An Empirical Analysis of Inward Foreign Direct Investment Flows in the European Union With Emphasis on the Market Enlargement Hypothesis

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Abstract

We use a cross-section, time-series approach to study the determinants of foreign direct investment (FDI) in the European Union with particular emphasis on the expectations of a Single Market following the Single European Act of 1987. Using annual data from the 1980s and early 1990s, we investigate the determinants of US and Japanese FDI in the EU by pooling the data by the host country. We find strong evidence in favour of a Single Market effect where the anticipation of a larger market size due to a barriers-free European market leads to an increase in the inflows of FDI. In addition, our estimation results show that FDI flows in the EU also depend on market size and the real exchange rate (as a proxy of relative labour costs).

Keywords: Single Market effect, foreign direct investment

JEL Classification: F21, F23

1 Introduction

Over the past fifteen years and, especially, during the second half of the 1980s, Foreign Direct Investment (FDI) to the European Union (EU) has increased significantly. This increase in FDI flows to the EU that originate primarily in the US and Japan, has been attributed to globalization strategies of US and Japanese corporations, the globalization of financial markets, and the Single Market Program (SMP) that came into effect in 1992. One would expect that due to the income growth in the EU and in anticipation of the SMP and the concomitant increase in market opportunities, foreign multinationals would increase their presence in EU-member countries. The precursor to the SMP was the Single European Act (SEA) of 1987 that introduced the commitment to complete the single market by the end of 1992.

Surprisingly, to the best of our knowledge, there has not been any comprehensive recent empirical study that tries to test for the relative importance of the determinants of inward FDI in the EU in light of the developments towards a Single Market. Several authors have speculated that the enlarged market opportunities created by the SMP is one of the most crucial factors explaining the growth of inward FDI (see Balasubramanyam and Greenaway, 1992, p. 186, and Neven and Siotis, 1993, p. 74). Our objective is to test for the significance of various factors in explaining inward FDI flows over the 1980s and early 1990s, with particular emphasis placed on the anticipation of a single market, using data pooled by the receiving country. Our cross section includes two source countries, the US and Japan, and 24 host countries.

The outline of the paper is as follows: section 2 discusses the determinants of FDI flows predicted by economic theory, section 3 provides a brief literature review and the motivation for the undertaking of this research, section 4 discusses our methodology and section 5 summarizes our econometric results and provides an interpretation. Finally, section 6 includes our main conclusions and suggests some extensions.

2 The theory and the locational determinants of foreign direct investment

It is well known that a generally accepted theory of FDI does not exist. It is believed that FDI arises in the context of imperfect product/factor markets and information costs. Given the informational disadvantage foreign firms face compared to local firms when operating in the host country, foreign firms need

to have some firm-specific advantage related to intangible assets (Kindleberger, 1969; Hymer, 1976). However, for FDI to take place, two additional conditions are jointly necessary and sufficient: (1) There must be a location-specific advantage (e.g., trade barrier, low labour cost) that explains why the firm wants to invest in the host country rather than produce at home and export. (2) The most profitable means of exploiting the rent associated with the firm's asset must be within the global corporation as opposed to arm's length trading (e.g., lease or sell the asset).

The consideration of firm-specific advantages would be relevant for highly disaggregated studies using firm data. In the present study we use aggregate data and hence we are interested in the locational determinants of FDI.[1] Several empirical studies have considered the size of host-country market, the growth of this market, tariff discrimination and relative labour costs as the main determinants of foreign direct investment flows (see the references in section 3). In this paper, we control for all these factors, but we place particular emphasis on the Single Market effect.

The market size of the host country is expected to be positively related to FDI flows since a larger market size is necessary to allow the attainment of economies of scale. This positive association is also consistent with recent models of economic geography that emphasize that proximity to market is an important determinant of the choice of location of the productive activity. We proxy market size by the host country's real GDP. In several empirical works of the determinants of inward FDI in the European community, market size has been proxied by the Community's real GDP. We have decided to follow Culem (1988) who argues that the use of the host country's real GDP might be justified given that the national markets of the EC member countries remain somewhat partitioned.

According to the acceleration principle, as aggregate demand grows the need for new investment increases and hence FDI increases too. To measure the market growth variable we use the annual growth rate of real GDP of the host country.

