Thesis for Master of Science - degree.

The role of capital mobility in developing economies' growth

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Preface

From the start of my study at university of Oslo, I recognized my interesting in writing my thesis to the Master degree in one of the parts of financial liberalization. During last term "fall of 2002", I decided to write in capital mobility role in promoting growth in the developing economies. Based on knowledge to my home country, I decided to take Sudan as the case of my study. Minding the fact that World Bank reported in its most recent study (World Development indicators 2002), Sudan as high FDI performance and low FDI potential. Beside the surprised share of foreign capital which Sudan got in the last decade (almost doubled four times), although it is one of the HIPC. Also the fast growth in the economy (from 0.4 in 1980s to 8.1 in 1990s, despite the talks of inflation role in this rate). All that let me spent long time surfing the Internet resources and collecting the data about Sudan as the case study. But when I met my supervisor professor Finn Førsund and discussed with him the quality of data and benefit of the study. I changed my mind and I knew that if I do my investigation over the entire developing world that might add to my study's motivations and me much than to write about my home country. Beside that the surplus, which I was thinking to obtain to my national people in providing good work and economic suggestions from the domestic case study, might be greater with providing common work for entire developing world. In addition to the reasonable explanations for both successful and unsuccessful economies in their implementation to adopted policies towards the capital mobility. Thanks to my supervisor to this inspiration. I'm grateful to him for his guidance, constructive suggestions, and sound treatment.

I would like to express thanks and appreciation to both, Halvor Mehlum and professor Tore Schweder for their advises and valuable comments on my analysis work and the technical side of Minitab (the software programme which used in the analysis of this paper).

I will always remember the great effort which done by Professor Olav Bjerkhold, the director of the Master programme, to provide the best environment to us, students in the Master programme. I would like to express my acknowledgement to him and thank him for all his efforts during my study time.

I confirm here that all faults in this paper are due to my own responsibilities.

Summary

Private capital flows to developing countries—mainly foreign direct investment and portfolio investment—as measured by net long-term resources flows, increased dramatically in the 1990s, from $ 62 billion in 1991 to almost $ 226 billion in 2000, dropping to $ 160 billion in 2001. On the other hand the overall economic growth in the developing countries declined in the same decade "1990s" and poverty has been rising. That what the Wold Bank reported in the most recent data collection (World Development Indicators 2002), where the world is experiencing every term of time new emerging economy in a favour of efficiency implementation to the foreign capital flows. Globalization is still leading the integration in the international economy, there is a free capital mobility preference among the investors and the countries of investment projects. There is a common belief that financial flows and capital movement can contribute to growth and poverty reduction, but how? That has been the major debate for a long time.

This paper is mainly deals with finding reasonable economic suggests and results to the best way for the developing countries to use the foreign capital inflows efficiently, and what is the ideal situation to achieve growth in these developing countries from the movement of international capital to their economies? All that upon empirical investigation to real recent statistical observations.

The paper contains illustration to the previous economical work in the theoretical foundation to the role of capital mobility in causing economic growth in the developing countries. The capital movement used to take three types, that which follows foreign direct investment (FDI) and private capital flows (PCF), beside the multilateral and economical groups and agglomerations' lending and aid contribution. The survey of the previous literature includes some examples of what written in each type of capital mobility, trying to present sufficient review covering the entire capital mobility effect in the growth of the host developing countries.

The analysis in this paper used the model of (Borensztein, De Gregorio and Wha-Lee 1995) who succeed to found an expression the growth (g) with human capital (H) and other variables:

$$g = 1/\sigma \, [\psi \, F \, (n^{*} , N/N^{*})^{-1} \, H - \rho \,].$$

And who analogy that in an econometrical approximation equation as follows:

$$g = C_0 + C_1 FDI + C_2 FDI. H + C_3 H + C_4 Y_{0+} C_6 X \quad [1]$$

The analysis also due to many other efforts which used almost the same components of this model, but with different technique, like Edwards (2001) and others.

The data that used in this paper is covered 90 developing countries from the different regions of world, during the recent last two decades (1980s and 1990s). The data was inserted in Minitab software (release 13) to create many regressions, the main equation of the regressions is:

$$g = C_0 + C_1 FDI + C_2 FDI. H + C_4 H + C_5 PCF + C_6 Priv. Dom. + C_7 G.E.$$

Where Priv. Dom. is private domestic investment and G.E. denotes government expenditure. Aid per capita was inserted to present the role of multilateral role. The domestic investment was introduced to present the domestic investment role and quality.

The main control variables of the above equation were found significant, which indicate that they effecting the dependant variable "the growth".

The results of the paper suggest that, there is a complementary between foreign capital flows and the stock of human capital in the host developing country. That demonstrates, only developing countries, which are rich with human capital, can compete well to attract and perform the foreign capital efficiency. While the developing countries which are poor in human capital could not achieve growth from the foreign capital inflows, and even that might hurts the domestic economy in weaken the domestic product market and the other bad consequences. The results also found the role of financial intermediation "from the test of Priv. Dom. and PCF predicted variables" is important to ensure that the foreign capital inflows could foster economic growth in the host developing countries. That shows the importance of well built financial intermediation in translating the foreign capital flows to profitable developing projects. The weak financial intermediations always fail in using the foreign capital flows and even in presenting profitable developing projects which could attract that international capital, the worse thing that if the capital flows happened might hurts the economy and crowd out the domestic investment. The analysis used control variable presenting the role of multilateral aid and programme in causing economic growth, and the interaction between it and the government expenditure was found significant. That illustrates how the poor developing countries are urgently need help to fund the building of society institutions and to finance the investment in infrastructure at least until they reached

a target level from human capital? Before the multilateral companies can use the normal lending programme and treat them without any exceptions and expecting interests and dividends payments.

[1] X and Y overwhelming many other control variables, some could be seen in the next model which used in this paper.

CONTENT

1. Introduction

Developing countries had experienced an observable failure in managing the investment opportunities, which they got from the international capital market. Many had encountered a terrible debt crisis (World Bank reported 42 HIPC ”Heavy indebted poor country” in (July 2002). While IMF classified 77 developing countries in programme of l ending under the Poverty Reduction and Growth Facility (PRGF), including the 42 HIPC and the rest are potentially expected to be HIPC (May2001)). All these countries entered the risky investment area, after the bad consequences in the domestic economies. On the other hand, many had experienced a real economic growth and rather entered the new industrialized countries as emerging economies. No one can doubt that the economy performance is the key word of the growth, especially when it concerned investment projects. The multilateral corporations determined that performance and figure it out through a recipe of ten points “The Washington consensus”. In this point of view it seems very easy, that the entire problem which developing countries facing could be easily solved, only with analogy that Washington consensus recipe in their economies’ performance, and every thing will be OK! Unfortunately it’s not that easy, especially in the part which I’m writing about “the capital inflows role in economic growth”. Most of the theoretical foundation about this topic supported the idea that the problem of managing the foreign capital in the host developing country is not only a matter of an economic recipe the country has to imply. The successful of using the foreign capital in Singapore and the other successful emerging economies are not the same intermediate successful in Mexico or the other same developing economies. That will not be the ideal situation to say that its benefit and recommended for all developing countries to open their economies to the foreign capital and will easily get growth in their economies.

The poor developing countries lacking main features of infrastructure to provide qualified human capital to interpret the foreign capital to economic growth, missing the strong institutional base. These factors have been the power for the good economic performance for almost all the successful emerging economies in implying the foreign capital and were

lacking in most of HIPC and the cause of failure in getting benefit from the foreign capital to those countries.

This paper is trying to explain, how the combination of well built financial intermediations and human capital in the host developing country is very important to the efficient use of foreign capital. Foreign capital inflow takes many types; the inflows which combining the foreign direct investment, private capital flows, and the multilateral official aid and loans. The previous literatures investigate each one of these type separately and some times two together and very few checked all of them together[2]. But all those economists who wrote about that agreed that the failure of using the foreign capital due to the lack of human capital, and some believe that the economy' institutions are in the same degree of the importance of human capital.

The paper doesn't establish its own model, but imply the most available recent data in one of the reliable model (Borensztein, De Gregorio, and Wha Lee, 1995) and inserting new additional control variable to the same model, using the theoretical foundation to that from other influent paper (Robertson 1998). Also the analysis was so far extended to cover very wide area of developing countries, the paper using data of 90 developing countries from all world regions, over the two previous recent decades (1980-2000). The analysis, which used in this paper is implied by Minitab software (Release 13).

The (Borensztein, De Gregorio, and Wha Lee 1995) model had driven a theoretical foundation from inserting human capital in the Solow model. They found an equation to the growth including human capital (the so called the recent growth model) and so found out an econometric equation with semi set of these variables. This model used FDI in its investigation and many other control variables. The paper's analysis insert the private capital flows, private domestic investment (to show the quality of the domestic financial institutions, and to see whether the foreign investment crowded out that domestic investment or not). Also introduced a variable for aid (the combination between aid and public expenditure was found significant which support the idea of host country's institutions need to be built and support to ensure the good performance, and to present the other types of capital flows in the analysis). These variables are increased the analysis quality[3] and help me to find support of results that can be named for all types of capital mobility.

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[2] This could be seen in the literature's review.

2 To save the model shape I did the analysis firstly without the new variables, the analysis quality was less than after, may be due to some omitted variables was very difficult to obtain.

