

Determinants of FDI into China and Vietnam: A Comparative Study*

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Over the course of reform, attracting substantial and rising amounts of inward FDI has made China and Vietnam become successful examples of transition to a market economy. Yet, the last two decades have experienced a widening gap in inward FDI between these two countries. Therefore, this paper aims to resolve this issue by providing an empirical analysis on the determinants of FDI into China and Vietnam. We find that the widening gap in inward FDI flows between China and Vietnam can be explained by two broad sets of main factors: one related to institutions and another to domestic macroeconomic stability.

JEL Classification: F15, F21, P20

Keywords: foreign direct investment, gravity model, China, Vietnam

* Received July 23, 2019. 1st revision October 9, 2019. 2nd revision January 3, 2020. Accepted February 12, 2020. The author would like to show her gratitude to two anonymous reviewers for the so-called insights. The author is also immensely grateful to the reviewers for sharing their bilateral FDI database.

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1. INTRODUCTION

Since 1994, FDI has become the most important source of external finance in the developing world. By the end of 2006, the share of FDI inflows reached 51% of total capital flows to developing countries. Moreover, inward FDI stock in developing countries amounted to 33% of their GDP compared to only 10% in 1980 (UNCTAD, 2007).¹⁾ This worldwide trend has been seen as the most visible dimension of globalization (Addison *et al.*, 2006). Among others, China and Vietnam have recorded great achievements in attracting substantial and rising amounts of inward FDI. Inward FDI, which is considered not only as a package of capital, technology and managerial skills, but also as an important source of both direct capital inputs and technology spillovers (Balasubramanyam *et al.*, 1996; Li and Liu, 2005), has become a determinant factor of China and Vietnam's economic growth. Therefore, the present paper aims at providing a comparative study of the determinants of FDI flows into China and Vietnam by employing an augmented gravity model.

The present comparative study is motivated by the fact that China and Vietnam have charted broadly parallel paths in their economies. In other words, both countries have a lot of similarities such as: separating agricultural collectives in favor of family farming; transferring from the planned economy and toward a market economy; allowing the development of private enterprises in almost all economic sectors; opening the domestic economy toward the world market and toward export-oriented industrial drives as well as opening their doors to foreign investors. Therefore, this empirical study allows us to point out the main factors, which play a relevant role in an economic similarity between China and Vietnam, notably the success of policy in attracting inward FDI. In addition, our empirical analysis also tends to investigate the macroeconomic factors that have contributed to the widening gap in the trend and patterns of inward FDI

¹⁾ All developing economies excluding China.

between China and Vietnam despite their similarities in economic and investment reforms.

On the other hand, since the 1990s, China has become the most popular destination of FDI. This phenomenon results in another heated debate of whether China rivals its neighboring economies in attracting inward FDI. In the concerned literature, a number of existing empirical studies suggest that China does not rival, however, may complement its Asian neighbors' FDI inflows. For instance, Eichengreen and Tong (2006) conclude the complementarity between FDI flows into China and those into other Asian economies. This finding is also supported by Zhou and Lall (2005) for a group of seven Asian economies over the period 1992-2001. Yet, to the best of our knowledge, there is no empirical study, which has been carried out, to address the question of whether FDI into China have had a creation effect or a diversion effect on FDI into Vietnam. Thus, another main objective of the present paper is to fill this knowledge gap. This paper also tries to give some recommendations to policy makers that we should experience the China situation for Vietnam itself.

The remainder of this paper is organized as follows. Section 2 provides a literature survey on the determinants of FDI. It is followed by a brief outline of the trend and patterns of inward FDI to China and Vietnam over the last two decades (section 3). Section 4 describes the econometric model and the dataset used for the empirical testing. Empirical results are reported and discussed in Section 5. Concluding remarks are in section 6.

2. LITERATURE REVIEW

Similar to a large number of the theoretical studies on FDI (e.g., Hymer, 1976; Hood and Young, 1984; Dunning, 1977), determining key factors influencing FDI inflows has been one of the most important concerns in international economics. The existing literature suggests that the FDI determinants depend on the investor's different goals. First, the market-

seeking investors are attracted by a host country with a large and fast-growing local market. Second, with the aim of minimizing transportation costs and optimizing for locations with lower labor costs, the efficiency-seeking investors pay a special attention to the geographical distance between home and host countries. Third, the abundant natural resources are the most important factor affecting the decision of resource-seeking investors. To the best of our knowledge, Blonigen (2005) provides an orthodox literature survey on FDI determinants. Hence, reviewing once again the literature of FDI determinants goes beyond the scope of this section. Regarding the main objective of this paper, we only outline the most important and influent works shedding light on the determinants of FDI into China (2.1) and into Vietnam (2.2).

2.1. Determinants of FDI into China

Since the launch of economic reforms in 1978, China has recorded impressive achievements. Together with a high economic growth rate, the growth of China's inward FDI has been even more remarkable. Although inward FDI plays an important role in fostering economic growth, China's FDI determinants have not been well developed in the literature. In this regard, the factors determining FDI flows into China are classified into three categories: micro factors (firm ownership specific advantages); macro factors (market size, economic growth, institutional quality and so on); and strategic factors (firms' long-term development strategy). In terms of macro determinants, Swain and Zhang (1997) and Liu *et al.* (1997) indicate that the real GDP growth rate significantly and positively influences inward FDI to China. Using a dataset covering FDI flows from the US and Hong Kong to China, Zhang (2000) and Wei and Liu (2001) also support the positive relationship between market size and China's inward FDI.

Together with market size, the low level of labor cost factors is also one of the main determinants of China's inward FDI. Swain and Wang (1995) conclude a positive relationship between China's relatively cheap labor and

its inward FDI. Similarly, Liu *et al.* (1997) argue that the low wage rates are one of the most important economic factors determining China's inward FDI. By contrast, Liu *et al.* (1997) find no evidence of the role of geographic factors in determining FDI into China. This finding seems to be not consistent with that of Grosse and Trevino (1996) implying that culture distance and geographic distance are significantly and negatively related to FDI inflows.

In another empirical research, Kerr and Peter (2001) examine the determinants of FDI into China over the period 1980-1998. Basing on the market imperfection framework and employing an error correction model, the authors reveal that the wage level, the exchange rate, the interest rates level, the taxation regime and the openness degree of China's economy are the main determinants of inward FDI. Differing from Kerr and Peter (2001), who use a time-series dataset, Pan (2003) investigate the impacts of country-specific factors on China's FDI determinants by using a panel dataset covering FDI flows from thirty home countries to China during the period 1984-1996. This work also endeavors to explain the sharp decrease in China's inward FDI due to the 1989 Tiananmen Square incident. Accordingly, some home country characteristics do not play any role in determining FDI flows into China because almost foreign investors are attracted by a large and fast growing local market of China. On the other hand, Pan (2003) also suggests that together with the aim of penetrating China's potential market, reducing transportation costs becomes another principal incentive for distant home countries to more invest in China. Basing on a smaller panel dataset covering bilateral FDI flow between China and its twenty-one home countries over the period 1983-1999, Zhao (2003) shows that the market-condition variables and the Yuan depreciation significantly increase FDI inflow to China, while the political and operating risks in China negatively influence its inward FDI.