The creation of a common market would be expected to lead to two conflicting effects on inward FDI in member countries: first, the implementation of a common external tariff would give rise to defensive foreign direct investment in the Community and second, the relaxation of all internal barriers would allow foreign firms to supply the whole Common market from one site. Therefore, the direction of the effect of a change in total trade barriers (both internal and external) imposed by EC-member countries on FDI flows is ambiguous a priori. Previous research of the determinants of inward FDI in the EC has employed

[1] These are the pull factors of FDI. The push factors (e.g. current account surplus of the investing country) would be captured in part by the constant term of our regressions.

various proxies for trade barriers to test for the effect of these barriers on the size of FDI flows. Since direct estimates on non-tariff barriers (NTBs) are not available, most of these proxies have concentrated on the use of tariff rates. Scaperlanda and Balough (1983) for example, have used a proxy (one minus the proportion of the original tariff in existence for the year) that captures the intertemporal decline in trade barriers internal to the EC. Following Ethier (1988) we proxy trade barriers by the average tariff rate defined as the ratio of "receipts from international trade taxes" over the "value of total imports" in each receiving country.[2] Our proxy for trade barriers (that captures only external barriers) is more appropriate for the present study for two reasons: first, during most of our estimation period very few changes in intra-EC tariffs took place as the only EC country in our sample that joined the Community is Spain. Hence, for the EC receiving countries, the only change in tariff barriers arose from the dismantlement of external barriers under the Tokyo round that was completed by the 1st of January, 1987. Second, for the non-member countries the provisions of the Tokyo round would also apply. Since most changes in trade barriers during our estimation period were external, we would expect a positive relationship between our trade barrier proxy and inward FDI flows.

The incorporation of the real exchange rate in the list of independent variables allows us to determine the effect of relative wealth and relative labour costs on FDI (Klein and Rosengren, 1994). A real depreciation of the host country's currency would increase the relative wealth of foreign firms and lead to an increase in foreign purchases of domestic assets. In addition, the real depreciation would lead to capital inflows as the foreign countries try to take advantage of relatively cheaper domestic labour. The importance of this channel can be seen from the evidence of the floating period that points towards a strong dependence of relative labour costs on exchange rate movements. We measure the real exchange rate of the host country by the nominal rate adjusted by the host and source country's GDP deflator. An increase in the real exchange rate (i.e., a real depreciation of the host country's currency) should be expected to lead to an increase in FDI inflows.

Finally, to capture the Single Market effect we employ a dummy variable that takes a value of 1 for EC member countries post-1987 and 0 in all other cases. A positive and significant coefficient of the dummy variable would be consistent with the "Europe 1992" effect where the prospects of a barriers-free market and a larger market size would lure direct investment from overseas. Also, as Heitger and Stehn (1990) claim, the anticipation of the single market might lead to expectations about a build up in external barriers against third countries as member countries try to compensate their national special interest groups for

[2]For the EU-member countries we use the "value of total imports *minus* the value of total imports originating from other EU members."

the reduction of internal barriers. Therefore, in accordance with this public-choice perspective, our dummy variable captures also an increased presence of foreign companies in the EU in anticipation of higher EU external barriers.

3 A review of the literature and motivation

Several empirical studies have dealt with variations in the pattern of FDI flows and the determinants of FDI in the European Community. Scaperlanda (1967) tested for a change in international investment patterns following the creation of the EC. He found no evidence for a shift of the growth rate of US direct investment into the EC and non-EC nations.

Scaperlanda and Mauer (1969) tested for the relative importance of the size of market, the growth rate of the market and trade barriers in the flows of FDI in the EC. They concluded that only the market size was statistically significant. Lunn (1980) using annual data for the 1957-1970 period found that all of the above three determinants of FDI were statistically significant. Scaperlanda and Balough (1983) improved upon previous studies by using a longer data series (1953-1977) and a better proxy for trade barriers. They concluded that market size, market growth and tariff discrimination are all important factors in explaining US FDI in the original six members of the EC. The authors also speculate that exchange rate variability seems to represent an important explanatory variable.

