

# **FDI, Investment and Growth in OECD Countries**

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## **Abstract**

MNCs engage in FDI to take cost advantages of producing abroad instead of licensing or subsidiary production. At macro side how FDI aggregated over MNCs accounts for significant proportions of total investment and has discernible impacts in economic growth is shown theoretically using a growth model where FDI complements to domestic capital. Model propositions are tested favourably by panel data analysis of FDI on growth for thirty OECD countries from 1990 to 2004. Paper contributes in integrating micro and macro aspects of FDI and in incorporating it in a growth model and providing empirical supports comparable in the literature.

**Key Words: FDI, Growth, OECD**

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## **I. Introduction**

Foreign direct investment occurs when a multinational corporation with specific advantages in technology, production process or management style or the customer base operates in a foreign country either by licensing arrangements or through operating its subsidiary branch rather than exporting goods to those markets from home. It is one of the major factors of globalisation benefiting both hosts and investors. Most MNCs operate in manufacturing and service industries ranging from automobile, energy, telecommunication, engineering, insurance and banks, pharmaceuticals to other private services sectors. FDI has micro and macro dimensions. At micro level any FDI activity is driven by profit maximising objective of an MNC. It occurs when it is profitable to produce in foreign country to serve foreign markets - for this the producer has some market power based on its superior know how or long time experience and customer relations. At macro level it complements domestic investment and helps host countries in the process of capital accumulation and to grow faster - as is seen from the experience of South Asian countries and recently from the experience of BRICS countries. Import of the advanced technology management, marketing and production process not only increase efficiency in production and distribution but also raise level of living standards and welfare of both host and foreign countries. The aim of this paper is to assess how FDI has contributed in the investment and growth process in the OECD countries. Few stylized factors can be reported from the figures on FDI, investment and growth reported in Tables 1 to 5.

1. Ratio of inflows to outflows varies by countries and over time. Study of ratios in Table A1 shows significant upsurge in FDI inflows in Eastern European countries in this period particularly in Czech Republic, Hungary, Poland, Slovakia and Turkey. Among western European countries Ireland, Portugal and Spain have benefitted by more inflows than outflows.
2. Growth rate of output varies across countries and over time significantly (Table A3).
3. Ratio of investment of GDP is more uniform over time in a particular country but varies significantly across the countries between 8 to 30 percent (Table A2) though it is more uniform in comparison to inflows and outflows of FDI.

It is difficult to compare investment and GDP measured in different national currencies as the official exchange rates should reflect the traded sector GDP but the significant part of GDP is non-traded particularly in larger economies. Despite this problem it is of great interest among practitioners and policy makers to see the connection between inflows and outflows of FDI, investment and rate of economic growth, more so among OECD countries which have experienced noticeable increase in mobility of capital across countries in recent years. Major contribution of this paper lies in combining both micro aspect in strategic model and macro aspect in endogenous growth model and in providing empirical supports from the OECD countries for 1990 to 2004. Basic micro economic theory of FDI is presented in the next section followed by a growth model with a link between FDI and investment and growth in section III. The empirical estimates emerging from the analysis of panel data on growth, investment, inflows and outflows of FDI among OECD will be

discussed in section IV followed by conclusions, references and derived tables in the appendix.

## **II. Microeconomic theory of Foreign Direct Investment**

Hymer (1976) and Caves (1982) were among early studies on FDI. Comparative static analysis under the general equilibrium framework had been used to analyse subsidy or tax issues relating to FDI in Batra and Ramachandran (1980) and Batra (1986). Strategic models of FDI are found in Carledon- Rossel (1985) Hortmann and Markusen (1987), Markusen (1995). Microeconomic models analyse the profit maximising motivations and strategic interactions of multinationals engaged in FDI. Starting point of these analyses is the underlying downward sloping demand functions, firm specific cost functions that are differentiated across countries. Licensing of copy rights or blue prints versus subsidiary based productions need to be based on microeconomic principles. These motives determine nature of inflows and outflows or joint ventures between MNCs and firms serving in domestic markets. Multinational corporations move to foreign country because of cost advantages in producing there rather than exporting commodities because of their ownership of firm specific capital, location based advantages of producing or licensing abroad such as the natural resources or customer bases and internalisation of benefits of technical know how by firms doing R & D (OLI). Multinational have cost advantage to go abroad because of ownership of firm specific factors such as R&D, scientific and technical workers, product newness and complexity, marketing expenditures. In general when they have more intangible assets such as management, engineering, marketing, financial services, patents and trade marks. Tariffs, quota, transportation cost, cheap factors of production and customer base are location factors for FDI by an MNC. Internalisation refers full exploitation of product and processes internally

within the firm rather than by licensing or franchising to firms in other countries. The degree of economies of scale and the structure of market determine the amount of inflows and outflows and which one of its FDI activities are strategically stable in the long run.

### **Microeconomic model of FDI**

Easiest way to analyse the underlying microeconomic theory of FDI activity is to think MNC as a monopolist facing two different demand functions at home and abroad. Monopolist has firm specific capital but the two markets differ on the structure of demand and cost conditions.

$$\Pi_1 = P_1 q_1 - C_1 \quad (1)$$

$$\Pi_2 = P_2 q_2 - C_2 \quad (2)$$

where  $\Pi_1$ ,  $P_1$ ,  $q_1$ ,  $C_1$  and  $\Pi_2$ ,  $P_2$ ,  $q_2$ ,  $C_2$  are profit, price, demand and cost functions in home and foreign markets respectively. It then discriminates between two markets to maximise profit. This can be illustrated by a numerical example.

Demand of the monopolist at home market is given by  $q_1 = 21 - 0.1 \times P_1$  and its inverse demand is  $P_1 = 210 - 10 \times q_1$ . Its demand abroad is  $q_2 = 50 - 0.4 \times P_2$  and the inverse demand abroad is  $P_2 = 125 - 2.5 \times q_2$ .

Cost of production is different across countries. It is  $C_1 = 200 + 10q_1$  at home but it is costlier to set up business in foreign country because of higher fixed costs  $C_2 = 800 + 10q_2$  (marginal costs may also be different). Optimality condition for profit maximisation is given by a point where the marginal revenue equals marginal cost in each market:

$$MR_1 = MC_1 \text{ and } MR_2 = MC_2 \quad (2)$$

Given above information the total revenue from the home market is  $R_1 = P_1 \times Q_1 = (210 - 10Q_1)Q_1 = 210Q_1 - 10Q_1^2$ . Therefore the marginal revenue from home market sales would be  $MR_1 = 210 - 20Q_1$ . Similarly the total revenue from the sales in the foreign market would be  $R_2 = P_2 \times Q_2 = (125 - 2.5Q_2)Q_2 = 125Q_2 - 2.5Q_2^2$  and associated marginal revenue is  $MR_2 = 125 - 5Q_2$ .

