TRADE LIBERALIZATION AND FOREIGN DIRECT INVESTMENT IN VIETNAM: A GRAVITY MODEL USING HAUSMAN - TAYLOR ESTIMATOR APPROACH

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ABSTRACT

Foreign direct investment (FDI) plays a crucial role in the process of development for Vietnam. Over the two decades of Renovation, a large number of FDI capital flowed into the country, especially after joining the WTO in 2007, an amount reaching up to approximately USD 229,913.7 million. A gravity model constructed using the Hausman – Taylor (1981) estimator was applied to 1995 to 2011 panel data that included 18 of Vietnam's major country partners and provided by Vietnam's authorities and international organizations. The purpose was to reexamine the possible effect of trade liberalization under the WTO regime and various FTAs on FDI flows. The estimates were consistent in line with the prediction that the WTO exerted great impact on FDI flows to Vietnam. By contrast, there is no evidence that demonstrates convincingly that the various FTAs in which Vietnam has signed/joined recently, increased FDI capital into the country. The paper also proposes recommendations for attracting FDI and using FDI capital more effectively.

Keywords: WTO, FTA, Vietnam, impact, gravity model, Hausman-Taylor estimator, FDI.

Tự do hóa thương mại và đầu tư trực tiếp nước ngoài tại Việt Nam: Một cách tiếp cận thông qua mô hình Lực hấp dẫn và Phương pháp ước lượng Hausman - Taylor

TÓM TẮT

Đầu tư trực tiếp nước ngoài (FDI) đóng một vai trò quan trọng trong quá trình phát triển của Việt Nam. Sau hơn hai thập kỷ đổi mới, một lượng lớn vốn FDI đã chảy vào Việt Nam lên tới 229913.7 triệu USD. Để đánh giá lại tác động của tự do hóa thương mại trong khuôn khổ của WTO và các hiệp định thương mại tự do khu vực (FTAs) tới việc thu hút vốn FDI, tác giả đã xây dựng mô hình Lực hấp dẫn (Gravity model), sử dụng dữ liệu bảng (panel data) trong giai đoạn 1995-2011 của 18 đối tác FDI quan trọng của Việt Nam và phương pháp ước lượng Hausman-Taylor (1981). Kết quả ước lượng cho thấy như dự đoán, WTO có tác động to lớn đến dòng vốn FDI chảy vào Việt Nam. Trong khi đó, không có bằng chứng thuyết phục rằng các hiệp định thương mại song/đa phương mà Việt Nam đã gia nhập hoặc ký kết gần đây thúc đẩy dòng vốn này vào Việt Nam. Để thu hút và sử dụng có hiệu quả hơn vốn FDI, một số khuyến nghị cũng được đề xuất trong nghiên cứu.

Từ khóa: FDI, FTA, tác động, mô hình lực hấp dẫn, phương pháp Hausman - Taylor, Việt Nam, WHO.

1. INTRODUCTION

FDI has a positive impact on a host country. On one hand, it generates new financial and managerial; and technological resources. On the other hand, it increases employment and exports. Moreover, FDI may also have the linkage effect of transferring know-how, managerial skill, and advanced technology to domestic firms, and promote the efficiency of the economy. After two decades of Renovation since 1986, especially after the World Trade Organization (WTO) accession, a considerable amount of FDI capital, up to USD 229913.7 million flowed into the country (GSO,

2013). [1]This raises the question: has trade liberalization under the WTO regime and the various Free Trade Agreements (FTAs) really boosted the FDI flows into Vietnam recently? Vietnam offers a particularly interesting case study for several reasons. First, previous studies focused on the impact of FTA or the WTO on FDI inflows to Vietnam, they widely use traditional methods (*e.g.*, Ordinary Least Squares (OLS), Fixed-effects (FE) or Random-effects (RE) techniques) with the assumption that the effects of all FTAs are the same and are associated with one aggregate FTA dummy. This studyl introduces a new "superior" estimation technique-Hausman-Taylor (1981) estimator, to disaggregate the impact of individual FTA. Second, Vietnam has maintained a high level of economic growth and has also attracted a considerable FDI capitals since the 1990s. Third, an understanding on the impact of various FTAs and the WTO on Vietnam's FDI inward may have important implications for the design of supporting polices to attract FDI capital, and use it more effectively. The section two of the present paper provides a brief literature review on the impact of trade liberalization under FTAs and the WTO on FDI inflows to Vietnam. Section three analyzes the FDI inflows to Vietnam in the period from 1988 to 2011. Section four details the empirical methodology by employing the standard Gravity model (first used by Tinbergen (1962) and data, and the analysis of the empirical results, using the Hausman-Taylor (1981) estimator. The final section refers to some concluding remarks and recommendations.