Taking into account a sample of FDI inflows to China from 18 major donor countries during 1989-2006, Liu (2010) looks at the role of intellectual property rights (IPRs) protection as well as the home countries' macro

variables in determining China's FDI inward. According to the author, the home countries with higher export ratio, depreciation of real exchange rate, lower borrowing cost, lower GDP per capita, higher relative labor cost, strong IPR protection and higher volatility in its exchange rate tend to invest more to China. In a spatial panel analysis, Yong *et al.* (2016) examine the determinants of FDI the three regions of China (Eastern, Central, and Western) by using the data within the period of 1994 to 2008. The empirical results show that the determinants of FDI vary among the three regions, depending on the motives of the investor and the results of policy bias. Moreover, the authors find evidence of the entrepreneurial nature of competition of FDI among the provinces revealed by the spatial FDI factor. Accordingly, a more coherent policy on FDI inflows into China is an urgent necessity, though the policies for each region must be, of necessity, different for each of the three regions.

Differently, Li *et al.* (2017) focus on China's pharmaceutical industry to assess whether factors related to location advantages, agglomeration dynamics, information cost effects and environmental regulation costs affect foreign firms' localization choices as well as invested amounts in that location. The authors confirm the positive effects of location advantages on pharmaceutical FDI attraction. Precisely, a higher proportion of foreign enterprises do not stimulate significant effects on FDI localization, while preferential policies and sectoral agglomeration are positively correlated with the localization of pharmaceutical foreign firms. Li *et al.* (2017) also reveal that investing firms tend to avoid areas with strict environment regulation. In the most recent study, Gopalan *et al.* (2019) tend to address the question of how the quality of physical infrastructure influences Greenfield FDI inflows into China and ASEAN over the period 1995-2016. The authors suggest that roads emerge as the most robust determinant of Greenfield FDI inflows to China and ASEAN. In general, as suggested in a survey work released by OECD (2000), the main determinants of China's inward FDI can be classified into six sub-categories: (i) China's market size and economic growth performance; (ii) natural and human resource endowments; (iii) the

infrastructure quality; (iv) the degree of trade openness and access to international markets; (v) the institutional quality; and (vi) the investment policies.

2.2. Determinants of FDI into Vietnam

The impressive growth of FDI flows into Vietnam has also become a growing concern in Vietnam's economic literature. While a large number of recent empirical studies investigate the triangular relationship between inward FDI, international trade and economic growth of Vietnam, there are only a few works examining the main determinants of FDI into Vietnam. In this vein, the pioneer work is developed by Nguyen and Haughton (2002), who investigate the impact of US-Vietnam Bilateral Trade Agreement (BTA) on FDI flows into Vietnam. In order to simulate the BTA impact on Vietnam's inward FDI, the authors employ their estimated results of a FDI determinant model for sixteen Asian countries over the period 1991-1999. They find that the BTA could initially increase Vietnam's inward FDI by 30% in the short run and twofold in the long-run. Lately, in a simple descriptive statistical analysis, Parker *et al.* (2005) study the trend and patterns of FDI flows into three Vietnamese industrial sectors, including textile, furniture and fisheries, in which Vietnam has recorded a strong export growth to the US since the BTA implementation. They conclude the relevant role of Vietnam-US BTA in encouraging inward FDI to these three sectors, which in turn results in a substantial increase in exports of FDI enterprises in Vietnam.

In a survey work, Mirza and Giroud (2004) tend to analyze the motivations of foreign firms investing in Vietnam as well as to identify several country-specific characteristics attracting FDI flows into Vietnam. Accordingly, political stability, government policies, local market size and quality of labor force have made Vietnam become a well-known destination on the world FDI map. More interestingly, the author shows that the destination of 40% of FDI firms' output is Vietnam's local market. However, according to

Nguyen and Nguyen (2007), the contribution of Mirza and Giroud (2004) suffers many critical issues since it is based on a data sample quite small, only consisting of twenty-two foreign invested firms in Vietnam. Nguyen and Nguyen (2007) also provide an empirical analysis of the determinants of FDI spatial distribution across Vietnam's provinces. They argue that in terms of FDI provincial distribution, market size, labor force and infrastructure play an important role in attracting inward FDI. By contrast, government policy captured by the Provincial Competitiveness Index (PCI) does not seem to be a FDI key determinant at the provincial level.

Most recently, Pham (2011) empirically investigates the WTO accession's effect on Vietnam's foreign trade and inward FDI. The author concludes that WTO accession has a significantly positive effect on Vietnam's inward FDI. Pham (2011) also identifies two channels through which the WTO accession can positively affect FDI flows. First, the WTO accession has been expected to induce Vietnam to undertake further domestic reforms that would result in more predictable institutions and policies, as well as greater financial development. Greater financial development and a boom in banking activities made Vietnam's investment climate more attractive to foreign investors. Second, the WTO accession has been also expected to lead to the opening of services markets, which in turn could boost FDI flows into Vietnam.

Nguyen and Cao (2015) provides an empirical analysis on the impact of institutional quality in general and of its different components on foreign direct investment (FDI) inflows to Vietnam. With reference to the International Country Risk Guide provided by the Political Risk Services (PRS) group, along with the 1996 to 2011 data, through the "fixed" effect technique, the authors support the positive effect of institutional quality in general on FDI inflows to Vietnam. Accordingly, 3 out of 6 institutional quality components, notably political stability and absence of violence, regulatory quality, and control of corruption, are the essential factors of attracting FDI to Vietnam. Nguyen and Cao (2015) also reveal the possible substitution of FDI by domestic investment for investors in Vietnam's

country partners as their institutional quality goes up. In the same light, Doan and Lin (2016) investigate the relationship between quality of local economic governance and inward FDI among provinces in Vietnam. They find evidence of a strong correlation between FDI attraction and economic governance, which is measured from private sector perceptions. It means that foreign investors are willing to invest in provinces providing transparent legal information, business support and favorable policies for investors.

In another empirical and qualitative research (in-depth interviews), Hoang (2016) addresses the question of whether institutional quality has an impact on FDI's decision of Dutch firms operating in Vietnam. The empirical results show that investors mostly concern about corruption and taxation policies when deciding to do business in Vietnam, while political stability does not play an important role and the investors' view about the corporate law is neutral. By and large, contrary to the significant contribution of inward FDI to Vietnam's economic development, the determinants of Vietnam's inward FDI have been still under-researched.

