been used for many studies on this subject since then [8].

In the light of the proliferation of FTAs after 1990s, numerous studies evaluated the impacts of FTAs. [9] and [10] examined the effects of major FTAs, such as the EU, the NAFTA, the MECOSUR and the AFTA, and they found significant positive effects in the cases of the MERCOSUR and the AFTA but not in the cases of the EU or the NAFTA. [11] also attempted to capture the trade creation and two-way trade diversion effects of major multilateral FTAs. They found significantly positive effect on trade creation for the FTAs only in Latin American countries, and they also found significant trade diversion effects for the cases of the EU and the EFTA. [12] analyzed the trade creation and trade diversion effects of the EEC, LAFTA and CMEA (Council of Mutual Economic Assistance, COMECON), and the author found both effects

[9] *Production possibility frontier (PPF) of a country shows the maximum amount of goods that can be produced with a fixed amount of resources. A community indifference curve is an illustration of different combinations of commodity quantities that would bring a whole community the same level of utility.*

[10] *This spurs firms to sustain higher rates of investment/or devoting more resources to research leading to technological change.*

[11] *The definition of terms adopted from [2]; [3]; and [4].*

for these FTAs and observed that the effects were diminishing in the 1990s. As the results of these studies indicate, the estimated results on the effects of FTAs on trade flows by using the gravity model are not uniform but mixed [8].

Recently, several attempts have been made to determine the effects of FTAs more in detail. Taking account of the improvement in the estimation method, [13] treated FTA dummies as endogenous variables, and they showed that the effect of FTAs on trade flows is quadrupled. [14] applied Baier and Bergstrand's specification to panel data analyses, and derived the result showing that FTAs generated a significant increase in trade in contrast to previous results. [15] constructed a modified gravity model and compared the results by using panel data. They found that the estimated values are different among different FTAs [8].

Park [16] applied computable general equilibrium (CGE) model to evaluate the impacts of different RTAs on East Asia. The author found that the static effect of existing, proposed, and negotiated East Asian RTAs on world and members' welfare was significant and positive. [1] appraised the effects of East Asia regionalism assuming ASEAN+3 employing GTAP model. The author simulated 8 hypothetical FTAs covering ASEAN and China, Japan, and South Korea. The results show that if East Asian regionalism under ASEAN+3 was achieved, benefits would occur to the region. However, ASEAN would be worse off, if Japan, South Korea, and China formed a FTA among themselves.

Frankel et al. [8] attempted to discern the impacts of FTAs on foreign trade by using two approaches. One approach is to examine the changes in trade patterns before and after an FTA by using indicators of intra-FTA interdependence.

The second approach is the estimation of a gravity equation to discern the impacts of FTAs on bilateral trade flows, i.e. trade creation and diversion effects. The results indicate that FTAs bring about trade creation effect and that trade diversion effect is limited. Besides, the analysis of disaggregated trade data shows different patterns among different products and it identifies trade diversion effect for many products in the case of the EU, the NAFTA and the MERCOSUR but not for the case of the AFTA.

Magee [17] used a panel of 133 countries between 1980 and 1998 to examine the possible impacts of regional trade agreements (RTAs). The author found that although the RTAs' positive impact was limited the latter has created more trade than it has diverted.

Mukhopadhyay and Thomassin [18] evaluated the impacts of free trade agreement in the ASEAN region along with China, Japan and South Korea (ASEAN+3) by the year 2020 using the GTAP framework. The study also assessed the environmental impact of the FTA in the region. The results show that the countries participating in the agreement will be benefited with increased output, expansion of trade and welfare due to trade reforms. The integration will increase the global welfare either. Notably, Vietnam will be gaining with the highest output growth in the ASEAN region; the impact on the environment would not be favorable. The environmental impact reveals a mixed outcome for participating countries under the agreement.

Gumilang [19] used static global CGE model, known as the Global Trade Analysis Project to examine the impacts of trade agreements with Japan (IJEPA) and ASEAN (AFTA) to the year 2022 on the case of Indonesia. The study suggests that Indonesia would grow rapidly over the period considered with a large deterioration in its environment. Following these, however, the agreements only have a marginal positive impact on Indonesia's output but with a noticeable increase in trade flows and signs of trade diversion. Overall, AFTA has a greater impact on the Indonesian economy compared to IJEPA. Similarly, the impact of trade liberalization on the environment is marginal. Tariff reform is inducing air pollution and reducing water pollution. In conclusion, the study suggests that Indonesia's participation in the AFTA and IJEPA agreements is not likely to bring drastic changes to her economic and environmental performance.

Sheng et al. [20] used an extended gravity model to shed light on the impact of the free trade area agreement between the Association of Southeast Asian Nations (ASEAN) and the People's Republic of China (PRC) on the members' trade flows and trade patterns. New determinants that capture the rising importance of global production sharing and intraregional trade in parts and components in East Asia are proposed. Results from the extended gravity model show that the free trade agreement leads to substantially higher bilateral trade between ASEAN and the PRC, more than what a conventional gravity model predicts. The

increase is concentrated in the ASEAN countries with stronger industrial linkages with the PRC.

Hayakawa and Yang [21] empirically examined the impacts of FTAs on import prices at the firm level focusing on firm-level imports in China from ASEAN countries by employing China' firm-product-level trade data. As a result, they could not find significantly positive impacts of an FTA's entry into force on import prices of FTA eligible products. Instead, the authors found a significant increase in import quantities of FTA eligible products. Thus, at the firm level, the gains from FTAs for exporters may be the increase in export quantities rather than the rise in export prices.

For the case of Vietnam, only a few studies have examined the impacts of FTAs that Vietnam has joined recently on foreign trade and FDI inflows into the country using economic model. Notably, [22] and [23] used the economic models for their empirical analysis. However, these authors assumed that the effects of all FTAs that Vietnam has signed/joined recently are the same and are associated with one aggregate FTA dummy. This could deflate the impact of each individual FTA. Moreover, we cannot observe the impacts of each FTA on inward FDI and foreign trade flows of Vietnam. Using this as a starting point and in an effort to enhance the originality and significance of the research, this study will try to fill that gap by reexamine the possible impacts of important FTAs on inward FDI and foreign trade of Vietnam. To do this the authors will employ gravity model and a panel data set of country pairs in the period from 1995 to 2011 that includes 17 main FDI and trading partners. The authors hope to arrive at a more profound understanding about the real economic impacts of singed FTAs on Vietnam. This will provide policy makers and people who are interested in this area with up-to-date and useful information.