2. THE IMPACT OF TRADE LIBERALIZATION ON FOREIGN DIRECT INVESTMENT IN VIETNAM

The question of whether trade liberalization under various FTAs and the WTO regime effectively induces FDI capital to Vietnam has been documented in some previous studies. Using a statistic computable general equilibrium model, Fukase and Martin (2001) peported that the United States-Vietnam Bilateral Trade Agreement (USBTA) had impact on FDI flows into Vietnam. Nguyen and Haughton. (2002) quantifed the effect by first specifying and estimating a model of determinants of FDI, using data from 16 Asian countries for the 1990-1999 period. Their model allows them to isolate the effects of the Most Favored Nation (MFN) status and WTO membership on FDI inflows. The authors suggested that the USBTA should lead to 30% more FDI capital into Vietnam in the first year, and an eventual doubling of the flow. However, the inflows would only be maintained if Vietnam had made the necessary changes and joined the WTO by 2005. In fact Vietnam only joined the WTO in 2007. Hoang (2006) used the time series data from 1988 to 2005 and constructed an empirical model of the time-series determinants of FDI inflows in Vietnam and found that the openness to trade of the host country is one of the factors attracting FDI inflows into Vietnam. Thus, the author found no relationship between FDI inflows to the country and the timing of joining ASEAN. Pham (2011) used a panel data in the period from 1990 to 2008 of 17 country partners to assess the effects of the WTO accession on the dynamics of FDI inflows to Vietnam. The author concluded that the WTO accession has significantly positive effects on Vietnam's FDI inwards. However, the author assumed that the effects of all FTAs are the same and are associated with one aggregate FTA dummy. This could inflate the impact of the WTO on FDI inflows into Vietnam. Nguyen et al. (2012) based their study on a panel dataset of 64 provinces and cities in Vietnam using the fixed-effects estimation method for econometric models concluded that Promulgating Unified Enterprises and the amending Investment Law in 2005, as well as access to the WTO in 2007 have had a positive effect on attracting FDI in the period 2006-2010. In addition, the Law factor has a more positive and stronger impact on FDI

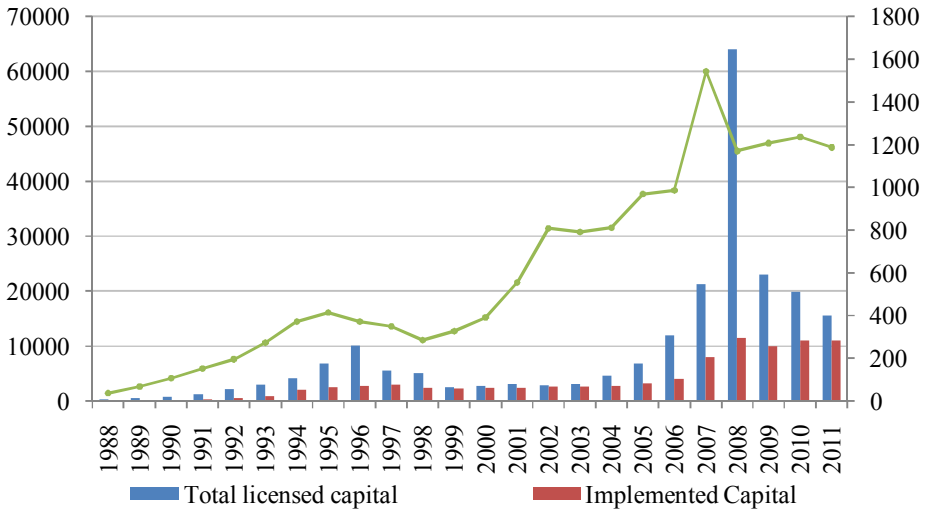
[1] Including supplementary capital to licensed projects in previous years; the figures are calculated from 1988 to 31st December, 2011.

attraction of Vietnam than the WTO accession. Overall, previous studies either used old data or traditional estimation techniques. The OLS, Fixed-effects or Random-effects methods which have their own disadvantages. For instance, OLS can lead to significant bias. And, while the random-effects models do not incorporate country fixed-effects, which are likely to be presented in a heterogeneous country sample, time-invariant variables will not yield coefficient estimates in fixed-effects models. Moreover, the authors did not separate the impact of the WTO and other individual FTAs. Some focused on examining the impact of the specific FTA/institution, etc. These require a more rigorous analysis with updated figures and a better estimation method. From this perspective, this paper employs the standard Gravity model, first used by Tinbergen (1962) and introduces a new superior estimation technique – Hausman - Taylor (1981) estimator with the most updated panel data. This is for the purpose to reexamine the possible impact of trade liberalization on FDI flows to Vietnam. The hypothesis is that trade liberalization under the WTO and various FTAs will stimulate the FDI flows into the country. It can be argued that the aforementioned international agreements have had a deep impact not only on Vietnam's trade policies but also on many fundamental rules of law and governance. These agreements/institutions have provided a critical benchmark and focus for having a more transparent, predictable, and stable investment environment. All of these may promote and attract more foreign investors, especially after Vietnam signed the USBTA and joined the WTO in 2007. The section 3 below gives an overview of FDI flows to Vietnam in the period 1988-2011.