Culem (1988) looks at bilateral FDIs among six industrialized countries using pooled data for the 1969-1982 period. Culem's second innovation in relation to other studies is the consideration of two not previously examined determinants of FDI: unit labour costs and export flows. A lower unit labour cost in a host country and large prior export flows would tend to increase inward FDI. Culem considers also the source country's opportunity cost of investing abroad. In other words, he considers the unit labour cost differential that captures the fact that domestic investment is the opportunity cost of FDI. For our purposes, Culem's analysis of US FDIs in the EC is the most important part of his study. Using disaggregated data flows from the US into five EC countries over the 1969-1982 period, Culem obtains a rather surprising result: market size (proxied by EC real GDP) does not have a significant effect on US FDI flows in the EC.

More recently, Neven and Siotis (1993) have used disaggregated data (at the sectoral level) to test for the existence of technology sourcing by foreign investors in the four large EC countries (UK, France, Germany and Italy) over the 1984-89 period. The authors find that technology sourcing is more impor-

tant than traditional factors (e.g., trade barriers against the rest of the world or intra-EC trade barriers). Finally, Bajo-Rubio and Sosvilla-Rivero (1994) use cointegration analysis to test for the determinants of manufacturing and non-manufacturing FDI in Spain over the 1964-1989 period. In their time-series study the authors use a dummy variable for the post-Spanish-accession years (i.e., post-1986) to capture any expectations about a larger market size arising from the creation of a single market. They find the variable statistically significant at the 10% level.

Our motivation for the present study stems from the significant increase in inward FDI in the EU that took place in the second half of the 1980s and originated primarily in the US and Japan. The share of Japanese FDI in the EU in total Japanese FDI increased from 14.1% in 1985 to 23.2% in 1990. Similarly, the share of US FDI to the EU increased from 35.3% in 1985 to 41.9% in 1990. Moreover, "plans for capital expenditure by US foreign affiliates in 1991 and 1992 released by the US Department of Commerce show that the EC is expected to account for nearly one-half of foreign plant and equipment expenditure by US firms compared with 38.8 per cent in 1985, 24.2 per cent in 1972 and 7.9 per cent in 1957" (Dunning, 1993, p. 183). According to the results of surveys by business consultants, market research analysts and banks, expectations of US firms about the completion of the internal market and the associated enlarged market opportunities (the so called 1992 effect) have a vital impact on the level and direction of US direct investment abroad.

As mentioned earlier, the bulk of the empirical evidence has shown that the surge in US direct investment in the EC in the late 1950s and 1960s was due to the increasing market size and growth as well as tariff barriers to US exports. It would be interesting to determine whether the same interpretation applies to the recent growth in Japanese and US investment activities in the EC.

Our objective is to use aggregate data pooled by the receiving country to test for the determinants of Japanese and US FDI flows in the EC. Our cross section includes 24 receiving countries. The use of pooled data allows a large sample size but restricts the estimated coefficients to be the same for all host countries. We have decided to include some non-EC member countries in order to increase the cross-section variability of our study and enhance the accuracy of our estimation.

4 Methodology

In accordance with the discussion of Section 2, we formulate the following two models:

$$FDI_{it}^{US} = \alpha_0 + \alpha_1 Y_{it} + \alpha_2 \dot{Y}_{it} + \alpha_3 T_{it} + \alpha_4 (P_t^{US} E_{it}^{US} / P_{it}) + \alpha_5 D_{it} + \alpha_6 (SEA)_{it} + \epsilon_{it}^{US} \quad (1)$$

where the subscript i refers to the 24 host countries and t =1980–1992.

$FDI_{it}^{US}, Y_{it}, \dot{Y}_{it}, T_{it}, (P_t^{US} E_{it}^{US} / P_{it}), D_{it}$ and SEA_{it} stand for real US FDI in country i (i.e., nominal FDI deflated by the US GDP deflator), domestic real income, domestic real income growth, our tariff barrier proxy (in real terms), the real exchange rate, an adjacency dummy and the Single European Act dummy respectively. The adjacency dummy takes the value 1 when there is an FDI flow between the US and either Mexico or Canada. We expect all slope coefficients. $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$, and α_6 to be positive and significant.

The second model that explains the determinants of Japanese FDI is as follows:

$$FDI_{it}^{J} = \beta_0 + \beta_1 Y_{it} + \beta_2 \dot{Y}_{it} + \beta_3 T_{it} + \beta_4 (P_t^{J} E_{it}^{J} / P_{it}) + \beta_5 (SEA)_{it} + \epsilon_{it}^{J} \quad (2)$$

where i refers to 24 host countries and t =1983-1992. Again, we expect positive and significant slope coefficients.