Fixed costs of production are different across countries but the marginal costs are assumed to be the same in both countries.

$$MC_1 = MC_2 = 10 \quad (3)$$

Now it is possible to solve the model for optimal amount of goods supplied at home and abroad by using the optimality conditions where the marginal revenue in each market needs to equal its marginal cost.

$$MR_1 = MC \rightarrow 210 - 20Q_1 = 10 \rightarrow Q_1 = 10 \rightarrow P_1 = 210 - 10 \times Q_1 \rightarrow P_1 = 110 \quad (4)$$

$$MR_2 = MC \rightarrow 125 - 5Q_2 = 10 \rightarrow Q_2 = 23 \rightarrow P_2 = 125 - 2.5 \times Q_2 \rightarrow P_2 = 67.5 \quad (5)$$

Thus the amount supplied at home is much smaller than amount supplied abroad and prices charged at home are much higher than the prices charged abroad. Corresponding revenues are:

$$R_1 = P_1 \times Q_1 = 110 \times 10 = 1100; R_2 = P_2 \times Q_2 = 67.5 \times 23 = 1552.5 \quad (6)$$

The cost function is assumed known here for simplicity. It must be derived from the cost minimisation subject to production technology constraint. The total cost of production at home and abroad are given by

$$C_1 = 200 + 10Q_1 = 200 + 10 \times 10 = 300 \quad (7)$$

$$C_2 = 800 + 10Q_2 = 800 + 10 \times 23 = 1030 \quad (8)$$

Now it is possible to calculate profits to the MNC from home and foreign markets:

$$\pi_1 = P_1 \times Q_1 - C_1 = 1100 - 300 = 800 \quad (9)$$

$$\pi_2 = P_2 \times Q_2 - C_2 = 1552.5 - 1030 = 522.5 \quad (10)$$

In order for an MNC to open subsidiary in the foreign market the cost of exporting goods (transportation, tariff and other costs) must be higher than the fixed cost of setting up business in the foreign country. In this example,  $TC > C_2 - C_1 = 800 - 200 = 600$ , where TC is the cost of exports. Bargaining on the share of profit for host and MNC has to be further considered in order to determine net benefits to them. Markusen (1995) has nicely illustrated the strategic interaction issues of licensing versus subsidiary production taking a two period model of production with given rental fees of license or cost of subsidiary operation and possibility of defect in the second period which can be summarised as  $R + D - FC < 2M - FC < 2R - FC$  where  $R$  is the rental earning in case of licensing from partner foreign firm,  $M$  is the profit from subsidiary is FDI takes the form of subsidiary operation,  $D$  is the payments in case of the licensee defects in the second period and starts supplying the market itself after learning the know how from the MNC in the first period and  $FC$  is the fixed cost FDI to the MNC. He concludes that the direct investment is more likely in cases where the technology has the joint input characteristic of knowledge capital. This model provides a glimpse of the fundamentals of the behavioural issues relating to the FDI activities of an MNC; it is not difficult to extend it to a dynamic monopoly and price discrimination model which is skipped here for space reasons.

### **III. Growth impacts of foreign capital for a small open economy**

The aggregate FDI amount is obtained when the direct investments from all MNCs are added together. These FDI not only have physical capital component but also include the knowledge spillover effects and complement to domestic investment

and promote growth which is analysed theoretically in the next section using an endogenous growth model.

Bhagwati and Tironi (1980) presented a theoretical analysis in which tariff reduction can be immiserising when capital are owned by foreigners and labour intensive good is imported from abroad under free trade arrangements. It is obvious that domestic workers producing labour intensive goods face lower wage rates due to reduction in prices of goods they produce under free trade. Grossman and Helpman (1991) have reversed this argument and shown links between the FDI and economic growth rate showing how the MNCs are exploiting the comparative cost advantage to operate their subsidiaries in foreign countries. They analyse the steady state path of the growth of varieties of products produced and the expenditure on those goods in terms of firm specific skills, discount factors of consumers and the elasticity of substitution in production. Walz (1997) uses a dynamic general equilibrium model with endogenous technical change and shows how inter-regions spillover of knowledge from advanced to less developed country is beneficial for host countries. A dynamic model of FDI, investment and growth is developed in this section to illustrate how the foreign capital is complementary to the domestic capital as it involves technological transfer, spreading new management and processes. Countries aiming to attract foreign capital need to invest. In spirit of endogenous growth theory role of foreign capital in growth can be analysed using a standard growth model as given in equations (11) to (32) as following:

$$\text{Preference: } U(c) = \frac{C^{1-\theta}}{1-\theta} \quad (11)$$

$$\text{Technology of firm: } Y = AK^\alpha F^{1-\alpha} \quad (12)$$

$$\text{Accumulation of physical capital: } \dot{K} = I_K - \delta K \quad (13)$$

$$\text{Accumulation of foreign capital: } \dot{F} = I_F - \delta_f F \quad (14)$$

$$\text{Market clearing: } Y = C + I_K + I_F \quad (15)$$

Current value Hamiltonian

$$J = \frac{C^{1-\theta}}{1-\theta} e^{-\rho t} + \nu [I_K - \delta K] + \mu [I_H - \delta F] + \omega [AK^\alpha F^{1-\alpha} - C - I_K - I_H] \quad (16)$$

First order conditions:

$$\frac{\partial J}{\partial C} = C^{-\theta} e^{-\rho t} - \omega = 0 \quad (17)$$

$$\frac{\partial J}{\partial I_K} = \nu - \omega = 0 \quad (18)$$

$$\frac{\partial J}{\partial I_H} = \mu - \omega = 0 \quad (19)$$

$$\dot{\nu} = -\frac{\partial J}{\partial K} \quad (20)$$

$$\dot{\mu} = -\frac{\partial J}{\partial F} \quad (21)$$

These five equations can be used to solve the values of K, F, Y, C,  $\mu$  and  $\nu$  and shown how such economy can grow at a constant growth rate over time.

$$\dot{\nu} = -\frac{\partial J}{\partial K} = \nu\delta - \omega\alpha AK^{\alpha-1} F^{1-\alpha} \quad (22)$$

$$\dot{\mu} = -\frac{\partial J}{\partial F} = \mu\delta - \omega(1-\alpha)AK^\alpha F^{-\alpha} \quad (23)$$

From equation (6) and (7)

$$C^{-\theta} e^{-\rho t} = v \quad (24)$$

Taking log both sides

$$-\theta \ln C - \rho t = \ln v \quad (25)$$

By differentiating both sides with respect to time:

$$-\theta \frac{\dot{C}}{C} - \rho = \frac{\dot{v}}{v} \quad (26)$$

Substituting

$$g_c = \frac{\dot{C}}{C} = -\frac{1}{\theta} \left( \frac{\dot{v}}{v} + \rho \right) = -\frac{1}{\theta} \left( \frac{v\delta - \omega\alpha AK^{\alpha-1} F^{1-\alpha}}{v} + \rho \right) = \frac{1}{\theta} (\alpha AK^{\alpha-1} F^{1-\alpha} - \rho - \delta) \quad (27)$$

Similarly from (8)  $\mu = \omega$

$$\frac{\dot{v}}{v} = \frac{v\delta - \omega\alpha AK^{\alpha-1} F^{1-\alpha}}{v} = \delta - \alpha AK^{\alpha-1} F^{1-\alpha} \quad (28)$$

$$\frac{\dot{\mu}}{\mu} = \frac{\mu\delta - \omega(1-\alpha)AK^{\alpha} F^{-\alpha}}{\mu} = \delta - (1-\alpha)AK^{\alpha} F^{-\alpha} \quad (29)$$

$$\frac{\dot{v}}{v} = \frac{\dot{\mu}}{\mu} \rightarrow \delta - \alpha AK^{\alpha-1} F^{1-\alpha} = \delta - (1-\alpha)AK^{\alpha} F^{-\alpha} \quad (30)$$

$$\frac{K^{\alpha} F^{-\alpha}}{K^{\alpha-1} F^{1-\alpha}} = \frac{\alpha}{(1-\alpha)} \text{ or } \frac{K}{F} = \frac{\alpha}{(1-\alpha)} \quad (31)$$