3. FDI FLOWS TO VIETNAM IN THE 1988-2011 PERIOD

In the 1980s, Vietnam was one of the poorest countries in the world, dealing with internal difficulties such as super inflation, poverty, and economic crisis. To stimulate economic development, control inflation, and catch up with other countries in the region that were rapidly advancing, Vietnam started transforming the centrally planned economy into a market-oriented economy since 1986. To continue economic integration into the world economy, Vietnam joined the ASEAN in 1995 and signed/joined several regional FTAs such as the ASEAN Free Trade Area (AFTA) in 1996, the United States-Vietnam Bilateral Trade Agreement (USBTA) in 2000, the ASEAN-China Free Trade Area (ACFTA) in 2002, the ASEAN-Korea Free Trade Area (AKFTA) in 2006, the World Trade Organization (WTO) in 2007, the Japan-Vietnam Economic Partnership Agreement (JVEPA) in 2008, and the ASEAN, Australia and New Zealand Free Trade Agreement (AANZFTA) in 2009. Joining these organizations/institutions not only helps Vietnam speed up economic reform, expend foreign trade but also attract FDI flows into the country. It is obvious that the trade openness is associated with the inflows of foreign investment in Vietnam.

Figure 1 shows the overall trends of FDI inflows to Vietnam by the number of projects and the amount of registered and implemented capital in the period 1988-2011. Generally, both the number of newly licensed projects and registered capital soared rapidly in the first half of the 1990s, and then declined dramatically in the second half of 1990s. FDI picked up again in the early years of the new millennium, and then suddenly rocketed after Vietnam joined the WTO. Specifically, from 37 projects and USD 341.7 million registered capital in 1988, the figures reached 372 projects and USD 10164.1 million USD in 1996. The first half of the 1990s was referred to as the first "investment boom" period in attracting FDI for Vietnam. In the period between 1988 and 1995, Vietnam attracted 1620 investment projects and USD 19265.2 million registered capital. In contrast to the increase of registered capital, implemented capital was far lower at only about USD 6517.8 million.



Note: Including supplementary capital to licensed projects in previous years
Source: General Statistics Office of Vietnam, Vietnam Ministry of Industry and Trade.

Figure 1. FDI registered capital in Vietnam during 1988 - 2011 (million USD)

After the Asian financial crisis in 1997, FDI flows into Vietnam reduced slightly in the second half of 1990s, even though the positive factors remained unchanged. Wherein, Japanese and other foreign investors diversified their investment sites, turning their attention from advanced ASEAN countries, such as Thailand and Malaysia, to tapping into the potential of Vietnam. The regulations and legal shortcomings have not been improved as expected. Particularly, the complicated, inefficient bureaucratic administrations have disappointed overseas investors. [2]Although Vietnam remained a relatively closed economy during the 1997 Asian financial crisis, the FDI capital from the Asian countries tended to decrease, causing a drop of FDI flows to Vietnam. [3]The FDI registered capital bottomed out in 1998. In the period from 1996 to 2000, there were 1724 investment projects with registered capital of around USD 26259 million. Implemented capital was some USD 12944.8 million, nearly doubled in comparison with the previous duration, which was at USD 6517.8 million.

FDI inflows, then started to rebound as countries in the region recovered after the 1997 Asian Financial Crisis, together with the signing of the U.S.-Vietnam Bilateral Trade Agreement in 2000. It is undeniable that USBTA took an important role in stimulating the U.S. investors to invest in Vietnam. FDI flows have grown steadily from USD 3142.8 million in 2001 to USD 6839.8 million in 2005. The total FDI capital that flowed to Vietnam in the duration 2001-2005 was USD 20702.2 million; lower than that in the duration 1996-2000, USD 26259 million. However, the implemented capital was higher, at USD 13852.8 million compared to USD 12944.8 million.

To qualify the provisions in the Trade Related Investment Measures Agreement (TRIMs), and related agreements like the Subsidies and Countervailing Measures Agreement (SCM) of the WTO, a large number of laws, sub-law documents have been supplemented, amended, and issued to facilitate institutional reform (Investment Law 2005,

[2] Tran Van Tho, 2004, "Foreign Direct Investment and Economic Development: The Case of Vietnam", *Working paper,* p. 4.