To estimate each of the above 2 models we make use of the cross-sectionally heteroskedastic and timewise autoregressive model described in Kmenta (1986, pp. 618–622). The use of this model assumes that for the cross-sectional observations the regression errors are heteroskedastic, whereas for the time-series observations they are autoregressive.[3] The estimation procedure is based on a transformed model where serial correlation across time and heteroskedasticity across countries are taken into account in order to derive residuals which are asymptotically nonautoregressive and homoskedastic[4]. This allows the application of the OLS method using all pooled observations (312 in the case of US and 240 in the case of Japan).

[3]This assumption seems to be plausible since residual correlation across host countries would be expected to be more relevant if our dependent variable were the share of US (or Japanese) FDI in a host country in world US (or Japanese) FDI. Also heteroskedasticity across time should probably not be relevant in our case where our time series includes a relatively small number of observations.

[4]All econometric estimations have been performed in SHAZAM.

5 Results

5.1 Data

Our data sources are as follows: US FDI is taken from various issues of the Survey of Current Business (US Department of Commerce). Japanese FDI data are taken from the Japanese Ministry of Finance. In constructing the "average tariff rate" series, the value of international taxes from imports was taken from the Government Finance Statistics Yearbook (IMF). All other series are taken from the International Financial Statistics (IMF).

Our cross-section, time-series study includes 13 time series annual observations, 1980-1992, (when the US FDI is the dependent variable), 10 time-series annual observations, 1983-1992, (when the Japanese FDI is the dependent variable) and 24 cross-sectional observations (i.e., 24 host countries).[5]

5.2 Results

Tables 1 and 2 list our econometric results. Table 1 summarises the regression results when the levels of the variables are used in the regressions. The lack of a long time span prohibits any reliable tests for stationarity in the individual series. Since preliminary ADF tests showed that the residuals of the estimated levels regression are not stationary (for most countries in our sample), we decided to re-estimate these regressions using first differences.[6] These results are summarised in Table 2[7].

Overall, the results for US FDI support many of our predictions. It turns out though, that the results support our expectations more strongly for US FDI in the manufacturing sector. For the US regressions, the SEA dummy is highly

[5] These countries are: Belgium, Denmark, France, Germany, Ireland, Italy, Netherlands, Spain, UK, Austria, Sweden, Switzerland, Australia, Venezuela, Mexico, India, Indonesia, Malaysia, Philippines, Singapore, Korea, Thailand, Canada plus US or Japan depending on whether the regression for the Japanese or US FDI is run.

[6] Note that even though the estimated residuals of the FDI regressions for each host country appear nonstationary, one should not have much faith in these results due to the low power of unit root tests in small samples, i.e. these tests tend to be biased in favour of the null of unit root. As a consequence, the results of the regressions in levels should be given serious consideration.

[7] The market size growth variable is not differenced in the regressions with differenced data. Therefore, the first difference in the market size variable measures the absolute change in the market size whereas the market growth variable measures the percentage change in the market size.

significant (at the 1% level) as expected. This result is very robust across different specifications (levels or differences, with or without a trend). The lack of significance of the real exchange rate in all cases except one might be justified in part since according to Heitger and Stehn (1990) the unit cost of labour in Japan is much lower than it is in Europe. The same would apply for the US. This explanation though is not totally convincing since our cross-section includes also some LDCs with unit labour costs smaller than those of the two source countries. Our tariff barriers proxy turns out to be significant only in the regressions where the dependent variable is US FDI in manufacturing. This result is not surprising since most tariffs apply to manufacturing products. The adjacency dummy that takes the value 1 when there is an FDI flow between the US and either Mexico or Canada appears to be highly significant. The estimated R^2 explain between 21% and 59% of the variability of US FDI and are typical of those found in pooled-data regressions.

As far as the Japanese FDI regressions are concerned, our results are not as strong as those of the US FDI. The market size variable is the most significant of the explanatory variables. The tariff proxy and the SEA dummy are significant at 5% if an one-tail test is used (in the regression in levels). The overall fit of the regressions is poor as less than 20% of the variability of the dependent variable is explained. The lack of strong results in favour of our a priori hypotheses may be attributed to the lack of good-quality data on Japanese FDI. As Neven and Siotis (1993, fn. 2) argue "Japanese data from the MOF relate to notifications rather than actual flows and appear to be subject to numerous biases." Another justification for the low in-sample predictive performance of the Japanese regressions shown by the relatively low R^2 might be the decreasing Japanese trade surpluses starting in late 1980s.