3. INWARD FDI TO CHINA AND VIETNAM: A SIMPLE COMPARATIVE ANALYSIS

Following the inception of economic reforms, the opening up of China and Vietnam to foreign investments began in 1979 with the implementation of the first Sino-foreign joint venture in China and in 1987 with the enforcement of the Law on Foreign Investment in Vietnam. Since then, all FDI activities in China and Vietnam had been regulated by these Laws together with their important amendments and additions.²⁾ The progressive liberalization with important modifications to the investment law has made China and Vietnam succeed in attracting substantial and rising amounts of FDI inflows. Thus, this section provides the main information on the trend and patterns of FDI

²⁾ Information on Vietnam's investment law can be found at http://www.mpi.gov.vn/portal/page/portal/mpi_en; Information on China's investment law can be found at http://www.fdi.gov.cn/pub/FDI_EN/default.htm.

flows into China and Vietnam since the launch of their economic reforms.³⁾ On the other hand, we also endeavor to take a closer look at the possible factors responsible for the inward FDI divergence between China and Vietnam over the studied period.

3.1. Growth of Inward FDI

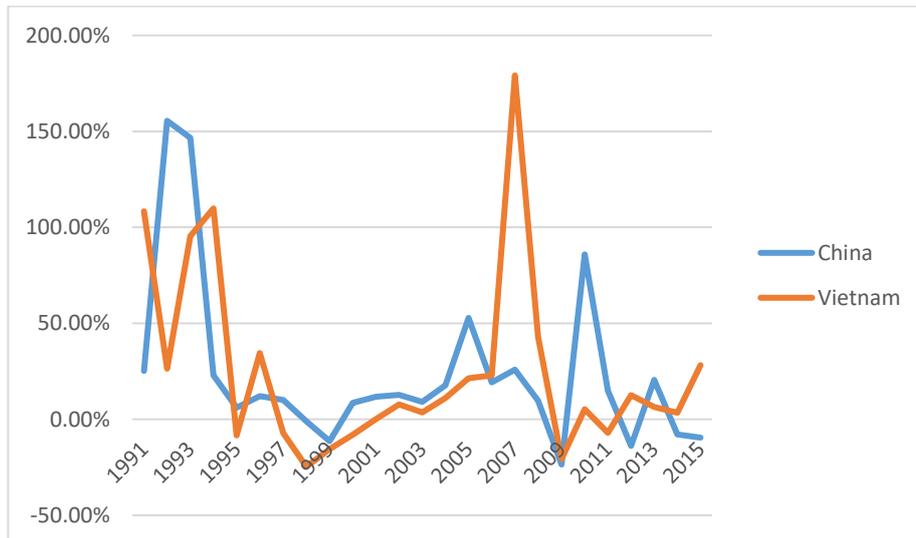
Table 1 presents the recent trends in inward FDI into China and Vietnam. As reported in table 1, before the 2000s, the world economy experienced a sharply increasing trend in inward FDI (using both measures). For instance, FDI flows during the 1990s increased to three or four times compared to the 1980s' FDI flows. However, since the beginning of 2000s, there has been a lessening trend in FDI flows, especially during the period 2000-2004.

Table 1 World Distribution of FDI Inflows

		World	East Asia	Southeast Asia	China	Vietnam
FDI net inflows (% of GDP)	1980-1989	1.12	2.61	2.70	0.58	0.02
	1990-1994	2.00	4.60	4.19	3.48	6.09
	1995-1999	3.97	6.10	5.51	4.70	7.53
	2000-2004	2.73	1.34	3.49	3.12	3.88
	2005-2015	3.27	10.73	5.05	3.46	6.04
FDI net inflows (% of Fixed capital formation)	1980-1989	4.60	0.29	6.44	2.13	0.16
	1990-1994	8.86	1.16	10.83	9.93	31.03
	1995-1999	15.33	3.34	15.45	13.10	24.87
	2000-2004	12.80	4.92	15.40	8.54	12.67
	2005-2015	13.82	17.24	21.25	9.24	21.05
FDI net inflows (% of total world FDI)	1980-1989	100	2.17	4.49	1.83	0.006
	1990-1994	100	8.25	7.11	7.11	0.34
	1995-1999	100	9.76	5.32	7.86	0.39
	2000-2004	100	10.14	2.79	5.70	0.17
	2005-2015	100	14.76	4.33	9.76	0.35

Source: Author's computations from WDI and ADB.

³⁾ FDI sectoral and partial distribution is not included because it goes beyond the scope of this paper.

Figure 1 FDI Growth Rate 1991-2015

Source: Author's creation from WDI.

From table 1, we can also observe that China and Vietnam's FDI inflows show the same relative magnitudes and temporal dynamics as other countries in the region to which China and Vietnam belong. Yet, since 1990s, the contribution of inward FDI to economic growth and capital formation has been much more important in Vietnam than in China. It means that compared to China, Vietnam could be more vulnerable to an external shock coming from its FDI source countries. The last part of table 1 also allows us to map the position of FDI flows into China and Vietnam. While Vietnam is only a little dot on the FDI world map, China has become the most popular destination of FDI.

We now turn our attention to the growth rate of FDI into China and Vietnam, which is plot in figure 1. Interestingly, China and Vietnam reveal a similar trend in growth rate of FDI inflows. At the beginning of 1990s, both China and Vietnam observed a massive inward FDI flow. The officially net FDI inflows over 1990-1994 rose from US\$348.7 million to US\$3.37 billion in China and from US\$ 180.0 million to US\$1.94 billion in Vietnam. A number of reasons can explain this robust increase. First, foreign investors

were attracted by the potentiality of a transitional economy with a great market remaining untapped. Second, they were also attracted by several positive factors, such as the abundant labor force, the cheap labor cost and the abundant natural resources as well. From 1997 to 1999, both China and Vietnam experienced an erratic growth rate of registered FDI, which was partially due to the Asian financial crisis. In fact, the main FDI donor countries of China and Vietnam were the Asian countries, who themselves had to face difficulties in their domestic markets. To maintain the domestic business operations, these donor countries had to postpone or cancel their overseas expansion plans, in particular their FDI projects.

Over the period 2003-2005, China and Vietnam witnessed a strong comeback of FDI. For instance, by 2005, Vietnam attracted over US\$6.8 billion of newly registered FDI, rising by 50.1%. In 2007, Vietnam's WTO accession immediately had a positive impact on attracting FDI into the country. As expected, Vietnam's inward FDI tremendously grew to a high record of over US\$1943 million in the 2007 first quarter and increased by 155.6% compared to this figure of the same period in 2006. By the end of 2007, Vietnam's annual growth rate of inward FDI already reached 179.2% and almost tripled compared to this figure in 2006. During the same period 2006-2007, China also evidenced a remarkable recovery of inward FDI. However the growth rate of China's inward FDI in 2007 had not yet exceeded the highest record of 155.5% attained in 1992. After a massive surge of inward FDI in 2007, both China and Vietnam experienced a fall in net inward FDI to both countries over the recent period. This chute probably resulted from the unfavorable worldwide development context caused by the propagation of 2007 financial crisis. After attaining a new peak in 2009, the growth rate of China's inward FDI tends to decrease, while Vietnam experiences a slight increase in its inward FDI.