3. AN ANALYSIS ON VIETNAM'S FOREIGN TRADE AND INWARD FDI

3.1 An Analysis on Vietnam's Foreign Trade

Fig. 2 below shows Vietnam's foreign trade values and percentage changes from 1995 to 2013. Generally, it is clear that Vietnam's foreign trade kept accelerating/increase together with the country's integration into regional free trade agreements, especially the WTO. Specifically, the total value of Vietnam's foreign trade has reached to USD 264,065.5 million in 2013, 19.41 times greater than 1995 (USD 13,604.3 million), 8.76 times higher than that of in 2000 (USD 30,119.2 million) and a 3.11-fold increase in comparison with total trade in 2006 (USD 84,717.3 million). Its exports rose from USD 5,448.9 million in 1995 to USD 132,032.9 million in 2013, and its imports increased from USD 8,155.4 million to USD 132,032.6 million at the same time. The average growth rates of total trade, exports and imports in the period from 1995 to 2013 are around 20%.

3.2 An Analysis on Vietnam's Inward FDI

Fig. 3 below shows the overall trends of FDI inflows into Vietnam by the number of projects, the amount of approved and implemented capital during 1988-2013. Generally, both the number of newly licensed projects and approved capital soared rapidly in the first half of the years, and then declined dramatically in the second half of the 1990s. FDI picked up in the early years of the new millennium and then suddenly rocketed after Vietnam's accession to the WTO. Specifically, in duration of 1988-1995, Vietnam attracted 1,620 investment projects and USD 19,265.2 million approved capital. Implemented capital was around USD 6,517.8 million. The first half of the 1990s is usually referred to as the "first investment boom" period in attracting FDI of Vietnam. After the launch of Asian financial crisis, in 1997, FDI flows to Vietnam reduced slightly. Although it remained a relatively closed economy during the 1997 Asian financial crisis, a large portion of FDI came from the region caused a drop of FDI flows [24]. The FDI approved capital bottomed out in 1998. In the second haft of the 1990s, there were 1,724 investment projects with approved capital of around USD 26,259 million. Implemented capital was some USD 12,944.8 million. The FDI inflows started to rebound as countries in the region recovered after the 1997 Asian financial crisis together with the signing of the US-Vietnam Bilateral Trade Agreement (USBTA) in 2000. FDI flows have grown up steadily from USD 3,142.8 million in 2001 to USD 6,839.8 million in 2005. The total FDI capital flowed into Vietnam in duration of 2001-2005 was USD 20,702.2 million. Implemented capital was about USD 13,852.8 million at the same period. In duration of 2007-2013, Vietnam attracted the total FDI capital of about USD 182,650.5 million. Total implemented capital of this duration was USD 73,076.6 million. Duration of 2007-2013 can be referred to as the "second investment boom" period of FDI in Vietnam due to the euphoria of Vietnam's accession to the WTO.

1986	Renovation Policy (Doi moi)-Economic reforms begin
1987	Foreign Investment Charter is issued
1988	Import tariffs introduce
1989	Market oriented reforms; Unify Exchange Rate; state monopoly of foreign trade eliminated
1990	Export Processing Zones established
1991	Law on Import and Export Duties-preferential tariffs established
1992	The European Union trade agreement
1993	
1994	Quotas introduced
1995	WTO Accession Working Party established; joins ASEAN
1996	Asia-Europe Meeting (ASEM) established
1997	Asian Financial Crisis begin; reduce requirements on firms to enter foreign trade
1998	Joins the Asia-Pacific Economic Cooperation (APEC)
1999	Most Favored Nation (MFN) agreement with Japan
2000	The United States-Vietnam Bilateral Trade Agreement (USBTA) signed
2001	CEPT/AFTA implementation plan under the ASEAN begins
2002	ASEAN-China Free Trade Area established; implementation of the USBTA begins
2003	The Framework Agreement for Comprehensive Economic Partnership between ASEAN and Japan signed
2004	The EU- Vietnam Bilateral Agreement on WTO Accession signed
2005	Law on Investment and Enterprise Law in tandem with other law documents are issued/amended
2006	Final bilateral agreements for WTO Accession reached; CEPT/AFTA implementation plan under ASEAN to be completed;
2007	Officially joins the WTO; ASEAN-Korea Free Trade Agreement (AKFTA) signed and enters into force; the Global Financial Crisis begins
2008	Japan-Vietnam Economic Partnership Agreement (JVEPA) signed; ASEAN-Japan Comprehensive Economic Partnership Agreement (AJCEP) signed
2009	ASEAN-Australia-New Zealand Free Trade Agreement (AANZFTA) and ASEAN-India Free Trade Agreement (AIFTA) signed
2010	
2011	
2012	Vietnam-Chile Free Trade Agreement signed and comes into effect (VCFTA)
	Start negotiations to sign the Vietnam-Korea Free Trade Agreement (VKFTA)
	Start negotiations to join the Trans-Pacific Partnership Agreement (TPP)
	Start negotiations to sign the Vietnam-European Union Free Trade Agreement (VEFTA)

Fig. 1. Timeline for Trade Liberalization and Economic Integration of Vietnam from 1986 to 2012

Source: Abbott P et al. (2009, p. 343) and updated by the authors (2015)

4. THE SPECIFICATION OF GRAVITY MODELS AND DECRYPTING THE DATASET

The gravity model of trade and FDI flows in international economics predicts bilateral trade and FDI flows based on the economic sizes (often using the Gross Domestic Product (GDP) measurements, GDP per capita, Gross National Product (GNP), GNP per capita) and the distance between two trading or FDI partners. Tinbergen first used this model in 1962. It was given the name "gravity model" for its analogy with Newton's law of universal gravitation. The basic theoretical model for trade and FDI flows between two countries i and j takes the form of:

$$F_{ij} = G(M_iM_j)/D_{ij} \quad (1)$$

In which:

- F_{ij} is the bilateral trade or FDI flows between country i and country j
- M_i is the economic mass of country i (often using GDP, GNP measurements)
- M_j is the economic mass of country j (often using GDP, GNP measurements)
- D_{ij} is the distance between countries (i and j), and
- G is a constant.