Since our sample of host countries includes both EU and non-EU countries we would like to test whether our results are driven by the non-EU countries. Hence we performed F tests for the equality of the coefficients in two specifications, i.e., the one with both EU and non-EU countries included in the sample of host countries and the one where EU and non-EU countries are included in separate regressions. The F-tests results for the different specifications of the estimated regression are given in Table 3. These results provide strong support to the claim that the estimated regressions differ significantly at 1% level and hence there is a need to estimate the regressions for the determinants of FDI by including EU countries only in the sample of host countries.

Tables 4 and 5 list the regression results for levels and differences respectively of the Japanese and US FDI when the group of host countries includes only EU member countries. Using an one-tail test of hypothesis we conclude the following: US total FDI (Table 4) seems to depend significantly on real GDP, the real exchange rate, the SEA dummy, and the tariff proxy (when a trend is

not included). The interpretation of the estimated coefficient of the SEA dummy is as follows: The value 713 for the regression without a trend implies that due to the SEA the post-1987 increase in the average value of inward US FDI in the EU was $713 mil. in real terms. The results for US FDI in manufacturing imply statistical significance for real GDP, the SEA dummy (except for the case of no trend) and the real exchange rate. The strong evidence in favour of a real exchange rate effect (as a proxy for relative labour costs) contrasts with that obtained by Culem (1988) for US investment in the EU in an earlier period using a measure of relative labour costs. Finally, real GDP, tariffs, the real exchange rate and the SEA dummy have a significant effect on Japanese FDI in EU countries. As said previously, the low in-sample predictive performance of the Japanese regressions shown by the relatively low R^2 might be due to the decreasing Japanese trade surpluses starting in late 1980s. The results of Table 5 for the differenced data indicate smaller overall goodness of fit (as one would expect from the use of differenced data) but for our purposes the most important result is the strong evidence in favour of a Single European Act effect (5% or better significance in most specifications). A comparison of the statistical significance of the SEA dummy between tables 1 and 2 and tables 4 and 5 shows that the significance is smaller (in the case of the US) when only EU countries are considered. This finding should be expected since part of the inward FDI in EU countries post 1987 would represent substitution of inward FDI of EU countries for non-EU countries that tends to lead to higher significance of the SEA dummy when the non-EU countries are part of the sample.

The comparison of the results in Tables 1, 2, 4 and 5 indicates the following: first, the coefficient for GDP is higher when using EU data only (i.e., Table 5) than when using the larger sample of host countries (i.e., Table 2). For example, for US total FDI the coefficient is 11.52 in Table 5 versus 5.53 in Table 2. This difference might be justified since one would expect demand to be more income elastic in the EU owing to the higher purchasing power of its consumers compared to the consumers of non-EU countries included in the sample used to derive the results of Table 2. Second, the real exchange rate appears to have a bigger impact on FDI into the EU than into other host countries included in the regressions of Table 1 (e.g., for US manufacturing FDI the coefficient of the real exchange rate is 1.27 in Table 4 versus 0.87 is Table 1). This could be due to a number of reasons: the EU is more politically stable than some of the other host countries or there is a better network of US subsidiaries in EU countries which makes rescheduling of investment in response to changes in bilateral real exchange rates easier.

6 Conclusions

We have used pooled data to test for the locational determinants of inward FDI in the EU with special emphasis placed on the influence of the Single European Act. Our results provide strong evidence for the importance of the market size, the real exchange rate, and the Single European Act, particularly in the US regressions. Our dummy that proxies for the effect of the Single European Act on inward FDI is significant across most estimated specifications indicating the importance of the forthcoming barriers-free European market for the decisions of foreign multinationals to invest in the EU-member countries.

It would be interesting to determine whether the Single European Act has had any effect on the share of the US (and Japanese) FDI in the EU in world US (and Japanese) FDI. If the share of US (or Japanese) FDI has increased due to the Single European Act, we could conclude that the process of European integration has led to a transfer of foreign investment to EU countries at the expense of other competing host countries. Some indirect evidence in favour of such a claim is provided for the US by the decreasing statistical significance of the SEA dummy when non-EU countries are excluded from the sample of host countries. However, more direct tests of this claim would be part of our future research agenda.