3.2. Inward FDI by Source Countries

In terms of FDI sources, investors from over 150 and 80 different countries have invested in China and Vietnam, respectively. Table 2 lists the major FDI donor countries of China and Vietnam over the period 1994-2015.

Comparing the sources of FDI into China with those into Vietnam during the period under consideration, we find that the most important sources of FDI into both countries come from East Asia. Besides, the share of FDI from ASEAN to China is fairly small while ASEAN zone is the second important source of FDI into Vietnam. It means that the connectedness with other countries in the same economic zone may be an important factor explaining the FDI distribution. On the other hand, the contribution of FDI inflows from the world leader economy, notably the US, is much higher in China than in Vietnam. In addition, as reported in table 2, China has tended to improve its FDI relationship with the rest of the world. This phenomenon is supported by a substantial increase in FDI inflows to China from the rest of the world. By contrast, strengthening the intra-regional financial integration (with East Asia and ASEAN countries) has seemed to be Vietnam's recent development strategy.

Overall, the present section briefly outlines the trend and patterns of inward FDI to China and Vietnam. Yet, to gain a better understanding of the

Table 2 China and Vietnam's Main FDI Source Countries (in %)

		East Asia	Southeast Asia	EU15	USA	Others
China	1994-1999	59.28	4.89	7.56	8.08	20.17
	2001-2004	47.84	5.91	8.07	8.79	29.38
	2005-2015	46.49	7.02	4.92	3.74	37.83
Vietnam	1994-1999	30.64	29.71	9.70	3.80	26.15
	2001-2004	38.07	19.81	20.04	3.96	18.12
	2005-2015	38.06	22.11	11.85	1.68	26.30

Source: Author's computations from the database of National of Bureau of Statistics of China and Vietnam Ministry of Planning and Investment.

FDI determinants as well as to resolve the question of whether China's inward FDI can create or divert Vietnam's inward FDI, a formal empirical analysis will be carried out in the next sections.

4. EMPIRICAL MODEL AND DATA ISSUES

As mentioned in the introduction, to investigate the main determinants of inward FDI to China and Vietnam, we apply the augmented gravity models. Even though there is no clear theoretical foundation for applying a gravity equation to explain FDI activity, many previous cross-country FDI studies have deployed this equation, in which FDI flows become an endogenous variable and is explained by the economic size of home and host countries, the geographic variables and many other macroeconomic variables.

In the concerned literature, a few recent studies aim to introduce a number of necessary modifications to a standard gravity to determine FDI patterns. Basing on the knowledge-capital model, Carr *et al.* (2001) and Bergstrand and Egger (2007) develop a theoretical model of multinational enterprise's (MNE) decisions, through which the authors introduce many additional possible factors explaining FDI patterns. Accordingly, the gravity variables, such as the geographic distance and the country size, allow one to explain "horizontal" FDI motivations, while "vertical" FDI motivations are captured by other explanatory variables such as labor endowments, natural resource abundance and so on. A gravity equation is also used in Head and Ries (2008) to model the merger-acquisition FDI motivations. This work supports the role of two other gravity variables, notably the common culture and language, in determining FDI patterns.

In another recent work, employing the Bayesian Model Averaging technique, Blonigen and Piger (2011) introduce an appropriate set of potential FDI determinants that include a combination of covariates proposed by three studies listed above and other empirical analyses on FDI determinants (e.g., Eaton and Tamura, 1994; Di Giovanni, 2005). Therefore,

the choice of gravity variables in this paper is based on the work of Blonigen and Piger (2011). Our two gravity equations are formulized as follows:

$$\begin{cases} FDI_{it}^{CHN} = f(GRA_t; INDE_VA_t) \\ FDI_{it}^{VNM} = f(FDI_{it}^{CHN}; GRA_t; INDE_VA_t), \end{cases} \quad (1)$$

where $FDI_{it}^{CHN} / FDI_{it}^{VNM}$ are implemented inward FDI to China and Vietnam from the home country i at the time t , respectively; GRA_t is a set of standard gravity variables, including the geographic variables and the economic size of FDI host and home countries, which is measured by GDP per capita; and $INDE_VA_t$ is a broad set of independent variables as follows:

- Exchange rate: Differing from Blonigen and Piger (2011), we include exchange rate variables to examine also the possible impact of the changes in exchange rate on FDI inflows.
- Bilateral trade: The relationship between inward FDI and international trade has been strongly evidenced in the literature. Thus, in all gravity equations we include bilateral trade flows between China/Vietnam and their FDI donor countries to revisit this linkage. However, simply including bilateral trade flows in the augmented FDI gravity equation could induce a potential problem of endogeneity. To tackle this issue, we employ two alternative estimators, notably the estimation proposed by Hausman and Taylor (1981) (henceforth, the HTM) and the Instrumental Variables (IV), which are widely known as a solution to endogenous regressors and provides a way to obtain consistent parameter estimates.
- Openness level: We utilize two separate indicators to measure the openness level. The first one is the Chinn and Ito (2006) index of capital account openness (KAOPEN index), which is constructed from four binary dummy variables codifying restrictions on cross-border financial transactions reported in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions. The second one is the trade openness indicator (OPEN) that is the sum of exports and

imports of goods and services measured as a share of GDP. In addition, we also pay a special attention to the role of BTA and WTO membership in fostering inward FDI to China and Vietnam by introducing in all estimations two binary variables BTA and WTO.

- Host country's endowments: The endowments of FDI host countries are measured by a set of explanatory variables. First, we consider the average monthly wages as a measure of relative labor endowments in the host country. Second, we also use the share of skilled labor in total employment as another indicator of labor endowments. Third, regarding host country's capital endowments, we introduce in all regressions the share of gross domestic investment in GDP.
- Host country's macroeconomic and institutional environment: Macroeconomic and institutional environment has been widely considered as a relevant determinant of FDI. So that, we employ three indicators, notably the development level of domestic financial system, inflation rate and institutional quality, to investigate the possible impacts of host country's macroeconomic and institutional environment on its inward FDI flows.
- Financial crisis: We evaluate the potential impact of financial crisis on FDI decision by introducing in each regression a binary dummy. In order to determine the value of this dummy, we employ the work of Laeven and Valencia (2008, 2013, and 2018), in which the authors present a new database on the timing of systemic financial and banking crises as well as policy responses to resolve them. This binary dummy takes the value of 1 if the FDI source country really suffers from a crisis over the studied period and value of 0 in the opposite case.
- Another main objective of this paper is to contribute to the debate on whether China competes with Vietnam for attracting inward FDI. To do so, we include in Vietnam's FDI gravity equation an additional variable, which is inward FDI to China from each of Vietnam's FDI home countries.