[3] Nguyen Ngoc Anh and Nguyen Thang, 2007, "Foreign direct investment in Vietnam: An overview and analysis the determinants of spatial distribution across provinces", MPRA Paper No. 1921, p.7, available at website: *mpra.ub.uni-muenchen.de/.../MPRA_paper_1921.pdf*, accessed in May 4th, 2012.

Enterprise Law 2005, etc). As a result, we witnessed the "abrupt increase" of FDI inflows in both registered capital and number of new projects in the duration 2007-2011. In the duration 2007-2011, average annual FDI flows into Vietnam surged to USD 28790 million. Vietnam attracted a total FDI capital of about USD 143950.3 million at the same period, nearly doubled than that of in the duration 1988-2006, USD 78248.7 million, and accounting for 62.61% of the total FDI capital flowed into Vietnam from 1988 to 2011, USD 229913.7 million. [4] The total implemented capital of this duration was USD 51530 million, 1.38 times higher than that of the duration from 1988-2006, which was at USD 37415.5 million. The duration 2007-2011 can be referred to as the second "investment boom" period of FDI in Vietnam. To respond to the question of whether trade liberalization under the WTO regime and various regional/bilateral FTAs in which Vietnam has signed recently, has really boosted the FDI flows to the country, the next section will detail a gravity model with the use of a panel data of 18 Vietnam's major partners during 1995-2011 and the Hausman-Taylor estimator to re-examine the possible effects of those factors.

4. EMPIRICAL METHODOLOGY, DATA AND ANALYSIS OF THE ESTIMATION RESULTS

4.1. The Gravity model and data

In a panel data setting, random-effects and fixed-effects models have been traditionally and widely used for the estimation of Gravity model. The choice between them is done by using the Hausman test. However, both methods have their own disadvantages. While the random-effects models do not incorporate country fixed-effects (which are likely to be presented in a heterogeneous country sample), time-invariant variables do not yield coefficient estimates in a fixed-effects model. It means that we cannot gain/acquire/produce/ estimates for the variation that is captured in the country fixed-effects, although these can be quite interesting in a Gravity model, since they reveal the distance between two countries and reveal whether they share a land border.

As a remedy, Hausman and Taylor (1981) and Wyhowki (1994) proposed a different model that could incorporate the advantages of the random-effects and the fixed-effects models. Egger (2005) stated that the Hausman-Taylor estimator is consistent and the performance is at least equivalent to the random-effects and the fixed-effects estimators. McPherson and Trumbull (2003) also tested different estimators and found the Hausman-Taylor estimator to be superior in the estimation results. Busse and Gröning (2011) also employed the Hausman-Taylor estimator as a suitable technique in their study. The Hausman-Taylor estimator is basically a hybrid of the fixed-effects and the random-effects models and takes the following form:

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

wherein, 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.

Concerning the variables in equation (1), the author uses the FDI flow from country partner j at year t to Vietnam as the dependent variable for yit (the variable is labeled FDIjt). Apart from the impact of trade liberalization on FDI inflows into Vietnam, the author is interested in the impact of the WTO and various FTAs.

[4] Accumulation of projects having effect as of 31 December, 2011, figures of Vietnam GSO, 2012.

For x'1it (variables that are time varying and uncorrelated with ui), the author constructs a set of dummy variables. Particularly, the impact of the WTO on Vietnam's FDI inward is taken in the form of the BothinVNjt and OneinVNjt dummies. BothinVNjt dummy takes the value of 1 if both Vietnam and country partner j are the WTO members at year t and otherwise. OneinVNjt dummy takes the value of 1 if either Vietnam or country partner j is the WTO member at year t and otherwise. Other dummies, the AFTA, USBTA, ACFTA, AKFTA, JVEPA, and the AANZFTA, are added to capture the probable affects of bilateral/regional trade agreements on Vietnam's FDI inward. The author relies on the fact that the FTAs and the WTO involve with different degrees in liberalization, and hence define them in order to isolate the impact of each, and purge of any "contamination" from each other. [5]Each dummy takes the value of 1 if Vietnam and country partner has signed/joined the bilateral/regional trade agreement at year t and otherwise. Two more variables that are time varying and uncorrelated with ui are added. The author employs the RERCURj/VNDt and the insVNt * insjt variables.