It has to be mentioned here that the paper found that, the human capital is quite important in the developing countries to obtain growth in their economies as a result of using foreign capital whatever was the type of that capital inflows. There should be existence of well established financial institutions “at least” to ensure well performance of the host economy under foreign capital flows and to deviate negative effect which hurts the economy crowding out the domestic investment. Some poor economies need the multilateral corporations to affiliate it with important aid to ensure the positive performance of the public sector before claiming these countries to open their capital account. Many times was the infrastructures’ fund the main cause to force the public sector in the host developing country to deviate from it’s policy and hurt the foreign capital with taxes to keep stability (Rodrik, 1990).

The paper is organized as follows. The theoretical foundation is reviewed in section 2. Section 3 is provided to show the historical background, including many recent and old real statistical figures, which support the ideas in this paper. The analysis takes place in section 4, using Minitab analysis details and data sources and remedies. Section 5 presenting some concludes remarks.

2 Theoretical framework

This section purpose provides sufficient theoretical foundation from most reliable literatures about capital mobility and how it affects the economic growth in the developing countries. The section follows in five sub-sections. Section 2-1 explains how capital mobility affects economic growth, including both “human capital approache” in 2-1-1 and “the accumulation factors approach” in 2-1-2. The capital distortion illustrates in 2-2. Section 2-3 includes the financial intermediation role performing the foreign capital efficiently. Section 2-4 involves selected literatures about the multinational enterprises in providing the developing countries foreign direct investment overwhelming capital inflows. The last section 2-5 is reserved to check the literature about the unilateral and official capital flows to developing countries.

2-1 How does foreign capital inflows affect economic growth in developing countries

As mentioned there are two groups of economists in dealing with how foreign capital flows to developing countries and what is the ideal situation to get benefit for this capital flows to

maintain economic growth. The first group, those who refer the successful to the combined human capital in the host developing economy, and here I shall investigate about two example, the group of Borensztein (1995) and Lucas (1990). The next group, those who involved the accumulation factor beside the human capital as the fair judgment in reasoning the economic growth as result of capital inflows in emerging economies, here I'm going to illustrate a paper of Robertson (1998).

2-1-1 The human capital approach

This section starts with illustration of Borensztein, DE Gergorio, and Wha-Lee (1995) as a presentation to the human capital approach[4]. Borensztein, DE Gergorio and Wha-Lee followed the new recent theory of growth, contrasting the traditional Solow growth framework, demonstrating the FDI as the major channel that involves the transmission of ideas and new technologies. The group of economists examined empirically the role of the FDI in the process of technology diffusion and economic growth in developing countries. Their analytical model has a different shape comparing to the classical one, taking the rate of technology as an endogenous factor not indirect. The article assumed that the FDI brings technological progress by introducing varieties of capital goods "form of capital deepening". This process needs presence of sufficient level of human capital to be implemented properly and cause some progress in the economy. So their test was trying to examine if the role of the FDI in the economical growth related with the human capital in the developing host country. However, from their empirical investigation, it is obvious that there is strong complementary effect between FDI and human capital. The paper suggested that the contribution of FDI to economic growth be enhanced by its interaction with the level of human capital in the host country. So the productivity of the foreign capital should be higher than the domestic investment in the presence of sufficient human capital. Beside that their investigation tested if the FDI flow crowd out domestic investment. The results also suggest that the FDI contribute to economic growth by increasing total capital accumulation in the host economy, explaining how the competition and the new imported quality increase the total investment by 1.5 and 2.3 times the increase in the flow of FDI.

[4] This paper is using the model of same group of economists (Borensztein and…1995) that could explain the demonstration of their whole model in this section.

The group of economists created cross-country regressions utilizing data "at the gross level" on FDI flow from industrial countries to 69 developing countries (Latin American countries and LDCs) over two decades 1970- and 1980-.

They built a model from the recent growth model implying the above -mentioned ideas. The consideration was about an economy got a technical progress as a result of the FDI "of the type of capital deepening". Like in Romer (1990), Grossman and Helpman (1991), and Barro and Sala-I-Martin (1994), the economy produces a single consumption good according to the following technology:

Human capital inserted in the Solow model:

$Y_t = A\, H_t^{\alpha} K^{1-\alpha}$

K stands for physical capital, which is, consists of aggregate of an aggregate of different varieties of capital goods. A represents the exogenous state of technology and H denotes human capital.

The stock of domestic capital is given by:

$K = \{ {}_0\int^N x(j)^{1-\alpha} dj \}^{1/(1-\alpha)}$

where x(j) presenting each one of the varieties of capital goods. N is the total number of varieties of capital goods. The domestic firms produce n varieties and the foreign firms produce n^* varieties $\Rightarrow$

$N = n + n^*$

The demand for each x(j) is given by the equality between it's rental rate m(j) to the final good and the marginal productivity of the capital good in the production of that final good, that is:

$m(j) = A (1 - \alpha) H^{\alpha} x(j)^{-\alpha}$. [5]

The authors assumed that the process of technology adaptation is costly, requiring a fixed setup cost F before production of the new type of capital can take place. It depends negatively on the number of foreign firms operating in the host economy through it's varieties (n^*) "this assumption capture the notion of FDI is the main channel of technology". Also negatively on how many varieties are produced domestically compared to those produced in the more advanced countries, which could be a "catch up" effect in technological progress, so the form for the set up cost is:

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[5] The group of economists didn't explain the details, even it's quite clear, I will do: like in solow and Ramsey models: r (t) = f(k (t)), where y = f (k) and k is aggregate level of x (j) s. Then with compensation and differentiate we will get: $r(t) = A (1 - \alpha) H^{\alpha} x(j)^{-\alpha}$, where r (t) is m (j) here.

$F = F(n^*, N/N^*)$

N* is denoting the total number of varieties which produced in more advanced countries.

Where

$\partial F/\partial n^* < 0$ and $\partial F/\partial(N/N^*) < 0$.

Assuming the steady state where the interest rate (r) is constant, profits for the producer of a new variety of capital j are:

$\pi(j)_t = -F(n^*_t, N_t/N^*_t) + \int_t^{\infty} [m(j)x(j) - x(j)]\, e^{-r(s-t)}\, ds.$

Maximization the profit equation subject to the demand equation generates:

$x(j) = H A^{1/\alpha}(1 - \alpha)^{2/\alpha}$

Inserting this equation into the demand equation:

$m(j) = 1/(1 - \alpha)$

Which gives the rental rate as a markup over maintenance costs. Solving for the zero profits "free entry" condition they obtained:

$r = \Psi F(n^*, N/N^*)^{-1} H,$

Where;

$\psi = A^{1/\alpha}\, \alpha\, (1 - \alpha)^{(2-\alpha)/\alpha}$

They assumed that individuals maximize the following standard intertemporal utility function: $U_t = \int_t^{\infty} C_s^{1-\sigma}/1-\sigma\ e^{-\rho(s-t)}\, ds.$ [6]

C⇒ denotes units of consumption of the final good Y. Using r as the rate of return the optimal consumption bath is given by the standard condition:

$\dot{C}t/C_t = 1/\sigma\,(r - \rho)$

In steady state equilibrium, the rate of growth of consumption must equal the rate of growth of output (g). So by substitution, they got an expression for the rate of growth to the developing economy "involving both foreign and domestic firms":

$g = 1/\sigma\,[\psi F(n^*, N/N^*)^{-1} H - \rho].$

The previous model shows how the FDI "which is measured by (n*) reduces the costs of introducing new varieties of capital goods and increasing the rate at which new capital goods are introduced. It is easy to see in the model the interaction between human capital and FDI, more easily after they implemented the model in the empirical data through the following approximation:

$g = C_0 + C_1\, FDI + C_2\, FDI{\cdot}H + C_3\, H + C_4\, Y_0 + C_6\, X$

g⇒ Rate of growth of the economy.

FDI⇒ Foreign direct investment

H⇒ Human capital stock

Y_{0}⇒ Initial GDP per capita.

X⇒ other variables, which are included in the growth determination.

We observe from the regression that there is a coefficient for the FDI and human capital separately and one jointly, beside the domestic investment and the other factors which included in X.. Moreover they figured out some other regressions, which based on panel data for the two decades 1970 – 1979 and 1980 – 1989. The estimation used the seemingly unrelated regression technique (SUR). The estimated coefficients on FDI " alone" was found significantly, where the interactive term with human capital was significantly positive which is strongly support their model. Beside that the regressions include variables to estimate foreign exchange market distortions and continental dummies, where the test found them as negatively correlated with growth which confirms that they work as disturbance. The model is clear and got very smoothly way to drive the theoretical foundation, unless the few comments in the footnotes the rest was clear, even it seems to be a little complicated in interpretation some factors, like using integration instead of summation to denote the capital varieties. The way of installing the empirical data in the model, using some regressions was smart, and the rest I leave it to section 4.

Lucas supports the above-mentioned group of economists, about the level of technology as endogenous factor in the recent growth theory. As I explained they claimed the complementary contribution of FDI and the human capital in the host country to posses the economical growth. Lucas focused mostly in explaining that the tradition neoclassical theory assumptions on technology and trade which implying that there should be a different in the marginal product of capital between countries "rich and poor" to provide a reason to capital flow…….

If trade in capital good is free and competitive, new investment will occur only in the poorer economy, and this will continue to be true until capital-labor ratios, and hence wages and capital returns, are equalized……must be drastically wrong

[6] Here the symbols are denoting the same variable as in Romer (1990), like ρ is denoting discount rate, σ denoting the constant –relative-risk-aversion, and the time variables s, t.