TABLE 1: Regressions with pooled data (levels)

Dependent Variable: US FDI (total)

	Coefficient	T-ratio	Coefficient	T-ratio
GDP	0.007	10.34***	0.0069	10.01***
Growth rate	9.02	0.80	11.17	0.98
Tariff	14.37	1.25	14.59	1.34*
Real Exchange Rate	0.67	0.42	0.63	1.45*
Dummy	13419	1.89**	13351	1.95**
SEA dummy	1371	4.75***	1270	4.56***
Trend	0.14	0.006	-	-
Constant	2682	0.06	2587	7.91***
R^2 = 0.3391			R^2 = 0.3355	

Dependent Variable: US FDI (manufacturing)

	Coefficient	T-ratio	Coefficient	T-ratio
GDP	0.0052	14.05***	0.0057	15.57***
Growth rate	11.73	1.88**	14.29	2.36***
Tariff	25.06	4.07***	20.26	3.61***
Real Exchange Rate	0.87	3.89***	0.87	0.20
Dummy	8966	2.48***	9661	2.74***
SEA dummy	1125	6.40***	920	5.34***
Trend	5.41	0.38	-	-
Constant	-8706	0.31	2687	7.91***
R^2 = 0.5697			R^2 = 0.5939	

Dependent Variable: Japanese FDI (total)

	Coefficient	T-ratio	Coefficient	T-ratio
GDP	0.69	4.04***	0.64	4.43***
Growth rate	50.40	0.18	62.42	0.43
Tariff	57.4	0.27	235	1.83**
Real Exchange rate	162	0.12	450	0.55
SEA dummy	1609	1.24	3646	1.76**
Trend	1201	1.44*	-	-
Constant	0.00	1.44*	1279	0.39
R^2=0.172			R^2=0.185	

Note: The list of host countries includes both EU and non-EU countries. *, **, and *** indicate significance at the 10%, 5% and 1% level, respectively for an one-tail test of hypothesis.

TABLE 2: Regressions with pooled data (differences)

Dependent Variable: US FDI (total)

	Coefficient	T-ratio	Coefficient	T-ratio
GDP	5.53	6.35***	5.63	6.30***
Growth rate	1.13	0.16	24.47	4.06***
Tariff	5.91	1.94**	7.48	1.47*
Real Exchange Rate	0.38	0.74	0.13	0.27
Dummy	935	1.55*	1212	2.09***
SEA dummy	755	5.15***	955	6.10***
Constant	338	4.89***	-	-
	$R^2 = 0.2447$		$R^2 = 0.2619$	

Dependent Variable: US FDI (manufacturing)

	Coefficient	T-ratio	Coefficient	T-ratio
GDP	3.39	5.86***	3.16	5.52***
Growth rate	1.00	0.23	10.69	3.45***
Tariff	6.04	1.95**	6.48	2.57***
Real Exchange Rate	0.41	1.43*	0.19	0.71
Dummy	739	2.38***	816	2.74***
SEA dummy	293	4.48***	323	4.54***
Constant	97	3.68***	-	-
	$R^2 = 0.2193$		$R^2 = 0.2124$	

Dependent Variable: Japanese FDI (total)

	Coefficient	T-ratio	Coefficient	T-ratio
GDP	0.86	4.14***	0.84	4.10***
Growth rate	369	1.06	434	1.47*
Tariff	82.7	1.26	107	0.36
Real Exchange Rate	2281	1.09	2230	1.08
SEA dummy	1304	0.52	960	1.39*
Constant	714	0.41	-	-
	$R^2 = 0.1857$		$R^2 = 0.1831$	

Note: The list of host countries includes both EU and non-EU countries. *, **, and *** indicate significance at the 10%, 5% and 1% level, respectively for an one-tail test of hypothesis.