Firstly, the RERCURj/VNDt designates the Real exchange rate between VND and Currency of country j at year t. An increase/decrease of real exchange rate corresponding to devaluation/overvaluation of VND may affect FDI flows. Specifically, an increase of the real exchange rate (the devaluation of VND) may attract FDI flows and vice versa. The real exchange rate is calculated by the following formula:

$$RER_{CURj/VNDt} = e_{CURj/VNDt} * (CPI_{jt} / CPI_{VNt}) \quad (2)$$

wherein,

RERCURj/VNDt is the Real exchange rate between VND and Currency of country j at year t

eCURj/VNDt is the Nominal exchange rate between VND and Currency of country j at year t

CPI_{jt} is the Consumer Price Indext of country j at year t

CPI_{VNt} is the Consumer Price Indext of Vietnam at year t

Secondly, the $ins_{VNt} * ins_{jt}$ is an institutional variable; ins_{VNt} and ins_{jt} are the values of the governance indicators of Vietnam and country partner j respectively at year t. Each of them was taken from the average of five indicators,i.e.(1) the Political Stability and Absence of Violence/Terrorism; (2) Government Effectiveness; (3) Regulatory Quality; (4) Rule of Law; and (5) Corruption Control Indicators; these were provided by the World Bank. Percentile rank among all countries ranges from 0 to 100. The higher figures mean better governance. [6] The institutional variable in this study reveals the interaction in governance between Vietnam and country partners on the ground. It reveals that better governance may facilitate the FDI inward.

For x'2it (variables that are time varying and correlated with ui), GDP of Vietnam, GDP of country partners, and Vietnam's exports and imports were employed as it might be argued that the FDI flows are not only influenced by the total output of two countries, Vietnam's exports and imports, but also can have an influence on Vietnam's GDP, exports and imports. Higher GDP figures and export-import volumes are expected to be positively associated with the FDI flows. To avoid the endogenous issues such as the exits of bidirectional causality between the added variables and GDP in Gravity model, the author used a one time period lag for the real Exports and real Imports variables.

For the z'_{1i} (*variables that are time invariant and uncorrelated with* u_i), the author employed standard gravity variables, the distance between two countries and whether they share land borders, namely, the DIS_{VNj}, and the BOR_{VNj}. Wherein, the expected sign of DIS_{VNj} is negative being a proxy for transport and transaction costs. This was adopted from the work of CEPII using the weighted distance between Vietnam and country partner. The BOR_{VNj} dummy is involved with the fact that Vietnam and country j share the land border or not-this is-highly expected to affect to FDI flows in to the country.

[5] AFTA: ASEAN Free Trade Area; ACFTA: ASEAN China Free Trade Area; AKFTA: ASEAN Korea FTA; JVEPA: Japan Vietnam Economic Partnership Agreement; AANZFTA: ASEAN-Australia-New Zealand FTA.

[6] World Bank, 2012.

The final category of variables z'2i (variables that are time invariant and correlated with ui) has been omitted, as none of my indicators fit this definition. The values of the quantitative variables such as the GDP, FDI, Exports, and Imports were converted to constant prices (2005 prices). All the variables, except the dummies, are in natural logarithm form in the Gravity equation.

The analysis presented in this paper was based on a panel data set in the 1995 to 2011 period which involves 18 Vietnam's major/stable FDI partners including: Australia, Belgium, Canada, China, France, Germany, Hong Kong, Japan, Malaysia, the Netherlands, the Philippines, Russia, Singapore, South Korea, Taiwan, Thailand, the United Kingdom, and the United States. The data were obtained from different but reliable sources such as Vietnam's authorities (the General Statistics Office, Ministry of Industry and Trade, Ministry of Planning and Investment) and the international organizations (the Asian Development Bank, International Monetary Fund, World Bank, and the World Trade Organization). Table 1, Table 2, and Table 3 show the estimates using the Hausman-Taylor (1981) estimator and the Stata 11.

4.2. An analysis of the Gravity model empirical results using the Hausman-Taylor (1981) estimator

The results presented in table 1 indicate that a large share of the variation in the FDI flows to Vietnam recently. This could be explained by a number of factors, namely, GDP, Distance, FTA, and the WTO accession.

We, now, start by the discussion on the positive impact of the WTO on FDI flows to the country. The estimated coefficients of the $Bothin_{VNjt}$ and $Onein_{VNjt}$ variables are positive and significant at 1% and 5% level, respectively, indicating that the WTO has a strong and positive impact on FDI flows to Vietnam. The empirical results are consistent with the descriptive analysis and the author's prediction. The explanation is on the following arguments.