He presented four suggestions points to replace the standard neoclassical prediction on capital flows. Briefly he named differences in human capital as the first point, using Anne Krueger's study (1968) data, replacing labor with effective labor. The external benefits of human capital was the second point, and this what the first group of economists did "investigating the complementary role of human capital and level of technology in introducing growth". The production function takes the form:

$y = Ax^{\beta}h^{\gamma}$,

Instead of the traditional form:

$y = Ax^{\beta}$

and so the marginal product of capital is:

$r = \beta A^{1/\beta}y^{(\beta-1)/\beta}h^{\gamma/\beta}$

Instead of:

$r = A\beta x^{\beta-1}$

where A is the level of technology, y is income per worker, h is human capital per worker, h^{γ} is an external effect[7], and x is capital per worker. Lucas used an example of "India and USA" and implied the data in both types of production functions. As expected in the first one "the traditional" was found huge gap in the capital return[8]. In the adjusted equation the difference in marginal product in capital was almost entirely eliminated[9]. Capital market imperfection was introduced to explain the two other points in explaining why capital doesn't flow from rich to poor; including the risk and uncertainty from the poor' s policies and the expected heavily taxation system. This paper is most mentioned one as influent in this topic even it used very old data analysis (Krueger's estimates based on data from the 1950s). Beside that the modeling ignored the accumulation of the economy's factors and concentrating in human capital as the cause of differences in return to capital between developing countries and developed countries.

2-1-2 The accumulation factors approach

Robertson critiques the human capital approach and supports the Young's approach (1994),,, that demonstrated the importance of the whole economical factor accumulation in the

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[7] As in Paul Romer (1986)

[8] According to the neoclassical assumption and equation, India must be about $(15)^{1.5} = 58$ times the marginal product of capital in the United States, these figures were got from using, production per worker in US is 15 times what it is in India, and estimated $\beta = 0.4$, an average of US and India capital shares.

[9] $(3)^{1.5}5^{-1} = 1.04$. "the predicted ratio of y between India and USA, using γ", the ratio between India and US became 3 after minding h, using new β rather than 15.

process of the growth. That might raise a question about the importance of the new-planted technology, which entered with the FDI. Robertson illustrates the relative unimportance of that technological change, showing that the new growth theory with the endogenous technology level is valid only in the short run. But in the long run, the economy reverts to the standard Ramsey model.

Lucas depends in his paper on the manipulated data from the previous studies and Robertson followed the first mentioned economists in providing his article with cross sectional data and processed it econometrically to test his hypothesizes and found scientific support for his results. Robertson differs from the above mentioned group of economists, that he introduced a model of a dual economy to explain the small difference in the return to capital in both poor and rich countries. Because of either, traditional production is relatively labor intensive or, traditional assets and labor are relative substitutes, and in addition to productivity gap between the two sectors. His model is quite interesting, but for the narrow of the available space, I'm going to illustrate the most interesting side, where he proved how the developing economy might reverts to the standard Ramsey model in the long – run. He started with the traditional feature of dual economy model, the objective function for the family, the family chooses the location of different family members at each moment in time and the family's total consumption over time to maximize utility:

$$U\,(c^x + c^y) = \int^{\infty}_{t=0} u(c^x + c^y)\, e^{-\rho t} dt \qquad (1)$$

Subject to:

$$\acute{K} = y - c^y - nk \qquad (2)$$

$$\text{and} \quad c^x = x \qquad (3)$$

Where: c^x and c^y denote consumption in each sector divided by the total labor force, N. Where the labor N (t) is assumed to be mobile. K(t) is the specific factor (capital) in the modern sector. A(t) the factor in the traditional sector (like livestock and simple tools)

Y(t)=F(K(t)

L(t)) is the production function in the modern sector and

X(t)= G(A, N(t)-L(t))

The above equation describes the output of the traditional sector, where

$L(t) \leq N(t)$

is the labor employed in the modern sector, n is the exogenous growth of labor so that:

$$N(t) = N(0)\, e^{nt}$$

all F(K(t), L(t)) and G(A, N(t)-L(t)) are homogeneous of degree one and exhibit positive but diminishing marginal products for all positive values of each input. He assumed that traditional output approaches zero as labor inputs become small and G(A,0) = 0, expressing the functions and variables in per-worker terms and suppressing time indices, which gives $y= f(k,\iota)$ and $x=(a,1-\iota)$ respectively where:

$\iota \equiv L/N$, $a \equiv A/N$, $k \equiv K/N$, $y \equiv Y/N$, and $x \equiv X/N$.

The current value Hamiltonian associated with the maximization problem is:

$$H (k, c^y, \iota, \lambda) = u(g(a, 1-\iota) + c^y) + \lambda(f(k, \iota) – c^y – nk) \quad (4)$$

The necessary conditions for an optimum solution to this problem are that there exists $\lambda > 0$ "the co-state variable", such that k, c^y, and λ simultaneously satisfy equations (5)-(7):

$$u' - \lambda = 0 \quad (5)$$

$$u'g_t + \lambda f_t = 0 \quad (6)$$

$$\dot{\lambda} = \rho\lambda – \lambda(f_k – \rho – n) \quad (7)$$

Combining (5) and (7) gives the Keynes – Ramsey condition:

$$\dot{c}/c = \sigma(c)(f_k – \rho – n) \quad (8)$$

Where

$\sigma(c) \equiv -u'(c) / u''(c)c$

is the inverse of the elasticity of marginal utility with respect to consumption, and

$c \equiv c^y + c^x$

Eq. (6) describes the optimal allocation of labor between the two sectors, denoting the equilibrium wage as w and substituting (5) into (6) gives:

$$G_{\iota\text{-}l} = f_t = w \quad (9)$$

Where

$g_{\iota\text{-}l} = - g_\iota$

Optimality requires that the marginal physical product of labor is equated across the two sectors through labor migration. Capital accumulated in the modern sector, so f_t increases with k, for a given value of ι, and the equilibrium wage ,w, also increases. So the traditional output infinitesimally small or zero. Given the above model, the author proofed that the economy in the long –run will be as one sector which indicates that reverting to Ramsey model……

The steady state of the Ramsey model is the unique steady state for the dual economy. It can only be obtained when traditional output is zero or, equivalently,

when ι = 1……[10].

Robertson presented a little complicated mathematical calculations to support his theory. But he succeed to prove that growth model which include only the human capital could easily reverts on the long run back to the Ramsey model. That explains the importance of the other factors in the determination of the economic growth and return to the foreign capital in the host developing country.

2-2 Capital distortion

The restrictions policies against foreign capital were raised by many developing countries fearing the debt crisis bad consequence and the hurting of the domestic investment and so the local industry. After the debt crisis in Mexico (1994-95) and the famous Asian countries' crisis, many economists tried to investigate the causes and the ideal situation to deviate the named crisis. May be the most two works were Rodrik (1998) and Krugman (1998) at the same time of experiencing the Asian crisis almost, both of them refer the problem mainly to the domestic financial institutions bad performance, and some other factors for each, I will back to that later. But non-of them presented analytical reasons for the openness or closing of capital account, and could be used as common not only for Asian countries, but also for all developing countries. Edwards (2001) answered this question clearly, his paper emphasizes on two related issues; the role of capital mobility as general in the performance of the domestic economies, and the comparison of the interaction between capital mobility and the economic growth in both advanced and emerging countries. Edwards considered the traditional classification to the world economy "Industrial and developing countries", and divided the latter to five groups; (1) African (2) Asian (3) Non-industrial European (4) Middle East (5) and Western Hemisphere or Latin American and the Caribbean. The data collected about the three types of capital flows:

1. Foreign Direct Investment FDI.
2. Debt and Bonds.
3. Private Portfolios.

That explains how Edwards included the three types of capital inflow in his paper. He estimated a series of non parametric Kruskal – Wallis x2 tests on the quality of the distribution of capital flows in each of the five emerging market regions and the industrial countries. The null hypothesis is that the data from the both types of economy "industrial &

[10] We saw the foundation of the model, the space is quite narrow to show the proof.

emerging" have been drawn from the same population. The Kruskal – Wallis $\chi^2$is computed as:

(1) $K = \{ [12/ n(n +1)] \sum (R_j^2/n_j) \} – 3(n+1)$ [11]

$n_j \Rightarrow$The sample size for the j group (j = 1, .m)

$n \Rightarrow$ The sum of the n_js

$R_j \Rightarrow$ The sum of the ranks j group

$\sum \Rightarrow$The sum which runs from j = 1 to j = m

The tests have the idea that capital flows have behaved differently in emerging markets "as a group" than in the industrial countries. The χ^2 test statistic was larger than the critical value except for the FDI in period (75 – 82).

To measure the financial liberality the author used two standards: (1) an index based on the number of years within a certain period that, according to IMF a particular country has not imposed capitals controls (NUYCO); a higher value denotes a higher degree of capital controls and less capital mobility. (2) Quinn's (997) index [12]of capital mobility, which can take values goes from 0 through 4, with increments of 0.5; a higher value denotes a higher degree of capital mobility. He computed once again the Kruskal – Wallis tests statistics, which confirmed the hypothesis that the extent of capital controls has been significantly larger in the emerging countries. From his analysis to the both indexes, the author suggests quite strongly …. *"Those countries that reduced the degree of capital controls experienced an increase in capital inflows. This, in turn, was translated into higher account deficits. Whether this, in turn, resulted in higher aggregate investment depends on the extent to which foreign savings crowd out domestic savings and is, ultimately, an empirical issue"* …….

But there is another positive side to the capital mobility affection in the host countries economies' performances refers to efficiency and productivity growth and is the interesting side of this paper. The analysis here is based on the estimation of the two equations below:

(2) $g_j = \alpha_0 + \alpha_1 k_j + \sum \alpha_2 X_j + \varepsilon_j$

(3)$\tau_j = \beta_0 + \beta_1 k_j + \sum \beta_2 X_j + \mu_j$,

Where g_j is average real GDP growth in country j during the 1980s. τ_j is the average rate of TFP growth during the 1980s. k_j is a measure of capital account openness in country j, or an

[11] The figure 12 is refer to this paper own data sample.