TABLE 3: F Tests

US Total FDI (levels;trend): F(7,298) = 10.34***
US Total FDI (levels;no trend): F(6,300) = 11.02***
US Total FDI (differenced;no constant): F(6,276) = 7.24***
US Total FDI (differenced;with constant): F(7,274) = 5.79***

US manuf. FDI (levels;trend): F(7,298) = 8.15***
US manuf. FDI (levels;no trend): F(6,300) = 8.31***
US manuf. FDI (differenced;no constant): F(6,276) = 8.40***
US manuf. FDI (differenced;with constant): F(7,274) = 7.38***

Japanese FDI (levels;trend): F(7,226) = 5.36***
Japanese FDI (levels;no trend): F(6,228) = 5.86***
Japanese FDI (differenced;no constant): F(5,206) = 6.30***
Japanese FDI (differenced;with constant): F(6,204) = 6.28***

Note: The F tests test the null hypothesis that the coefficients in the regressions with both EU and non-EU countries in the sample of host countries differ from those in which the EU and the non-EU countries are included in separate regressions. A *** denotes significance at 1% level.

TABLE 4: Regressions with pooled data (levels)

Dependent Variable: US FDI (total)

	Coefficient	T-ratio	Coefficient	T-ratio
GDP	0.008	7.42***	0.008	7.24***
Growth rate	24.47	0.73	17.22	0.51
Tariff	8.41	0.36	20.21	1.89**
Real Exchange Rate	1.41	2.24***	1.49	2.34***
SEA dummy	469	1.70**	713	2.88***
Trend	92.8	1.83**	-	-
Constant	0.00	1.79**	4280	6.96***
R^2 = 0.4914			R^2 = 0.4767	

Dependent Variable: US FDI (manufacturing)

	Coefficient	T-ratio	Coefficient	T-ratio
GDP	0.006	8.15***	0.006	8.01***
Growth rate	11.26	0.48	7.11	0.35
Tariff	1.01	0.05	2.75	0.14
Real Exchange Rate	1.27	3.47***	1.20	3.67***
SEA dummy	277	1.54*	156	1.15
Trend	46.84	1.27	-	-
Constant	95428	1.3*	2599	8.13***
R^2 = 0.4361			R^2 = 0.4210	

Dependent Variable: Japanese FDI (total)

	Coefficient	T-ratio	Coefficient	T-ratio
GDP	0.55	1.71**	0.57	1.74**
Growth rate	622	0.43	580	0.41
Tariff	1226	1.67**	1403	1.88**
Real Exchange rate	10317	1.92**	10739	1.89**
SEA dummy	2999	1.41*	4862	1.78**
Trend	751	0.46	-	-
Constant	0.00	0.45	35102	2.12***
R^2=0.1486			R^2=0.1568	

Note: The list of host countries includes only EU countries. *, **, and *** indicate significance at the 10%, 5% and 1% level respectively for an one-tail test of hypothesis.

TABLE 5: Regressions with pooled data (differences)

Dependent Variable: US FDI (total)

	Coefficient	T-ratio	Coefficient	T-ratio
GDP	11.52	6.59***	9.99	5.23***
Growth rate	73.19	1.92**	62.32	1.44*
Tariff	8.35	1.25	0.43	0.10
Real Exchange Rate	2.07	1.88**	1.78	1.50*
SEA dummy	577	3.17***	831	3.98***
Constant	705	4.79***	-	-
R^2 = 0.4062			R^2 = 0.2888	

Dependent Variable: US FDI (manufacturing)

	Coefficient	T-ratio	Coefficient	T-ratio
GDP	6.98	5.59***	7.13	5.14***
Growth rate	28.7	1.36*	28.6	1.31*
Tariff	4.68	0.16	14.69	0.40
Real Exchange Rate	0.54	0.73	1.01	1.02
SEA dummy	177	1.87**	258	2.41***
Constant	367	4.74***	-	-
R^2 = 0.3848			R^2 = 0.2630	

Dependent Variable: Japanese FDI (total)

	Coefficient	T-ratio	Coefficient	T-ratio
GDP	1.19	1.93**	1.15	1.89**
Growth rate	906	0.48	975	0.68
Tariff	297	1.14	398	1.20
Real Exchange rate	14603	1.62*	14113	1.58*
SEA dummy	2688	1.40*	1939	1.32*
Constant	1240	0.16	-	-
R^2=0.1557			R^2=0.1526	

Note: The list of host countries includes only EU countries. *, **, and *** indicate significance at the 10%, 5% and 1% level respectively for an one-tail test of hypothesis.