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Impacts of FTAs and BITs on the Locational Choice of Foreign Direct Investment: The case of Japanese firms*

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Abstract

This paper examines the impacts of Japan's free trade agreements (FTAs) and bilateral investment treaties (BITs) on the locational choice of Japanese firms' foreign direct investment (FDI). Japan's FTAs have comprehensive coverage, as they cover not only trade liberalization in the form of tariff elimination/reduction but also FDI liberalization and facilitation in the forms of granting foreign firms national treatment, non-application of performance requirements, etc. In light of the inclusion of provisions concerning FDI liberalization/facilitation in Japan's FTAs, the paper analyzes whether Japan's FTAs have expected positive impacts on Japanese firms' decision of the location of FDI by applying the conditional logit model. The paper also examines the impacts of BITs. The analysis finds that both FTAs and BITs have positive impacts on Japan's FDI.

Keywords: Free trade agreements, Foreign direct investment
JEL classification: F15, F21

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I. Introduction

Japan has enacted 14 free trade agreements (FTAs) so far, as of the end of March 2015, 13 bilateral FTAs and one regional FTA with the ASEAN (Association of Southeast Asian Nations) member countries[1]. Japan's first FTA is one with Singapore, which was enacted in November 2002, while the most recent FTA is with Australia enacted in January 2015. Japan along with other Northeast Asian countries such as China and Korea was a late comer in the FTA race, which began in the early 1990s in the rest of the world. One of the reasons for the hesitation to discuss FTAs on the part of Japan was its adherence to the multilateral trading system under the General Agreement on Tariffs and Trade (GATT)/ the World Trade Organization (WTO), which gave it enormous benefits in terms of provision of increasingly liberalized global market for Japanese firms. As such, discriminatory FTA was not acceptable to Japan.

Japan's attitude toward FTAs changed toward the end of 1990s and began FTA discussions with several countries. At least two reasons may be identified for this change. One is rapid expansion of FTAs and the other is slow progress in multilateral trade negotiations under the WTO. Faced with these developments, which would result in discrimination against Japanese firms in their export markets, Japan decided to shift its trade policy from the one relying solely on multilateral trading framework to the one complementing it with bilateral and regional frameworks using FTAs.

One of the notable characteristics of Japan's FTAs is its comprehensiveness, as they include not only trade liberalization, which is contained in traditional FTAs, but also trade facilitation as well as liberalization and facilitation of foreign direct investment (FDI) and service trade, intellectual property rights, and others. Among those items, liberalization and facilitation of FDI is given a particular importance, because they would provide business friendly environment for a large number of Japanese firms operating in foreign markets.

In light of these developments, this paper attempts to examine the impacts of FTAs on Japanese firms' decision on the location of their FDI. A number of studies have been conducted to examine the impacts of FTAs on foreign trade, but the study of their

[1] The Japanese government does not use the expression free trade agreements (FTAs) but it uses the term "Economic Partnership Agreement (EPA)" because the agreement that Japanese government is interested in is of comprehensive contents including not only trade liberalization, which is included in traditional or narrowly defined FTAs, but also trade facilitation, liberalization and facilitation of service trade and investment, and much more. In this paper, we use the expression FTAs rather than EPAs because FTAs are more commonly used in the discussions of trade policies, especially in the international arena.

impacts on FDI has been quite few. Besides FTAs, we examine the impacts of bilateral investment treaties (BITs) on FDI by Japanese firms. BITs have been introduced to establish an FDI friendly environment, in order to attract FDI and BITs have been extensively analyzed concerning their impacts on FDI. Recognizing these points, this study is expected to shed lights on the importance and effectiveness of government policies, in this case FTAs and BITs, in achieving their objectives.

The structure of the remaining part of this paper is as follows. Section II reviews previous studies on the impacts of FTAs and BITs on FDI inflows, and section III briefly examines the pattern of Japanese FDI. Section IV discusses the research method and hypotheses, while section V presents the results of the analysis. Section VI provides concluding remarks.

II. Previous Studies on the Impacts of FTAs and BITs on FDI Inflows

Policy environment of the FDI host countries has been argued and shown to play an important role in attracting FDI. Open, transparent, stable, non-discriminatory and credible policy environment is argued to successfully attract FDI. These factors are particularly important for attracting FDI in developing countries, where huge investment opportunities are found, but at the same time uncertainty or risks in economic and political environment do exist. One way to overcome these risks it to sign and enact international treaties such as bilateral investment treaties (BITs) and free trade agreements (FTAs) with an investment chapter. Contents of BITs vary but the essential feature of BITs is to provide foreign investors protection from expropriation and fair and equitable treatment. The number of BITs, most of which were signed between a developed and a developing country, rose slowly during the 1960s, 1970s, and 1980s. The number of BITs began to increase rapidly in the 1990s and continued to increase in the 21st century. At the end of 2013 the number of BITs stood at 2,902[2].

The effectiveness of BITs for attracting FDI has been an issue of heated debate for several decades and it has been examined empirically by many researchers with mixed results. This section briefly reviews the findings of these studies, in order to set the stage for our research of the impacts of Japanese FTAs and BITs on the locational determinants of Japanese FDI. It should be noted that there exist a number of studies of the impacts of BITs on FDI but only a few studies on the impacts of FTAs on FDI have been conducted. Indeed, as will be seen below, we identified only two studies that examined this issue.

One of the early empirical studies on the impacts of BITs on FDI was

[2] UNCTAD (2014).

UNCTAD (1998). UNCTAD(1998) analyzed the issue by applying several measures of FDI inflow such as the absolute value and FDI/GDP ratios and by using various different methodologies such as a statistical test of the differences in FDI between two periods, before and after BITs, and a cross-sectional regression analysis. A statistical investigation was applied to the data covering 72 FDI recipient countries and 14 home countries during the period 1971-1994, while a cross-sectional analysis used the data on 133 host countries for three years, 1993, 1994, and 1995. Both analyses found that BITs have positive impacts on FDI inflows but their impacts are not large compared to other factors such as the size of the market of the host countries.

Hallward-Driemeier (2003) examined bilateral FDI flows from 20 member countries of the Organization of Economic Cooperation and Development (OECD) to 31 developing countries for the 1980-2000 period, and found that BITs did not have positive impacts on attracting FDI by applying the instrumental variable estimation, in order to cope with the endogeneity problem between BITs and FDI. She also found that the countries with weak domestic institutions have not received FDI by having BITs. Rather, those countries that have already reasonably strong institutions are most likely to attract FDI from ratifying a BIT. Based on these findings, she argues that BITs act as more of a complement rather a substitute for domestic institutions. Salacuse and Sullivan (2005) found that a BIT with the United States has a positive impact on FDI inflows while BITs with other OECD countries or non-OECD countries do not increase FDI inflows by analyzing FDI inflows to 99 developing countries in the years 1998, 1999, and 2000.

Contrasting to these studies, several studies detected positive impacts of BITs on FDI inflows. Neumayer ande Spess (2005) found that a higher number of BITs raises FDI flows to a developing country by studying FDI flows to 119 developing countries from 1970 to 2001. They claim that their results are robust to the changes in model specification, estimation techniques, and sample size. Egger and Merlo (2007) analyzed not only static but also dynamic effects of BITs on FDI inflows using bilateral FDI stock data covering 24 home and 28 host countries between the years 1980 and 2001. Of the 28 countries, 22 are OECD members and 10 are transition countries in Central and Eastern Europe. They estimated the dynamic model by using the GMM. They found that both short-run and long-run estimates are positive and statistically significant and the long-run estimates are significantly larger compared to short-run estimates. Busse et.al.(2010) analyzed bilateral FDI covering 28 source countries and 83 recipient developing countries between 1978 and 2004. Employing a gravity-type model and various model specifications, including an instrumental variable approach and PPML

for taking care of zero FDI values, they found positive impacts of BITs on FDI inflows. They argue that BITs may even substitute for weak domestic institution.