Thus the ratio of domestic and foreign capital is constant. Putting this value in the production function:

$$Y = AK^\alpha F^{1-\alpha} = AK \frac{K^\alpha}{K} F^{1-\alpha} = AK \frac{F^{1-\alpha}}{K^{1-\alpha}} = AK \left( \frac{1-\alpha}{\alpha} \right)^{1-\alpha} \quad (32)$$

This is in the form of AK model. In steady state  $g = \frac{\dot{Y}}{Y} = \frac{\dot{C}}{C} = \frac{\dot{K}}{K} = \frac{\dot{F}}{F} = \frac{\dot{v}}{v} = \frac{\dot{\mu}}{\mu}$

where  $C$  represents consumption,  $K$  capital stock,  $F$  amount of FDI,  $I$  investment,  $A$  technology,  $Y$  output,  $U$  utility of representative household,  $\theta, \beta, \alpha, v, \mu, \lambda, \delta, \omega$  are parameters of the model.

This basic model can be extended in several directions. First is to introduce stochastic shock ( $z$ ) in technology,  $A(z)$ . Growth process can further be enhanced by making technical progress to the accumulation for foreign or human capital and explaining conditions for multinational firms to invest like this.

#### IV. Empirical Literature on FDI on Investment and Growth<sup>2</sup>

Wallis (1968) had looked at increase in inflows of FDI from the US to EU and assessed the importance of FDI in enhancing economic growth. Then Feldstein and Horioka (1980) estimated impacts of FDI on saving and investment. Desai, Foley and Hines (2005) had found almost one to one positive relation between FDI inflows and saving GDP ratios and investment and negative relation between FDI outflows and reduction in investment among OECD countries in 1990s. In a recent study de Mello (1999) has used the panel data model to conclude that growth and FDI nexus are sensitive to country specific factors and generally supports positive relation between

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<sup>2</sup> Empirical analysis of this issue can be done either using an applied dynamic multi-country, multi-sector general equilibrium model or using econometrics techniques. I have done former in earlier paper (Bhattarai (2007)) and this section relies mainly on panel data regression models as this is easier to be more comprehensive about 30 countries with this methodology.

FDI and growth in the long run. Balasubramanyn et al. (1999) find supports for the Bhagwati hypothesis that the impact of FDI is larger in countries that have adopted the export led growth strategies in panel data study of 46 developing countries. There are country specific studies such as Ram and Zhang (2000) and Bin and Haughton (2002). Wang and Zhang (2008) looks at technology spillover effect across vertically and horizontally integrated firms and industries in China and finds ownership of FDI an important variable in assessing externalities of FDI. Many other studies aim to measure the impact of foreign aid on a particular country (Helpman (2006)). This section aims to test predictions of above theories particularly on the impact of FDI inflows and outflows in investment and growth in 30 OECD countries for the period of 1990 to 2004.

### Panel Regression Analysis to Assess Impacts of FDI on Investment and Growth

Data for this analysis is taken from the OECD database on FDI available from the [www.mimas.ac.uk/ESDS](http://www.mimas.ac.uk/ESDS) international for years 1990 to 2004. GDP and GFCF were taken at national currency for each country and then converted to the US dollars using the exchange rate of national currency to the US dollars. Growth rates of GDP, investment and FDI were computed. All variables used in this analysis are stationary.

Table 1  
Pooled Panel Data Regression for OECD Countries (1990-2004)

(a) Growth rate of output on investment ratio

	Coefficient	Std. Error	t-value	t-prob
Investment ratio	0.1357	0.0589	2.30	0.02
Constant	-0.0018	0.0120	-0.15	0.88
R <sup>2</sup>	0.0406			
no. of observation	465			

(b) Contribution FDI Inflows and Outflows in Domestic Investment

	Coefficient	Std. Error	t-value	t-prob
Outflow investment ratio	-0.0175	0.0057	-3.06	0.00
Inflow investment ratio	0.0190	0.0061	3.10	0.00
Constant	0.2168	0.0065	33.20	0.00
R <sup>2</sup>	0.0180			

(c) Elasticity of growth rate of output on inflow and outflow of foreign capital

	Coefficient	Std. Error	t-value	t-prob
Log of inflows	0.0019	0.0013	1.52	0.13
Log of outflows	-0.0008	0.0011	-0.72	0.48
Constant	0.0175	0.0093	1.88	0.06
R <sup>2</sup>	0.0083			
no. of observations		464		

(d) Contribution FDI Inflows and Outflows in Growth Rate of Output

	Coefficient	Std. Error	t-value	t-prob
Outflow investment ratio	-0.0019	0.0059	-0.33	0.74
Inflow investment ratio	0.0028	0.0064	0.44	0.66
Constant	0.0269	0.0022	12.10	0.00
R <sup>2</sup>	0.0165			

Results presented in sections (a) to (d) of Table 1, estimated using the PcGive, reveal several interesting facts regarding the impacts of FDI on growth and investment.

First, the ratio of investment to GDP is a significant determinant of growth rates across OECD countries as shown in part (a). This is exactly what is expected from the theory of economic growth. Net investment adds to the capital accumulation and more capital associated with given labour generates more output.

Secondly inflows and outflows of FDI have expected signs and statistically significant determinants of investment ratios among OECD countries as shown in part (b). One percent increase in the ratio of FDI inflows to the gross investment raises the investment to GDP ratio by about 2 percent. Thus inflows contribute to the investment. On the other hand one percent increase in the FDI outflows to total investment lowers the investment GDP ratio by about 2 percent. This finding is consistent to that of Desai, Foley and Hines (2005). Thus the panel regression analysis clearly reveals the positive contribution of FDI inflows in investment and then growth rates from analysis of results in part (a) and (b). This also supports theoretical proposition given above.

Thirdly, the elasticities of inflows and outflows to growth rates have expected signs in part (b). Inflows are associated with positive sign and outflows with negative sign as expected though statistically not significant.

Fourthly the contribution of to economic growth is not direct. It first influences the amount of investment available for investment and then the investment influences the growth rate. This is clear from analysis of result part (d) in which outflows seem to influence growth rate negatively and inflows contribute positively but the coefficients are not significant statistically.

