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THE DETERMINANTS OF FOREIGN DIRECT INVESTMENTS INTO JAPAN

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Foreign Direct Investment inflows into Japan have remained low compared to FDI outflows, and to FDI inflows into other developed countries. However, an increasing trend has been noticed since the mid-1980s. Despite the rise and the importance of FDI in the current stagnation of the Japanese economy, there is little literature focusing on FDI inflows. The present paper presents an econometric analysis of the determinants of FDI inflows into Japan. We find that the size of the market, volatility of exchange rates, price movements, cost of establishing greenfield plants and deregulations of the environment for investments are important determinants.

1. Introduction

The level of Foreign Direct Investment (FDI) into Japan has always been considered low compared to other leading developed countries. Both the ratio of inward FDI to GDP and the ratio of foreign investments into Japan to Japanese investments abroad have remained far smaller than the average for the latter countries. In 1999, inward FDI amounted to 0.7% of the GDP whereas the ratio reached 9.3%, 9.5%, 11.7% and 23.3% for Germany, the United States, France and England, respectively. Inward foreign investments amounted to 13% of Japanese investments abroad while the ratio was 54%, 96%, 61% and 59% for the four developed countries, respectively. Furthermore, in 1999, Japanese investments abroad accounted for 6.2% of the world stock of outward investments; in contrast, FDI in Japan stayed at 0.8% of the world stock of inward investments.¹⁾ The observed fact has commonly been attributed to the higher cost of production, and the social and economic structure including more restraining regulations.

However, from the latter half of the 1980s, inflows of FDI into Japan have steadily increased. Although the average level of the developed countries has not yet been reached, the ratios have risen considerably. The enhancement of the inflow of FDI into Japan has been particularly impressive from the second half of the 1990s till now. The continuous increase is reflected in Panel (a) of Figure 1. FDI inflows increased from US\$ 3,837 millions in 1995 to US\$ 28,276 millions in 2000. Foreign Direct Investments are shown to have extensively contributed to the economic performances of host countries. Hence, FDI can be regarded as one of the few factors that can stimulate the recovery of the Japanese economy from the current stagnation, and prevent the hollowing-out of the economy. While Japanese FDI outflows have

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1) JETRO(2001) pp.77-79, collected from United Nations, World Development Report 2000.

been extensively scrutinized, there is relatively little empirical work on inflows of foreign investments into Japan.

The lack of literature, the crucial role of FDI in the current Japanese economy and the remarkable increase of FDI inflows motivated the present analysis. We attempt to investigate empirically the main factors that determine incoming Foreign Direct Investments into Japan.

2. Survey of literature and theoretical background

We present, hereafter, potential determinants of FDI inflows that have been amply used in the literature.

Most analyses of the determinants of FDI inflows have included the size of the host market measured by GDP. The market size has been widely found to be an important, if not the most important, incentive for FDI. A larger market allows a more efficient utilization of resources and the exploitation of economies of scale, and therefore a higher return of investment (Moore 1993, Wang and Swain 1995, Raggazi 1973). Chakrabarti (2001) offers a relatively comprehensive enumeration of works that have proved that the size of the economy is a considerable determinant of FDI inflows for developed as well as developing economies. However, the market size might be less influential, or even insignificant, if foreign companies are using the host country only as a production base, taking advantage of the low costs of the host economy in order to export their production more competitively to a third or home markets (Agarwal 1980).

A second potential determinant is the movements in the price level. A large and uncontrollable increase in the price level, or high inflation, might reflect instability of the macroeconomic policy of the host country. Such instability creates an uncertain environment for investments (Bajo-Rubia and Sosvilla-Rivero 1994, Yih Yun Yang et al. 2000). High inflation discourages specifically re-exporting FDI since the relative costs of production in the host country rise. In contrast, decreases in the price level, leading to shrinkage in economic activities, might bring about a deflationary spiral and eventually bankruptcy of firms. This might push local investors to sell their ownerships of companies in host countries to foreign investors at low prices, and would result in an expansion of FDI inflows.