[12] Comprehensive set of cross-country indicators on the degree of capital mobility, cover 20 advanced countries and 45 emerging economies over two periods.

indicator of the extent of capital account liberalization between 1973 and 1987. The X_j are other variables that affect economic performance; ε_j and μ_j are heteroskedastic errors with zero means. The αs and the βs are parameters to be estimated. Like in the recent literature on growth and cross country economic performance, the following X_j were included

(a) the investment ratio during 1980s (INV80), its coefficient expected to be positive.

(b) A measure of human capital, schooling years, (Human), expected positive.

(c) The log of real GDP per capita in 1965 (GDP651), expected negative.

Equations (2) and (3) were estimated using weighted least squares, weighted two stage least squares, SURE, and weighted three stage least squares, taking GDP per capita in 1985 as a weight in all regressions. The estimated coefficients of (human, INV80, GDP651, and the CAPOP also have the same expected signs and were found significant at conventional levels. These results suggest that, once controlling for other variables, countries that are more integrated to global financial markets have performed better than countries that have isolated themselves. The author finally tested whether the emerging countries are different in implementing the inflow capital comparing with the industrial countries, investigating whether the effect of capital restrictions on growth depends on the country's development level. The author done that by adding "the interactive independent variable (log GDPC[13]* CAPOP)" in the estimation of equations (2) and (3):

(2)* $g_j = \alpha_0 + \alpha_1 \text{ CAPOP}_j + \alpha_2 (\text{CAPOPj log GDPC}_j) + \alpha_3 \text{ Human } 65_j + \alpha_{14} \text{ log GDPC65}_j + \varepsilon_j$

$\Rightarrow$If α_2 is significant, the total effect of capital openness on growth becomes country specific and will be given by:

(3)* $E_j = \alpha_1 + \alpha_2 \text{ log GDPC}_j$

The sign of α_2 determines the effect of capital account openness on growth increases with the level of development. The coefficient of the interactive term ($\text{CAPOP}_j \text{ log GDPC}_j$) was found positive, indicating that the effect of more open capital account increases with the initial level of development of the country. Further more since the index of the capital account openness was found negative, an open capital account may in fact have a negative effect at very low levels of development.

The paper results suggest strongly that the relationship between capital mobility and the financial liberalization "Capital opening account CAPOP" is only positive under a certain degree of economical development. At this level it could present a degree of economical

[13] GDPC is GDP per capita in 1980

growth to the post country otherwise it might harm the economy and the policy of the protectionist might be the right one!! As I mentioned the author got that result from his analysis to the interaction of CAPOP index with the other standard measures of domestic financial development, including banking system and exchange market. While we observe an important exception in his empirical test about the FDI which was found similar to some extent in the economies' behavior, in both the developed and the emerging. This might support the group of economists, who declare the importance of technology affect in the economical growth "the Lucas' group". Beside that it's obviously that his main result support the classical group "Young and Robertson" who support the view of accumulation factors, and the analysis of the whole economy to check the real growth, technology helps but not leads the whole mechanism of growth.

2-3 Financial intermediations role

The above mentioned review was about the whole process of the capital mobility, including capital flows "whatever was it, private or public", technology transfer, and it's relation with economic growth in the host developing countries. From here on the review will be more specified to every candidate of that process. Firstly the capital will be investigated as investment portfolio's component (as private flow, neglecting if it launched the FDI or such a portfolio flows). Then the MNEs role will be illustrated as a background for capital mobility. Finally the unilateral grants and loans will be demonstrated.

There are huge numbers of books and papers in the literature of investigating the role of capital flows in economic growth, and even there are some concerned with the private capital flows[14]. But Bailliu's (2000) found evidence that capital flows foster higher economic growth, above and beyond any effects on the investment rate, which was interesting. But the most interesting thing that he found an important linkage between that process to be efficient and the financial system in the host country. He done that using panel data of 40 developing countries from 1975-1995, focusing in more broad measure of capital flows on economic growth, rather than on a more specific category, such as FDI. We saw from the above economists' work review, that capital flows promote economic growth by increasing the domestic investment rate and/or by leading investments associated with positive slipovers, such as transfer of technology or improve of the domestic performance.

[14] Due to my own reading, Rodrik (1998), Krugman (1998), are some of them and many included in those papers!

But Bailliu considered the potential effects of capital flows on growth through its influence on domestic financial intermediation**.** This channel has received less attention in the literature, and that why I have chosen Biallui to present the role of financial intermediation in performing well the capital inflows in the developing countries' economies. The author simply considered the capital flow that occurs when a domestic bank borrows from a foreign bank to finance a project being undertaken by a domestic firm[15]….

The efficiency with which the domestic bank channels the borrowed funds Into a productive investment project, in addition to its ability to properly evaluate the investment project, will likely influence the extent to which, if at all, this capital inflow ultimately contributes to economic growth……

This view is obviously means that the economic growth in the host country depends much in the efficiency of the domestic financial sector, namely the banking system. More specifically the capital inflows require a certain level of development into the domestic financial sector to create a positive affection in the economy, and to deviate the distortion. His model is quite interesting, but for the space purpose it's hard to illustrate it. It built on simple closed-economy version of the AK model "$Y_t = AK_t$", using the growth rate of output expressed by investment and capital productivity. Then opens the same economy to capital freer, interpreted these factors as explanatory variables in some regressions, which helped him to found empirical evidences to his theory.

2-4 Multinational role

Markusen (2002) sum up almost all of his previous work in the field of Multinational firms, a journey of more than twenty years in his last book. The most important fact in the book that Markusen addressed clearly his view about the common mix between FDI and the capital flows as a transaction of the investment portfolio……

.....a lot of evidence suggests that the decision to build or acquire a foreign factory is largely separate from the decision of where to raise the financial capital.

This was his view since he started working in 1977 on the Industrial organization approach "IO"[16] to study trade. It's good chance to confirm here that this paper is not contrasting his approach or the recent trade theory; moreover the paper is not dealing only with the capital theory to exclude FDI and the Multinational firms. This new theory provides microeconomic

[15] The opposite can be happened if we think about the "knowledge capital theory & the IO approach" and the capital movement to install the FDI.

approach to study direct investment presenting good approach to investigate whether the FDI and Multinational are introducing growth in the host developing economies[17]. Obviously the paper doesn't support the theoretical model in which capital flows only from the rich to poor countries, neither nor the old view of direct investment as not fundamentally different from the theory of portfolio capital movements. Although that the empirical statistics indicate that the developed countries are major recipients or hosts of FDI, developing countries have the larger share of inward investment than their share of world GDP[18]. Which indicates that FDI is presenting at least *a reason* to the international capital to flow to the developing countries? The least developed countries attract so little FDI, Markusen explained why that happened, the absence of all form of infrastructure, including physical, institutional, and legal. Beside the demand side reasons "such as the nature of products produced by MNE" and the cost side reasons, such as the need for the skilled labor in the production process".
Markusen has followed the same approach of the most of the economists who deal with the FDI and MNE, which inspired of John Dunning (1977+...+1993) "The OLI advantage approach"[19]. He used this approach to figure out a framework for his new model "Knowledge-capital approach, KK" to substitute the traditional theory which included the physical capital. The Knowledge capital "including skilled labor intensity" can be easily transported or transferred to foreign production facilities and has a joint – input property[20] across the different production facilities that create ownership, internalization, and location advantages. Markusen book is quite rich with the foundation trade theory, which overwhelmed the international capital movement. Also the book established almost new theory "KK" in treating the multinational corporations as channels of new knowledge and technology, which helps in creating economic growth in the host developing economy.

Dunning (1993) defines FDI as simply as, the investment, which is made outside the home country of the Investment Company, but inside the investing company. Control over the use of the resources transferred remains with the investor. It consists of a (package) of assets and

[16] It is an approach introduced firstly by him in the Canadian big enterprises and then became common in United States and so round the globe economy. The approach mostly deals with the technology and other motivation a part of capital, to do new business to those big enterprises.
[17] The planting investment is content of capital as the major factor. In the case of developing countries most of that capital usually paid by foreign fund, whether it's paid by the firm's internal retained earnings, or from the parent-country.
[18] Source: UNCTAD world investment report (2000) and Mrkusen and Zhang (1999) own calculations; share of inward FDI stock / share of world GDP.
[19] Will be explained more when we look at Dunning works.
[20] This refers to the ability to use the engineer or other headquarters asset in multiple production locations without reducing the services provided in any single production.

intermediate products, such as capital, technology, management skills, access to markets and entrepreneurship. As mentioned the ownership, location, and internalization "OLI" approach belongs to Dunning. The best way to demonstrate how that approach explains the interaction between MNE, the host countries, and even the global economy is to illustrate his "Schema for analyzing the role of MNEs in the global economy", *(in the next page).* Supporting this exhibition, Dunning explained that the best way to analyze the impact of MNEs is to examine its impact on certain attributes of economic and social property to investigate both welfare and growth if it happened. Like the impact on gross national product, labor productivity, competitiveness, quality of output, investment, upgrading of human capital, technological capability, exports, industrial relations and the environment. We see in figure 2-1, there are triadic relationship between the owner (the left box) which presented by firms – the "O" specific advantages, the location-specific advantages of countries (the right box), and the way in which firms and governments on behalf of countries organize the use of resources and capabilities within their domain is presenting in the top three boxes. The interaction gives many outcomes of which will affect the welfare of both multinational corporations and countries, explained in the two below boxes clearly. The figure even included the multilateral corporations' role and interaction. Dunning worked also with the empirical side much, illustrating and improving the previous models in investigating the economical role of the MNEs. But he reminds with very important point that although MNE activity does have distinctive consequences on market structure and on the efficiency of value-added activity, the extent of this significance is often exaggerated.