Table 1. Gravity model empirical results-Hausman-Taylor Estimator

Explanatory variables	Dependent variable: $LnFDI_{jt}$
Time Varying Exogenous	
$LnRER_{CURj/VNDt}$	-0.0231
$Ln(ins_{VNt}*ins_{jt})$	0.4597
$Bothin_{VNjt}$	1.3076*
$Onein_{VNjt}$	0.8165**
AFTA	-1.1432**
USBTA	0.3541
ACFTA	0.1547
AKFTA	0.4422
JVEPA	0.4977
AANZFTA	-0.6198***
Time Varying Endogenous	
$LnGDP_{VNt}$	-1.8167*
$LnGDP_{jt}$	0.8178***
$LnEX_{jt-1}$	0.1669
$LnIM_{jt-1}$	0.1512
Time Invariant Exogenous	
$LnDIS_{VNj}$	-1.7394**
BOR_{VNj}	-2.0316
Constant	44.1461*

*Note: * Significant at 1% level or better; ** Significant at 5% level or better;*
*** Significant at 10% level or better*

Table 2. Summary the Statistics (period: 1995-2011, countries: 18, observations: 306)

Variables	Observations	Mean	Standard Deviation	Min	Max
$LnFDI_{jt}$	306	17.9142	1.8494	10.5950	21.7498
$LnDIS_{VNj}$	306	8.3099	0.9309	6.7140	9.5226
$LnGDP_{VNt}$	306	24.5363	0.3192	23.9940	25.0309
$LnGDP_{jt}$	306	27.2633	1.3520	24.9592	30.2141
$LnEX_{jt-1}$	306	20.2589	1.2556	15.2266	23.4143
$LnIM_{jt-1}$	306	20.2065	1.4982	16.1206	23.7405
$LnRER_{CURj/VNDt}$	306	7.8679	2.0986	2.2857	10.3280
$Ln(ins_{VNt}*ins_{jt})$	306	7.9462	0.3711	6.6646	8.3058
AFTA	306	0.2091	0.4073	0	1
USBTA	306	0.0392	0.1944	0	1
ACFTA	306	0.1633	0.3703	0	1
AKFTA	306	0.0980	0.2978	0	1
JVEPA	306	0.0130	0.1137	0	1
AANZFTA	306	0.0490	0.2162	0	1
$Bothin_{VNjt}$	306	0.2777	0.4486	0	1
$Onein_{jt}$	306	0.6405	0.4806	0	1
BOR_{VNj}	306	0.0555	0.2294	0	1

Table 4. The GATT/WTO rounds of negotiation and tariff cuts

Round	Dates	Length (months)	Tariff cuts [a]	Round "productivity" [b]	Number of GATT members	
					All [c]	G-77 [d]
Geneva I	1947	8	26.0	39.0	19	7
Annecy	1949	8	3.0	4.5	20	8
Torquay	1950-1951	8	4.0	6.0	33	13
Geneva II	1956-1956	16	3.0	2.3	35	14
Dillon	1960-1961	10	4.0	4.8	40	19
Kennedy	1964-1967	42	37.0	10.6	74	44
Tokyo	1973-1979	74	33.0	5.4	84	51
Uruguay	1986-1994	91	38.0	5.0	125	58

Note: [a] Average cuts in bound tariffs (Preeg (1970), Baldwin (1986), WTO (1994, 2007)). Import-weighted tariff cuts of industrial countries for industrial products (petroleum excluded). The five first figures refer to the average tariff cuts of the United States; [b] Average tariff cut per year of negotiations; [c] GATT members at the end year of the negotiations (WTO website); [d] G-77 membership is taken as a proxy for defining "developing" GATT members.

Source: Martin, W., and Messerlin, P., (2007, pp. 347-366).

Firstly, the WTO accession has been accompanied by the tariff reduction expertise from this institution's history of development since 1947 (see Table 4).

From Table 4, it is obvious that the Geneva I round witnessed greater tariff reduction by the United States. The later four rounds offered modest tariff cuts. The next three rounds, Kennedy, Tokyo, and Uruguay, have brought about a much larger tariff reduction than ever before. Vietnam as a late "comer" is not an exceptional case. Vietnam has cut down thousands of tariff lines (around 10600) in line with the framework committed to the WTO. Average tariff rate is expecting to reduce from 17.2% to 13.4% gradually up to 2015. A tariff