A third frequently noted factor is the strength of the host country's currency measured by the level of exchange rates. A depreciation of the host country currency might attract FDI for two main reasons. First, a depreciation of the host country currency renders the shares of the host country's firms relatively cheap, prompting mergers and acquisitions (M&A) from foreign firms. Second, if foreign companies aim at re-exporting to home or third countries, following a depreciation of the currency, producing in the host country enhances competitiveness and investors' wealth rises. However, if the companies intend to sell in the host market, a depreciation of the currency might hinder inflows, also for two reasons. First, as FDI is projected in the long run, the stream of return on investments might become lower in the home

currency. Second, a depreciation of the currency lowers the relative purchasing power of the host country's consumers. In brief, the effects of the level of exchange rates on FDI inflows are rather ambiguous (Benassy-Quere et al. 2001).

In addition to the level, the host country's exchange rates determine notably the extent of incoming FDI through their volatility. Instability of the currency has been extensively found to be a significant impediment for inflows of FDI. Income stream from a highly volatile currency area is associated in the long run with high exchange risk (Chakrabarti 2001). As opposed to portfolio investments that do not pay much attention to the exchange rate variability since they can in the short run hedge through the derivative market, FDI attaches particular importance to exchange rate volatility because for a long run horizon hedging is not possible. This factor is particularly determinant for risk-averse investors (Benassy-Quere et al. 2001). Nevertheless, keeping nominal exchange rates stable leads, very often, to a loss of price competitiveness that is also an important determinant of FDI inflows. In the presence of comparatively high inflation, a stable nominal currency hides a cumulated appreciation of the real currency, therefore pushing up real price. On the other hand, a less restrictive policy towards volatility of nominal exchange rates eliminates the trend in the real exchange rates and helps to keep price competitiveness. Hence, using stability of exchange rate as an incentive to attract FDI involves the trade-off between volatility and price competitiveness. Finally, instability of the host country currency discourages repatriation of investment returns and hence is detrimental to FDI inflows. On the contrary, a positive relationship between FDI inflows and exchange rate volatility might be found if investment in the local market is used as a substitute for exporting. When variance is judged as too high, one possibility for skipping the vagaries of the currency market is to engage in FDI in the local market. In the short run, larger volatility will lead to greater FDI inflows. However, from the above-mentioned mechanisms, in the long run, the negative effects of volatility outweigh the positive ones in attracting FDI (Harvey 1990).

Other straightforward determinants of FDI inflows would be the cost of establishing greenfield plants and the cost of acquiring firms established inside the host country. The former cost can be proxied by the land price. Land price is vastly found to represent an essential factor in the locational distribution of FDI (Blomstrom et al. 2000). The latter cost can be measured with the stock price. Share price represents a direct motive for investing in one country through buying of a part or entire ownership of an established firm. Such practice often occurs through Mergers and Acquisitions.

From the above literature and theoretical background, we select the variables that might determine significantly the inflows of FDI into Japan. In section 3.1, we describe the data and run Unit Root tests for each variable ; in section 3.2, we analyze the aggregate inflows of FDI into Japan. Some concluding remarks are offered in part 4.

3. Analysis

Based on the surveyed literature and theoretical backgrounds, the following variables can be considered as the main candidates for the determinants of FDI inflows into Japan: the scale of the economy measured by GDP, the strength and stability of the host country's currency measured by the level and volatility of exchange rates, the cost of establishing greenfield plants measured by the land price, the price of shares measured by the stock price, price movements in the host economy, and the environment for investments, such as laws and regulations.

3.1 Data and Unit Root tests

We use annual time series data from fiscal years 1980 to 2001. Sources and details about the data are given in the Appendix. Logarithms of the variables are taken. Exchange rates are measured as the value of a unit of US\$ in Japanese Yen. For the cost of establishing greenfield plants, we use the land price. For the "law and regulations," we introduce a dummy variable that takes the value of one from 1998 to 2001. In 1998, strong measures to deregulate and promote competition in the environment for investments were implemented on a full scale by the Japanese government.