A recent study by Tobin and Rose-Ackerman (2011) found that BITs do not attract FDI by examining FDI to 97 developing countries between 1984 and 2007. They examined BITs involving OECD and developing countries only. Similarly to Hallward-Driemeier (2003), Tobin and Rose-Ackerman argued that BITs cannot substitute for a weak investment environment and countries must have the necessary domestic institutions that interact with BITs to make these international commitments credible and valuable to investors. Paniagua (2011) also found that BITs do not attract FDI using annual bilateral FDI covering 164 host and 120 home countries for the 2003-2009 period. Indeed, most estimates are negative although not statistically significant.

While a number of studies examined the impacts of BITs on FDI and their results are still not conclusive, only few studies have examined the impacts of FTAs on FDI. Busse et.al.(2010) found that the results of the estimation are not stable and they differ depending on the methods of estimation. The relationship is found positive and statistically significant in the system GMM estimation but not significant in the PPML fixed-effect estimation. Paniagua (2011) found a negative and statistically significant sign on FTAs and argue that trade and FDI are substitutes. In other words, FTAs would promote exports to FTA partners, which would reduce FDI in FTA partner countries. It should be noted that for both Busse et.al (2010) and Paniagua (2011) the main objective was to examine the impacts of BITs on FDI and not the impacts of FTAs, and thus the analyses and discussions on the impacts of FTAs are very limited.

III. Foreign Direct Investment by Japanese Firms

III.1 An Overview of Japanese FDI from the 1980s to the Present[3]

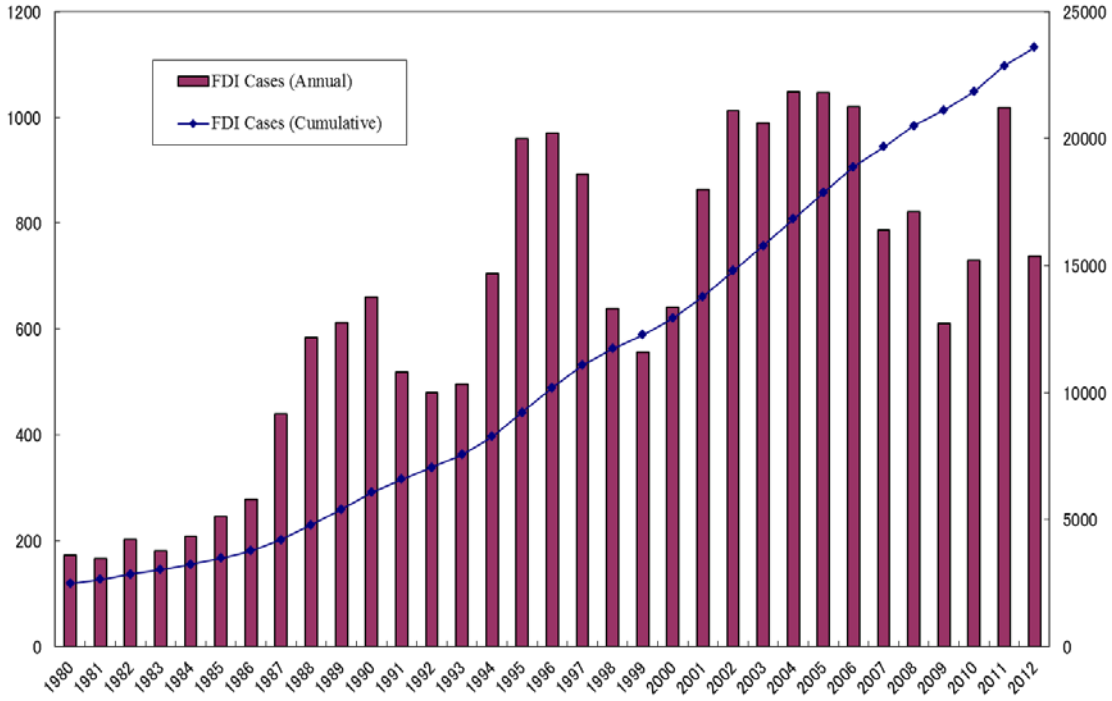
Japanese firms began to undertake foreign direct investment (FDI) actively in the mid-1980s. According to Toyo Keizai (2013), the number of newly established foreign affiliates of Japanese firms in a year was around 200 from 1980 to 1986 (Figure 1). It increased notably to 440 in 1987 and then continued its increase to reach 660 in 1990 before a decline. The rapid expansion of FDI in the latter half of 1980s was mainly due to a sharp appreciation of the Japanese yen against major currencies, as the real effective exchange rate appreciated by 35 percent from 1985 to 1987[4]. The sharp exchange rate appreciation stimulated Japanese firms' FDI in two ways. One way was

[3] The analysis in this section expands the discussions in Urata and Kawai (2000)

[4] World Bank, World Development Indicators on line, accessed on January 28, 2015.

the “relative price” effect and the other was the “liquidity” or “wealth” effect. The relative price effect substantially reduced the international price competitiveness of Japanese products, resulting in a decline of Japan’s export volume. To cope with the new disadvantageous price structure, a number of Japanese firms shifted their production base to foreign countries, particularly to East Asia, where production costs were lower.

Figure 1 Overseas Affiliates of Japanese Firms (number of cases)



Source: Toyo Keizai (2013)

Yen appreciation promoted FDI by Japanese firms through the “liquidity” or “wealth” effect as well. Yen appreciation made Japanese firms relatively more “wealthy” in the sense of increased collateral and liquidity, enabling them to finance FDI relatively more cheaply. The liquidity/wealth effect was magnified by the emergence of the bubble economy in Japan, which was created by expansionary monetary policy by the Bank of Japan, in order to deal with the recessionary impact caused by the drastic yen appreciation. Active fiscal spending by the Japanese government for the same purpose of reflating the Japanese economy was an additional factor leading to the bubble economy.

Although the sharp yen appreciation was a dominant factor leading to dramatic increase in Japan's FDI, several additional factors have contributed to the increase in Japan's FDI. First, accumulated experiences in managing overseas corporate activities through trading and other activities by Japanese firms enabled them to expand their overseas activities through FDI. Second, an increasing shortage of labor in Japan, due mainly to reflated economic activities, forced Japanese firms to move their operation overseas, where abundant labor was available. Finally, buoyant global economy, which was fueled by expansionary macroeconomic policies pursued by not only Japan but also Germany and other countries, contributed to attracting FDI from Japan.

The number of FDI cases declined in the early 1990s before a sharp rise again in the mid-1990s. This decline was mainly attributable to the burst of the bubble economy, depreciation of the Japanese yen and slowing down of the world economy. The number of FDI cases increased sharply in the mid-1990s, reaching close to 1,000 in 1995. This large increase was due to the yen appreciation and recovery of the world economy. This increase was abruptly reversed in 1998 when the Asian Financial Crisis occurred and damaged the Asian economy severely, which in turn affected economic growth of the rest of the world negatively. Entering the 21st century, the number of FDI cases started to rise again, as the Asian economy and the world economy recovered. Buoyant world economy and relatively stable yen exchange rate in the mid-2000s kept the number of FDI cases remain high around 1,000 a year, until the world economy was struck by the Global Financial Crisis in 2008, which resulted in a sharp drop in the number of FDI cases. The number of FDI cases began to rise again in 2010 with the recovery of the world economy and yen appreciation.