Table 3. The Correlation matrix

	$LnFDI_{jt}$	$LnDIS_{VNj}$	$LnGDP_{VNt}$	$LnGDP_{jt}$	$LnEX_{jt-1}$	$LnIM_{jt-1}$	$LnRER_{CURj/VNDt}$	$Ln(ins_{VNt}*ins_{jt})$	AFTA	USBTA	ACFTA	AKFTA	JVEPA	**AANZFTA**	$Bothin_{VNjt}$	$Onein_{jt}$	BOR_{VNj}
$LnFDI_{jt}$	1.0000																
$LnDIS_{VNj}$	-0.3119	1.0000															
$LnGDP_{VNt}$	0.0361	-0.0000	1.0000														
$LnGDP_{jt}$	0.0909	0.7099	0.1281	1.0000													
$LnEX_{jt-1}$	0.3275	-0.0742	0.6920	0.3476	1.0000												
$LnIM_{jt-1}$	0.5590	-0.4521	0.5483	0.0884	0.7413	1.0000											
$LnRER_{CURj/VNDt}$	-0.2970	0.5159	-0.0028	0.1978	-0.0630	-0.4182	1.0000										
$Ln(ins_{VNt}*ins_{jt})$	0.1790	0.2974	-0.0004	0.2023	0.1114	-0.0552	0.4807	1.0000									
AFTA	-0.0195	-0.6633	0.0547	-0.6487	0.0152	0.1214	-0.1348	-0.2426	1.0000								
USBTA	0.1281	0.2636	0.1036	0.4313	0.3111	0.0779	0.1667	0.0894	-0.1039	1.0000							
ACFTA	0.0326	-0.5083	0.3199	-0.3182	0.2509	0.3510	-0.1082	-0.3311	0.6420	-0.0893	1.0000						
AKFTA	0.1096	-0.3570	0.3705	-0.2664	0.2313	0.3304	-0.2416	-0.1483	0.4790	-0.0666	0.5677	1.0000					
JVEPA	0.1429	-0.0069	0.1443	0.1678	0.2283	0.1976	-0.1682	0.0574	-0.0592	-0.0233	-0.0509	-0.0379	1.0000				
AANZFTA	-0.0152	-0.2099	0.2900	-0.1722	0.2171	0.2078	-0.0194	-0.0896	0.3298	-0.0459	0.3909	0.5359	-0.0261	1.0000			
$Bothin_{VNjt}$	0.0997	-0.0190	0.7449	0.1021	0.5423	0.4460	0.0130	0.1122	0.0399	0.0626	0.2193	0.4089	0.1856	0.3661	1.0000		
$Onein_{jt}$	-0.0614	0.0393	-0.5588	--0.0718	-0.4024	-0.3946	0.1009	0.1806	0.0503	-0.0241	-0.1294	-0.3256	-0.1536	-0.3031	-0.8278	1.0000	
BOR_{VNj}	0.0091	-0.1434	-0.0000	0.1884	0.1816	0.2154	-0.0356	-0.3531	-0.1247	-0.0490	0.2787	-0.0800	-0.0279	-0.0551	0.0088	-0.1454	1.0000

reduction will always import benefit of intermediary goods in the host country or imports of the final goods in the home country. Lower tariffs mean lower prices. The lower prices of the foreign imported goods in manufacturing (intermediary goods) and trade (final consumer goods) favor the stronger competitiveness and profit in business and, hence, attract foreign firms to come and invest in a host country that has higher levels of economic openness/liberalization like Vietnam. An economy that is open to trade is attractive to overseas investors for two main reasons: (1) the openness signals that the governance enforces policies in place that welcome both trade and competition; and (2) it may help reassure investors that they can repatriate their profits.

Secondly, the overarching/main function of the WTO is not only to ensure that trade flows as smoothly, predictably and freely as possible, but also this multilateral trading system is an attempt by government to make the business environment stable and predictable. And, it commits to policy stability, predictability and good governance through its membership to the WTO. To qualify the WTO agreements, the 2005 Investment Law and Enterprises Law were issued with some main changes in the following direction: (i) these Laws apply for both foreign and domestic investors (both are equal in investment activities in Vietnam matching the national treatment principle); (ii) great amounts of prohibitive regulations/requirements previously imposed on foreign enterprises have been abolished (*e.g.,* export with certain proportion, achieve certain localization, dual price policy, give priority to buy and use domestic goods and services or have obligations to purchase goods and services from domestic manufacturers or service providers, self balance foreign currency from exports to meet demand of imports, etc); (iii) foreign investors have more rights to actively join some fields that were restricted before, like baking, financing, insurance, retailer, brokerage, telecommunication, securities, rice exports, etc. These present the efforts of the Government of Vietnam in offering a more predictable and transparent investment environment for overseas investors.

Generally, the Vietnam's liberalization process within the framework promised to the WTO and several national advantages in tandem with the improvement of investment environment could be important factors in inducing such large amounts of FDI flows to the country.