In this study, the authors will employ the Hausman–Taylor estimator for its superior than Ordinary Least Squares (OLS), Fixed-Effects (FE), or Random-Effects (RE) estimation techniques. The Hausman–Taylor estimator is a hybrid of Fixed-Effects and Random-Effects models and takes the following form:

$$y_{it} = \beta_1 x'_{1it} + \beta_2 x'_{2it} + \alpha_1 z'_{1i} + \alpha_2 z'_{2i} + \varepsilon_{it} + u_i \quad (2)$$

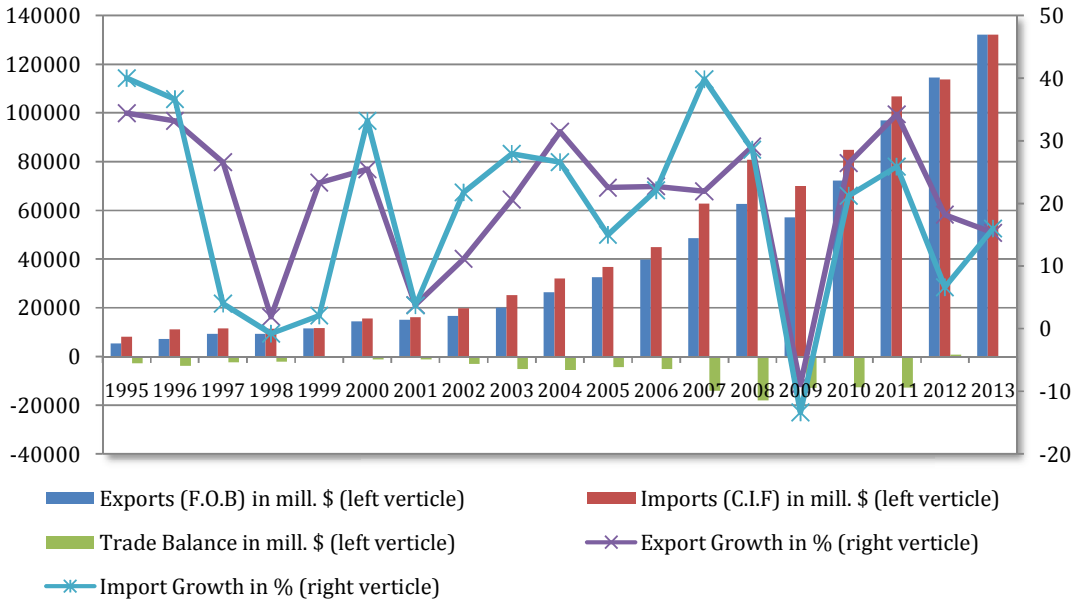

Fig. 2. Vietnam's foreign trade volumes and percentage changes from 1995 to 2013
Source: The authors calculated from figures published by the Vietnam General Statistics Office (2015)

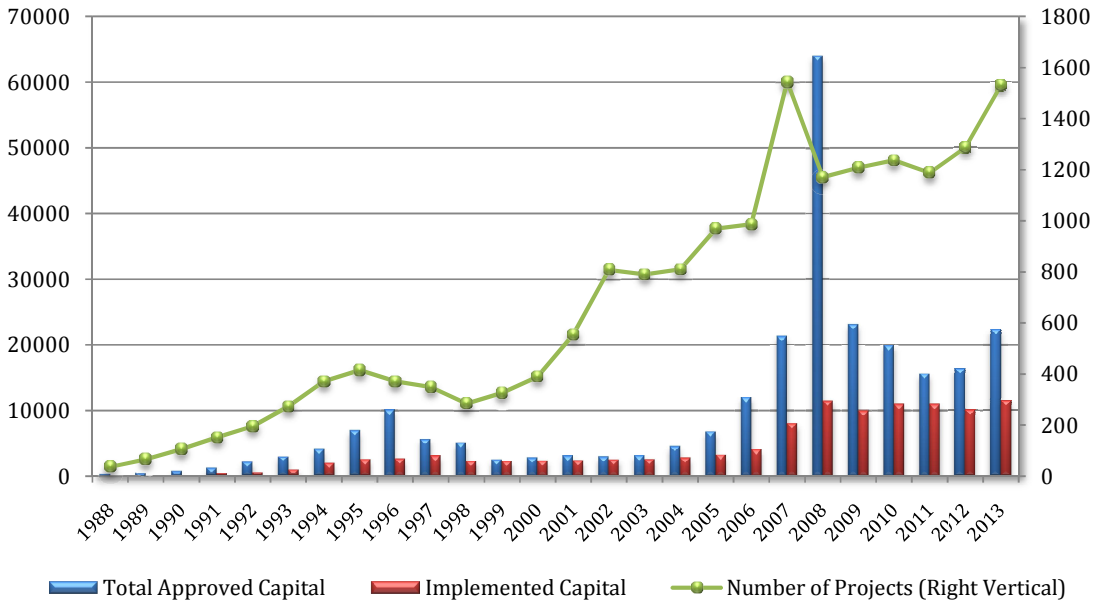

Fig. 3. FDI Approved and implemented capital in vietnam from 1988 to 2013 (million USD).[12]
Source: The General Statistics Office of Vietnam (2015)

[12] *Including supplementary capital to licensed projects in previous years.*

In which, y_{it} reflects the dependent variable for country i in period/time/year t; x'_{1it} denotes variables that are time varying and uncorrelated with the error term in the random-effects model (u_i); x'_{2it} refers to a set of variables that are time varying and correlated with u_i; z'_{1i} represents the time invariant variables that are uncorrelated with u_i; z'_{2i} describes the time invariant variables that are correlated with u_i; β_i and α_i are the vectors of coefficients associated with the covariates; and ε_{it} is the random error with the hope that its value is appropriate zero. Accordingly, one of the main assumptions of the Hausman-Taylor estimator is that the explanatory variables that are correlated with u_i can be identified. Our benchmark specification models take the following forms:

$$LnFDI_{it} = \beta_{10} + \beta_{11}LnDIS_{VNi} + \beta_{12}LnGDP_{VNt} + \beta_{13}LnGDP_{it} + \beta_{14}LnEX_{it-1} + \beta_{15}LnIM_{it-1} + \beta_{16}LnRER_{CURi/VNDt} + \beta_{17}Ln\ (ins_{VNt}*ins_{it}) + \gamma_{11}AFTA + \gamma_{12}USBTA + \gamma_{13}ACFTA + \gamma_{14}AKFTA + \gamma_{15}JVEPA + \gamma_{16}AJCEP + \gamma_{17}AANZFTA + \gamma_{18}Bothin_{VNit} + \gamma_{19}Onein_{VNit} + \gamma_{110}BOR_{VNi} + \varepsilon_{1VNi} \quad (3)$$