In order to specify our model, we run two types of Unit Root tests. We start by testing for the existence of a unit root in each variable using the GLS-detrended Dickey-Fuller test, as developed by Elliot, Rothenberg, and Stock (1996). The results of the test for each variable are given in Table 1. FDI inflows are found to be stationary around a deterministic trend, and the level and volatility of exchange rates are found to be stationary around their respective means.

One possible source of non-stationarity can be examined through the existence of structural change. Indeed, the plots of the variables displayed in Panels (b), (c) and (d) of Figure 1 might suggest that the variables have been subjected to structural change. Therefore, we perform the Unit Root test with structural change for the levels of all variables that were found to be non-stationary in the first test, following Perron (1989). The specification that we adopt here is the "changing growth model," where the fiscal year 1989 is taken as the breakpoint.²⁾ The choice of the breakpoint is motivated by the vastly accepted view that the collapse of the economic bubble in 1989 has altered the structure of the Japanese economy. The results of the test are presented in Table 2. The levels of GDP, stock price and land price are found to be stationary after taking into consideration the structural change. Therefore, we introduce those three variables in level into our model.

From the GLS-detrended Dickey-Fuller test in Table 1, it is verified that the first difference of CPI is stationary. Hence we use the first difference of this variable in our model.

Summarily, FDI, GDP, the level and volatility of exchange rates, stock price and land price

2) Fiscal year 1989 covers the period from April 1989 to March 1990. The stock price in Japan reached its peak in December 1989 and started to decline sharply thereafter. Accordingly, we take the fiscal year 1989 as the breakpoint.

are introduced in level form; CPI is introduced in first difference form.

3.2 Total FDI Inflows

We start from the analysis of the aggregate inflows of FDI into Japan and introduce all potential determinants in our regression.

$$\ln FDI_t = \beta_0 + \beta_1 \ln GDP_t + \beta_2 \ln VEXRT_t + \beta_3 \Delta \ln CPI_t + \beta_4 \ln EXRT_t + \beta_5 \ln STPR_t + \beta_6 \ln LAPR_t + DUM + u_t$$

We estimate the model by Ordinary Least Squares using Eviews 4.1. Trends in the variables are eliminated to control for non-stationarity. Such methodology has been applied to variables exhibiting deterministic trends as well as to those subject to structural change. An analysis adopting a similar technique can be seen in Fernandez (1997). We begin by estimating the full model using the entire sample period 1980 to 2001. The results are presented in Specification 1 of Table 3. Following Hendry's "general to specific" approach (Hendry *et al.* 1984), we successively drop variables with statistical significance levels less than one and obtain the final results displayed in Specification 3. The main findings are put forward as follows.

First, in line with most literature about the determinants of FDI, the results suggest that the size of the economy appears to be a major factor for inflows of FDI. Among the variables that are found as influencing inflows of FDI in the present analysis, GDP exhibits generally the highest coefficient and statistical significance level. The variable remains robust to different specifications. Since logarithms of the variables are taken, the coefficients represent the elasticity of FDI inflows with respect to each variable. Hence, FDI inflows are highly sensitive to changes in the size of the market. An expansion (or contraction) of 1% of the domestic market leads to an increase (or decrease) of approximately 20% of FDI inflows. The importance of the GDP variable implies that foreign investments being held in Japan are targeting the domestic market.

Second, the results show that the volatility of exchange rates stands as an impediment to FDI inflows into Japan. Goldberg and Kolstad (1994) developed a theoretical model linking the variability of exchange rates to foreign investments and they presented empirical tests. The analysis considers a two-period model. In the first period, the multinational firm makes the decision about the location of its investment based on the maximization of expected profit streams. In the second period, the production process is launched and revenues are collected. Since the production process involves medium or long run investment facilities, it cannot be adjusted instantaneously to the variability of exchange rates. It is commonly accepted that exchange rate volatility reduces the certainty equivalent expected exchange rates level. And since the latter enters the profit function of the firm, it can be established that larger variability of the exchange rates hinders inflows of FDI. The model is proved, empirically, to hold for bilateral foreign investments between the United States and Canada, Japan and the United

Kingdom. We found a similar effect of exchange rates volatility on incoming FDI into Japan. Furthermore, high volatility of the exchange rates of the host country discourages FDI if the foreign companies use a large share of imported inputs in their process of production. Instability of the local currency introduces uncertainty in the production planning of such FDI and discourages entry. Indeed, foreign investments operating in Japan import 36.4% of their total purchase. For a comparison, Japanese firms conducting activities abroad import 13.2% of their total buying.³⁾ The considerable importance of imported purchases for FDI in Japan strengthens the obstructing effect of exchange rates volatility on FDI inflows.