Dunning's explanation to the interaction between MNE and the global economy

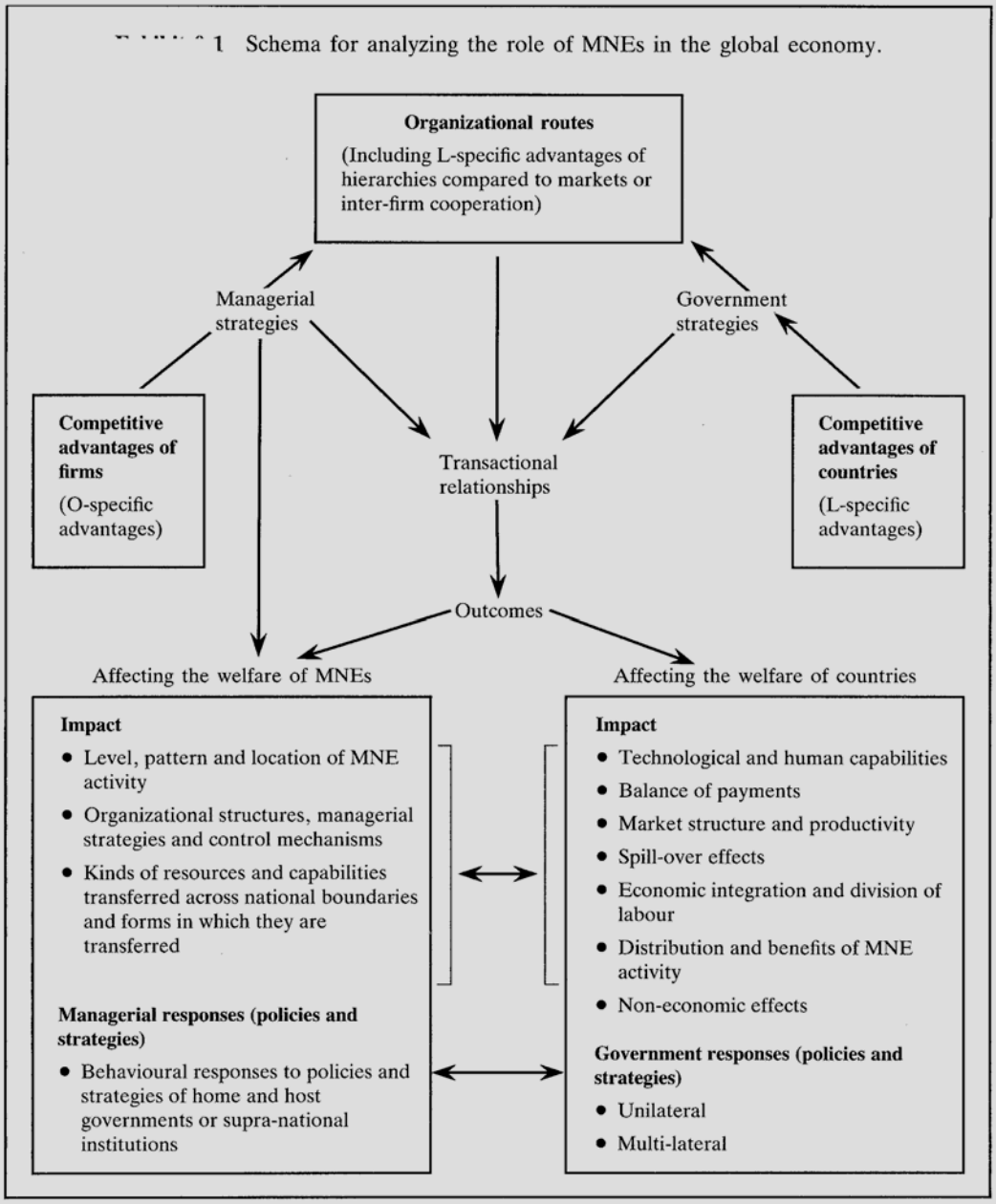

Figure (2-1)

Source: Dunning (1993)

2-5 The multilateral capital inflows and role

Rodrik (1995) presented influent work in the multilateral lending to developing countries, describing how it is a conditionality lending and compare it with the private capital flows, and even he found that there is a little evidence that multilateral has acted as a catalyst for private capital flows. Chatterjee, Sakoulis, and Turnovsky (2001) have chosen to investigate that capital which flows from the unilateral corporations to the developing economies, which invested in the public sector. More specifically their study concerns with the official development assistance and grants or the long lasting loans, which the developing countries receive from the unilateral corporations, and how it finances new investment in infrastructure to allow the domestic economy to get benefit? Such as the recent observed efforts of the European Union to affiliate the poor new jointed country or other potential member nations in their transition into the union[21], and like the efforts of IMF and WB. Unlike the usual start to investigate the foreign capital movement, this paper addresses these issues in the context of an endogenously growing open economy. Also explicitly characterises and contrasts the dynamic response of such an economy to a temporary aid program that may or may not be tied to public investment[22]. That may raise the existence trade-off between the domestic co-financing of the public investment and the optimal respond to flow of external assistance from abroad, in the framework of intertemporal[23]. This group of economists found that a permanent pure transfer has no growth or dynamic consequences; in the short-run it has a welfare impact. But in the long-run, the capital may accumulated and may crowding out the domestic investment, so its benefit depends on the level of the infrastructure in the recipient country "the debate was already made about poor country!" They found that both transfers, "although only temporary, have permanent effects on levels of economic growth, with those of the tied shock", were significantly greater.

[21] Its type of capitals tied transfer to finance public investment program, one was from 1989-1999, and the recipients were Greece, Ireland, Spain, and Portugal. Other was named for the Central Eastern European countries, called Agenda 2000, and expected to continue until 2006.

[22] Since there is a sharp trade-off between welfare –maximization and growth-maximization, the word tied could be explained as a key of growth unlike *pure*.

[23] The paper investigated both temporary and permanent aid program.

3. Historical Back-ground:

3-1 An overview of the whole world capital movement:

It's important to have an outlook over the global capital mobility types and channels before we step on the details about the developing countries share. It's quite reasonable to find statistical report to support my previous dividing to the capital mobility types which mentioned in the introduction and treated as a fact in this study. Tables 3-1 demonstrates the three types of capital flows obviously, showing the global capital flows for each type of capital movement in both billions of US. Dollars and percentage of total capital inflows. The most important observation in this table that FDI was not that influenced in the capital mobility earlier in the 70s and 80s. But it began to rise from the 90s to dominated the rest types in the 2000 and now days, which caused surely by the development of the multinational corporations. So the private capital flows, even its start was not bad and it improved but it fluctuated many times to be measured as increased or decreased. The third type, which included grants and long lasting loan and overwhelming the unilateral role its start, was quite strong, but it also fluctuated much. This we could also refer to the strong relation between it and the global political and economical agglomerations. The table is general statement, which demonstrates the distribution of the global capital movement among the various types of capital flows. As I mentioned in both the introduction and theoretical foundation, there are various types of capital movement. The most spread observed one is the one, which follow the foreign direct investment[24]in the host country, beside the investment portfolio and the country's debt and bonds. Developing countries' history of capital inflows started with formal barriers and tariff distortion to stop the capital flows in the most developing countries. Few countries contrast that theory and for many reasons[25] experienced growth in their economies, that attract many countries to lift their barriers on foreign capital. So started the competition in the international capital market.

[24] I prefer to talk indirectly about the FDI "as an investment opportunity which provide capital for the project, wherever was the source of that capital"
[25] Will be discussed later.

	71-75	76-80	81-85	86-90	91-95	96-2000	1999	2000	2001
Total Capital Inflows (Billions of US.dollars)	339	1,513	1,895	4,316	5,541	16,503	3,845	5,150	3,463
Direct Investment Inflows	67	168	282	770	1,105	4,623	1,265	1,755	801
Portfolio Investment Liabilities	69	186	393	1,274	2,633	6,680	1,842	1,759	1,613
Other Investments Liabilities	203	1,159	1,219	2,273	1,803	5,199	739	1,637	1,048
Total Capital Inflows (percent of total capital)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Direct Investment Inflow	19.7	11.1	14.9	17.8	19.9	28.0	32.9	34.1	23.1
Portfolio Investment Lia.	20.5	12.3	20.7	29.5	47.5	40.5	47.9	34.1	46.6
Other Investments Liabil	59.9	76.6	64.4	52.7	32.7	31.5	19.2	31.8	30.3

Table (3-1): Global Capital Flows

Source: (Wong and Adams, 2002), IMF, International Financial Statistics (CD-ROM, July 2002); and national sources.

FDI spread faster in the developing countries, because multinational corporations found in those fresh areas big potential markets. Beside that the developing countries with rich natural resources were highly expected returns investment opportunities. Table 3-2 illustrates the distribution of FDI inflows by region round the glob. The table showing how the developing countries got almost nothing in the 70s and very little earlier of 80s, so started the developing countries to compete in international capital market in mid of 80s. It was continuing increasing its share of the FDI, until it reached its maximum in 1997. At the same year the Asian emerging economies got the famous financial crisis. That pushed them to control the capital flows and may be inspired other developing countries to do the same, that why we see in the table sudden shock which hit the FDI flows in the developing countries “by 10.8 from 1997 to 1998”. It’s clear from the table that Asian and Western

Hemisphere countries got the big share of the FDI cake from the developing countries. Where the countries in transition and Eastern Europe come next and Africa and the rest occupied the last class. But in the accumulation measurement developing countries get a margin of the FDI comparing with the advanced countries.