$$LnEX_{jt} = \beta_{20} + \beta_{21}LnDIS_{VNj} + \beta_{22}LnGDP_{VNt} + \beta_{23}LnGDP_{jt} + \beta_{24}\ Ln[1- (GDP_{VNt}/(GDP_{VNt} + GDP_{jt}))^2 - (GDP_{jt}/(GDP_{VNt} + GDP_{jt}))^2] + \beta_{25}LnFDI_{jt-1} + \beta_{26}LnRER_{CURj/VNDt} + \gamma_{21}AFTA + \gamma_{22}USBTA + \gamma_{23}ACFTA + \gamma_{24}AKFTA + \gamma_{25}JVEPA + \gamma_{26}AJCEP + \gamma_{27}AANZFTA + \gamma_{28}Bothin_{VNjt} + \gamma_{29}Onein_{VNjt} + \gamma_{210}BOR_{VNj} + \gamma_{211}CRI_j^{1997} + \gamma_{212}CRI_j^{2008} + \varepsilon_{2VNj} \quad (4)$$

$$LnIM_{jt} = \beta_{30} + \beta_{31}LnDIS_{VNj} + \beta_{32}LnGDP_{VNt} + \beta_{33}LnGDP_{jt} + \beta_{34}\ Ln[1- (GDP_{VNt}/(GDP_{VNt} + GDP_{jt}))^2 - (GDP_{jt}/(GDP_{VNt} + GDP_{jt}))^2] + \beta_{35}LnFDI_{jt-1} + \beta_{36}LnRER_{CURj/VNDt} + \gamma_{31}AFTA + \gamma_{32}USBTA + \gamma_{33}ACFTA + \gamma_{34}AKFTA + \gamma_{35}JVEPA + \gamma_{36}AJCEP + \gamma_{37}AANZFTA + \gamma_{38}Bothin_{VNjt} + \gamma_{39}Onein_{VNjt} + \gamma_{310}BOR_{VNj} + \gamma_{311}CRI_j^{1997} + \gamma_{312}CRI_j^{2008} + \varepsilon_{3VNj} \quad (5)$$

In which:

- FDI_{jt} is the amount of implemented FDI capital of country j at year t in Vietnam in USD (2005 price).
- FDI_{jt-1} is the amount of implemented FDI capital of country j at year t-1 in Vietnam in USD (2005 price).
- DIS_{VNj} is the weighted distance between Vietnam and country j in km (obtained from CEPII).
- GDP_{VNt} is the real GDP of Vietnam at year t in USD (2005 price).
- GDP_{jt} is the real GDP of country j at year t in USD (2005 price).
- EX_{jt} is the real Vietnam's exports to country j at year t in USD (2005 price).
- EX_{jt-1} is the real Vietnam's exports to country j at year t-1 in USD (2005 price).
- IM_{jt} is the real Vietnam's imports from country j at year t in USD (2005 price).
- IM_{jt-1} is the real Vietnam's imports from country j at year t-1 in USD (2005 price).
- $RER_{CURj/VNDt}$ is the real bilateral Exchange Rate between Vietnam Dong and currency of country j at year t.
- ins_{VNt} is the average value of government indicator of Vietnam at year t (obtained from World Bank).
- ins_{jt} is the average value of government indicator of country j at year t (obtained from World Bank).
- AFTA is a binary dummy variable which is unity after Vietnam and partners have joined/signed the ASEAN Free Trade Area at year t and otherwise.
- USBTA is a binary dummy variable which is unity after Vietnam and the United States have signed the Bilateral Trade Agreement at year t and otherwise.
- ACFTA is a binary dummy variable which is unity after Vietnam and partners have joined/signed the ASEAN-China Free Trade Area at year t and otherwise.
- AKFTA is a binary dummy variable which is unity after Vietnam and partners have joined/signed the ASEAN Korea Free Trade Agreement at year t and otherwise.
- JVEPA is a binary dummy variable which is unity after Vietnam and Japan have signed the Japan-Vietnam Economic Partnership Agreement at year t and otherwise.
- AJCEP is a binary dummy variable which is unity after Vietnam and partners have joined/signed ASEAN-Japan Comprehensive Economic Partnership Agreement and otherwise.
- AANZFTA is a binary dummy variable which is unity after Vietnam and partners have joined/signed the ASEAN-Australia-New Zealand Free Trade Agreement at year t and otherwise.
- $Bothin_{VNjt}$ is a binary dummy variable which is unity if both Vietnam and country j are WTO members at year t and otherwise.
- $Onein_{VNjt}$ is a binary dummy variable which is unity if country j is a WTO member at year t and otherwise.

- BOR_{VNj} is a binary dummy which is unity if Vietnam and country j share the land border and otherwise.
- CRI_j^{1997} and CRI_j^{2008} are binary dummy variables. Each dummy will take the value of 1 if country j has been suffered from the 1997 Asian financial crisis or the 2008 global financial and economic crisis respectively and otherwise. The values of these variables are obtained from the work of [25] and some others (e.g., [26-29]).
- ε_{1VNj}, ε_{2VNj}, and ε_{3VNj} are random errors.

All the variables, except the dummies, are in natural logarithm form in the gravity equations. This is to make the models smoothly when the authors run computation using the Stata 11 and the Hausman-Taylor estimation.

For the data, the empirical analysis presented in this study is based on a panel data set in the period from 1995 to 2011 which involves 17 Vietnam's major/stable trading and FDI partners including: Australia, Belgium, Canada, China, France, Germany, Hong Kong, Japan, Malaysia, the Netherlands, the Philippines, Singapore, the Republic of Korea, Taiwan, Thailand, the United Kingdom, and the United States. 17 trading and FDI partners listed above amount to around 80% of Vietnam's foreign trade and FDI capital sources for the duration 1995-2011. The data is obtained from different reliable sources such as Vietnam's authorities (e.g., the General Statistics Office [GSO], the Ministry of Industry and Trade [MIT], the Ministry of Planning and Investment [MPI]), and the international organizations (e.g., the Asian Development Bank [ADB], the International Monetary Fund [IMF], the United Nations Statistics Division [UNSD], the World Bank [WB], the World Trade Organization [WTO]). In regards to the special case of Chinese Taipei (Taiwan), the Figures are collected from ADB and the World Economic Outlooks October 2012, available on Knoema's website. The detailed description of those sources of the data is listed in Appendix 1.