The preceding discussions indicate that the changes in annual number of FDI cases depend mostly on the state of the world economy and Japan's exchange rate, which is influenced by the state of the Japanese economy as well as the world economy. Having discussed the developments of Japanese overall FDI, the next sections examine their destinations and sectoral patterns. Before moving to the next section it should be noted that the cumulative number of overseas affiliates of Japanese firms increased 9.5-fold in 32 years from 2,478 in 1980 to 23,600 in 2012[5].

III.2 Destinations of Japanese FDI

Destinations of Japanese FDI shifted from developed to developing regions from 1980 to 2012, as the share of developing region in the world FDI cases increased from 48.9 percent in 1980-89 to 79.8 percent in 2000-2012, while the share of

[5] The figures here are taken from Toyo Keizai (2013).

developed regions declined from 51.1 percent to 20.2 percent during these periods (Table 1). Among the developing regions, Asia, particularly Northeast Asia increased its share in world total substantially. The shares of Asia and Northeast Asia in world total increased from 44.9 and 19.0 percent in 1980-89 to 72.4 and 47.9 percent in 2000-2012, respectively. Unlike the case for Northeast Asia, the share of Southeast Asia declined from 24.4 percent in 1980-89 to 19.4 percent in 2000-2012, although the number increased sharply from the 1980s to the 2000s. The similar patterns to Southeast Asia can be observed for other regions including North America and Europe in that the absolute value increased but the shares declined.

Table 1 Geographical Distribution of Overseas Affiliates of Japanese Firms

	Number of Cases				Share of World Total (%)			
	1980-89	1990-99	2000-12	Cumulative 2012	1980-89	1990-99	2000-12	Cumulative 2012
Africa	9	38	65	135	0.3	0.6	0.6	0.6
Americas	953	1,151	1,574	4,401	30.8	16.7	13.9	18.6
Latin America	4	25	100	132	0.1	0.4	0.9	0.6
North America	846	898	1,093	3,378	27.4	13.1	9.6	14.3
US	777	830	1,012	3,096	25.1	12.1	8.9	13.1
Asia	1,388	4,561	8,196	15,135	44.9	66.3	72.4	64.1
Northeast Asia	587	2,364	5,429	8,786	19.0	34.4	47.9	37.2
China	80	1,522	4,266	5,871	2.6	22.1	37.7	24.9
Korea	92	171	433	750	3.0	2.5	3.8	3.2
Taiwan	218	268	325	946	7.1	3.9	2.9	4.0
Hong Kong	196	400	392	1,139	6.3	5.8	3.5	4.8
Southeast Asia (ASEAN)	753	2,038	2,198	5,530	24.4	29.6	19.4	23.4
Brunei	1	0	1	3	0.0	0.0	0.0	0.0
Cambodia	0	5	25	30	0.0	0.1	0.2	0.1
Indonesia	55	349	322	821	1.8	5.1	2.8	3.5
Lao PDR	0	3	7	10	0.0	0.0	0.1	0.0
Malaysia	184	352	175	790	6.0	5.1	1.5	3.3
Myanmar	0	9	8	17	0.0	0.1	0.1	0.1
Philippines	34	226	130	434	1.1	3.3	1.1	1.8
Singapore	212	339	319	1,041	6.9	4.9	2.8	4.4
Thailand	267	617	759	1,794	8.6	9.0	6.7	7.6
Viet Nam	0	138	452	590	0.0	2.0	4.0	2.5
South Asia	31	114	432	606	1.0	1.7	3.8	2.6
India	22	93	405	537	0.7	1.4	3.6	2.3
Europe	634	963	1,318	3,373	20.5	14.0	11.6	14.3
EU28	617	914	1,158	3,127	20.0	13.3	10.2	13.3
Oceania	107	163	174	556	3.5	2.4	1.5	2.4
Developing regions	1,512	4,959	9,038	16,710	48.9	72.1	79.8	70.8
Developed regions	1,579	1,917	2,289	6,890	51.1	27.9	20.2	29.2
WORLD	3,091	6,876	11,327	23,600	100.0	100.0	100.0	100.0

Source: Toyo Keizai (2013)

As of the end of 2012, China hosts the largest number of overseas affiliates of Japanese firms at 5,871. China is followed by the United States (3,096), Thailand (1,794), Hong Kong (1,139), and Singapore (1,041), while the ASEAN and the European Union (EU) host 5,530 and 3,127 affiliates, respectively. The share of total for China is 24.9 percent, and the shares for other countries and regions are as follows; the US (13.1%), Thailand (7.6%), Hong Kong (4.8%), Singapore (4.4%), the ASEAN (23.4%) and the EU (13.3%).

III.3 Sectoral Composition of Japanese FDI

Sectoral composition of overseas affiliates of Japanese firms did not change much from the 1980s to 2000s (Table 2). As of the end of 2012, the service sector has the largest share at 52.1 percent, while the manufacturing sector at 41.2 percent. Other sectors including agriculture, mining, construction and regional headquarters hold very small shares. Among services, wholesale trade registers a dominant share at 30.9 percent of total, while sectors with relative large shares include other services (5.7%), transportation service (4.8%), and finance and insurance (4.6%). It has been pointed out that many Japanese firms in services have established overseas affiliates, in order to provide services to overseas affiliates of Japanese manufacturing firms. Among the manufacturing sector, the largest share is observed for electric and electronic products at 8.0 percent. Electric and electronic products are followed by transportation equipment (6.7%), chemical products (6.3%), and general machinery (5%).

Table 2 Sectroal Distribution of Overseas Affiliates of Japanese Firms

	Number of Cases				Sharel of Total (%)			
				Cumulative				Cumulative
	1980-89	1990-99	2000-12	2012	1980-89	1990-99	2000-12	2012
Agriculture, forestry, fisheries	16	32	35	100	0.5	0.5	0.3	0.4
Mining and quarrying	16	36	106	178	0.5	0.5	0.9	0.8
Construction	67	116	171	403	2.2	1.7	1.5	1.7
Manufacturing	1,224	3,224	4,385	9,734	39.6	46.9	38.7	41.2
Food, beverages, tobacco	67	170	176	480	2.2	2.5	1.6	2.0
Textiles and apparel	37	179	184	440	1.2	2.6	1.6	1.9
Pulp and paper products	4	34	33	77	0.1	0.5	0.3	0.3
Chemical products	184	497	654	1,489	6.0	7.2	5.8	6.3
Medicene	24	50	78	177	0.8	0.7	0.7	0.8
Petroleum and coal products	1	8	14	24	0.0	0.1	0.1	0.1
Rubber products	39	84	122	265	1.3	1.2	1.1	1.1
Ceramic, stone and clay products	31	95	96	242	1.0	1.4	0.8	1.0
Iron and steel	30	108	136	302	1.0	1.6	1.2	1.3
Non-ferrous metal products	38	77	131	266	1.2	1.1	1.2	1.1
Fabricated metal products	54	173	247	503	1.7	2.5	2.2	2.1
General machinery	160	355	562	1,190	5.2	5.2	5.0	5.0
Electric and electronic products	244	680	785	1,882	7.9	9.9	6.9	8.0
Transportation equipment	199	487	806	1,592	6.4	7.1	7.1	6.7
Precision instruments	48	91	128	301	1.6	1.3	1.1	1.3
Other manufacturing	64	136	233	504	2.1	2.0	2.1	2.1
Services	1,645	3,222	6,154	12,284	53.2	46.9	54.3	52.1
Electricity, gas, and water	2	30	78	112	0.1	0.4	0.7	0.5
Tranportation service	173	333	548	1,124	5.6	4.8	4.8	4.8
Communication service	63	193	465	729	2.0	2.8	4.1	3.1
Services	125	329	850	1,356	4.0	4.8	7.5	5.7
Wholesale trade	1,030	1,905	3,373	7,293	33.3	27.7	29.8	30.9
Retail trade	20	52	134	230	0.6	0.8	1.2	1.0
Hotel and restraurants	14	30	94	150	0.5	0.4	0.8	0.6
Finance and insurance	185	274	520	1,079	6.0	4.0	4.6	4.6
Real estate	33	76	92	211	1.1	1.1	0.8	0.9
Regional headquarters	123	246	476	901	4.0	3.6	4.2	3.8
Total	3,091	6,876	11,327	23,600	100	100	100	100