The other two types of capital movement consist of the private capital movement in the type of the private creditors and the foreign portfolio investment in the host developing countries. Beside the debt of developing, which received as type of loans from the unilateral corporations and bonds and equity issued by the official public sectors? Figure 3-1 and table 3-3 illustrates the private capital flows to emerging markets[26].

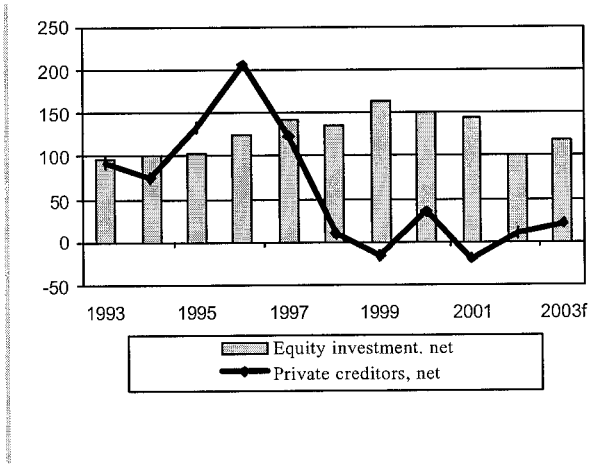

Figure (3-1): Private Capital Flows to Emerging Markets
(Billion of U.S. Dollars)

Source: (IIF, Institute of the International Finance, 2003)

[26] Some selected good performance economies from the developing countries.

	1970	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001 /4
						(Billions of U.S. dollars)					
World/1	7.2	52.3	55.7	203.7	321.7	371.3	459.3	671.2	1,056.4	1,376.6	690.5
Major advanced economies	5.2	37.3	31.7	113.5	129.5	155.7	197.2	334.1	535.7	724.1	341.8
Other advanced economies	1.9	10.6	12.1	66.4	89.6	86.8	94.5	164.4	343.0	498.3	224.4
Newly industrialized Asian economies /2/3	0.1	1.4	1.5	7.7	12.1	14.6	18.1	12.0	19.5	20.6	7.3
Memorandum: Euro area	-	-	-	-	-	-	-	-	-	378.6	110.1
Developing countries	0.1	4.4	12.0	23.8	102.6	128.8	167.5	172.7	177.7	154.1	124.4
Africa	-	0.7	1.0	1.2	4.5	4.3	7.9	6.0	7.6	3.4	7.7
Asia	-	1.2	3.1	10.6	51.9	62.1	67.0	61.0	51.9	47.0	51.5
Asia excluding China	-	-	1.4	7.1	16.1	22.0	22.8	17.3	13.1	8.6	4.6
Middle East	-	(4.0)	2.2	3.4	(0.1)	2.8	5.4	6.9	2.3	1.2	0.3
Western Hemisphere	0.1	6.4	5.7	8.3	30.2	43.9	66.0	73.7	88.4	74.8	53.0
Countries in transition	-	0.0	0.0	0.3	16.1	15.6	21.2	25.1	27.5	27.7	11.9
Central and Eastern Europe	-	0.0	0.0	0.3	12.3	10.4	12.4	18.5	20.8	22.6	5.5
CIS and Mongolia	-	-	-	-	3.8	5.2	8.9	6.6	6.7	5.1	6.4
Memorandum: Euro area						(Percent of world total)					
World	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Major advanced economies	72.6	71.3	56.8	55.7	40.2	41.9	42.9	49.8	50.7	52.6	49.5
Other advanced economies	26.0	20.3	21.6	32.6	27.9	23.4	20.6	24.5	32.5	36.2	32.5
Newly industrialized Asian economies /2/3	0.9	2.7	2.7	3.8	3.8	3.9	3.9	1.8	1.8	1.5	1.1
	-	-	-	-	-	-	-	-	-	27.5	15.9
Developing countries	1.4	8.4	21.5	11.7	31.9	34.7	36.5	25.7	16.8	11.2	18.0
Africa	0.0	1.3	1.8	0.6	1.4	1.2	1.7	0.9	0.7	0.2	1.1
Asia	0.0	2.3	5.5	5.2	16.1	16.7	14.6	9.1	4.9	3.4	7.5
Asia excluding China	0.0	0.0	2.6	3.5	5.0	5.9	5.0	2.6	1.2	0.6	0.7
Middle East	0.0	-7.6	3.9	1.6	0.0	0.8	1.2	1.0	0.2	0.1	0.0
Western Hemisphere	1.4	12.3	10.2	4.1	9.4	11.8	14.4	11.0	8.4	5.4	7.7
Countries in transition	0.0	0.0	0.0	0.1	5.0	4.2	4.6	3.7	2.6	2.0	1.7
Central and Eastern Europe	0.0	0.0	0.0	0.1	3.8	2.8	2.7	2.8	2.0	1.6	0.8
CIS and Mongolia	0.0	0.0	0.0	0.0	1.2	1.4	1.9	1.0	0.6	0.4	0.9

Table (3-2): FDI Inflows by region

Source: (Wong and Adams, 2002), IMF, International Financial Statistics (CD-ROM, July 2002); and national sources.

*Preliminary figures for 2001 as data are missed for many countries!

The private creditors went down, shock falling since the financial crisis of the Asian countries and never got persist increasing measurement, in that decade which appear in the figure (1993-2003). Table 3-3 demonstrates that recently, the Latin American emerging economies dominated the rest emerging economies. The important observation in this table that the five Asian economies become source of the financial outflows in some years recently, and the African countries got minus amount of the official financial flows.

Financial Flows to Emerging Market Economies by Region, Net
(billions of dollars)

	1999	*2000*	*2001*	*2002e*	*2003f*
Private flows	148.2	185.6	125.7	112.5	137.1
Latin America	69.7	62.6	47.8	25.2	35.5
Europe	38.3	42.2	17.0	21.7	31.0
Africa/Middle East	10.2	4.7	9.3	3.8	8.1
Asia/Pacific	30.1	76.2	51.6	61.8	62.5
Five Asian economies[1]	-5.8	17.2	7.1	2.9	5.7
Official flows	12.4	-3.0	14.7	12.2	10.4
Latin America	7.9	-6.7	22.4	14.0	17.7
Europe	0.2	2.0	1.4	5.0	-0.1
Africa/Middle East	-1.7	-0.5	-4.0	-2.0	-2.0
Asia/Pacific	6.0	2.3	-5.0	-4.8	-5.2
Five Asian economies[1]	1.9	2.9	-4.6	-3.9	-4.9

e = estimate, f = IIF forecast
[1] *South Korea, Indonesia, Malaysia, Thailand, Philippines.*

Table (3-3): Financial flows to emerging economies

Source: (IIF, Institute of the International Finance, 2003)

That illustrates how African countries got almost no amount of that official flows, and have to pay back their debt and its interest.

3-2 The favourable freer of capital mobility:

Financial liberalization was set to be one of the most effective measurements of the economic development. It's known that freer of capital mobility is used by the entire multilateral corporation to ensure the well behaviour of the economy and to have the green light to get the corporation' financial aid and support[27]. Many developing countries forced to lift their barriers and control for the foreign capital by these unilateral procedures. But the policy itself was attractive to many countries, especially after some countries experienced economic growth. The historical statistical could always judge well, table 3-4 shows us the developing countries with capital freer. The table contains 23 developing countries and 10 countries were withdrawn from the policy after a while. This is quite big number "43.5%" which could allow us saying that the table doesn't support the financial liberalisation. Specially if we think about the Asian countries which supposed to be the first withdrawal after one year (1997) and after they experienced the financial crisis, also Niger was just lifted its capital account restrictions (1996) which is not fair to judge its attitude.

Country	period without restriction
Argentina	94-96
Bolivia	87-96
Costa Rica	73-74, 81-82, 96
Ecuador	73-93
Gambia, The	92-96
Guatemala	74-80, 90-96
Honduras	73-80
Hong Kong	73-96
Indonesia	73-96
Iran, Islamic Rep. Of	75-78
Liberia	73-84
Malaysia	74-96
Mexico	73-82
Nicaragua	73-78
Niger	96
Panama	73-96
Paraguay	83-84
Peru	79-84, 94-96
Seychelles	78-96
Singapore	79-96
Togo	95
Uruguay	79-93
Yemen, Republic of	73-90

Table (3-4): Developing countries with no restrictions on capital account transactions, (73-96)

Source: Kim (1997) and Rodrik (1998), using IMF annual reports on exchange restrictions.

The crisis of Asian countries was one of the greatest disadvantages of the capital freer, whether the cause was from the misleading of the symmetric information[28]or the role of financial intermediaries[29]. But the contrasting opinion is also becoming popular day after day and it's spreading faster among the developing countries, for the causes, which I mentioned. Table 3-5 illustrates the countries, which changed its policies towards the foreign direct investment. All

[27] Financial liberalization is one of the ten points in the Washington consensus, the advisable programme for the economic reform.

[28] Rodrik (1998) said that the failures of the market during the Asian crisis arising from asymmetric information, incompleteness of contingent markets, and bounded rationality.

[29] Krugman (1998) due the crisis to the role of financial intermediaries (and of the moral hazard associated with such intermediaries when they are poorly regulated), and the prices of real assets such as capital and land.

which we could say about the table it reflects obviously the spreading of the favourable capital freer policy among the countries.