5. AN ANALYSIS/DISCUSSION OF THE EMPIRICAL RESULTS

The estimated results of $LnFDI_{jt}$, $LnEX_{jt}$, and $LnIM_{jt}$ gravity equations are presented in Table 1 below using the Stata 11 and the Hausman–Taylor estimation. Appendix 2 presents Summary of the Statistics. Appendix 3, Appendix 4, and Appendix 5 express the Correlations Matrices of $LnFDI_{jt}$, $LnEX_{jt}$, and $LnIM_{jt}$ gravity equations respectively. The estimated results give an overview about the possible impacts of FTAs and other factors on Vietnam's foreign trade and inward FDI. Within the analysis framework, the authors will only focus on the assessment of the impacts of AFTA, USBTA, ACFTA, AKFTA, JVEPA, AJCEP, AANZFTA, and the WTO on Vietnam's foreign trade and inward FDI.

The authors, now, start by the discussion on the possible impacts of FTAs on Vietnam's foreign trade and inward FDI. Table 2 below summaries the impacts of important FTAs on Vietnam's foreign trade and inward FDI.

First, the authors discuss the impacts of FTAs on FDI inflows into Vietnam. The estimated results indicate that the AFTA, USBTA, ACFTA, JVEPA and the AJCEP have not facilitated FDI inflows into the country due to their statistically insignificant coefficients. The coefficient of the AANZFTA dummy variable is significant but in the negative side. This could be explained that after signing the AANZFTA, the investors from ASEAN, Australia, and New Zealand might export directly to Vietnam due to lower tariff rates. And, they seem to reduce their foreign investment in the host country to avoid the high tariff barriers as in the time before signing the AANZFTA. The coefficient of the AKFTA dummy variable is positive and significant at the level of 5% suggesting that only this FTA induced the FDI flows to Vietnam of about 127.13% [= EXP (0.8203441) – 1]. The estimated coefficients of the $Bothin_{VNjt}$ and $Onein_{VNjt}$ variables are positive and significant at the level of 5% and 10% respectively indicating that the WTO has a "strong" and positive impact on FDI inflows into Vietnam. Being WTO membership of Vietnam's FDI partners has helped to increase FDI inflows into the country at about 107.63% [= EXP (0.7305899) - 1]. Accession to the WTO of both Vietnam and partners increased FDI inflows into the country at about 190.40% [= EXP (1.066118) – 1].

Second, the authors analyze the impacts of FTAs on Vietnam's Exports. The estimated coefficient of the USBTA dummy is positive and statistically significant at the level of 1% indicating that the USBTA has had a strong and positive impact on Vietnam's exports. The USBTA has helped to increase Vietnam's exports about 325.0% [= EXP (1.446955) – 1]. By contrast, the estimated coefficients of other FTAs including the AFTA, ACFTA, AKFTA, JVEPA, AJCEP, and the AANZFTA are not significant. This means these FTAs have not motivated Vietnam's exports. The coefficient of the $Onein_{VNjt}$ dummy is negatively

significant at the level of 5% suggesting that there was a "trade diversion" from Vietnam to other WTO members. Specifically, Vietnam's trading partners had diverted their imports from Vietnam to other WTO members for lower tariff rates. This is consistent with the theory of the impact of the WTO on trade flows (Vietnam's exports to trading partners had been reduced to an amount of around 55.17% [=EXP (0.439374) - 1] since trade partners became WTO members while Vietnam still was an outsider). The estimated coefficient of the $Bothin_{VNjt}$ dummy is statistically insignificant. It means joining the WTO by both Vietnam and its trading partners has not increased Vietnam's exports as expected and indicated in some previous studies.

Table 1. The summary of the gravity model estimation results using the Hausman-Taylor (1981) estimation

Explanatory variables	Dependent variables		
	$LnFDI_{it}$	$LnEX_{it}$	$LnIM_{it}$
Time varying exogenous			
LnSIMSIZE	-	0.9184781	0.0657589
$LnRER_{CURj/VNDt}$	0.0605428	0.1054633	0.1208685
$Ln(ins_{VNt}*ins_{jt})$	2.316686**	-	-
AFTA	-0.4948234	-0.0270398	-0.097925
USBTA	0.5060926	1.446955*	0.4469156*
ACFTA	0.3706749	0.0018743	0.4859765*
AKFTA	0.8203441**	0.1159645	-0.0804554
JVEPA	0.2439291	-0.0085332	0.3145337
AJCEP	0.4056076	-0.1056205	-0.212482
AANZFTA	-0.9352514**	-0.1098954	0.1671734
$Bothin_{VNjt}$	1.066118**	-0.3626161	0.7877818 *
$Onein_{VNit}$	0.7305899***	-0.439374**	0.250974***
CRI_i^{1997}	-	0.2543705*	0.1239098**
CRI_i^{2008}	-	-0.0999105	-0.271356***
Time varying endogenous			
$LnGDP_{VNt}$	-2.038916*	1.469922**	1.541878*
$LnGDP_{jt}$	0.9642687**	1.543947**	0.8287191
$LnEX_{it-1}$	0.1351719	-	-
$LnIM_{it-1}$	0.1812063	-	-
$LnFDI_{it-1}$	-	0.0601236**	0.0581889*
Time invariant exogenous			
$LnDIS_{VNj}$	-1.947559**	-1.04677*	-1.624041*
BOR_{VNj}	-0.937514	-0.5885475	-0.329246
Constant	31.64125**	-48.43155*	-28.83678*

*Notes: *, **, and *** indicate significance at the levels of 1%, 5%, and 10% respectively*

Table 2. The summary of the impacts of FTAs on Vietnam's Foreign Trade and Inward FDI