We, now, turn in to the possible impact of other factors on Vietnam's FDI inward. First, the estimated coefficient of the $LnGDP_{jt}$ variable presented in Table 1 also offers an overview about the strong impact of this factor on FDI flows to Vietnam. The coefficient is positive and significant at 10% level. As predicted, the growth of the GDP of the advanced countries-Vietnam's FDI partners led to an increase of FDI flows, suggesting that convergence in income levels could be the cause in the growth/variation of multinationals in making direct investment abroad, and that Vietnam is an attractive destination. Second, the significant and negative coefficient of the $LnGDP_{VNt}$ variable indicates that FDI inflows in Vietnam might not be a market seeking FDI. In other words, Vietnam's market size is not an important factor for overseas investors.

To the $LnIM_{jt-1}$ and $LnEX_{jt-1}$ variables, their coefficients are not significant, indicating that an increase of Vietnam's exports and imports has not attracted FDI flows. As for the distance between Vietnam and country partners, $LnDIS_{VNj}$, this effect on FDI flows is clearly negative, being a proxy for transport and transaction costs. It is obvious that transport and transaction costs are likely to increase if two countries are located far away from each other. The author does not observe the negative impact of the BOR_{VNj} variable from the estimated results. This implies that FDI flows to Vietnam did not depend on FDI flows to China. Contrary to expectations, $LnRER_{CURj/VNDt}$ and $Ln(ins_{VNt}*ins_{jt})$ variables are not statistically significant, suggesting that the exchange rate regime and governance factor did not induce FDI inflows to Vietnam.

Finally, we discuss the possible impact of the various FTAs on FDI flows to the country. The estimated results show that the USBTA, ACFTA, AKFTA, and the JVEPA have not facilitated FDI inflows into the country. Their coefficients are statistically non-significant. The coefficients of the AFTA and the AANZFTA are significant but in negative sides. This could be explained that after signing the FTAs, 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 FTAs.

Overall, various/complicated factors motivated the FDI inflows into Vietnam recently. They are economic space of Vietnam and the country partners, the distance between them, the FTAs, and the country's economy openness within the framework promised to the WTO. These may not always be expected or appreciated. Among them, the WTO accession could be one of the most important factors that boosted such large amounts of FDI capital to the country. This is consistent with the main motivation of the Vietnamese Government in promoting Vietnam's entry into the WTO, and to use the foreign competition to speed up economic reform and attract FDI capital. By contrast, there is no evidence that demonstrates convincingly that various FTAs in which Vietnam has signed/joined recently, increased FDI capital into the country.

5. CONCLUDING REMARKS AND RECOMMENDATIONS

The WTO accession and several factors have a great impact on the amounts of FDI capital flowing into Vietnam recently. However, the implemented ratios of FDI capital were quite low as a result of the weaknesses of the economy. In other words, the poor infrastructure, a lack of skilled labor, and weak institution are the "bottle neck" of Vietnam's economy in attracting and absorbing FDI capital. To enhance the role of FDI in Vietnam and to attract and use FDI capital more effectively, the following recommendations are suggested:

First, the Government of Vietnam should focus on improving the infrastructure in terms of roads, electricity, seaports, airports, water supply system on one hand. On the other hand, the investment environment should also be further improved, emphasizing regulatory reform, administrative procedural reform, apparatus reform, capacity enhancement for cadres and civil servants, and administrative modernization. These are to reduce the obstacles and to create a clear business environment, transparent/stable legal framework. In addition, it's time for Vietnam to seek for better quality in capital-intensive, advanced technology FDI projects from developed economies. Sustainable development obliges the harmonization between economic growth and environment protection that is of crucial importance for Vietnam.

Second, the attraction of high quality, capital-intensive, advanced technological FDI projects requires certain skillful labor force along with better infrastructure. At the present time, attracting FDI based on the abundance of cheap labor force, industrial land, and natural resources are advantages to Vietnam. After joining the WTO and with the pressure of economic integration, these advantages will sooner or later come to a halt. Hence, the strategy for raising skilled labor force using various fiscal sources is necessary.

Third, using marketing methods to polish Vietnam's images in the international community will make its soft power stronger then its current lobbying and promote the FDI inflows. This should be conducted not only by the Ministry of Planning and Investment, but also by the Ministry of Culture, Sport and Tourism, as well as other authorities, cities, provinces, and individuals.

In conclusion, by using the most updated panel data and empirical study by employing the standard Gravity model in tandem with a superior estimation technique-Hausman-Taylor estimator, the present main findings might

firther contribute to the existing literature about the impact of trade liberalization under various FTAs and the WTO on FDI flows to the country recently. However, the empirical analysis presented in this paper was restricted to the impact of the first years of the country's international economic integration-trade liberalization. It could well be that the outcome changes overtime. Furthermore, assessing the impact of trade liberalization on FDI flows to specific industries in Vietnam is also important. Due to the scarcity of information, the author has to leave this for future researches. To this end, the economic model should be constructed to examine the possible effects of trade liberalization on FDI flows to the host country.

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