Next, the analysis indicates that price movements markedly determine FDI into Japan. A decline in price level leads to larger inflows of foreign investments. The size of the elasticity of FDI inflows with respect to price movements is large, approximately identical to that of GDP. The influence of price movements on FDI inflows, for the case of the Japanese economy, might be explained as follows. Inflows of FDI into Japan have exhibited a steady increase from the late 1980s, the period when the bubble occurred. And the increase in FDI inflows has been impressive from the latter half of the 1990s, the period when deflation has appeared to be particularly critical. A decrease in prices, which can be considered as a proxy for economic recessions, brings about a cut in firm sales and profits. Lower performance of the firms in the whole economy would result in unresolved or worsening deflation, and the vicious circle goes on. This phenomenon of deflation was first experienced in advanced countries after the Second World War. Heavily indebted corporations, facing a liquidity crisis and credit crunch, would resort to selling off factories and subsidiaries at extremely low prices in order to raise cash under the circumstances of a fire-sale. For the financial sector, selling assets including stocks and real estates offers a way of proceeding to bad debt disposal. An economic recession and deflation, at the extreme, would bring firms to complete bankruptcy. They would end up selling their assets to foreign companies at the so-called “fire-sale” price. This phenomenon of “fire-sale FDI,” as mentioned by Krugman (2000), has extensively happened as well in the East Asian countries following the Asian Crisis in 1997. It is often indicated that the possibility of buying foreign companies or assets at fire-sale prices offers important incentives for multinational firms to engage in FDI in that foreign country. We confirm empirically such a statement in the case of Japan.

The variable that was found to be a major determinant of FDI inflows is the land price. A decrease in land price is associated with an enhancement of inflows of FDI into Japan. The lower levels of foreign investments in Japan compared to the standard of leading developed countries has been partly attributed to higher costs of establishing greenfield plants. Such costs include essentially the land price. After the collapse of the bubble, the land price index has substantially fallen, as plotted in Panel (d) of Figure 1. In 2000, the index was around half of its value in 1992. Our results show that the decrease in cost of investment in Japan through the sharp drop of land price encouraged significantly foreign direct investments, especially after the collapse of the bubble. In addition to the cost of establishing greenfield plants, the cost of

3) JETRO (2001) p.85

keeping offices in the host country might also determine the extent of FDI inflows. We attempted to look for data about office rental but the span of our sample could not be covered. Therefore, we use here only the land price. However, for the period where data were available, land prices and office rentals appear to be highly correlated.

Lastly, we found that the variable “deregulations” bears a positive influence on the inflows of FDI into Japan. A series of deregulations has been implemented by the Japanese government in order to enhance competitiveness in the structure of the environment for investments in Japan. Measures have been gradually carried out, and they were fully and briskly enforced in 1998. An expected by-product of such deregulations would be an expansion of incoming foreign investments. The set of deregulations, presented in our analysis as a dummy variable from 1998 aims, among other purposes, at allowing foreign firms to operate in fields in which entry was previously difficult, even impossible. As illustrations, in the distribution industry, large-sized retail store laws were loosened, permitting the entry of foreign large-sized distribution companies. In the telecommunications sector, deregulatory measures such as abolition of the foreign capital regulation were enforced. In the broadcast sector, the regulation against foreign capital entry into the cable television broadcast business was abolished, and a more extensive debate on the foreign capital regulation adopted on the program-supplying broadcast business related to communication satellites is being carried out. Concerning the finance-securities sector, the Foreign Exchange and Foreign Trade Law was entirely amended in 1998, leading to deregulations in various fields, such as foreign currency settlements between residents and overseas deposit transactions. Furthermore, complete liberalization of stock transaction commissions was implemented.⁴⁾ Our results show that such decisive deregulations have indeed attracted foreign investments into Japan.⁵⁾

In the light of the above observations and the results displayed in Table 3, it is emphasized that the size of the coefficients of the statistically significant variables, GDP, CPI, volatility of exchange rates, land price and the dummy variable for deregulations, are stable and robust to any specification.