Source: Toyo Keizai (2013)

IV. Research Methodology and Hypotheses

IV.1. The Model

For modeling the location of Japanese firms' FDI, we assume that Japanese firms undertake FDI in a country, where they can maximize their profits after evaluating relevant characteristics of alternative locations[6]. Let us describe the profit (π) of firm i obtained from undertaking FDI in country j as (1).

$$\pi_{ij} = a_0 X_{1j}^{a_1} \ldots X_{mj}^{a_m} \times e^{u_{ij}} \qquad (1)$$

where a's are unknown parameters, X_{sj} (s =1, . . . , m) are variables describing the characteristics of country j (j = 1, . . . , n), and u_{ij} is a random disturbance term.

Given profit Equation (1) and assuming that u_{ij} are independently and identically distributed with Weibull density functions, then we obtain that the probability of undertaking FDI in country j is given by Equation (2) (McFadden, 1974).

$$P_{ij} = \frac{\exp(\sum_{s=1}^{m} a_s \ln X_{sj})}{\sum_{j=1}^{n} \exp(\sum_{s=1}^{m} a_s \ln X_{sj})} \qquad (2)$$

Expressing the number of FDI selections made by Japanese firms in country j as wj (j = 1, . . . ,n), we obtain the probability of observing such FDI pattern as Equation (3).

$$L = \prod_{i} \prod_{j=1}^{n} P_{ij}^{wj} \qquad (3)$$

This type of model is called the conditional logit model, and the parameters (a's), which indicate the characteristics of potential host countries to Japanese FDI, are estimated by the maximum likelihood estimation method, which maximizes the

[6] Several studies have applied this type of model to explain the locational determinants of FDI by Japanese firms. See Woodward (1992), Head, Ries, and Swenson (1995), Fukao and Yue (1997), Wakasugi (2005), and Urata and Kawai (2000). Discussions of this section are adopted from Urata and Kawai (2000).

likelihood function (3).

IV.2. Dependent Variable

Information on foreign direct investment (FDI) is available in several different forms. One is the value of FDI and another is the number and characteristics of FDI cases/projects. The value of FDI is generally taken from the balance of payment statistics and it has been used extensively in the study of the impacts of BITs on FDI. Indeed, all the studies that are discussed in the section on previous studies used FDI value data. The major sources of FDI value data are UNCTAD and national government statistical offices.

Unlike previous studies, this study uses the data on the number and characteristics of FDI cases. This is because we are interested in the determinants of location choice of FDI cases or overseas affiliates. Specifically, we use the information on the country of affiliates' location and the year of establishment. The information is obtained from Toyo Keizai's Overseas Japanese Companies Database (2013 version)[7]. This database is constructed annually based on the responses to the questionnaire survey carried out by Toyo Keizai. It contains the information on overseas affiliated companies (name, location, the year of establishment, number of employees, description of business, etc) and parent companies (name, location, paid-in capital, etc). The 2013 version contains the information on 22,872 overseas affiliates and 26,811 parent frms. Our analysis covers the period from 1980 to 2012.

IV.3. Explanatory variables: The Hypotheses

Bilateral investment treaties (BITs) and free trade agreements (FTAs) are considered to be important variables for determining FDI policy environment of the host countries. The types of BITs enacted by Japan may be classified into two types (Table 3). One is traditional BIT (given unity for BIT1 in the table), which consists of clauses mainly on protection of investment such as national treatment (NT) after investment (establishment), most-favored-nation (MFN) treatment after establishment, fair and equitable treatment, expropriation and compensation, protection from strife, transfers, subrogation, investment treaty arbitration, and interstate dispute settlement[8]. The other is new type BIT (given unity for BIT2 in the table), which includes not only those protection-related items contained in traditional BITs but also those related to FDI

7 This database was kindly provided by RIETI.
8 See METI (2014) for the details.

liberalization. Specifically, typical new type BITs include NT before and after investment (establishment), MFN before and after investment (establishment), and prohibition of performance requirements such as export requirement, local content requirement and technology transfer requirement, and investor-state dispute settlement. For the period of analysis, Japan had 15 BITs in action. Out of 15 BITs, 9 BITs, which were enacted before 2003, are traditional BITs (BIT1), while 6 BITs, which were enacted after 2003, are new type BITs (BIT2). As usually the case for other countries, all BITs that Japan has enacted are those with developing countries, where political and security risks are high compared to developed countries. We would expect positive impact of BITs on Japanese firms' decision on the location of their affiliates.

Japan became active in signing and enacting FTAs in the early 2000s. For the period of our analysis Japan enacted 12 FTAs including 11 bilateral FTAs and one regional FTA with ASEAN countries. Traditionally FTAs eliminate tariffs on imported products from FTA partners but recent FTAs have more comprehensive coverage, which includes trade facilitation, liberalization and facilitation in service trade and FDI, labor, intellectual property rights, government procurement, and others. Specifically, Japan's bilateral FTAs include not only trade liberalization and facilitation in goods and services also liberalization and facilitation in FDI. Indeed, investment chapter in Japan's bilateral FTAs contain the contents similar to BIT2. Japan's FTA with ASEAN has not yet included the investment chapter, as it is still under negotiation (at the time of drafting this paper, February 2015). In the table FTAs with comprehensive investment content (BIT2) are given unity for BIT2. Following the discussions earlier, BIT2 are expected to have a positive sign. The expected sign of FTA is rather complicated. It is expected to be positive if we consider its investment chapter, that is, BIT2. However, the expected sign of FTA is ambiguous if we consider "free trade" component of FTAs. The expected sign depends on the relationship between trade and FDI. If trade and FDI are substitutes, FTA is expected to be negative. By contrast, FTA is expected to be positive if trade and FDI are complements. Based on the discussions above, the expected sign of FTA, which include FTAs with and without an investment chapter, is ambiguous.

Table 3 Japan's BITs and FTAs Covered in This Study

	Effective	BIT		FTA	
Partner country	date	BIT1	BIT2	BIT2	
Egypt	1978.1	1	0	0	0
Sri Lanca	1982.8	1	0	0	0
China	1989.5	1	0	0	0
Turkey	1993.3	1	0	0	0
Hong Kong	1997.6	1	0	0	0
Bangladesh	1999.9	1	0	0	0
Russia	2000.5	1	0	0	0
Mongolia	2002.3	1	0	0	0
Pakistan	2002.5	1	0	0	0
Singapore	2002.11	0	0	1	1
Korea	2003.1	0	1	0	0
Vietnam	2004.12	0	1	0	0
Mexico	2005.4	0	0	1	1
Malaysia	2006.7	0	0	1	1
Chile	2007.9	0	0	1	1
Thailand	2007.11	0	0	1	1
Cambodia	2008.7	0	1	0	0
Brunei	2008.7	0	0	1	1
Indonesia	2008.7	0	0	1	1
Lao, PDR	2008.8	0	1	0	0
ASEAN	2008.12	0	0	0	1
(Cambodia)	2008.12	0	0	0	1
(Lao, PDR)	2008.12	0	0	0	1
(Myanmar)	2008.12	0	0	0	1
(Vietnam)	2008.12	0	0	0	1
Philippines	2008.12	0	0	1	1
Uzbekistan	2009.9	0	1	0	0
Switzerland	2009.9	0	0	1	1
Vitetnam	2009.10	0	0	0	1
Peru	2009.12	0	1	0	0
India	2011.8	0	0	1	1

Note: BIT1 means traditional BIT without FDI liberalization, whereas BIT2 includes FDI liberalization.