Table A2 in the Appendix summarizes the dataset and provides the definition, the source, and the units of measurement of all variables of interest. In general, inward FDI to China and Vietnam is mainly explained by a set of following variables:

Inward FDI = F (*Standard gravity variables;*
Exchange rate;
Bilateral trade;
Openness level;
Host country's endowments;
Host country's macroeconomic and institutional
environment;
Financial crisis).

We now turn our attention to the datasets used for the empirical testing. In this paper, we build two separate datasets over the period 1994-2015. The first one covers China's inward FDI from its forty-three major source countries. The second one covers FDI inflows to Vietnam from the same forty-three major source countries.⁴⁾ Here, we use the realized FDI data for both China and Vietnam. This is because many foreign investors that invested in the host country during the period failed to register their projects in advance. This explains why the officially registered FDI cannot be used as a consistent and accurate measurement of FDI activities in the home country in rigorous studies. Moreover, due to the data availability, we must collect our panel data from different data sources such as the Ministry of Planning and Investment and General Statistics Office (GSO) of Vietnam, the National Bureau of Statistics of China the Asian Development Bank (ADB), the World Development Indicator (WDI) and so on (see further table A2 in the appendix).

⁴⁾ FDI source countries of China and Vietnam are listed in table A1 in the appendix.

5. EMPIRICAL RESULTS

The gravity model has been widely used in estimating the determinants of foreign trade. In the concerned literature, the gravity model is usually estimated by the Ordinary Least Squares (OLS) method in the log linear specification, using both the traditional and the fixed-effects equations.⁵⁾ However, Santos Silva and Tenreyro (2006) argue that this standard empirical method is inappropriate. According to the authors, in a cross-sectional dataset, the log-linearization of the empirical model in the presence of heteroskedasticity leads to inconsistent estimates due to the expected logarithm value of a random variable, which depends on higher-order moments of its distribution. Therefore, if the errors are heteroskedastic, the transformed errors will be generally correlated with the covariates. The biases are present both in the traditional and the fixed-effect gravity equations. To overcome this problem, Santos Silva and Tenreyro (2006) propose a simple Poisson pseudo-maximum-likelihood (PPML) method and assess its performance using Monte Carlo simulations. We, thus, employ the PPML method developed by Santos Silva and Tenreyro (2010), which seems to be robust to different patterns of heteroscedasticity and can provide a natural way to deal with zeros in trade data. We report the PPML estimator's results in table 3. First of all, to check the adequacy of the estimated models, we perform a heteroscedasticity-robust RESET test developed by Ramsey (1969). The corresponding p -values are reported at the bottom of table 3. According to the p -values, the Ramsey test does not reject the hypothesis that the coefficient on the test variable is 0. In other words, the RESET test provides no evidence of misspecification of the gravity equations estimated using the PPML. It means that applying the PPML estimator is appropriate.

⁵⁾ The traditional gravity equation is introduced by Tinbergen (1962) while Anderson and van Wincoop (2003) develop a gravity equation, which considers multilateral resistance terms or fixed-effects.

5.1. Impacts of Standard Gravity Variables

We start with a discussion on the estimated coefficients of gravity variables reported in table 3. First, we look at the possible impact of country size, which is measured by GDP per capita, on China and Vietnam's inward FDI. In both gravity equations, the positive and statistically significant value of FDI home country's GDP per capita implies that inward FDI to China and Vietnam strongly depends on economic growth of their partner countries. Similarly, estimated coefficients of China's GDP per capita is positive and significant, also implying that China's economic growth plays a determinant role in attracting FDI to the country. This result supports that larger host country's market may be associated with higher FDI due to larger potential demand and lower costs due to scale economies. However, the value of this coefficient in Vietnam's equation (0.178) is relatively smaller than that in China's equation (0.015) and statistically insignificant. It means that foreign investors might be attracted by other factor endowments, such as human capital and nature resources, instead of Vietnam's economic growth. Second, regarding other gravity variables, we find that the geographic distance, as expected, is significantly and negatively related to the FDI inflow, while the contiguous border variable only exercises a negative impact on FDI flows into China.

5.2. Impacts of Bilateral Exports and Imports

We now focus on the role of bilateral trade flows in determining inward FDI. Following the empirical results, there is a positive link between China's inward FDI and its exports to FDI home countries, whereas Vietnam's import growth slightly encourages FDI inflows to the country. Two main comments on this result may be made. In the case of China, the period under consideration 1994-2013 experienced a memorable growth of China's exports that in turn played an important role in attracting FDI inflow.

Table 3 PPML Estimator's Results

Independent variables	China	Vietnam
<i>FDI to China</i>	–	0.010** (0.004)
<i>FDI host country's GDP per capita</i>	0.050*** (0.010)	0.002 (0.004)
<i>FDI home country's GDP per capita</i>	0.178*** (0.031)	0.015* (0.08)
<i>Distance</i>	–0.070*** (0.006)	–0.025** (0.011)
<i>Contiguous border</i>	–0.046*** (0.011)	–0.039 (0.035)
<i>Exports to FDI home country</i>	0.044*** (0.003)	–0.004 (0.006)
<i>Imports from FDI home country</i>	0.005* (0.003)	0.041*** (0.006)
<i>Bilateral exchange rate</i>	–0.010*** (0.001)	–0.006* (0.003)
<i>FDI home country's trade openness</i>	–0.001 (0.006)	0.021 (0.019)
<i>FDI host country's trade openness</i>	0.039** (0.015)	0.172 (0.226)
<i>FDI home country's KAOPEN index</i>	0.016*** (0.003)	–0.025** (0.008)
<i>FDI host country's KAOPEN index</i>	–	0.044 (0.056)
<i>WTO membership</i>	0.029 (0.020)	0.062** (0.027)
<i>Bilateral Trade Agreement</i>	0.017 (0.026)	0.011** (0.005)
<i>FDI host country's average wage</i>	0.033** (0.012)	0.706 (0.439)
<i>FDI host country's skilled labor</i>	1.042* (0.583)	0.673 (2.082)
<i>Host country's gross domestic investment</i>	0.043 (0.182)	0.224 (0.327)
<i>FDI host country's financial development</i>	–0.049 (0.053)	–0.006 (0.232)
<i>FDI host country's inflation</i>	0.000 (0.002)	–0.003** (0.002)
<i>FDI host country's ICRG score</i>	0.313** (0.124)	0.100* (0.062)
<i>Financial crisis</i>	0.000 (0.008)	–0.002** (0.001)
Constant	3.688*** (0.551)	1.319 (2.253)
RESET test p-values	0.1986	0.6890

Notes: Values in brackets are *p*-values. Values in parentheses are robust standard errors. ***, **, *: Significant at 1%, 5%, 10% level, respectively.

Investing to China allows the foreign investors to benefit from an existing and large export market of China and then to re-export their products to the third markets as well as to the FDI home country. In the case of Vietnam, the linkage from imports to inward FDI might reflect foreign investors' confidence in Vietnam's emerging growth prospects. In other words, a rapid growth of imports reflecting a potential economic growth in Vietnam might become the main cause for the surge in its inward FDI.