As shown in Table 3, we attempted to introduce the level of exchange rate and stock price. Discussions on the link between the level of exchange rates and FDI are controversial as pointed out in the above survey of literature. Generally, an ambiguous net connection between the level of exchange rates and FDI is emphasized. Thus it is expected that the sign on the level of exchange rates might be indeterminate. In fact, the variable is not found to be statistically significant in our results.⁶⁾

Concerning the stock price, although it seems to serve as an indicator of the value of domestic firms, this role is not straightforward for the case of the Japanese economy. Japanese

4) For example, Hamada, K. (2002) discusses the process of the Big Bang in Japan.

5) Blomstrom et al. (2000) point out the importance of deregulations in attracting FDI into Japan. Our results confirm empirically such a connection.

6) We note that the FDI inflow is measured in US\$ while other variables such as GDP and stock price are in JPY; therefore if the FDI inflow is converted into JPY using the US\$/JPY exchange rate, the coefficient of the exchange rate variable found in our analysis might be slightly altered. However, that would not change the thrust of the results.

firms that fell into bankruptcy due to the economic slump, were withdrawn from the stock index. Hence, transactions related to the acquisitions of a part or entire ownership in such firms by foreign investors occur outside the stock market. Moreover, at first sight, the effects of land price and stock price on inflows of FDI would be expected to be similar since both prices simultaneously decreased sharply after the collapse of the bubble. However, we can observe a clear difference between the movements of the two variables; as displayed in Panels (c) and (d) of Figure 1, the stock price followed a zigzagging course while the land price dropped steadily after the collapse of the bubble. This difference might partly explain the dissimilarity in the statistical results concerning the two variables.

3.3 Per sector analysis

We partition the total FDI inflow to Japan into two sectors: manufacturing and non-manufacturing. Prior to the regression analysis, the unit root test suggested by Elliott et al. (1996) is also performed on each of the FDI inflows into manufacturing and non-manufacturing sectors. As shown in Table 4, both variables are found to be stationary around a deterministic trend. Subsequently, we run a regression employing only the variables that were found to be important determinants along the analysis of aggregate FDI inflows. The results are presented in Table 5. Although slight differences are noticed between the two sectors, the nature of the findings is similar to that for total FDI. The determinants of total FDI apply almost equally to each of the component sectors: manufacturing and non-manufacturing; GDP and deregulation are particularly robust.

4. Concluding remarks

The limited amount of literature on FDI inflows into Japan, the importance of FDI in the current stagnation of the economy, and the recent sharp increase of inflows motivated the present paper. We found that the size of the market, the volatility of exchange rates, price movements, the cost of establishing greenfield plants and deregulations might be the principal determinants of inflows of foreign investment into Japan.

FDI can contribute to avoiding a hollowing out of an economy, expanding employment, promoting regional economic development and enhancing the competitiveness and efficiency in the host country, while various issues can also be brought about to the host country along with incoming FDI. Accordingly, from the present analysis, three policy implications could be put forward regarding FDI inflows. Firstly, preventing excessive volatility of the exchange rates through an intervention in the foreign currency market would be desirable for the purpose of attracting FDI. Secondly, further deregulations combined with an improvement of social infrastructure would enhance the competitiveness of the environment of investment and ultimately would increase FDI inflows. Thirdly, if a host country's firms are sold at fire-sale prices to foreign firms that are inferior to the domestic firms with respect to efficiency, not

only is the host country's national wealth transferred to foreign country but the worldwide misallocation of resources is also brought about. In this sense, fire-sale FDI inflows would be a warning to countries experiencing an economic crisis. From the viewpoint of preserving national wealth, it would be advisable that a host country's government induces domestic firms that show high efficient managerial resources to purchase the assets of domestic firms that tend to fall into bankruptcy. Damages from "Vulture Investment" or "Assets Stripping M&A" by foreign firms would be avoided if the inducement comes to be effective. Towards such an awareness, the Industry Revival Organization of Japan has been established, aiming at preserving and re-launching existing firms.