In addition to BITs and FTAs, we include fairly standard set of control variables in our estimation; market size, wage rate, exchange rate, exchange rate volatility, macroeconomic stability (inflation), agglomeration (cumulative FDI cases by Japanese firms), infrastructure (electric power consumption per capita), and openness to

trade (trade/GDP)[9]. Let us discuss the hypotheses concerning these variables.

One of the important motives of foreign firms for undertaking FDI is to increase sales in the host country or local sales. This motive becomes very important when trade cost is high and when proximity to consumers is important. Local sales motive is particularly important in developed countries, where the size of local market is large. In our estimation market size is measured by GDP (ln GDP) in constant 2005 US dollars. lnGDP is expected to have a positive sign if the motive of FDI is to expand local sales.

Another important motive behind FDI is to use low wage labor, in order to achieve efficient production. This motive is particularly important for Japanese firms using labor-intensive technologies, because labor shortage has become a serious problem due to aging and declining population in Japan. Wage rate (lnWAGE) is obtained by dividing GDP (constant 2005 US dollars) by working-age (ages between 15 and 64) population. The expected sign of the estimated coefficient on lnWage is negative. This effect is expected to be large for Japanese FDI in developing countries.

Exchange rate is an important determinant of FDI location for several reasons[10]. First, a country whose currency depreciates tends to attract FDI, as the depreciation makes it easier for foreign firms with foreign currency denominated assets to invest in that country. Second, for the firms oriented toward export production, depreciation of the currency of a host country increases the attractiveness of that country as a host to FDI, because depreciation is likely to improve export competitiveness of the products produced in that country. Based on these observations, we expect that the real exchange rate of the host country (denoted as EXR), which is constructed in such a way that depreciation results in the increase in its value, to show a positive sign.

Risks play a very important role in the decision of FDI location by foreign firms. Foreign investors are concerned with the security of their FDI, as FDI involves substantial commitment in the forms of financial and human resources. Risks take several forms such as economic and political risks. In this study we only consider macroeconomic risks, as the information on political risks is difficult to obtain for the countries and for the period of analysis of this study. Macroeconomic stability or instability is captured by exchange rate volatility and inflation rate. Exchange rate volatility (EXRV) is measured by the coefficient of variation in real exchange rate over

[9] See Appendix Table 1 for the definitions and the data sources. See also Appendix Tables 2 and 3 for the basic statistics and correlation coefficients of the variables.

[10] It should be remembered that exchange rate was argued to be an important factor in determining Japanese overall FDI in an earlier section.

the past five years, while the inflation rate (INF) is measured by consumer price index. We expect both EXRV and INF to have negative signs.

Infrastructure plays a crucial role for attracting FDI, because economic activities cannot be conducted without adequate supply of infrastructure. Several indicators such as the availability and development of transportation and communication facilities may be used for the measurement of infrastructure. In this study, we use the level of electricity consumption per person (ln ELEC) as a proxy for infrastructure because of the availability of the data. Besides, Japanese manufacturing firms consider the availability of stable supply of electricity as a key factor for producing high quality products. The expected sign of the estimated coefficient of lnELEC is positive.

Agglomeration of Japanese FDI would attract new Japanese FDI for several reasons. A potential Japanese investing firm would think that a country where a substantial number of Japanese FDI already operating to be a suitable location for investment. Investing Japanese firms may also expect abundant business opportunities with existing Japanese firms, with whom they feel most comfortable doing business with. Indeed, there have been a large number of cases where Japanese firms follow their business partners overseas. We measure the extent of agglomeration by the number of cumulative FDI cases (CFDI) by Japanese firms in the host country, and we expect CFDI to have a positive sign.

Orientation of trade policy affects FDI decision in various ways. Foreign investing firms interested in conducting efficient production and exporting in the host country would prefer open trade regime, as importing inputs and exporting outputs could be conducted freely and efficiently. Country's orientation of trade is generally similar to its attitude toward FDI inflows. Orientation of trade policy is measured by trade openness (TRADE), which is defined as trade (exports + imports) divided by GDP. The estimated coefficient on TRADE is expected to be positive.

V. The Results

Conditional logit estimation was conducted using the data covering 97 countries for the 1980-2012 period[11]. The results of conditional logit estimation are shown in Tables 4-6. For each regression two different specifications are applied, in order to see the impacts of BITs and FTAs on the locational decision of the Japanese firms. To deal with possible endogeneity problem between dependent variable and independent variables, independent variables are introduced with one-year lag.

[11] See Appendix Table 4 for the sample countries.

Admittedly this is a very crude way to deal with the problem, but given the data constraint this is a practical approach. Let us first discuss the results of the control variables, that is, those variables other than BITs and FTAs, then turn to the discussion on the results on BITs and FTAs.

The estimated coefficients of control variables are generally consistent with the expected signs and with previous studies. A host country with the following characteristics is shown to attract Japanese FDI: large market size (lnGDP), low wages (lnWAGE), depreciated currency vis-à-vis Japanese yen (EXR), small fluctuation in exchange rates (EXRV), low inflation rate (INF), high degree of agglomeration (CFDI), well-developed infrastructure (lnELEC), and open trade regime (TRADE). The estimated relations are quite robust as the signs and the magnitude of the estimated coefficients are quite stable regardless of the specification or the samples.

Several interesting observations can be made by comparing the results of the estimation. The results shown in Table 4 indicate that compared to the locational decision in developed countries, in the case of investment in developing countries Japanese firms are less sensitive to the host country market size, more sensitive to wage rate, more sensitive to the level as well as the volatility of the exchange rate, less sensitive to inflation, more sensitive to the degree of agglomeration, less sensitive to infrastructure, and more sensitive to trade openness. These findings appear to indicate that the major motive behind investing in developing countries is to undertake export production, whereas the major motive behind investing in developed countries is to expand local sales. A firm interested in engaged in export production is sensitive to wages, exchange rates, agglomeration, and open trade regime, while it is less sensitive to local market size. One puzzling finding is infrastructure. Recognizing poor infrastructure in developing countries, one would think that a firm considering investment in developing countries pays close attention to the availability of well-developed infrastructure. Having discussed the results on infrastructure from the point of view of developing countries, what may be puzzling is large positive and statistically significant estimated coefficient in the case of developed countries. This is because infrastructure in developed countries is generally well developed and thus infrastructure should not influence locational decision of foreign investors.