5.3. Impacts of Openness Level

As suggested above, we also tend to examine the role of openness level in explaining inward FDI growth in China and Vietnam. First, trade openness level of FDI home countries is not a factor explaining their FDI flows to both China and Vietnam. Second, the trade openness level of home country seems to foster FDI flows. However, the estimated coefficient of this variable is only statistically significant in China's equations. This result suggests that China's trade-oriented growth model is very important in attracting FDI, and rising complementarity of trade and FDI flows. Third, we reveal that the role of financial openness measured by KAOPEN index in determining inward FDI differs between China and Vietnam. Following the newest database constructed by Chinn and Ito (2006), the KAOPEN index of China over the period 1994-2013 has been unchanged. That is why this paper fails in investigating the impact of China's KAOPEN index on its inward FDI. Interestingly, China's inward FDI is significantly and positively influenced by the KAOPEN index of FDI home countries, meaning that countries with high level of financial openness are more attracted by China's economic performance and then invest more into China. This finding also suggests that establishing the investment relationship with China seems to be requisite in the financial openness policy setting of FDI donor countries because of China's important standing in the world economy. By contrast, the changes in financial integration level of FDI donor countries do not favor FDI flows into Vietnam. Similarly, we find no evidence of any relationship between

Vietnam's financial openness level and its inward FDI. Fourth, looking at the role of BTA and WTO membership, we find a positive effect of BTA on Vietnam's FDI inflows. The estimated coefficient of BTA variable is statistically significant at the 5% level, suggesting that the BTA promotes Vietnam's inward FDI. In fact, over the past two decades, BTAs have been implemented between Vietnam and its principal trading partners (including the US, Japan, EU15 and ASEAN). Consequently, BTAs' implement has strengthened trade and investment relationship between Vietnam and its strategic partners. In addition, we find no evidence of any impact of becoming WTO member on China's inward FDI, while joining WTO strongly and positively affects Vietnam's inward FDI. This finding is consistent with that of Pham (2011), who points out two possible channels through which the WTO accession can influence Vietnam's inward FDI. On the one hand, the WTO accession has been expected to induce Vietnam to undertake further domestic reforms that would result in more predictable institutions and policies, as well as greater financial development. The potential development of the financial system may be considered as one of the main causes for the surge in FDI flows into Vietnam. On the other hand, the WTO accession is also expected to lead to the strengthening of services market that seems to be another primary cause for the surge of FDI into Vietnam in general and into services sectors in particular.

5.4. Impacts of Exchange Rate Valuation

The estimated coefficients of exchange rate variable enter in all gravity equations with a negative and significant value, implying that a depreciation of the Yuan and the Dong against the foreign currencies encourages FDI flows into China and Vietnam, respectively. In fact, due to a weaker real exchange rate, foreign firms can take advantage of relatively low prices in China and Vietnam's markets to purchase factors of production or to increase home-country profits on goods sent to a third market if their production is re-

exported. This finding is also consistent with that of Blonigen (1997), who argues that the exchange rate depreciation in host countries tend to increase FDI inflows in a “firm-specific assets” framework.

5.5. Impacts of Host Country’s Endowments

First, we find evidence of a positive link between the average wages and inward FDI into China. Rising wages increase China’s living standard, which in turn attracts foreigners to invest in China to benefit from emerging domestic markets of the country. By contrast, we fail to identify a significant relationship between wage level and inward FDI in the case of Vietnam. However, it does not mean that Vietnam’s relatively low labor cost has no impact on attracting FDI. The main reason is that to fully detect the role of labor cost in determining inward FDI, other alternative and complementary measures should be required, but unfortunately Vietnamese data is not available. Second, the growth of skilled labor becomes a key factor making China be an important destination for FDI. Third, we evidence a positive but statistically insignificant link between inward FDI and domestic investment in China and Vietnam. This inconclusive result might be explained by a particularly intriguing and complex relationship between foreign and domestic investment, which has been widely addressed in both empirical and theoretical FDI studies.

5.6. Impacts of Macroeconomic and Institutional Environment

Above all, our empirical finding does not support any positive connection between the development of domestic financial market and inward FDI. However, it is worth noting that over the economic reform courses, both China and Vietnam have recorded a substantial increase in the share of bank credit to private sectors to GDP.⁶⁾ For instance, over the studied period, the

⁶⁾ The share of bank credit to private sector to GDP is the main measure of financial development (Rajan and Zingales, 2003; Baltagi *et al.*, 2009).

banking private credit of both China and Vietnam continues to grow rapidly and faster than the average value of all countries in the same region (see further table A3 in the appendix). So that, no correlation between financial development and inward FDI results in an open question about the effectiveness of financial deepening in China and Vietnam. We leave this issue for further research. We now turn our attention to the impacts of other macro domestic conditions. On the one hand, inward FDI to Vietnam has significantly and negatively suffered from the accumulated inflationary pressures. As reported in table A3 in the appendix, while China has maintained a pretty low inflation rate compared to almost other developing economies, Vietnam has experienced a decreasing trend in economic growth that is unfortunately followed by a high and drastically increasing inflation rate. Consequently, macroeconomic instability negatively influences Vietnam's inward FDI. On the other hand, the empirical result concluded the relevant role of institutional quality in determining inward FDI to China and Vietnam. According to Walsh and Yu (2010), this relationship can be explained by several ways. First, good governance results in higher economic growth that in turn attract more FDI inflows. Second, poor institutions is associated with corruption, which can increase investment cost and reduce profits. Third, due to the high sunk cost of FDI, foreign investors are averse to uncertainties, including the political uncertainty resulting from poor institutions. Furthermore, another political question arises about the role of Vietnam's institutional quality in attracting inward FDI, since the coefficient of ICRG score variable is significantly positive but smaller in Vietnam's equation than in China's equation. In other words, compared to China, Vietnam has an unmatched advantage in attracting FDI inflows in terms of institutional quality. Lastly, regarding the estimated coefficients of crisis dummy, we find a negative and significant value of this dummy in Vietnam's equation. It means that the domestic financial crises of FDI donor countries negatively influence FDI flows into Vietnam. In other words, the turmoil of FDI home countries' financial systems can be considered as a main determinant of FDI into Vietnam.

5.7. Robustness Checks

We perform another estimation to check for the robustness of the PPML estimator's results. We consider trade regressors as endogenous variables. In this case, the instrumental variables (IV) estimator is a preferred estimator to correct the country specific or time-specific effects and allows getting rid of any endogeneity in explanatory variables. We instrument the bilateral exports and imports variables with two external variables, which are plausible exogenous drivers of a country's trade, and are unlikely or much less correlated with FDI, as follows:

- Exports from China or Vietnam is instrumented with the weighted average of Most Favored Nation (MFN) and Effectively Applied (AHS) tariffs, and *de jure* trade globalization index of the destination countries;
- Imports into China or Vietnam is instrumented with the weighted average of Most Favored Nation (MFN) and Effectively Applied (AHS) tariffs, and *de jure* trade globalization index of China and Vietnam, respectively.