Finally, we refer to the following two points. First, the sample size is rather small, therefore the accuracy of the results for the purpose of policy implications might be restricted. Although we attempted to enlarge the span and frequency of the sample, data on FDI are not available. Second, we recognize that data on FDI do not reflect exactly the size of inflows and existing foreign investments. However the task of developing adequate data on FDI is rather difficult. Nevertheless, the available data allow us to observe the trend and outline of FDI and to analyze FDI at a first stage. The data on FDI that we used in the present paper were taken from the Japan External Trade Organization (JETRO) White Papers on Investment, which are based on statistics of the Ministry of Finance and are widely accepted as reference for data source.

Appendix: Data sources

Data on Inflows of Foreign Direct Investment into Japan were taken from JETRO White Papers on Investment, computation based on reports and notifications about Statistics on Japanese Foreign Direct Investment, Ministry of Finance.

Statistics on GDP were taken from International Financial Statistics, International Monetary Fund, October 2002.

The land price is an index number, base year 1990, drawn from "The Japan Real Estate Institute".

The Consumer Price Indexes were taken from the Statistics Bureau and Statistics Center, Japanese Ministry of Public Management, Home Affairs, Posts and Telecommunications.

The exchange rate and volatility of the exchange rate were computed from data provided in International Financial Statistics, International Monetary Fund, October 2002.

Data on stock prices were computed from statistics given by the Bank of Japan.

Information regarding deregulations of the environment for investment were collected from the "Guidebook for Incorporation and Operation of Company in Japan" published by JETRO, 2001.

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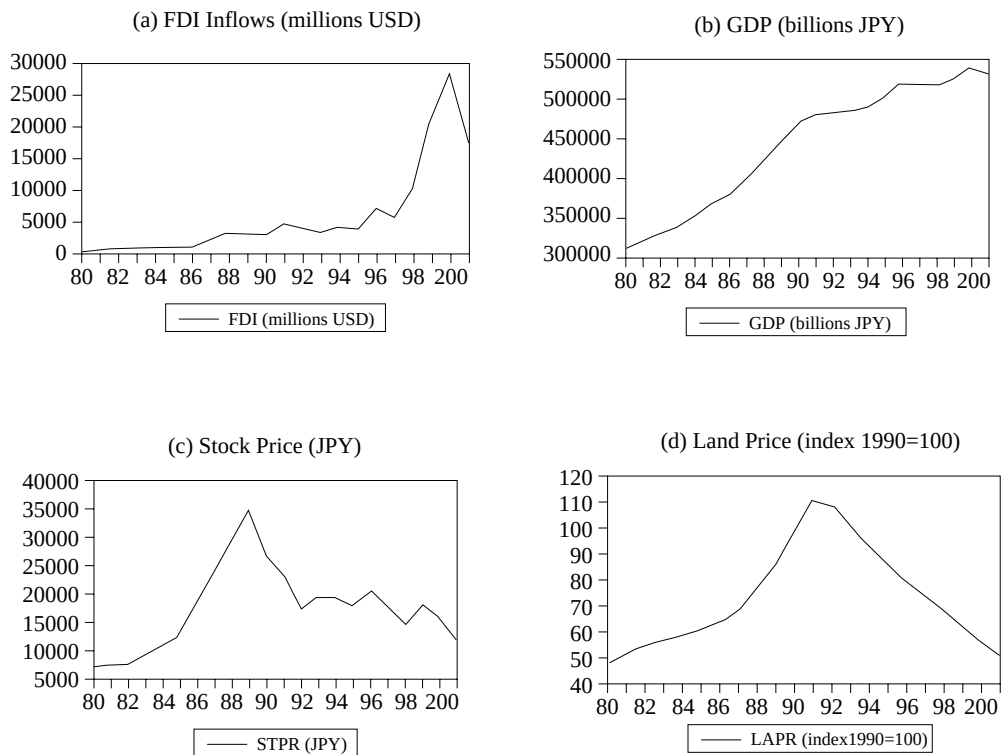