Table 2  
Contribution FDI Inflows and Outflows in Domestic Investment  
Panel Data Regression for OECD Countries (1990-2004)

Determinants of FDI	Coefficient	Std. Error	t-value	t-prob	Determinants of FDI	Coefficient	Std. Error	t-value	t-prob
Outflow ratio	-0.0056	0.0042	-1.34	0.18	Outflow ratio	-0.0076	0.0044	-1.74	0.08
Inflow ratio	0.0060	0.0046	1.30	0.20	Inflow ratio	0.0078	0.0048	1.64	0.10
Constant	0.2355	0.0002	1086.00	0.00	Constant	0.2507	0.0043	58.70	0.00
AUT	-0.0139	0.0002	-77.40	0.00	T1991	-0.0087	0.0024	-3.69	0.00
BEL	-0.0368	0.0002	-207.00	0.00	T1992	-0.0165	0.0037	-4.43	0.00
CAN	-0.0414	0.0003	-151.00	0.00	T1993	-0.0238	0.0051	-4.67	0.00
CZE	0.0415	0.0005	77.90	0.00	T1994	-0.0240	0.0052	-4.66	0.00
DNK	-0.0457	0.0001	-654.00	0.00	T1995	-0.0235	0.0054	-4.37	0.00
FIN	-0.0438	0.0006	-73.10	0.00	T1996	-0.0165	0.0058	-2.87	0.00
FRA	-0.0444	0.0006	-80.40	0.00	T1997	-0.0113	0.0059	-1.91	0.06
DEU	-0.0244	0.0002	-101.00	0.00	T1998	-0.0070	0.0067	-1.04	0.30
GRC	-0.0329	0.0001	-432.00	0.00	T1999	-0.0086	0.0061	-1.41	0.16
HUN	-0.0233	0.0009	-25.60	0.00	T2000	-0.0101	0.0058	-1.76	0.08
ISL	-0.0379	0.0004	-88.40	0.00	T2001	-0.0149	0.0059	-2.51	0.01
IRL	-0.0382	0.0010	-39.20	0.00	T2002	-0.0219	0.0064	-3.43	0.00
ITA	-0.0351	0.0003	-138.00	0.00	T2003	-0.0232	0.0069	-3.37	0.00
JPN	0.0368	0.0003	122.00	0.00	T2004	-0.0194	0.0074	-2.63	0.01
KOR	0.1014	0.0002	526.00	0.00	AUT	-0.0138	0.0002	-74.70	0.00
LUX	-0.0176	0.0031	-5.65	0.00	BEL	-0.0368	0.0002	-205.00	0.00
MEX	-0.0362	0.0052	-7.00	0.00	CAN	-0.0412	0.0003	-143.00	0.00
NLD	-0.0222	0.0006	-39.90	0.00	CZE	0.0412	0.0005	75.10	0.00
NZL	-0.0300	0.0002	-140.00	0.00	DNK	-0.0456	0.0001	-517.00	0.00
NOR	-0.0369	0.0002	-167.00	0.00	FIN	-0.0435	0.0006	-69.10	0.00
POL	-0.0399	0.0004	-99.60	0.00	FRA	-0.0441	0.0006	-76.40	0.00
PRT	0.0083	0.0001	68.10	0.00	DEU	-0.0243	0.0003	-96.80	0.00
SVK	0.0487	0.0004	132.00	0.00	GRC	-0.0328	0.0001	-430.00	0.00
ESP	0.0044	0.0002	20.60	0.00	HUN	-0.0237	0.0009	-25.30	0.00
SWE	-0.0642	0.0001	-709.00	0.00	ISL	-0.0377	0.0004	-84.80	0.00
CHE	-0.0037	0.0008	-4.40	0.00	IRL	-0.0385	0.0010	-38.70	0.00
TUR	-0.0132	0.0001	-132.00	0.00	ITA	-0.0350	0.0003	-135.00	0.00
GBR	-0.0613	0.0007	-91.60	0.00	JPN	0.0369	0.0003	120.00	0.00
USA	-0.0550	0.0002	-256.00	0.00	KOR	0.1014	0.0002	518.00	0.00
EMU	-0.0272	0.0003	-78.00	0.00	LUX	-0.0069	0.0083	-0.84	0.40
					MEX	-0.0337	0.0054	-6.24	0.00
R <sup>2</sup>	0.7456				NLD	-0.0218	0.0006	-36.70	0.00
					NZL	-0.0300	0.0002	-139.00	0.00
					NOR	-0.0368	0.0002	-160.00	0.00
					POL	-0.0401	0.0004	-96.70	0.00
					PRT	0.0083	0.0001	65.50	0.00
					SVK	0.0485	0.0004	127.00	0.00
					ESP	0.0045	0.0002	20.10	0.00
					SWE	-0.0640	0.0001	-503.00	0.00
					CHE	-0.0033	0.0009	-3.75	0.00
					TUR	-0.0132	0.0001	-131.00	0.00
					GBR	-0.0609	0.0007	-86.50	0.00
					USA	-0.0549	0.0002	-248.00	0.00
					EMU	-0.0270	0.0004	-69.60	0.00
					R <sup>2</sup>	0.7764			

Table 3  
Contribution FDI Inflows and Outflows in Growth Rates of Output  
Panel Data Regression for OECD Countries (1990-2004)

	Coefficient	Std. Error	t-value	t-prob
Outflow investment ratio	0.0005	0.0033	0.17	0.87
Inflow investment ratio	0.0001	0.0035	0.04	0.97
Constant	0.0278	0.0059	4.74	0.00
T1991	-0.0136	0.0043	-3.18	0.00
T1992	-0.0088	0.0055	-1.60	0.11
T1993	-0.0098	0.0070	-1.39	0.17
T1994	0.0109	0.0083	1.30	0.19
T1995	0.0099	0.0085	1.17	0.24
T1996	0.0114	0.0071	1.59	0.11
T1997	0.0179	0.0066	2.70	0.01
T1998	0.0089	0.0087	1.03	0.30
T1999	0.0133	0.0083	1.62	0.11
T2000	0.0213	0.0063	3.37	0.00
T2001	-0.0033	0.0088	-0.38	0.71
T2002	0.0004	0.0070	0.05	0.96
T2003	-0.0006	0.0077	-0.07	0.94
T2004	0.0144	0.0072	1.98	0.05
AUT	-0.0091	0.0001	-66.00	0.00
BEL	-0.0122	0.0001	-93.00	0.00
CAN	-0.0065	0.0002	-30.10	0.00
CZE	-0.0297	0.0004	-72.60	0.00
DNK	-0.0123	0.0001	-180.00	0.00
FIN	-0.0125	0.0005	-26.60	0.00
FRA	-0.0134	0.0004	-31.10	0.00
DEU	-0.0137	0.0002	-73.00	0.00
GRC	-0.0028	0.0001	-50.40	0.00
HUN	-0.0112	0.0007	-16.10	0.00
ISL	-0.0051	0.0003	-15.50	0.00
IRL	0.0300	0.0007	40.70	0.00
ITA	-0.0184	0.0002	-95.20	0.00
JPN	-0.0172	0.0002	-75.30	0.00
KOR	0.0272	0.0001	187.00	0.00
LUX	-0.0059	0.0065	-0.91	0.36
MEX	-0.0022	0.0040	-0.55	0.59
NLD	-0.0058	0.0004	-13.10	0.00
NZL	-0.0034	0.0002	-21.40	0.00
NOR	-0.0011	0.0002	-6.17	0.00
POL	0.0010	0.0003	3.25	0.00
PRT	-0.0083	0.0001	-87.50	0.00
SVK	0.0067	0.0003	23.50	0.00
ESP	-0.0029	0.0002	-17.60	0.00
SWE	-0.0122	0.0001	-123.00	0.00
CHE	-0.0204	0.0007	-31.00	0.00
TUR	0.0083	0.0001	113.00	0.00
GBR	-0.0092	0.0005	-17.40	0.00
USA	-0.0036	0.0002	-22.00	0.00
EMU	-0.0122	0.0003	-41.50	0.00
R <sup>2</sup>	0.3406			

As mentioned in the beginning the inflows and outflows of FDI and growth rates vary significantly across OECD countries and over time. An attempt is made in this paper to measure the impact of space and time on FDI in Table 2 and 3 by including time variables for each year from 1991 to 2004 (1990 is the base year) and 30 countries in OECD (Australia is the base country). As shown in Table 2 country specific factors are more important in determining the inflows and outflows of FDI. Some countries are friendlier to FDI than others and have favourable impacts from FDI on investment and growth. These time and country specific effects are found to be consistent to the stylized facts relating to the growth rates of output, investment ratios and inflows and outflows of FDI.