Above all, we run the Sargan-Hansen of over-identifying restriction. The joint null hypothesis is that the instruments are valid instruments, notably uncorrelated with the error term, and that the excluded instruments are correctly excluded from the estimated equation. As reported in the last line of table 4, we cannot reject the null hypothesis of Sargan/Hansen test meaning that the selected instrumental variables are appropriate.

We now look at the IV estimator's main results reported in the upper part of table 4. On the whole, we find that applying the IV technique to re-estimate all equations of interest does not alter either the sign or the statistical significance of explanatory variables. Only the magnitudes of estimated coefficients are little affected. It means that the IV estimator's results effectively support the robustness of the PPML results.

Table 4 IV Poisson Estimator's Results

	China	Vietnam
<i>FDI to China</i>	–	0.115*** (0.032)
<i>FDI host country's GDP per capita</i>	0.616** (0.210)	–0.019 (0.034)
<i>FDI home country's GDP per capita</i>	0.221*** (0.056)	0.807** (0.337)
<i>Distance</i>	–0.047** (0.019)	–0.005* (0.003)
<i>Contiguous border</i>	–0.029 (0.020)	0.177 (0.113)
<i>Exports to FDI home country</i>	0.022* (0.013)	–0.129 (0.073)
<i>Imports from FDI home country</i>	0.037*** (0.015)	0.182* (0.075)
<i>Bilateral exchange rate</i>	–0.013*** (0.003)	–0.030** (0.012)
<i>FDI home country's trade openness</i>	0.029** (0.015)	0.063** (0.035)
<i>FDI host country's trade openness</i>	0.083** (0.041)	–0.050 (0.390)
<i>FDI home country's KAOPEN index</i>	0.031*** (0.007)	0.029** (0.034)
<i>FDI host country's KAOPEN index</i>	–	0.064 (0.087)
<i>WTO membership</i>	0.056* (0.032)	0.032** (0.015)
<i>Bilateral Trade Agreement</i>	–0.017 (0.028)	0.105* (0.069)
<i>FDI host country's average wage</i>	0.046** (0.021)	1.442 (0.698)
<i>FDI host country's skilled labor</i>	2.462** (1.210)	0.833 (3.097)
<i>Host country's gross domestic investment</i>	–0.265 (0.314)	–0.296 (0.529)
<i>FDI host country's financial development</i>	0.035 (0.090)	0.326 (0.396)
<i>FDI host country's inflation</i>	0.000 (0.004)	–0.003*** (0.004)
<i>FDI host country's ICRG score</i>	0.114** (0.038)	0.089** (0.036)
<i>Financial crisis</i>	0.015 (0.016)	–0.028** (0.011)
Constant	4.058*** (0.910)	5.362 (4.127)
Sargan-Hansen's J test p-values	0.8920	0.8756

Notes: Values in brackets are *p*-values. Values in parentheses are robust standard errors. ***, **, *: Significant at 1%, 5%, 10% level, respectively.

5.8. Inward FDI to China: Creation or Diversion Effect on Vietnam's Inward FDI?

We now turn our attention to the question of whether an increase in China's inward FDI can widen or narrow Vietnam's inward FDI. According to the results of both PPML and IV Poisson estimators, China's inward FDI does not negatively influence FDI inflows to Vietnam. Moreover, the positive and significant coefficient of FDI to China variable means that there may exist a co-movement between China's FDI inflows and Vietnam's inward FDI. This finding seems to be relatively consistent with the recent development of FDI theory, which argues that an increase in inward FDI to a country does not necessarily cause a decline in inward FDI to other ones. As suggested by Ernst (1997), transnational corporations (TNCs) have progressively adopted their international strategies towards systemic globalization. In this context, to fully reap the benefits of systemic globalization, the location decisions of TNCs are due to industrial structure or specification of host economies. Inward FDI to one country, therefore, may result in a creation effect on inward FDI to other ones if it creates more opportunities for international production network or a rising demand for primary and intermediate inputs. China's investment liberalization effectively facilitates TNCs' rationalization of their production processes within East Asian region (Ianchovichina and Walmsley, 2005). As a result, China's neighbors may receive FDI inflows, which are a complement to those into China. This result is also consistent with that of Sohn (2016), who supports a co-movement between China's FDI inflows and neighboring ASEAN countries' FDI inflows. This link may be the outcome of the ever-increasing interdependence between China and ASEAN countries, which is explained by "expanding supply-chain networks, deepening cross-border production networks, or increasing fragmentation and diversification of the off-shoring business activities of multinational corporations in East Asia" (Sohn, 2016, p. 131).

However, it is noteworthy that compared to Vietnam, China's economic performance in terms of macroeconomic stability and institutional quality may become a comparative advantage of China in attracting inward FDI in the long-run, even though our empirical analysis finds no evidence of a direct and clear-cut diversion effect of China's inward FDI on Vietnam's inward FDI. The differences between China and Vietnam in institutional quality and in macroeconomic stability can be also demonstrated by a broad set of indicators as follows:

- *Rule of law*: Both China and Vietnam are in the negative zone in terms of the rule of law (below the average value). However, Vietnam is much weaker than China in this measure (−0.53 versus −0.33, in 2010).⁷⁾
- *Corruption control*: Corruption is a serious problem in China and Vietnam as both countries experience a negative value of the World Bank control of corruption indicator. However, the corruption problem is more severe for Vietnam than China (−0.63 versus −0.60, in 2010).
- *Regulatory quality*: This indicator in both China and Vietnam countries has been weak and falling in the negative zone. However, China' regulatory quality indicator is significantly stronger than that of Vietnam (−0.22 versus −0.61, in 2010).⁸⁾
- *Government effectiveness*: Regarding to this measure, China experiences a figure much stronger than that of Vietnam (0.10 versus −0.26, in 2010).⁹⁾
- *Inflation control*: as reported in table A3 in the appendix, while China has kept inflation low, Vietnam's inflation rate has been

⁷⁾ Rule of law was defined by the as “the extent to which agents have confidence in and abide by the rules of society, including the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence” (Kaufmann *et al.*, 2007).

⁸⁾ Regulatory quality is defined as “the ability of the government to provide sound policies and regulations that enable and promote private sector development” (Kaufmann *et al.*, 2007).

⁹⁾ Government Effectiveness is defined as “the quality of public services, the capacity of the civil service and its independence from political pressures; the quality of policy formulation” (Kaufmann *et al.*, 2007).

still higher than its economic growth even remained in two digits over the recent period.

On the whole, Vietnam has lagged behind China not only in the pace of adopting the globalization process (as summarized in table 4) but also in stabilizing the domestic macroeconomic conditions and improving the institutional quality. It has become a significant factor responsible for the divergence in inward FDI attractiveness between China and Vietnam.