FTAs	The impacts on		
	Inward FDI	Exports	Imports
AFTA	Statistically insignificant	Statistically insignificant	Statistically insignificant
USBTA	Statistically insignificant	Increase 325.0%	Increase 56.34%
ACFTA	Statistically insignificant	Statistically insignificant	Increase 62.57%
AKFTA	Increase 127.13%	Statistically insignificant	Statistically insignificant
JVEPA	Statistically insignificant	Statistically insignificant	Statistically insignificant
AJCEP	Statistically insignificant	Statistically insignificant	Statistically insignificant
AANZFTA	Decrease 154.79%	Statistically insignificant	Statistically insignificant
$Bothin_{VNjt}$	Increase 190.40%	Statistically insignificant	Increase 119.85%
$Onein_{VNjt}$	Increase 107.63%	Decrease 55.17%	Increase 28.52%

Source: the authors compilation (2015)

Third, the authors evaluate the impacts of FTAs on Vietnam's imports. The authors observe considerable impacts of both the USBTA and the ACFTA on Vietnam's imports. By contrast, there is no evidence that demonstrates convincingly that the AFTA, AKFTA, JVEPA, AJCEP and the AANZFTA have promoted the country's imports. The USBTA and the ACFTA have increased Vietnam's imports by about 56.34% [= EXP (0.4469156) – 1] and 62.57% [= EXP (0.4859765) – 1] respectively. Being the WTO membership of Vietnam's trade partners increased the country's imports by about 28.52% [= EXP (0.250974) - 1]. Belonging to the WTO by both Vietnam and trade partners has motivated the country to import goods by 119.85% [= EXP (0.7877818) – 1]. This expresses the "trade creation effect" (replaces the higher cost of domestic production by lower cost sources of supply from abroad through importation).

6. CONCLUDING REMARKS AND RECOMMENDATIONS

Generally, the empirical results give us an idea on the opening up of the country's economy through the means of FTAs and the WTO has led to diverse FDI and trade effects. Nonetheless, these may not always be intended or appreciated. Some FTAs have created "strong" trade and inward FDI but unevenly across individual agreements. The magnitude of an individual FTA estimate resolves a number of empirical puzzles that previous empirical studies in the case of Vietnam could not answer. Most markedly, momentum from the implementation of the USBTA is branded to stimulate both the country's exports and imports while tariff reducing under the ACFTA is revealed to encourage the country's imports only. In contrary to the AANZFTA, the AKFTA is recognized as the only regional free trade agreement inducing the FDI flows to the country. The WTO has increased the country's imports, motivated the FDI flows but has not expanded the country's exports as the authors predicted. Notably, the insignificant coefficients of other FTA variables do not mean those FTAs are not important for Vietnam. This implies that a developing country derives benefits from FTAs membership. Importantly, economic models should be constructed to evaluate the real impacts of FTAs on country members. However, the effects were robust to changes in methods of estimations and in economic models employed. Hence, the results and analyses will be more reliable and persuasive if optimal models and superior estimation techniques are carefully/rigorously employed.

To this end, what are the policy implications for Vietnam? It must be noted that to facilitate the competitive ability of Vietnam's merchandises in international markets and sustain an effective paradigm of foreign trade as well as to secure an attractive investment environment is not a simple task. It requires a careful analysis of related information (e.g., information on each industry, each merchandise and investment environment, etc.) that the authors could not cover in a short time. Generally, the followings are some recommendations to allow Vietnam to achieve sustainable development in the coming years.

Firstly, Vietnam should develop an effective and efficient physical infrastructure in terms of roads, railways, ports, airports, electric, water supply system, etc. This creates convenient conditions for trade by reducing time and costs in both transportation and transactions. Good infrastructure may also induce FDI that has taken an important role in diversifying Vietnam's exports and in improving the quality and competitiveness of Vietnam's merchandises in international markets.

Secondly, the investment environment should be further improved, with an emphasis on regulatory reform, administrative procedural reform, etc. The aims are to reduce the number of obstacles resulting from weak institution (bureaucracy), and to create a healthy business environment to sharpen its competitiveness with regional countries in attracting FDI.

Thirdly, Vietnam ought to focus on training a skilled labor force. At the moment, attracting FDI based on an abundance of a cheap labor force, industrial land and natural resources are advantages to Vietnam. After joining FTAs, these advantages will sooner or later come to a halt. Hence, the strategy for raising a skilled labor force using various fiscal sources is necessary.

In conclusion, our investigations can contribute to the existing literature on the impacts of FTAs on inward FDI, and foreign trade of a developing country in terms of testable implications from gravity models. However, the research on the impacts of FTAs on inward FDI and foreign trade of Vietnam is just the beginning of the study. Since, existing data is quite limited, evaluating the impacts of FTAs on a specific industry, commodity, industrial policy of Vietnam, or on

Vietnam's economic efficiency, competitiveness, the changing attitude of industrialists etc. merits further research to understand how FTAs effect to member countries.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Appendix 1. Variables and data resources

Variables	Data resources
$LnFDI_{jt}$, $LnFDI_{jt-1}$	Vietnam Ministry of Planning and Investment (MPI), Vietnam General Statistics Office
$LnEX_{it}$, $LnEX_{it-1}$	Vietnam Ministry of Industry and Trade, Vietnam General Statistics Office, ADB
$LnIM_{it}$, $LnIM_{it-1}$	Vietnam Ministry of Industry and Trade, Vietnam General Statistics Office, ADB
$LnDIS_{VNi}$	CEPII (the French Institute for Research on the International Economy)
$LnGDP_{VNt}$	United Nations Statistics Division, World Bank
$LnGDP_{it}$	United Nations Statistics Division, World Bank
$LnRER_{CURi/VNDt}$	United Nations Statistics Division, World Bank, Asian Development Bank
$Ln(ins_{VNt}*ins_{it})$	World Bank
AFTA	WTO's website page, Vietnam WTO central website page
USBTA	WTO's website page, Vietnam WTO central website page
ACFTA	WTO's website page, Vietnam WTO central website page
AKFTA	WTO's website page, Vietnam WTO central website page
JVEPA	WTO's website page, Vietnam WTO central website page, Japan Customs website page
AJCEP	WTO's website page
AANZFTA	WTO's website page, Vietnam WTO central website page
$Bothin_{VNit}$	WTO's website page
$Onein_{VNit}$	WTO's website page
CRI_j^{1997}	Laeven and Valencia (2008)
CRI_j^{2008}	Laeven and Valencia (2008); Rose and Spiegel (2012); etc.