## **V. Conclusion**

Microeconomics of FDI has been illustrated with an example of on multi-plant MNC that faces different structure of demand and costs between home and foreign countries with strategic consideration of licensing or subsidiary production in foreign countries. On macro side the total FDI aggregated over MNCs accounts for significant proportion of total investment and has discernible impact in economic growth. This growth effect is shown theoretically using an endogenous growth model with FDI in which foreign capital complements to domestic capital and contributes in both in investment and the growth rate of the output. Models predications have been tested using panel data growth regression of 30 OECD countries over 1990 to 2004. Analysis establishes positive impacts of FDI inflows and negative impacts of FDI outflows in investment and then to economic growth. Time and country specific effects are found to be consistent to the stylized facts relating to the growth rates of output, investment ratios and inflows and outflows of FDI. The empirical results illustrated in this paper are comparable to Desai et. al (2000). Paper makes contribution by integrating micro, macro and empirical aspects of FDI.

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Table A1: Ratios of Inflows to Outflows

	AUS	AUT	BEL	CAN	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	JPN	KOR	LUX	MEX
1990	8.18	0.40	1.23	1.45	7.25	0.75	0.29	0.43	0.12	6.13	1.13	1.91	1.71	0.83	0.04	0.75	0.92	0.02
1991	3.59	0.27	1.23	0.49	7.25	0.71	1.99	0.60	0.21	6.23	5.35	0.64	7.07	0.34	0.04	0.79	0.92	0.04
1992	1.09	0.84	1.23	1.32	7.25	0.45	0.54	0.59	0.11	5.76	5.36	2.01	6.80	0.54	0.16	0.63	0.92	0.03
1993	2.20	0.95	1.23	0.83	7.25	1.32	0.61	0.83	0.02	4.51	231.78	0.03	4.90	0.52	0.02	0.44	0.92	0.03
1994	1.78	1.67	1.23	0.88	7.26	1.24	0.37	0.64	0.38	4.23	23.69	0.06	1.96	0.44	0.05	0.33	0.92	0.12
1995	3.65	1.68	1.23	0.81	69.98	1.36	0.71	1.50	0.31	4.35	86.36	0.37	1.76	0.84	0.00	0.50	0.92	0.08
1996	0.86	2.29	1.23	0.74	9.34	0.30	0.31	0.72	0.13	4.34	906.70	1.31	3.59	0.55	0.01	0.50	0.92	0.08
1997	1.19	1.34	1.23	0.50	51.56	0.67	0.40	0.65	0.29	3.95	9.03	2.64	2.67	0.41	0.12	0.64	0.92	0.11
1998	1.79	1.65	1.23	0.66	29.24	1.73	0.65	0.64	0.28	0.26	11.99	1.99	2.27	0.27	0.13	1.14	0.92	0.10
1999	7.77	0.90	1.23	1.43	70.41	0.89	0.70	0.37	0.52	1.02	13.25	0.54	2.98	1.03	0.56	2.22	0.92	0.11
2000	4.42	1.54	1.23	1.50	116.36	1.36	0.37	0.24	3.51	0.52	4.45	0.43	5.57	1.09	0.26	1.86	0.92	0.14
2001	0.69	1.89	1.23	0.77	34.12	0.86	0.45	0.58	0.67	2.58	10.69	0.50	2.37	0.69	0.16	1.46	0.92	6.17
2002	2.16	0.06	1.23	0.83	41.08	1.16	1.09	0.97	2.82	0.08	10.76	0.28	2.66	0.85	0.29	0.91	0.92	20.51
2003	0.49	1.00	0.87	0.35	10.20	2.31	1.46	0.80	5.56	3.09	1.30	0.88	4.11	1.81	0.22	1.03	0.89	11.32
2004	3.33	0.47	1.28	0.04	4.90	1.03	2.78	0.57	0.62	2.04	4.03	0.26	0.59	0.87	0.25	1.99	0.94	5.03

	NLD	NZL	NOR	POL	PRT	SVK	ESP	SWE	CHE	TUR	GBR	USA	EMU
1990	0.77	0.71	0.82	6.36	13.68	14.03	4.02	0.13	0.82	42.75	1.70	1.30	0.74
1991	0.45	1.15	0.03	27.20	4.84	14.03	2.81	0.90	0.43	30.00	0.90	0.61	0.63
1992	0.49	2.78	2.06	51.33	2.78	14.03	6.15	0.10	0.07	12.98	0.87	0.41	0.63
1993	0.64	1.59	1.57	94.30	14.13	14.03	3.02	2.83	0.01	45.43	0.57	0.61	0.71
1994	0.41	1.30	1.28	64.56	4.44	15.42	2.26	0.95	0.31	12.41	0.29	0.58	0.67
1995	0.61	1.60	0.84	86.97	0.96	5.61	1.51	1.29	0.18	7.83	0.46	0.59	0.71
1996	0.52	3.16	0.54	84.82	1.84	6.30	1.22	1.08	0.19	6.56	0.72	0.94	0.72
1997	0.45	1.22	0.79	108.80	1.13	2.42	0.51	0.87	0.37	3.21	0.54	1.01	0.73
1998	1.01	4.55	1.36	20.14	0.75	4.82	0.62	0.81	0.48	2.56	0.61	1.26	0.81
1999	0.72	0.88	1.28	234.51	0.36	1.14	0.42	2.78	0.35	1.21	0.44	1.29	0.86
2000	0.84	2.21	0.80	554.74	0.82	82.89	0.68	0.57	0.43	1.13	0.51	2.02	1.04
2001	1.03	11.26	4.14	64.12	1.00	24.55	0.86	1.49	0.48	6.74	0.89	1.17	0.92
2002	0.78	1.10	0.14	18.03	12.07	367.98	1.20	1.15	0.77	6.50	0.48	0.55	0.93
2003	0.48	10.47	1.39	15.96	1.07	44.54	0.90	0.24	1.07	3.51	0.27	0.43	0.75
2004	0.08	2.63	0.72	16.22	0.30	7.28	0.41	0.56	0.05	3.36	0.61	0.55	0.61

Data source: OECD (author's own calculations)