6. CONCLUSION

Using two panel datasets over the period 1994-2015 and employing two augmented gravity equations, the present paper provides an important insight into the determinants of inward FDI to China and Vietnam. We also shed light on either similarities or differences in the main factors determining inward FDI to China and Vietnam. In this regard, our empirical research provides a number of important findings.

First, we reveal that China and Vietnam shares many common determinants of inward FDI such as the country size (GDP per capita of FDI home countries), the geographic distance, and the exchange rate valuation. Second, bilateral trade influences inward FDI into China and Vietnam differently. While China's inward FDI motivations can be strongly explained by the country's export growth performance, a rising trend in Vietnam's imports is one of main factors determining its inward FDI. Third, the financial openness setting (measured by the KAOPEN index) of FDI home countries seems to only favor FDI flows into China. Fourth, the BTA implementation or the WTO membership has only significantly positive impact on boosting Vietnam's inward FDI. Lastly but most importantly, compared to China, Vietnam has experienced the weaknesses in either improving institutional quality or maintaining domestic macroeconomic

stability, which could be considered as a main factor creating the widening divergence in attracting inward FDI between China and Vietnam.

Another important finding of the present study is that a growing trend in inward FDI to China does not play any role in diverting Vietnam's inward FDI. Yet, in the age of economic globalization, an unrelated economic relationship between two economies today, such as the independence between FDI inflows to China and those to Vietnam, may turn to be a related one tomorrow. Thus, in the long-run, if Vietnam continues to lag behind China in improving institutional quality and government effectiveness and in stabilizing macroeconomic environment, this lag may drive the widening gap in inward FDI attractiveness between China and Vietnam: creating China's inward FDI but diverting Vietnam's inward FDI. In general, our empirical results offer mixed blessing for policy makers in developing countries, such as China and Vietnam, aspiring to attract more FDI by ameliorating their institutional quality.

To conclude, our empirical evidence, by and large, confirms the quantitative importance of the mechanisms of FDI, which have been highlighted in the concerned literature. However, it also suggests that the FDI determinants are not identical and varies from one country to another, implying that more nuanced political economy explanations should be needed. To this end, formal economic modeling may be carried out to gain a better understanding of the political economy mechanisms, which shape and influence the dynamics of FDI flows.

APPENDIX

Table A1 List of FDI Source Countries of China and Vietnam

Economic development level	Country list
Developing countries	Argentina, Bolivia, Brazil, Cambodia, India, Indonesia, Lao, Macao, Malaysia, Panama, Paraguay, Peru, Philippines, Russia, Thailand
Developed countries	Australia, Austria, Belgium, Canada, Chile, Denmark, Finland, France, Germany, Hong Kong, Hungary, Ireland, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Romania, Singapore, Spain, Sweden, Switzerland, United Kingdom, United States

Table A2 Variable Description

Variables	Definition	Data sources
Dependent variable		
<i>Implemented FDI flows</i> (in log-value)	FDI position of source country to China/Vietnam (in millions of U.S. dollars)	National bureau of Statistics of China (NBS); General Statistics Office of Vietnam (GSO); fDi Markets (Financial Times Ltd.); M&A from Zephyr
Standard gravity variables		
<i>Economic size</i>	Real GDP per capita of FDI source country; Real GDP per capita of China/Vietnam	WDI and ADB

<i>Geographic Distance</i>	Distance between the capital of China/Vietnam and that of FDI source country	CEPII
<i>Contiguous border</i>	Binary dummy indicating China/Vietnam and FDI source country are geographically contiguous	CEPII
Bilateral trade		
<i>Bilateral exports</i>	Exports from China/Vietnam to FDI source country	National bureau of Statistics of China (NBS); General Statistics Office of Vietnam (GSO)
<i>Bilateral imports</i>	Imports from FDI source country to China/Vietnam	
<i>Bilateral exchange rate</i>	Real bilateral exchange rate between China/Vietnam and FDI source country: calculated as the product of the nominal exchange rate and relative price levels in each country	IFS, WDI and ADB
Openness level		
Trade openness of FDI home country ($OPEN^{home}$)	Home country's ratio of exports and imports to GDP at constant price	WDI and ADB
Trade openness of FDI host country ($OPEN^{host}$)	Host country's ratio of exports and imports to GDP at constant price	WDI and ADB
<i>Financial openness</i>	KAOPEN index of FDI home country	Chinn and Ito (2006)
<i>Bilateral trade agreement (BTA)</i>	Binary dummy for regional trade agreement between China/Vietnam and FDI source country	
<i>WTO</i>	Binary dummy capturing the impact of WTO accession of China/Vietnam	

Host country's endowments

<i>Level of wages</i>	Average wages per month of China/Vietnam (in US dollar)	Ministry of Planning and Investment of Vietnam; National bureau of Statistics of China
<i>Skilled labor</i>	Share of skilled labor in total employment	ADB
<i>Gross domestic investment</i>	Share of gross domestic investment in GDP	WDI

Host country's macroeconomic and institutional environment

<i>Development level of domestic financial system</i>	Credit provided by banking sector to private sectors (% of GDP)	WDI
<i>Inflation</i>	Average annual inflation	WDI
<i>Institutional quality</i>	International Country Risk Guide (ICRG score)	Political Risk Services
<i>Financial crisis</i>	Dummy variable capturing the impact of domestic financial shock in FDI source country	Laeven and Valencia (2008, 2013, 2018)
Instrumental variables	Weighted average of Most Favored Nation (MFN) and Effectively Applied (AHS) tariffs	World Integrated Trade Solution (WITS)
	<i>De jure</i> trade globalization index	KOF Swiss Economic Institute

Table A3 Main Macroeconomic Indicators of China and Vietnam

	Domestic credit provided by banking sector (% GDP)		
	1995-2000	2001-2004	2005-2015
Vietnam	22.47	46.68	92.54
China	102.84	135.67	123.63
ASEAN (Average value)	58.26	55.23	54.59
East Asia (Average value)	115.11	123.96	105.77
	Inflation rate		
	1995-2000	2001-2004	2005-2015
Vietnam	9.38	4.83	9.35
China	5.16	1.05	2.79
	GDP growth rate		
	1995-2000	2001-2004	2005-2015
Vietnam	7.51	7.18	6.24
China	9.12	9.18	9.76

Source: Author's computation from WDI and ADB.

Table A4 Timeline for Economic Openness Milestones of China and Vietnam

	China	Vietnam	Time-lag (Vietnam- China)
Launch of economic reforms	In December 1978 at the Third Plenum of the 11 th Central Committee, Deng Xiaoping announced the official launch of the Four Modernizations.	In December 1986, at the 6 th Congress of Vietnamese Communist Party, Nguyen Van Linh announced the official launch of Vietnam's economic reforms, dubbed as "Renewal".	8 years
Investment openness	Law on Sino-foreign joint ventures, 1979	Foreign Investment Law, 1987	8 years
The BTA with the US	July 1979	December 2001	22 years
WTO accession	December 2001	January 2007	5 years

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