Appendix 2. Summary the statistics (Period: 1995-2011; Countries: 17; Observations: 289)

Variables	Observations	Mean	Standard deviation	Min	Max
$LnFDI_{it}$	289	18.0240	1.8452	10.6048	21.7692
$LnFDI_{it-1}$	289	18.0012	1.8665	10.6048	21.7692
$LnEX_{it}$	289	20.5201	1.1501	16.7017	23.5033
$LnEX_{it-1}$	289	20.3200	1.2547	15.2265	23.4143
$LnIM_{it}$	289	20.4010	1.4905	16.8974	23.8168
$LnIM_{it-1}$	289	20.2259	1.5313	16.1206	23.7405
$LnDIS_{VNi}$	289	8.2815	0.9503	6.7140	9.5226
$LnGDP_{VNt}$	289	24.5363	0.3192	23.9940	25.0309
$LnGDP_{it}$	289	27.2646	1.3901	24.9592	30.2141
LnSIMSIZE	289	-2.2820	1.1671	-5.1491	-0.7707
$LnRER_{CURi/VNDt}$	289	7.9673	2.1171	2.2857	10.3280
$Ln(ins_{VNt}*ins_{it})$	289	8.0069	0.2793	7.0925	8.3058
AFTA	289	0.1522	0.3598	0	1
USBTA	289	0.0415	0.1998	0	1
ACFTA	289	0.1730	0.3789	0	1
AKFTA	289	0.0865	0.2815	0	1
JVEPA	289	0.0138	0.1170	0	1
AJCEP	289	0.0692	0.2542	0	1
AANZFTA	289	0.0519	0.2222	0	1
$Bothin_{VNit}$	289	0.2941	0.4564	0	1
$Onein_{VNit}$	289	0.6608	0.4742	0	1
BOR_{VNj}	289	0.0588	0.2357	0	1
CRI_i^{1997}	289	0.1522	0.3598	0	1
CRI_i^{2008}	289	0.2802	0.4499	0	1

Appendix 3. The correlations matrix ($LnFDI_{jt}$ equation)

Correlations	$LnFDI_{jt}$	$LnDIS_{VNj}$	$LnGDP_{VNt}$	$LnGDP_{jt}$	$LnEX_{jt-1}$	$LnIM_{jt-1}$	$LnRER_{.}$	Ln(inst.)	AFTA	USBTA	ACFTA	AKFTA	JVEPA	AJCEP	AANZFTA	$Bothin_{VNjt}$	$Onein_{VNjt}$	BOR_{VNj}
$LnFDI_{jt}$	1.0000																	
$LnDIS_{VNj}$	-0.3075	1.0000																
$LnGDP_{VNt}$	-0.0011	0.0000	1.0000															
$LnGDP_{jt}$	0.0892	0.7167	0.1222	1.0000														
$LnEX_{jt-1}$	0.2891	-0.0508	0.7038	0.3524	1.0000													
$LnIM_{jt-1}$	0.5549	-0.4520	0.5456	0.0850	0.7457	1.0000												
$LnRER_{CURi/VNDt}$	-0.3371	0.5559	-0.0075	0.2002	-0.1097	-0.4422	1.0000											
$Ln(ins_{VNt}*ins_{jt})$	0.1416	0.5274	-0.0193	0.2696	-0.0438	-0.1348	0.4833	1.0000										
AFTA	-0.0406	-0.5228	0.2620	-0.4857	0.1205	0.2115	-0.1334	-0.4110	1.0000									
USBTA	0.1212	0.2723	0.1067	0.4320	0.3106	0.0759	0.1605	0.0770	-0.0882	1.0000								
ACFTA	0.0074	-0.5016	0.3311	-0.3207	0.2376	0.3497	-0.1325	-0.5551	0.8247	-0.0952	1.0000							
AKFTA	0.1222	-0.3172	0.3696	-0.2363	0.2221	0.3187	-0.2400	-0.2566	0.5548	-0.0640	0.5101	1.0000						
JVEPA	0.1403	-0.0034	0.1485	0.1679	0.2294	0.1975	-0.1772	0.0527	-0.0502	-0.0247	-0.0542	-0.0365	1.0000					
AJCEP	0.0891	-0.2707	0.3418	-0.1410	0.2734	0.2987	-0.1538	-0.2145	0.4916	-0.0568	0.4520	0.6921	0.4345	1.0000				
AANZFTA	-0.0302	-0.2049	0.2988	-0.1728	0.2125	0.2066	-0.0308	-0.1737	0.4219	-0.0487	0.3878	0.5939	-0.0277	0.6737	1.0000			
$Bothin_{VNjt}$	0.0654	0.0000	0.7753	0.1027	0.5334	0.4460	-0.0169	0.0146	0.1492	0.0560	0.2067	0.4767	0.1835	0.4224	0.3625	1.0000		
$Onein_{VNit}$	-0.0852	0.0645	-0.6436	-0.0833	-0.4974	-0.4399	0.0669	0.0768	-0.1033	-0.0341	-0.1555	-0.4296	-0.1654	-0.3807	-0.3266	-0.9012	1.0000	
BOR_{VNj}	0.0016	-0.1373	-0.0000	0.1887	0.1752	0.2140	-0.0482	-0.5382	-0.1059	-0.0520	0.2744	-0.0769	-0.0296	-0.0682	-0.0585	0.0000	-0.1626	1.0000

Appendix 4. The correlations matrix ($LnEX_{jt}$ equation)