Table 2: Ratio of Investment to GDP

	AUS	AUT	BEL	CAN	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	JPN	KOR
1990	0.24	0.23	0.22	0.21	0.25	0.20	0.28	0.21	0.23	0.21	0.20	0.19	0.18	0.22	0.33	0.37
1991	0.22	0.23	0.20	0.20	0.24	0.19	0.24	0.21	0.23	0.21	0.20	0.20	0.17	0.22	0.32	0.39
1992	0.22	0.23	0.20	0.19	0.27	0.18	0.20	0.20	0.24	0.19	0.19	0.18	0.17	0.21	0.31	0.37
1993	0.23	0.22	0.19	0.18	0.28	0.17	0.16	0.19	0.22	0.19	0.18	0.16	0.15	0.19	0.30	0.36
1994	0.24	0.23	0.19	0.19	0.28	0.17	0.16	0.18	0.23	0.17	0.20	0.16	0.16	0.18	0.29	0.36
1995	0.23	0.22	0.19	0.18	0.31	0.18	0.17	0.18	0.22	0.17	0.20	0.16	0.17	0.19	0.28	0.37
1996	0.23	0.22	0.19	0.18	0.32	0.19	0.17	0.18	0.21	0.18	0.21	0.19	0.19	0.19	0.28	0.37
1997	0.24	0.22	0.20	0.20	0.30	0.20	0.18	0.17	0.21	0.18	0.22	0.20	0.20	0.19	0.28	0.36
1998	0.24	0.22	0.20	0.20	0.28	0.20	0.19	0.18	0.21	0.19	0.23	0.24	0.22	0.19	0.26	0.30
1999	0.25	0.22	0.21	0.20	0.27	0.20	0.19	0.19	0.21	0.21	0.23	0.22	0.23	0.20	0.25	0.30
2000	0.22	0.23	0.21	0.19	0.28	0.20	0.19	0.19	0.21	0.22	0.23	0.23	0.23	0.20	0.25	0.31
2001	0.23	0.22	0.20	0.20	0.28	0.20	0.19	0.19	0.20	0.21	0.23	0.22	0.23	0.20	0.25	0.30
2002	0.25	0.20	0.19	0.20	0.28	0.20	0.18	0.19	0.18	0.22	0.23	0.18	0.22	0.21	0.23	0.29
2003	0.25	0.21	0.19	0.20	0.27	0.19	0.18	0.19	0.18	0.24	0.22	0.20	0.22	0.20	0.23	0.30
2004	0.26	0.21	0.20	0.22	0.26	0.19	0.18	0.19	0.18	0.24	0.22	0.24	0.24	0.21	0.23	0.30
	LUX	MEX	NLD	NZL	NOR	POL	PRT	SVK	ESP	SWE	CHE	TUR	GBR	USA	EMU	
1990	0.22	0.18	0.23	0.20	0.21	0.20	0.26	0.29	0.25	0.23	0.29	0.23	0.21	0.17	0.23	
1991	0.23	0.19	0.22	0.17	0.20	0.19	0.25	0.26	0.25	0.21	0.28	0.24	0.18	0.16	0.22	
1992	0.20	0.20	0.22	0.17	0.19	0.16	0.23	0.31	0.23	0.18	0.25	0.24	0.17	0.16	0.22	
1993	0.22	0.19	0.21	0.19	0.20	0.15	0.22	0.30	0.21	0.15	0.23	0.27	0.16	0.17	0.20	
1994	0.21	0.19	0.21	0.21	0.20	0.17	0.22	0.26	0.21	0.15	0.23	0.25	0.16	0.17	0.20	
1995	0.20	0.16	0.21	0.22	0.20	0.18	0.23	0.25	0.22	0.16	0.23	0.24	0.17	0.18	0.20	
1996	0.20	0.18	0.22	0.22	0.20	0.20	0.23	0.31	0.21	0.16	0.22	0.25	0.17	0.18	0.20	
1997	0.22	0.20	0.22	0.21	0.22	0.22	0.25	0.34	0.22	0.15	0.22	0.26	0.17	0.19	0.20	
1998	0.22	0.21	0.22	0.20	0.25	0.24	0.27	0.36	0.23	0.16	0.22	0.25	0.18	0.19	0.20	
1999	0.23	0.21	0.23	0.21	0.22	0.24	0.27	0.29	0.25	0.17	0.22	0.22	0.18	0.20	0.21	
2000	0.21	0.21	0.22	0.20	0.18	0.24	0.27	0.26	0.26	0.18	0.23	0.22	0.17	0.20	0.21	
2001	0.23	0.20	0.21	0.21	0.18	0.21	0.26	0.29	0.26	0.17	0.22	0.18	0.17	0.19	0.21	
2002	0.23	0.19	0.20	0.21	0.18	0.19	0.25	0.27	0.26	0.17	0.21	0.17	0.17	0.18	0.20	
2003	0.22	0.19	0.19	0.23	0.17	0.18	0.23	0.25	0.27	0.16	0.21	0.15	0.17	0.18	0.20	
2004	0.21	0.20	0.19	0.23	0.18	0.18	0.23	0.24	0.28	0.16	0.21	0.18	0.17	0.18	0.20	

Table 3: Growth rate of output across OECD countries

	AUS	AUT	BEL	CAN	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	JPN	KOR
1990	0.08	3.60	1.83	-2.09	-11.61	1.30	-6.24	1.02	5.11	3.10	-3.06	-0.22	1.93	1.53	3.35	9.39
1991	3.65	2.36	1.53	0.88	-0.51	1.98	-3.74	1.37	2.23	0.70	-3.06	-3.37	3.34	0.77	0.97	5.88
1992	4.10	0.33	-0.96	2.34	0.06	-0.09	-0.92	-0.91	-0.80	-1.60	-0.58	1.31	2.69	-0.89	0.25	6.13
1993	4.48	2.66	3.23	4.80	2.22	5.53	3.58	2.22	2.66	2.00	2.95	3.61	5.76	2.15	1.11	8.54
1994	4.12	1.91	2.38	2.81	5.94	3.07	3.93	2.12	1.89	2.10	1.49	0.12	9.63	2.83	1.94	9.17
1995	3.93	2.62	1.20	1.62	4.03	2.83	3.69	1.11	0.99	2.36	1.32	4.79	8.20	0.72	3.44	7.00
1996	4.48	1.84	3.51	4.23	-0.73	3.20	6.09	2.24	1.80	3.64	4.57	4.83	11.35	1.89	1.57	4.65
1997	5.17	3.56	1.68	4.10	-0.76	2.16	5.19	3.50	2.03	3.36	4.86	6.43	8.05	1.44	-2.05	-6.85
1998	3.98	3.32	3.42	5.53	1.34	2.56	3.89	3.30	2.01	3.42	4.15	4.12	10.39	1.93	-0.14	9.49
1999	1.95	3.36	3.74	5.23	3.65	3.53	5.01	3.91	3.21	4.48	5.20	4.35	9.37	3.58	2.86	8.49
2000	3.77	0.83	0.79	1.78	2.46	0.70	2.64	1.85	1.24	4.49	4.07	3.90	6.07	1.80	0.18	3.84
2001	3.15	0.86	1.51	2.92	1.90	0.47	1.64	1.03	0.00	3.91	4.37	-0.09	6.58	0.34	0.26	6.97
2002	4.05	1.21	0.99	1.88	3.60	0.38	1.77	1.09	-0.22	5.04	4.18	2.74	4.46	0.04	1.41	3.10
2003	2.68	2.31	2.97	3.07	4.48	2.13	3.73	2.47	1.06	4.58	4.81	7.62	4.38	1.20	2.74	4.73
2004	2.81	2.04	1.67	3.07	6.37	3.06	2.92	1.71	0.78	3.83	4.13	7.15	6.02	0.09	1.91	4.20
	LUX	MEX	NLD	NZL	NOR	POL	PRT	SVK	ESP	SWE	CHE	TUR	GBR	USA	EMU	
1990	8.64	4.22	2.44	-1.31	3.10	-7.02	4.37	2.87	2.55	-1.08	-0.95	0.93	-1.36	-0.19	2.61	
1991	1.82	3.63	1.71	1.11	3.52	2.51	1.09	2.87	0.93	-1.18	0.10	5.98	0.22	3.34	1.41	
1992	4.20	1.95	1.26	6.44	2.79	3.74	-2.04	2.87	-1.03	-2.00	-0.19	8.04	2.28	2.69	-0.72	
1993	3.82	4.42	2.96	5.33	5.05	5.29	0.96	6.21	2.38	3.95	1.19	-5.46	4.31	4.06	2.49	
1994	1.43	-6.17	3.12	4.18	4.19	6.95	4.28	5.84	2.76	3.97	0.35	7.19	2.93	2.54	2.40	
1995	1.52	5.15	3.41	3.52	5.10	6.24	3.62	8.03	2.42	1.46	0.63	7.01	2.75	3.75	1.48	
1996	5.94	6.77	4.28	1.52	5.39	7.09	4.19	5.74	3.87	2.46	2.08	7.53	3.04	4.55	2.55	
1997	6.49	5.03	3.92	0.43	2.68	4.98	4.85	3.69	4.47	3.81	2.64	3.09	3.34	4.22	2.81	
1998	8.42	3.76	4.68	5.27	2.03	4.52	3.84	0.32	4.75	4.60	1.31	-4.71	3.02	4.49	2.99	
1999	8.44	6.59	3.94	2.14	3.25	4.25	3.92	0.72	5.05	4.40	3.58	7.36	3.81	3.69	3.84	
2000	2.52	-0.03	1.93	3.62	1.99	1.21	2.02	3.23	3.65	1.06	1.15	-7.50	2.35	0.76	1.90	
2001	4.10	0.77	0.08	4.56	1.50	1.44	0.76	4.12	2.70	2.41	0.44	7.94	2.06	1.61	0.88	
2002	2.10	1.39	0.34	3.40	1.01	3.87	-0.81	4.16	3.10	1.91	-0.20	5.79	2.67	2.52	0.80	
2003	4.88	4.16	2.24	3.69	3.86	5.34	1.52	5.42	3.27	4.13	2.53	8.93	3.26	3.65	2.02	
2004	5.02	4.16	1.51	2.00	2.74	3.62	0.74	6.04	3.62	3.30	2.42	7.38	1.85	3.08	1.51	