Table 4 Regression Results: All Samples, Developing and Developed Countries

	(1)	(2)	(3)	(4)	(5)
	All Samples		Developing Countries		Developed
Variables					countries
lnGDP	1.017***	1.022***	0.901***	0.910***	0.977***
	(0.00862)	(0.00868)	(0.00959)	(0.00975)	(0.0218)
lnWAGE	-1.146***	-1.171***	-1.378***	-1.414***	-0.0497
	(0.0119)	(0.0121)	(0.0153)	(0.0154)	(0.0306)
EXR	0.00404***	0.00280***	0.00307***	0.000963***	-0.0362***
	(0.000183)	(0.000200)	(0.000187)	(0.000222)	(0.00612)
EXRV	-1.291***	-1.207***	-1.330***	-1.128***	0.0381
	(0.0799)	(0.0797)	(0.114)	(0.114)	(0.0917)
INF	-0.000814***	-0.000734***	0.000101	0.000111	-0.198***
	(0.000186)	(0.000175)	(9.75e-05)	(9.29e-05)	(0.00789)
CFDI	0.000247***	0.000285***	0.000397***	0.000449***	-6.38e-05**
	(9.41e-06)	(9.80e-06)	(1.08e-05)	(1.13e-05)	(2.99e-05)
lnELEC	0.547***	0.541***	0.319***	0.314***	0.729***
	(0.0120)	(0.0123)	(0.0157)	(0.0161)	(0.0310)
TRADE	0.0117***	0.0118***	0.0153***	0.0155***	-0.00135**
	(0.000133)	(0.000135)	(0.000152)	(0.000156)	(0.000661)
BIT	0.104***		0.348***		
	(0.0230)		(0.0249)		
BIT1		-0.0313		0.214***	
		(0.0254)		(0.0278)	
BIT2		1.172***		2.055***	
		(0.0542)		(0.0637)	
FTA	0.405***		0.573***		-1.039***
	(0.0393)		(0.0414)		(0.360)
BIT2*FTA		-0.684***		-1.253***	
		(0.0601)		(0.0662)	
Observations	1,481,947	1,481,947	1,096,328	1,096,328	385,619
ID	18,874	18,874	13,708	13,708	5,166
Pseudo R2	0.3484	0.3506	0.4306	0.4363	0.5013
Standard errors in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 5 reports the results for manufacturing and non-manufacturing sectors. The results on control variables are generally consistent with the results observed for all the samples in Table 4. One interesting finding may be that locational decision of Japanese manufacturing firms is more sensitive to exchange rate compared to that of

non-manufacturing firms. This difference may be explained by the fact that manufacturing firms, especially those investing in developing countries, are engaged in export production whereas firms in non-manufacturing are oriented toward local market sales.

Table 5 Regression Results: Manufacturing and Non-manufacturing Industries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All Samples				Developing Countries			
	Manufacturing		Non-manufacturing		Manufacturing		Non-manufacturing	
Variables								
lnGDP	1.025***	1.023***	0.967***	0.976***	0.913***	0.911***	0.842***	0.863***
	(0.0138)	(0.0138)	(0.0113)	(0.0114)	(0.0142)	(0.0144)	(0.0133)	(0.0135)
lnWAGE	-1.292***	-1.320***	-1.044***	-1.070***	-1.471***	-1.497***	-1.295***	-1.345***
	(0.0200)	(0.0203)	(0.0151)	(0.0154)	(0.0231)	(0.0233)	(0.0210)	(0.0213)
EXR	0.00533***	0.00409***	0.00335***	0.00184***	0.00466***	0.00310***	0.00211***	-0.000777**
	(0.000250)	(0.000278)	(0.000277)	(0.000298)	(0.000258)	(0.000302)	(0.000279)	(0.000332)
EXRV	-1.713***	-1.565***	-1.018***	-0.960***	-1.851***	-1.632***	-0.993***	-0.795***
	(0.142)	(0.142)	(0.0953)	(0.0952)	(0.185)	(0.186)	(0.145)	(0.145)
INF	-0.000794**	-0.000713**	-0.000751***	-0.000672***	-8.29e-05	-5.52e-05	0.000186**	0.000191**
	(0.000318)	(0.000295)	(0.000228)	(0.000215)	(0.000237)	(0.000221)	(9.42e-05)	(9.10e-05)
CFDI	0.000342***	0.000395***	0.000256***	0.000297***	0.000491***	0.000555***	0.000395***	0.000450***
	(1.59e-05)	(1.69e-05)	(1.24e-05)	(1.29e-05)	(1.80e-05)	(1.93e-05)	(1.43e-05)	(1.48e-05)
lnELEC	0.492***	0.494***	0.615***	0.600***	0.293***	0.295***	0.370***	0.355***
	(0.0202)	(0.0206)	(0.0153)	(0.0157)	(0.0235)	(0.0239)	(0.0217)	(0.0223)
TRADE	0.0105***	0.0105***	0.0118***	0.0121***	0.0135***	0.0134***	0.0156***	0.0162***
	(0.000247)	(0.000252)	(0.000162)	(0.000166)	(0.000267)	(0.000274)	(0.000193)	(0.000200)
BIT	0.232***		-0.0745**		0.425***		0.219***	
	(0.0348)		(0.0318)		(0.0365)		(0.0352)	
BIT1		0.116***		-0.264***		0.325***		0.00718
		(0.0385)		(0.0352)		(0.0410)		(0.0395)
BIT2		1.531***		0.978***		2.062***		2.107***
		(0.0891)		(0.0690)		(0.100)		(0.0824)
FTA	0.885***		0.167***		0.990***		0.356***	
	(0.0703)		(0.0488)		(0.0747)		(0.0513)	
BIT2*FTA		-0.417***		-0.809***		-0.687***		-1.632***
		(0.0979)		(0.0774)		(0.105)		(0.0862)
Observations	626,335	626,335	855,612	855,612	518,907	518,907	577,421	577,421
ID	8,046	8,046	10,828	10,828	6,580	6,580	7,128	7,128
Pseudo R2	0.4235	0.4264	0.3124	0.3148	0.4894	0.4942	0.3929	0.4005

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6 shows the results, which include dummy variables for small and medium-sized enterprises (SMEs), in order to discern possible different responses to the independent variables by the firms of different sizes[12]. The results on SME dummy variables appear consistent with our expectation in that for SMEs the important

[12] Small and medium-sized enterprises are defined as those with paid-in capital less than 300 million yen in the case of manufacturing, less than 100 million yen in the case of wholesale, and .less than 50 million in the case of other services.

encouraging factors in the host countries are low wages, low macroeconomic risk, depreciated local currency, high degree of agglomeration, well-developed infrastructure, and open trade regime, in comparison to large firms. SMEs tend to use labor intensive technology, thereby keen on employing low wage labor. With limited human and financial resources, SMEs are less equipped to deal with risks. As such, SMEs choose to invest in a country with low exchange rate volatility and inflation. For the same reason SMEs tend to rely on other firms or business environment surrounding them, being reflected in higher dependence on other firms in agglomeration and infrastructure. Specifically, large firms do not need to rely on electricity supply provided in the form infrastructure, because they can have their own electricity generation system. However, with limited financial resources, SMEs cannot have their own generators and thus rely on external sources. SMEs are found to be less interested in the size of the local market compared to large firms. This may be because SMEs do not directly sell their products in the local market, but SMEs are rather interested in agglomeration, in which they can find their business partners.