Item	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Number of countries that introduced changes in their investment regimes	35	43	57	49	64	65	76	60	63	69	71
Number of regulatory changes	82	79	102	110	112	114	151	145	140	150	208
of which:											
-more favourable to FDI [a]	80	79	101	108	106	98	135	136	131	147	194
-less favourable to FDI [b]	2	-	1	2	6	16	16	9	9	3	14

Table (3-5): National regulatory changes, 1991-2001

Source: UNCTAD, World Investment Report 2002: Transnational Corporations and Export Competitiveness, box table I.2.1.

a. Including liberalization changes aimed at strengthening market functioning, as well as increased incentives.

b. Including changes aimed at increasing control as well as reducing incentives.

3-3 Winners and losers of the capital flows:

It's hard to judge whether the capital flow is good for the developing economies or not, it's a long economical story, needs to analysis of the data and the rest of the economical procedures. But it's not to find out the countries, which got better and those, which got worse from the statistical data. In this section I will do so, leaving the rest of finding causes and remedies for the next chapter. I took three measures to determine the winner of the capital mobility among the developing countries. First the usual measurement of the FDI inflows as a percentage of the GDP, this will be illustrated in figure (3-2). Second a measure based on country' export market share gains, and this will be demonstrated in figure (3-3). Final the most important one; the relationship between the FDI and the real growth rates of GDP[30], this also will be illustrated by figure (3-4).

Table (3-2) explains that Western Hemisphere and Central and Eastern Europe are getting good level of FDI as a percent of their GDP, where the rest are coming closely to each other.

[30] This measurement is not specified by region or country, but taken as common measurement.

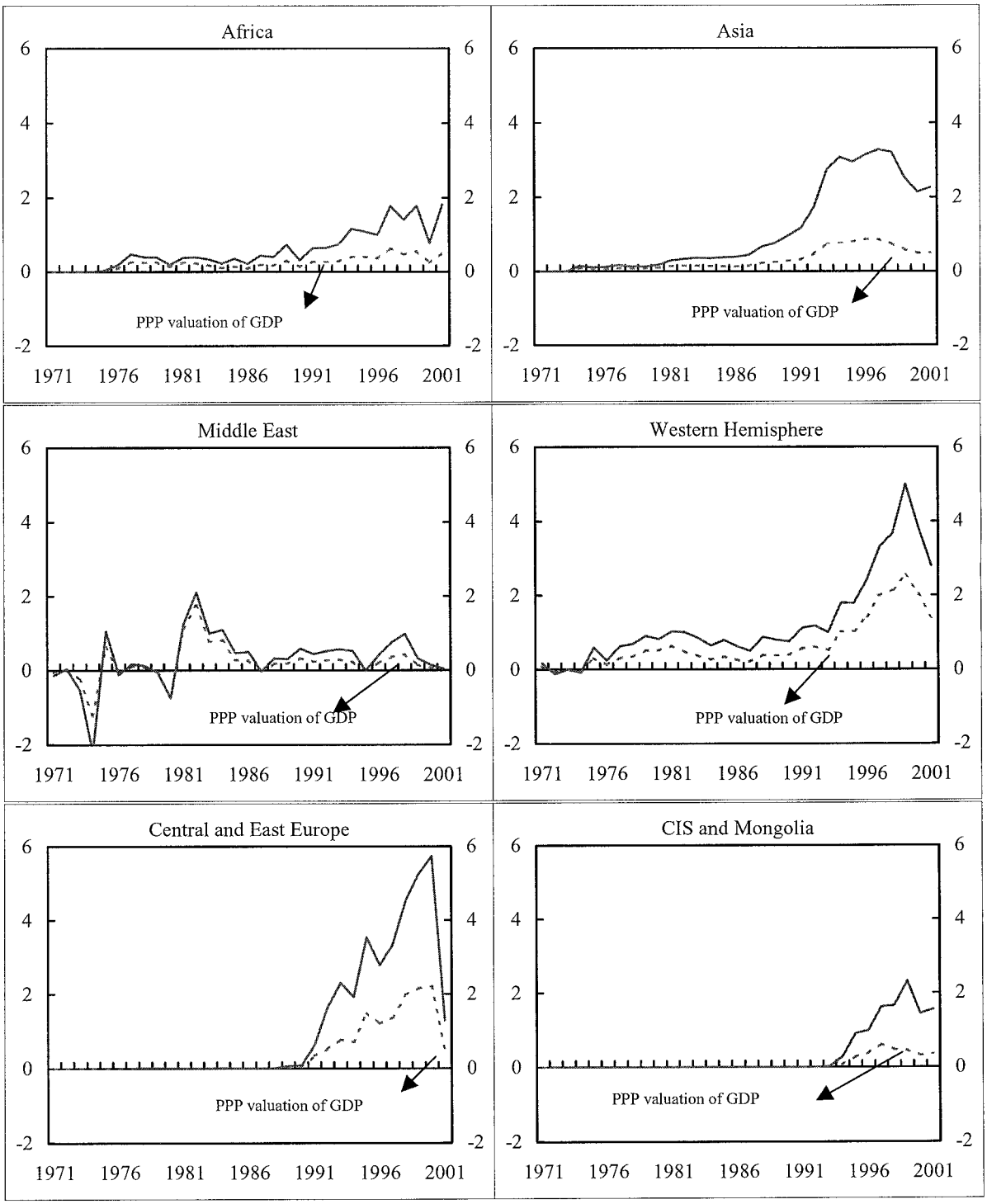

Figure (3-2): FDI inflows as a percentage of gross domestic product (1971-2001) (percent)

Source: Wong and Adams (2002), IMF Financial Statistics; WEO database; others

Its surprise to know that most of 20 winner economies "almost 75%", based on export market share gains for 25 years (1985-2000) were developing countries[31]. Its also surprise to know that most of these winners were won in the favour of the capital flows as important factor, figure 3-3 illustrates all this.

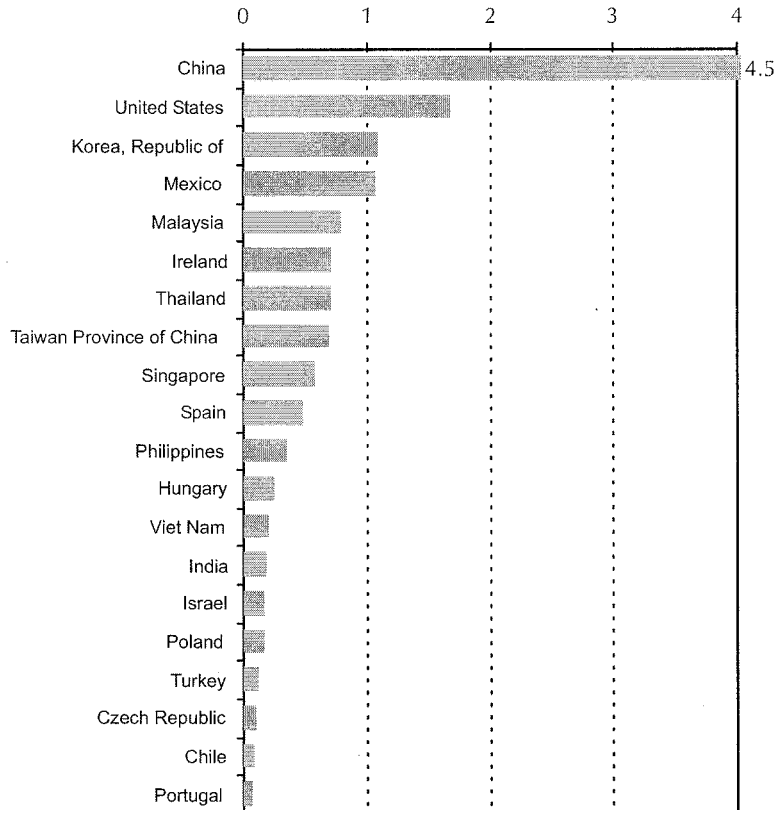

Figure (3-3): Changes in world export market shares, 1985-2000

The 20 winner economies, based on export market share gains, 1985-2000

(percentage points)

Source: UNCTAD, World Investment Report 2002: Transnational Corporations and Export Competitiveness, figure VI. 1.

Figure 3-4 supports the difficulty judgement idea, about the feasibility of capital flows and so FDI. We observe in the figure that earlier the FDI was just a margin, even though the growth rates of GDP behaved as normal economically, increased and decreased. But in the recent years the real

[31] Including the emerging economies among these developing countries.

growth of GDP behaved relatively to the FDI increasing (like 1996, 1999, 2000), despite that it's hard to find exact relationship to be common economical measure[32].