Table 4: Ratio of FDI Inflows to Investment

	AUS	AUT	BEL	CAN	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	JPN	KOR
1990	10.89%	1.64%	32.86%	6.07%	11.00%	4.25%	1.91%	5.50%	0.70%	8.44%	3.66%	1.68%	6.59%	2.39%	0.17%	0.81%
1991	6.25%	0.80%	33.90%	2.48%	9.60%	5.30%	0.84%	5.26%	1.03%	7.90%	21.27%	1.28%	15.40%	0.89%	0.11%	0.98%
1992	8.54%	3.32%	34.74%	4.57%	7.70%	3.97%	2.18%	6.74%	0.44%	8.21%	21.16%	1.12%	16.94%	1.43%	0.23%	0.60%
1993	6.06%	2.78%	38.02%	4.78%	6.48%	7.33%	6.10%	7.10%	0.09%	6.96%	36.67%	0.05%	14.44%	2.11%	0.02%	0.45%
1994	5.56%	4.38%	32.60%	7.94%	6.87%	17.73%	9.14%	5.96%	1.41%	6.03%	14.38%	0.15%	9.19%	1.16%	0.06%	0.52%
1995	13.56%	3.60%	28.47%	8.83%	14.76%	12.37%	4.90%	8.17%	2.18%	5.47%	63.07%	0.85%	12.41%	2.18%	0.00%	0.92%
1996	6.14%	8.77%	30.26%	8.80%	7.22%	2.30%	5.11%	7.98%	1.31%	4.95%	36.82%	6.04%	17.83%	1.47%	0.02%	1.11%
1997	8.45%	5.90%	32.38%	9.42%	8.31%	8.66%	9.79%	9.56%	2.79%	4.57%	44.62%	10.28%	17.52%	2.27%	0.29%	1.55%
1998	6.66%	9.00%	28.93%	19.19%	19.73%	20.74%	46.76%	11.20%	5.07%	0.26%	30.54%	7.27%	44.36%	1.74%	0.28%	5.16%
1999	3.12%	6.70%	31.69%	18.36%	40.49%	45.14%	19.69%	18.04%	13.02%	2.13%	30.63%	3.50%	85.83%	3.11%	1.03%	7.04%
2000	16.62%	19.85%	32.06%	48.57%	30.74%	96.15%	37.10%	16.57%	48.19%	4.04%	25.33%	9.24%	113.05%	5.94%	0.75%	5.84%
2001	9.62%	14.10%	33.58%	20.29%	31.04%	36.71%	15.55%	19.65%	7.09%	5.75%	31.32%	10.72%	41.49%	6.65%	0.67%	2.48%
2002	15.47%	0.76%	29.04%	15.54%	37.72%	17.47%	29.74%	16.11%	13.01%	0.14%	17.03%	4.99%	99.10%	5.13%	0.97%	1.50%
2003	4.99%	11.76%	49.26%	4.13%	7.87%	5.73%	9.95%	11.21%	6.64%	2.43%	10.64%	13.86%	58.11%	4.79%	0.61%	1.94%
2004	20.00%	5.85%	56.35%	0.71%	15.30%	20.68%	7.94%	7.47%	1.74%	3.41%	17.47%	18.26%	22.19%	4.33%	0.72%	4.60%
	LUX	MEX	NLD	NZL	NOR	POL	PRT	SVK	ESP	SWE	CHE	TUR	GBR	USA	EMU	
1990	3900.95%	5.66%	14.58%	19.18%	4.51%	0.73%	10.86%	6.84%	9.97%	3.40%	7.45%	2.28%	13.51%	4.83%	14.35%	
1991	3304.44%	8.13%	7.88%	25.02%	0.19%	2.98%	10.14%	6.58%	8.40%	10.94%	3.76%	2.16%	7.37%	2.40%	9.68%	
1992	3922.93%	6.16%	8.64%	16.17%	3.71%	6.12%	8.61%	5.44%	10.78%	0.10%	0.69%	2.29%	9.84%	1.95%	8.54%	
1993	3483.66%	5.86%	9.74%	25.44%	6.69%	15.14%	8.37%	4.82%	10.08%	13.14%	0.15%	1.33%	9.62%	4.66%	12.51%	
1994	3026.11%	18.58%	9.44%	22.17%	10.77%	10.82%	5.75%	6.47%	8.57%	18.49%	5.09%	1.92%	5.31%	3.82%	13.34%	
1995	2797.01%	20.95%	14.11%	21.18%	8.15%	16.51%	2.57%	4.95%	4.77%	33.80%	2.94%	2.20%	10.61%	4.44%	15.63%	
1996	2874.56%	17.00%	19.06%	25.78%	9.78%	17.62%	5.03%	6.13%	5.30%	12.65%	4.97%	1.58%	11.04%	6.13%	17.17%	
1997	2958.37%	18.12%	13.57%	15.39%	11.75%	14.86%	8.74%	3.29%	5.30%	28.97%	11.65%	1.61%	14.54%	6.89%	22.65%	
1998	2602.24%	14.13%	39.33%	16.70%	11.61%	17.45%	9.12%	9.26%	8.13%	48.91%	14.05%	1.90%	28.64%	10.76%	37.78%	
1999	2456.20%	13.37%	46.39%	7.89%	20.86%	19.46%	3.76%	7.24%	13.09%	143.54%	20.90%	1.94%	33.67%	16.02%	62.83%	
2000	2710.04%	14.16%	74.91%	12.95%	22.40%	21.90%	21.55%	46.62%	26.14%	56.37%	32.96%	2.20%	47.62%	16.52%	97.36%	
2001	2560.64%	21.83%	62.27%	42.55%	7.21%	14.42%	20.67%	26.42%	18.18%	28.65%	15.77%	12.70%	21.12%	8.66%	48.42%	
2002	2029.22%	14.64%	25.75%	8.48%	1.70%	10.58%	5.08%	54.39%	19.54%	26.42%	9.41%	3.73%	8.26%	4.51%	41.67%	
2003	1272.86%	11.73%	17.97%	9.94%	8.95%	11.56%	21.47%	6.47%	9.62%	8.77%	22.73%	4.73%	5.05%	3.27%	27.41%	
2004	1017.07%	16.61%	1.69%	11.37%	4.89%	24.15%	5.25%	9.65%	7.71%	17.89%	1.65%	5.36%	14.34%	6.20%	25.12%	