Table 6 Regression Results: Small and Medium-sized Enterprises (SMEs)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					Developing Countries			
Variables	All Samples		Developing Countries		Manufacturing		Non-Manufacturing	
lnGDP	1.017***	1.022***	0.905***	0.915***	0.928***	0.926***	0.845***	0.866***
	(0.00905)	(0.00910)	(0.0101)	(0.0103)	(0.0155)	(0.0157)	(0.0137)	(0.0140)
lnWAGE	-1.124***	-1.149***	-1.346***	-1.386***	-1.431***	-1.459***	-1.275***	-1.327***
	(0.0122)	(0.0124)	(0.0160)	(0.0162)	(0.0247)	(0.0250)	(0.0215)	(0.0219)
EXR	0.00397***	0.00265***	0.00289***	0.000652***	0.00440***	0.00271***	0.00207***	-0.000863**
	(0.000195)	(0.000212)	(0.000199)	(0.000236)	(0.000281)	(0.000330)	(0.000288)	(0.000340)
EXRV	-1.225***	-1.144***	-1.190***	-0.989***	-1.605***	-1.384***	-0.938***	-0.745***
	(0.0819)	(0.0817)	(0.117)	(0.117)	(0.192)	(0.192)	(0.147)	(0.146)
INF	-0.000808***	-0.000723***	0.000113	0.000122	-8.45e-05	-5.73e-05	0.000194**	0.000200**
	(0.000189)	(0.000177)	(9.53e-05)	(9.09e-05)	(0.000245)	(0.000229)	(9.26e-05)	(8.94e-05)
CFDI	0.000236***	0.000276***	0.000380***	0.000435***	0.000456***	0.000522***	0.000382***	0.000441***
	(9.85e-06)	(1.03e-05)	(1.13e-05)	(1.18e-05)	(1.90e-05)	(2.04e-05)	(1.47e-05)	(1.53e-05)
lnELEC	0.547***	0.539***	0.303***	0.297***	0.265***	0.266***	0.357***	0.341***
	(0.0122)	(0.0126)	(0.0164)	(0.0168)	(0.0252)	(0.0256)	(0.0222)	(0.0228)
TRADE	0.0114***	0.0116***	0.0151***	0.0153***	0.0132***	0.0131***	0.0154***	0.0160***
	(0.000140)	(0.000143)	(0.000159)	(0.000165)	(0.000291)	(0.000300)	(0.000198)	(0.000206)
BIT	0.0751***		0.327***		0.412***		0.213***	
	(0.0243)		(0.0264)		(0.0398)		(0.0364)	
BIT1		-0.0716***		0.177***		0.303***		-0.00992
		(0.0269)		(0.0296)		(0.0447)		(0.0410)
BIT2		1.158***		2.082***		2.081***		2.128***
		(0.0559)		(0.0658)		(0.106)		(0.0836)
FTA	0.400***		0.565***		0.947***		0.380***	
	(0.0410)		(0.0432)		(0.0797)		(0.0528)	
BIT2*FTA		-0.683***		-1.294***		-0.751***		-1.627***
		(0.0623)		(0.0685)		(0.112)		(0.0875)
Dsm_lnGDP	-0.0497	-0.0520*	-0.0632**	-0.0727**	-0.113***	-0.111***	-0.0569	-0.0709
	(0.0305)	(0.0307)	(0.0319)	(0.0323)	(0.0397)	(0.0400)	(0.0592)	(0.0599)
Dsm_lnWAGE	-0.326***	-0.322***	-0.342***	-0.320***	-0.303***	-0.302***	-0.411***	-0.372***
	(0.0489)	(0.0489)	(0.0551)	(0.0549)	(0.0695)	(0.0695)	(0.101)	(0.101)
Dsm_EXR	0.00165***	0.00224***	0.00236***	0.00391***	0.00250***	0.00333***	0.00164	0.00351**
	(0.000580)	(0.000648)	(0.000595)	(0.000695)	(0.000725)	(0.000825)	(0.00121)	(0.00149)
Dsm_EXRV	-0.932**	-0.929**	-2.019***	-2.107***	-2.249***	-2.319***	-0.376	-0.459
	(0.372)	(0.371)	(0.503)	(0.507)	(0.638)	(0.645)	(0.863)	(0.864)
Dsm_INF	-0.00373	-0.00270	-0.000972	-0.000810	3.59e-05	5.81e-05	-0.0483***	-0.0467***
	(0.00369)	(0.00343)	(0.00169)	(0.00145)	(0.000908)	(0.000818)	(0.0133)	(0.0133)
Dsm_CFDI	0.000217***	0.000204***	0.000259***	0.000227***	0.000340***	0.000330***	0.000157**	0.000114*
	(3.71e-05)	(3.85e-05)	(4.21e-05)	(4.35e-05)	(6.16e-05)	(6.53e-05)	(6.80e-05)	(6.91e-05)
Dsm_lnELEC	0.0751	0.0895*	0.156***	0.169***	0.194***	0.202***	0.241**	0.253**
	(0.0507)	(0.0510)	(0.0568)	(0.0573)	(0.0701)	(0.0707)	(0.108)	(0.109)
Dsm_TRADE	0.00261***	0.00247***	0.00237***	0.00206***	0.00192**	0.00187**	0.00352***	0.00311***
	(0.000468)	(0.000476)	(0.000544)	(0.000552)	(0.000759)	(0.000773)	(0.000894)	(0.000908)
Dsm_BIT	0.239***		0.197**		0.0903		0.227	
	(0.0790)		(0.0822)		(0.104)		(0.151)	
Dsm_BIT1		0.316***		0.309***		0.118		0.394**
		(0.0854)		(0.0901)		(0.115)		(0.163)
Dsm_BIT2		0.0774		-0.526**		-0.149		-0.772*
		(0.226)		(0.247)		(0.310)		(0.454)
Dsm_FTA	0.211		0.191		0.550**		-0.303	
	(0.148)		(0.155)		(0.232)		(0.227)	
Dsm_BIT2*FTA		0.200		0.732***		0.699**		0.430
		(0.242)		(0.257)		(0.326)		(0.469)
Observations	1,481,947	1,481,947	1,096,328	1,096,328	518,907	518,907	577,421	577,421
ID	18,874	18,874	13,708	13,708	6,580	6,580	7,128	7,128
Pseudo R2	0.3511	0.3533	0.4324	0.4381	0.4913	0.4962	0.3947	0.4023

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Let us turn to the results on the impacts of BITs and FTAs on FDI by Japanese firms. The estimated coefficients on BIT and FTA are shown to be positive and statistically significant in all the regressions in Tables 4-6 except two cases. One is the case of developed countries in Table 4 and the other is nonmanufacturing in Table 5. These two cases are not surprising once one realizes the following observations. It is only Switzerland among developed countries that has an FTA with Japan and Switzerland attracted relatively small number of Japanese firms at 62 from 1980 to 2012. As to the case of non-manufacturing, the coverage of BITs is generally rather limited compared to the case of manufacturing, which is more or less entirely covered by BITs. This is particularly the case for FTAs, in which investment in service sector is covered by agreements on service trade rather than investment chapter. In addition, FDI in non-manufacturing sector was active in developed countries compared to the case for manufacturing. These factors are likely to have led to negative and statistically significant impact in the case of non-manufacturing in all samples. As such, the impacts of BITs on FDI in non-manufacturing sector are rather weak. Despite the presence of these two inconsistent cases, our findings tend to confirm that having BITs and FTAs with Japan are likely to attract Japanese FDI. This is particularly the case for developing countries.

As discussed earlier, there are two types of BIT. One type of BIT is mainly to protect FDI, while the other type includes not only FDI protection but also FDI liberalization. We called the former type, BIT1, the latter type, BIT2. It should be noted that almost all FTAs that Japan enacted have an investment chapter, whose contents are similar to BIT2. Recognizing these characteristics of BITs and FTAs, we examined the impacts of BIT1s, BIT2s, and FTAs on FDI. The results on the estimated coefficients on BIT1 and BIT2 show that the positive impacts of BIT2 are significantly larger compared to BIT1. Indeed, in some cases BIT1 is found not effective in attracting Japanese FDI. These findings are consistent with our expectation in that FDI liberalization would attract FDI. In order to see the impacts of FTA excluding BIT2, that is, mainly trade liberalization, the interaction term between BIT2 and FTA is introduced. The estimated coefficient on the interaction term between BIT2 and FTA is negative and statistically significant. This result indicates that trade liberalization discourages FDI, implying that trade and FDI are substitutes. Having discussed the results on BIT, BIT1, BIT2, FTA, it should be noted that the impacts of BIT2s and FTAs on FDI are very difficult to be separated because their coverage of the countries is very similar in the case of Japan. Indeed, correlation coefficient between these two variables is as high as

0.862. We need a larger number of sample observations to separate these two impacts.

The results in Table 6 show that BITs, particular BIT1s, have larger FDI promotion effect for SMEs compared to large firms. This may reflect an observation that international treaties like BITs are more important for SMEs than for large firms, because large firms may be able to deal with possible problems by themselves with their abundant financial and human resources whereas SMEs cannot. In contrast to the case of BIT1, large firms tend to respond more positively to BIT2 compared to SMEs. This may reflect the differences in speed between large firms and SMEs in responding to BITs. BIT2 are enacted more recently than BIT1, and large firms were able to take an opportunity more quickly than SMEs.