FIGURE 1. Plots of Selected Variables (FDI, GDP, Stock Price and Land Price)

TABLE 1. GLS-detrended DF (ERS) Unit Root Test

Variables	Specification	Test Statistic
Total FDI	Constant and trend	-3.031(1)*
GDP	Constant and trend	-1.041(1)
Exchange Rate	Constant	-1.614(1)*
Volatility Exchange Rate	Constant	-3.372(0)***
CPI	Constant and trend	-2.791(8)
First Difference CPI	Constant	-1.722(0)*
Stock Price	Constant and trend	-0.934(0)
Land Price	Constant	-2.114(1)

Notes: the null hypothesis of unit root could not be rejected at any lag length for CPI

Critical values are tabulated in Elliott, Rothenberg and Stock (1996)

Numbers in () represent lag length

*indicates 10% significance level

**indicates 5% significance level

***indicates 1% significance level

TABLE 2. Unit Root Test with Structural Change (Sample 1980-2001, break point 1989)

Variables	Test Statistic	10% Critical Value
GDP	-3.665*	-3.61
CPI	-2.915	-3.61
Stock Price	-8.913***	-3.61
Land Price	-4.148**	-3.61

Notes: Critical values are tabulated in Perron and Vogelsang (1993)

*indicates 10% significance level

**indicates 5% significance level

***indicates 1% significance level

TABLE 3. Total FDI

Variables	Spec. 1	Spec. 2	Spec. 3
Constant	-247.34** (-2.879)	-248.46*** (-3.473)	-247.696*** (-3.752)
GDP	20.732** (2.797)	20.845*** (3.603)	20.795*** (3.838)
Exchange Rate	0.034 (0.045)	0.024 (0.038)	- -
Volatility Exchange Rate	-0.133* (-1.979)	-0.134* (-2.085)	-0.133** (-2.350)
First Difference CPI	-19.485* (-1.862)	-19.424* (-1.988)	-19.246** (-2.328)
Stock Price	0.018 (0.026)	- -	- -
Land Price	-1.935 (-1.513)	-1.96** (-2.416)	-1.964** (-2.541)
Dummy (1998-2001)	1.359*** (4.488)	1.36*** (4.735)	1.361*** (4.963)
R sq. adjusted	0.959	0.962	0.965
F statistic	53.095	65.158	80.662
Durbin Watson	2.913	2.918	2.918

Notes: numbers in () represent t-statistics

*indicates 10% significance level

**indicates 5% significance level

***indicates 1% significance level

TABLE 4. Unit Root Test for FDI per Industry and per Category GLS-detrended DF (ERS) test

Variables	Specification	Test Statistic
Manufacturing	Constant and trend	-3.692(0)**
	Constant	-1.563
Non-manufacturing	Constant and trend	-3.121(0)*
	Constant	-0.149

*indicates 10% significance level

**indicates 5% significance level

***indicates 1% significance level

TABLE 5. FDI Per Industry

Variables	Manufacturing	Non-Manufacturing
Constant	-299.017*** (-2.715)	-213.254*** (-3.102)
GDP	24.912*** (2.756)	17.792*** (3.153)
Volatility Exchange Rate	-0.131 (-1.387)	-0.102* (-1.730)
First Difference CPI	-28.717** (-2.082)	-11.552 (-1.342)
Land Price	-2.122 (-1.645)	-1.506* (-1.871)
Dummy (1998-2001)	1.186*** (2.595)	1.368*** (4.793)
R sq. adjusted	0.833	0.976
F statistic	15.252	116.475
Durbin Watson	2.829	2.982

*indicates 10% significance level

**indicates 5% significance level

***indicates 1% significance level