Table 5: Ratio of FDI Outflows to Investment

	AUS	AUT	BEL	CAN	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	JPN	KOR
1990	1.33%	4.11%	26.70%	4.19%	1.52%	5.70%	6.58%	12.77%	5.73%	1.38%	3.23%	0.88%	3.86%	2.87%	4.80%	1.08%
1991	1.74%	2.91%	27.54%	5.02%	1.32%	7.45%	0.42%	8.72%	4.98%	1.27%	3.98%	2.01%	2.18%	2.62%	2.66%	1.24%
1992	7.87%	3.93%	28.22%	3.48%	1.06%	8.75%	4.04%	11.48%	3.96%	1.42%	3.95%	0.56%	2.49%	2.65%	1.47%	0.95%
1993	2.76%	2.91%	30.89%	5.76%	0.89%	5.53%	9.93%	8.52%	3.98%	1.54%	0.16%	1.54%	2.94%	4.07%	1.10%	1.02%
1994	3.12%	2.62%	26.48%	9.00%	0.95%	14.32%	24.90%	9.33%	3.72%	1.43%	0.61%	2.32%	4.69%	2.65%	1.30%	1.60%
1995	3.72%	2.13%	23.13%	10.94%	0.21%	9.07%	6.91%	5.44%	7.07%	1.26%	0.73%	2.28%	7.06%	2.60%	1.69%	1.84%
1996	7.12%	3.83%	24.58%	11.96%	0.77%	7.54%	16.56%	11.05%	10.10%	1.14%	0.04%	4.61%	4.96%	2.69%	1.90%	2.23%
1997	7.11%	4.42%	26.30%	18.85%	0.16%	13.02%	24.48%	14.68%	9.51%	1.16%	4.94%	3.89%	6.56%	5.61%	2.36%	2.42%
1998	3.71%	5.45%	23.50%	28.90%	0.67%	12.02%	71.79%	17.57%	18.32%	1.00%	2.55%	3.65%	19.55%	6.52%	2.14%	4.52%
1999	0.40%	7.43%	25.74%	12.80%	0.58%	50.61%	28.25%	49.16%	25.24%	2.10%	2.31%	6.48%	28.79%	3.02%	1.83%	3.17%
2000	3.76%	12.89%	26.04%	32.49%	0.26%	70.93%	100.91%	67.98%	13.74%	7.80%	5.69%	21.28%	20.30%	5.47%	2.86%	3.14%
2001	13.87%	7.47%	27.28%	26.42%	0.91%	42.61%	34.89%	33.77%	10.65%	2.23%	2.93%	21.22%	17.48%	9.60%	4.12%	1.70%
2002	7.15%	12.29%	23.59%	18.78%	0.92%	15.00%	27.25%	16.58%	4.60%	1.77%	1.58%	17.57%	37.26%	6.04%	3.39%	1.64%
2003	10.12%	11.75%	56.63%	11.68%	0.77%	2.48%	6.84%	14.02%	1.19%	0.78%	8.18%	15.77%	14.15%	2.65%	2.76%	1.88%
2004	6.01%	12.49%	44.01%	19.91%	3.12%	20.00%	2.85%	13.00%	2.81%	1.67%	4.34%	71.30%	37.79%	4.96%	2.85%	2.32%
	LUX	MEX	NLD	NZL	NOR	POL	PRT	SVK	ESP	SWE	CHE	TUR	GBR	USA	EMU	
1990	4261.99%	270.84%	18.94%	26.91%	5.49%	0.11%	0.79%	0.49%	2.48%	25.43%	9.12%	0.05%	7.96%	3.71%	19.32%	
1991	3610.28%	214.98%	17.48%	21.73%	7.07%	0.11%	2.10%	0.47%	2.99%	12.14%	8.83%	0.07%	8.14%	3.92%	15.34%	
1992	4286.01%	176.74%	17.78%	5.81%	1.81%	0.12%	3.09%	0.39%	1.75%	1.02%	10.12%	0.18%	11.29%	4.75%	13.64%	
1993	3806.08%	168.25%	15.21%	15.97%	4.27%	0.16%	0.59%	0.34%	3.34%	4.64%	15.56%	0.03%	16.92%	7.62%	17.60%	
1994	3306.19%	155.29%	23.16%	17.02%	8.42%	0.17%	1.30%	0.42%	3.80%	19.51%	16.31%	0.15%	18.47%	6.64%	19.87%	
1995	3055.88%	272.56%	23.13%	13.26%	9.66%	0.19%	2.66%	0.88%	3.15%	26.24%	16.12%	0.28%	23.15%	7.59%	21.88%	
1996	3140.61%	212.23%	36.72%	8.15%	18.19%	0.21%	2.73%	0.97%	4.35%	11.69%	26.07%	0.24%	15.39%	6.51%	23.92%	
1997	3232.17%	161.10%	29.87%	12.57%	14.93%	0.14%	7.74%	1.36%	10.40%	33.41%	31.14%	0.50%	26.95%	6.83%	30.84%	
1998	2843.09%	143.38%	38.85%	3.67%	8.54%	0.87%	12.22%	1.92%	13.05%	60.09%	29.49%	0.74%	47.33%	8.57%	46.60%	
1999	2683.53%	123.55%	64.86%	9.00%	16.26%	0.08%	10.37%	6.37%	31.00%	51.63%	59.35%	1.60%	77.10%	12.45%	73.46%	
2000	2960.86%	101.38%	88.73%	5.86%	27.96%	0.04%	26.41%	0.56%	38.45%	98.59%	76.47%	1.95%	93.58%	8.19%	93.64%	
2001	2797.63%	3.54%	60.67%	3.78%	1.74%	0.22%	20.77%	1.08%	21.24%	19.25%	32.63%	1.88%	23.62%	7.38%	52.65%	
2002	2217.02%	0.71%	32.92%	7.68%	11.75%	0.59%	0.42%	0.15%	16.30%	23.03%	12.30%	0.57%	17.29%	8.26%	44.87%	
2003	1423.56%	1.04%	37.60%	0.95%	6.42%	0.72%	20.05%	0.15%	10.70%	37.11%	21.27%	1.35%	18.73%	7.66%	36.78%	
2004	1080.85%	3.30%	21.11%	4.32%	6.78%	1.49%	17.68%	1.32%	18.85%	31.82%	31.67%	1.60%	23.33%	11.37%	41.32%	