VI. Concluding Comments

This paper analyzed the impacts of Japan's FTAs and BITs on foreign direct investment by Japanese firms by examining the data covering 97 countries for the 1980-2012 period. The analysis found that both FTAs and BITs have positive impacts on FDI by Japanese firms. In particular, FTAs with an investment chapter and BITs with FDI liberalization in addition to FDI protection were found to be effective in attracting Japanese FDI in developing countries.

Based on our findings, countries, particularly developing countries are advised to enact FTAs and BITs with FDI liberalization to attract FDI. Attracting FDI would contribute to economic development/growth of the host countries as FDI would bring in not only financial resources for investment, which would increase production and employment, but also technology and management know-how, which would improve productivity. Having discussed the important role that FTAs and BITs play in attracting FDI, host countries have to successfully utilize FDI inflows to acquire technology and management know-how and disseminate them to local firms, in order to achieve economic growth. For the realization of these objectives, human resource development is crucially important.

It should also be noted that FDI expansion resulting from FTAs and BITs would benefit investing countries and firms as well. Japan's FDI outflow would enable Japanese firms to use their resources efficiently, contributing to their growth as well as growth of the Japanese economy. Indeed, overseas operation has become an important source of revenue and profit for many Japanese firms, which recycle their profits back to Japan to finance local activities, especially research and development. In other words, profits made overseas have become an important source of Japanese firms' competitiveness.

Discussions on future research are in order. First, lack of appropriate data for the period and country coverage of our study precluded us from considering political risk and quality of domestic institutions in the analysis. These elements need to be considered, as investment is considered to be sensitive to risks. One important issue is if political risk and/or low quality of domestic institution may be substituted by international treaties such as FTAs and BITs. Second, it may be of interest to analyze the timing of FDI decision making. Does a firm respond to the signing of treaties or actual implementation? How long does it take firms to make FDI decision after realizing the signing/enactment of treaties. For this type of analysis, FDI data on monthly basis may be needed. Third, a qualitative study would be very useful to complement quantitative studies like ours, in order to increase our understanding of the impact of FTAs and BITs on FDI. Specifically, studies based on questionnaire survey and interviews inquiring if FTAs and/or BITs had impacts on firms' decision on FDI would be very useful. Finally, comparable studies of the impacts of FTAs and BITs in other countries would be useful and interesting to know if the patterns found for Japanese firms are unique or common.

Appendix Table 1 Variables Used in the Analysis, Definitions and the Sources

	Variables		Definition	Source
Dependent variable	FDI		Foreign affiliate of Japanese firms: country and year of establishment	Tokyo Keizai Publishing Company
Independent variables	ln GDP		GDP in constant 2005 US$	World Development Indicators (World Bank)
	ln WAGE		Wage rate proxyed by GDP(in constant 2005 US$)/Population (age 15-64)	World Development Indicators (World Bank)
	EXR		real exhange rate: local currencey/yen (index:2010=1) adjusted by CPI	Financial Statistics(IMF)
	EXRV		exchange rate volatility: coefficient of variation for the past 5 years	Financial Statistics(IMF)
	INF		Inflation: the change in consumer price index	World Development Indicators (World Bank)
	CFDI		Cumulative number of FDI cases	Tokyo Keizai Publishing Company
	ln ELEC		Electric power consumption per capita	World Development Indicators (World Bank)
	BIT	BIT1	Traditional BIT with investment protection	METI (2014)
		BIT2	Comprehensive BIT with investment liberalization	METI (2014)
	FTA		Free trade agreement, Economic partnership agreement	METI (2014)

Appendix Table 2 Basic Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
lnGDP	2337	25.67925	2.449848	21.04	48.244
lnWAGE	2337	9.646849	2.198446	4.811	30.045
EXR	2337	6.308442	26.83879	0.000608	302.79
EXRV	2337	0.1831121	0.1980815	0.0144	2.2296
INF	2337	29.80195	325.756	-9.79765	11749.6
CFDI	2337	124.3333	386.8914	0	5316
lnELEC	2337	7.478585	1.527237	2.55957	10.14998
TRADE	2337	82.09642	57.81356	6.32034	447.058
BIT	2337	0.0795892	0.2707141	0	1
BIT1	2337	0.0688917	0.2533242	0	1
BIT2	2337	0.0290971	0.1681148	0	1
FTA	2337	0.0222507	0.1475295	0	1

Appendix Table 3 Correlations Coefficients

	FDI	lnGDP	lnWAGE	EXR	EXRV	INF	CFDI	lnELEC	TRADE	BIT	BIT1	BIT2	FTA
FDI	1												
lnGDP	0.0972	1											
lnWAGE	-0.0181	0.7172	1										
EXR	0.014	-0.0373	-0.1893	1									
EXRV	-0.0267	0.1068	0.0909	0.0493	1								
INF	-0.0073	0.1215	0.12	-0.0094	0.1136	1							
CFDI	0.2805	0.314	0.0274	0.0199	-0.0843	-0.0208	1						
lnELEC	0.0177	0.2931	0.5779	-0.1825	-0.0028	-0.0684	0.1526	1					
TRADE	0.0037	-0.2374	0.0966	-0.0191	-0.0505	-0.0407	0.108	0.2552	1				
BIT	0.106	0.0019	-0.225	0.0708	-0.0698	-0.0155	0.2059	-0.1234	0.0181	1			
BIT1	0.1047	-0.0057	-0.2196	-0.0516	-0.0619	-0.0133	0.1985	-0.1271	0.0048	0.9193	1		
BIT2	0.0299	0.0256	-0.0418	0.2004	-0.0627	-0.0147	0.1724	0.0285	0.2082	0.1783	-0.0543	1	
FTA	0.023	0.0004	-0.0444	0.1193	-0.0576	-0.0127	0.1645	0.0174	0.2339	0.0329	-0.0468	0.8621	1

Appendix Table 4 List of Countries for the Study			
Algeria	Finland	Malaysia	Saudi Arabia
Angola	France	Mauritius	Serbia
Argentina	Georgia	Mexico	Sinagpore
Australia	Germany	Mongolia	Slovakia
Austria	Ghana	Montenegro	Slovenia
Bahrain	Greece	Morocco	South Africa
Bangladesh	Guatemala	Mozambique	Spain
Belgium	Hong Kong	Nepal	Sri Lanka
Bolivia	Hungary	Netherlands	Sweden
Botswana	India	New Zealand	Switzerland
Brazil	Indonesia	Nicaragua	Tanzania
Brunei	Iran	Nigeria	Thailand
Bulgaria	Ireland	Norway	Trinidad and Tobago
Cambodia	Israel	Oman	Tunisia
Canada	Italy	Pakistan	Turkey
China	Jordan	Panama	Uganda
Colombia	Kazakhstan	Paraguay	Ukraine
Costa Rica	Kenya	Peru	United Kindom
Cote d'Ivoire	Korea	Philippines	Uruguay
Croatia	Kuwait	Poland	USA
Czech Republic	Lao PDR	Portugal	Viet Nam
Denmark	Latvia	Puerto Rico	Zimbabwe
Dominica	Libya	Qatar	
Egypt	Lithuania	Russia	
Estonia	Luxembourg	Samoa	

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