Correlations	$LnEX_{jt}$	$LnDIS_{VNj}$	$LnGDP_{VNt}$	$LnGDP_{jt}$	LnSIMSIZE	$LnFDI_{it-1}$	LnRER.	AFTA	USBTA	ACFTA	AKFTA	JVEPA	AANZFTA	AJCEP	$Bothin_{VNjt}$	$Onein_{VNjt}$	BOR_{VNj}	CRI_j^{1997}	CRI_j^{2008}
$LnEX_{jt}$	1.0000																		
$LnDIS_{VNj}$	-0.0305	1.0000																	
$LnGDP_{VNt}$	0.6960	0.0000	1.0000																
$LnGDP_{jt}$	0.3856	0.7167	0.1222	1.0000															
LnSIMSIZE	-0.2470	-0.6897	0.1053	-0.9694	1.0000														
$LnFDI_{it-1}$	0.2791	-0.3043	-0.0198	0.0796	-0.0907	1.0000													
$LnRER_{CURi/VNDt}$	-0.1146	0.5559	-0.0075	0.2002	-0.1986	-0.3356	1.0000												
AFTA	0.1001	-0.5228	0.2620	-0.4857	0.4967	-0.0528	-0.1334	1.0000											
USBTA	0.3528	0.2723	0.1067	0.4320	-0.4428	0.1266	0.1605	-0.0882	1.0000										
ACFTA	0.2341	-0.5016	0.3311	-0.3207	0.3551	-0.0092	-0.1325	0.8247	-0.0952	1.0000									
AKFTA	0.2267	-0.3172	0.3696	-0.2363	0.2976	0.0848	-0.2400	0.5548	-0.0640	0.5101	1.0000								
JVEPA	0.2415	-0.0034	0.1485	0.1679	-0.1371	0.1278	-0.1772	-0.0502	-0.0247	-0.0542	-0.0365	1.0000							
AJCEP	0.2705	-0.2707	0.3418	-0.1410	0.1919	0.1022	-0.1538	0.4916	-0.0568	0.4520	0.6921	0.4345	1.0000						
AANZFTA	0.1908	-0.2049	0.2988	-0.1728	0.2254	-0.0069	-0.0308	0.4219	-0.0487	0.3878	0.5939	-0.0277	0.6737	1.0000					
$Bothin_{VNjt}$	0.5445	0.0000	0.7753	0.1027	0.0750	0.0131	-0.0169	0.1492	0.0560	0.2067	0.4767	0.1835	0.4224	0.3625	1.0000				
$Onein_{VNjt}$	-0.5090	0.0645	-0.6436	-0.0833	-0.0714	-0.0280	0.0669	-0.1033	-0.0341	-0.1555	-0.4296	-0.1654	-0.3807	-0.3266	-0.9012	1.0000			
BOR_{VNj}	0.1917	-0.1373	-0.0000	0.1887	-0.1817	-0.0238	-0.0482	-0.1059	-0.0520	0.2744	-0.0769	-0.0296	-0.0682	-0.0585	0.0000	-0.1626	1.0000		
CRI_j^{1997}	-0.1295	-0.2290	-0.3896	-0.1494	0.0513	0.1062	-0.1931	-0.1796	-0.0399	-0.1938	-0.1304	-0.0502	-0.1156	-0.0992	-0.2736	0.1408	0.0578	1.0000	
CRI_j^{2008}	0.5497	-0.0170	0.7560	0.1143	0.0587	0.0640	-0.0288	0.1430	0.0632	0.2034	0.4657	0.1898	0.4369	0.3749	0.9668	-0.8712	0.0077	-0.2645	1.0000

Appendix 5. The Correlations Matrix ($LnIM_{jt}$ equation)

Correlations	$LnIM_{it}$	$LnDIS_{VNj}$	$LnGDP_{VNt}$	$LnGDP_{jt}$	$LnSIMSIZE$	$LnFDI_{it-1}$	$LnRER.$	$AFTA$	$USBTA$	$ACFTA$	$AKFTA$	$JVEPA$	$AANZFTA$	$AJCEP$	$Bothin_{VNjt}$	$Onein_{VNjt}$	BOR_{VNj}	CRI_j^{1997}	CRI_j^{2008}
$LnIM_{it}$	1.0000																		
$LnDIS_{VNj}$	-0.4608	1.0000																	
$LnGDP_{VNt}$	0.5236	0.0000	1.0000																
$LnGDP_{jt}$	0.0912	0.7167	0.1222	1.0000															
$LnSIMSIZE$	0.0175	-0.6897	0.1053	-0.9694	1.0000														
$LnFDI_{it-1}$	0.5548	-0.3043	-0.0198	0.0796	-0.0907	1.0000													
$LnRER_{CURj/VNDt}$	-0.4544	0.5559	-0.0075	0.2002	-0.1986	-0.3356	1.0000												
$AFTA$	0.2139	-0.5228	0.2620	-0.4857	0.4967	-0.0528	-0.1334	1.0000											
$USBTA$	0.0809	0.2723	0.1067	0.4320	-0.4428	0.1266	0.1605	-0.0882	1.0000										
$ACFTA$	0.3644	-0.5016	0.3311	-0.3207	0.3551	-0.0092	-0.1325	0.8247	-0.0952	1.0000									
$AKFTA$	0.3167	-0.3172	0.3696	-0.2363	0.2976	0.0848	-0.2400	0.5548	-0.0640	0.5101	1.0000								
$JVEPA$	0.1966	-0.0034	0.1485	0.1679	-0.1371	0.1278	-0.1772	-0.0502	-0.0247	-0.0542	-0.0365	1.0000							
$AJCEP$	0.2877	-0.2707	0.3418	-0.1410	0.1919	0.1022	-0.1538	0.4916	-0.0568	0.4520	0.6921	0.4345	1.0000						
$AANZFTA$	0.1992	-0.2049	0.2988	-0.1728	0.2254	-0.0069	-0.0308	0.4219	-0.0487	0.3878	0.5939	-0.0277	0.6737	1.0000					
$Bothin_{VNjt}$	0.4356	0.0000	0.7753	0.1027	0.0750	0.0131	-0.0169	0.1492	0.0560	0.2067	0.4767	0.1835	0.4224	0.3625	1.0000				
$Onein_{VNjt}$	-0.4381	0.0645	-0.6436	-0.0833	-0.0714	-0.0280	0.0669	-0.1033	-0.0341	-0.1555	-0.4296	-0.1654	-0.3807	-0.3266	-0.9012	1.0000			
BOR_{VNj}	0.2395	-0.1373	-0.0000	0.1887	-0.1817	-0.0238	-0.0482	-0.1059	-0.0520	0.2744	-0.0769	-0.0296	-0.0682	-0.0585	0.0000	-0.1626	1.0000		
CRI_j^{1997}	-0.0394	-0.2290	-0.3896	-0.1494	0.0513	0.1062	-0.1931	-0.1796	-0.0399	-0.1938	-0.1304	-0.0502	-0.1156	-0.0992	-0.2736	0.1408	0.0578	1.0000	
CRI_j^{2008}	0.4553	-0.0170	0.7560	0.1143	0.0587	0.0640	-0.0288	0.1430	0.0632	0.2034	0.4657	0.1898	0.4369	0.3749	0.9668	-0.8712	0.0077	-0.2645	1.0000

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