The last table in this section demonstrates also winners and losers of the FDI, but in their performance and attractiveness to FDI. Table 3-6 explains short period of time but gives very good idea about the FDI classifications to world countries, determining the developing countries situation. Countries with high FDI performance (i.e. above the mid-point, countries that combined strong potential with strong performance, the front runners). They are industrialized countries and most of the Asian "tigers", and a number of Latin American. The above potential economies comprised mainly those without strong

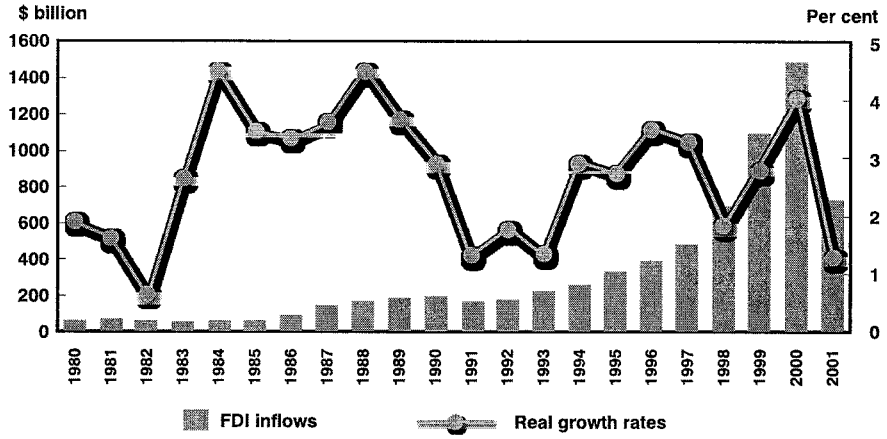

Figure (3-4): FDI inflows and real growth rates of GDP in the world, 1980-2001 (Billions of dollars and percentage)

Source: UNCTAD, World Investment Report 2002: Transnational Corporations and Export Competitiveness, figure I.1.

structural capabilities that have done well in attracting FDI; most of them are relatively poor and lack a strong industrial base. Brazil and china are notable exception, which were nevertheless, also part of this group. The below-potential economies included many industrialized and rich countries that have a week FDI performance because of policies of restrictions or traditions of supporting the domestic investment and corporations or already countries of capital –abundant "like the Gulf

[32] The source of the figure data due the fluctuation in the two diagram in the recent years to the huge inequality in the world income; recently FDI spreads in the low income countries, so FDI increase with lower relative increase in GDP. But what about the old earlier years?

countries". The under-performance group including poor countries that for economic or other reasons did not attract their expected share of global FDI.

This section contains many statistical tables and graphs which provide good support for the thesis results in many ways, which will be explained in the next section.

4. Empirical valuation to capital inflows to developing countries

This section as I mentioned deals with the analytical illustration to my own empirical work[33] to demonstrate the mechanism where foreign capital cause a growth or harm the economic performance in the host developing countries. The section constructs of four sub-sections. Firstly the data source and analysis remedy tools and details will briefly mentioned in 4-1. Then I present summary for the foreign capital inflow contributions and the developing economies performance upon my analysis in section 4-2. Section 4-3 explains shortly the conditional capital flows and the fairness of the monitoring system for the multilateral lending corporations to fund the developing economies' projects. Last sub-section is 4-4, and specified to introduce judgement to who gets better off and who gets worse from the capital flows.

4-1 Data source and analysis remedy tools

The process of preparing to the final form of the analysis, required various kinds of data to launch the software programme. This paper got valuable data from different sources should be appreciated and mentioned here. The analysis sample covers 90 developing countries from all different world regions, beside a cumulative indicator for each over the last two decades (1980-90 and 1990-2000). From the theoretical foundation, the model, which I use, needs a support of different data, the growth indicator and other seven variables. World Bank used to prepare a measurement statistics for the world development "World development indicators" every year. Many of the data, which used in the analysis were got from the World development indicators (2002). Despite the available data were created to serve the world bank group purpose in providing a term of relative data set to be scale for the measurement ranking, it were quite helpful and functional in the software programme[34]. Obviously, study like this provides many of the data to measure the main variables in this analysis. To measure the growth of the economies, I used the

[33] Beside the necessary description work from the previous literature.
[34] Most of the data were in the form of percentage relative terms, the World development indicators (2002) is available partially in the web-side of the world bank and full version in the CD ROM "commercial version"

data from the sub –section (4-1) “Growth of out” to choose the average annual growth of gross domestic product “a percentage” as an indicator. From section (4-11) “Central government finances” I got an indicator to interpret the public sector financial performance, using the total government expenditure “also as percent of GDP”. It was really hard to find a good measurement which present sufficient indicator for the domestic financial intermediation , I used the indicator of the domestic credit to private sector, from the private sector development measurement in sub-section (5-1), the states and market. The World development indicators specified a chapter for the global link, and there is a sub-section (6-1) for the integration with the global economy, where I got two scales to measure both foreign direct investment and the private capital flows. Both are in the gross level and expressed as percentage of GDP. In the same chapter there is a sub-section (6-10) deals with the aid dependency, that helped me to find scale to measure the official assistance or official aid which flows from the multilateral or unilateral corporations to the developing countries, and that was aid per capita.

I got a problem in finding a reliable economic source for the GDP per capita, all the sources and the economical links in the internet used this data from the CIA World fact book, for both (2001, 2002), I got to use it. Although its not very necessary to included in the equation, since most of the predictable variables are relative and percentage of GDP, beside the left hand side is composed from also relative variable (average growth in GDP comparing with the previous one). I omitted this variable from the regressions and then I got the same result almost[35].

There were many choices for me to find good indicator for the human capital, but I choose the most popular one in the previous literature, the school life expectancy, from the UNESCO institute for the statistics.

The analysis used a data for the comparison reasons from other various sources, International monetary fund (IMF), Institute of the international finance (IIF), UNCTAD World investment report (2002), some national sources, and some previous literature work, will be mentioned in the specified place of data.

The data set, which used in the analysis are sort of pole or average type for period of time. The average growth was taken as two observations, one for each decade (1980-90 indicator and 1990-2000 indicator) and so the rest variables, assuming that all other variables in the two period are the same apart of the control variables, which included in the equation. There is also other assumption has been taken in this analysis, that the observations with zero value are excluded from the cases and that are obvious when we move from regression (1) to regression (2), the degree of freedom is

minimized because of the excluded cases. They add nothing to the analysis results, since the investigation is trying to explain how the control variables affect the dependant variable. The purpose of the analysis is to find an estimation of the effect predicted variables in the growth "the left hand side of the equation"[36]. I have to mention here also, that the missing data were limited the fit of the analysis and if it were available, this analysis could has to got much better results. It might be benefit for the future researchers to mention here that many developing countries "even some emerging" don't care about reporting education input, despite of it's importance. The collected data was inserted in Minitab software (release 13), doing many required calculations and creating some regressions, upon the model of the group of economists Borensztein, De Gregorio and Wha-Lee (1995). Also Minitab programme provided the analysis with many plots and graphs which helps in the process of the analysis.

4-2 The performance of the host developing countries

This sub-section is provided to show an outlook for the foreign capital flows and the host developing countries performance in functioning that foreign capital efficiently, using the analysis work and other previous literature.

The candidates of the 90 developing countries, which included in this analysis were mixed and vary between poor and very poor and intermediate and emerging economies. So this composition is acceptable to have unusual observations, and even to give some results might not be the standard for the closed symmetric sample of data. But all countries are developing countries and the analysis got very few number of unusual observations, only three (Azerbaijan, Georgia, and Israel). That was for many reasons, Azerbaijan got very bad growth (-6.3) and got also a little margin from the international capital comparing with it's GDP. And Georgia which got the worse growth among all the candidates (-13.0). Israel got the biggest share from the official aid per capita (123.0) and the largest government expenditure (almost50%). The analysis fit also is not too different from the previous work and supporting the theoretical foundation in this paper.

As I mentioned the purpose of this analysis is to find a support for the theoretical foundation and to check what's going on, through recent empirical investigation. Furthermore to estimate the

[35] See Appendix I, regression (3).

[36] For example, Chad got zero from the FDI " in small margin from PCF, almost in two decades", its useless and we don't expect some thing from inserting it, and I think this will be unrelated to the study topic if we do "see appendix III". There are some developing countries obtained growth with completely closed capital account with many other economic reasons and that some thing else.

effects of the foreign capital inflows to the developing countries. I construct many regressions to do that. In regression (1), the regression equation is composed from dependant variable “growth” and many other predicted variables, to check the effect of each of these variables alone. As observed the results of this regression was reliable to say that two of the capital flows’ candidates “FDI, private capital flows PCF” were found little significant. Although that we could say that the private domestic investment has a significant affect and indicates the importance of the domestic financial intermediations (see the P value 0.013). On the other hand the private capital flows sounds like better significantly than the FDI and the aid per capita was also found little significant. That might returned us to Bialliu (2000) paper, who found that it should be existence of good level quality of the domestic financial intermediation to ensure growth from the foreign capital inflows to the host developing economy.

Regression (1)

```
The regression equation is
Average growth of GDP = 3,12 - 0,0340 Foreign direct
investment - 0,143 Schooling life expectancy + 0,046 GDP-per
capita + 0,0218 Government expenditure - 0,0230 Private
capital flows + 0,0338 Private domestic investment - 0,0021
Aid per capita

74 cases used 135 cases contain missing values

Predictor        Coef     SE Coef          T        P
Constant        3,121       2,253       1,39    0,171
FDI          -0,03404     0,07548      -0,45    0,653
Schoolin      -0,1433      0,2224      -0,64    0,522
GDP-per        0,0458      0,1304       0,35    0,726
Governme      0,02183     0,04453       0,49    0,626
PCF          -0,02299     0,02578      -0,89    0,376
Priv.Do.      0,03385     0,01330       2,54    0,013
Aid per      -0,00213     0,01380      -0,15    0,878

S = 3,308       R-Sq = 11,0%     R-Sq(adj) = 1,6%
```

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	7	89,60	12,80	1,17	0,332
Residual Error	66	722,43	10,95		
Total	73	812,03			

Source	DF	Seq SS
FDI	1	1,17
Schoolin	1	3,05
GDP-per	1	7,54
Governme	1	1,97
PCF	1	4,80
Priv.D.	1	70,81
Aid per	1	0,26

Unusual Observations

Obs	Foreign	Average	Fit	SE Fit	Residual	St Resid
10	2,5	-6,300	2,245	0,695	-8,545	-2,64R
15	4,4	10,300	2,146	0,861	8,154	2,55R
19	39,2	3,400	1,588	2,505	1,812	0,84 X
70	4,3	-13,000	2,048	0,819	-15,048	-4,69R
88	19,5	5,100	4,902	2,065	0,198	0,08 X
133	2,6	0,500	1,371	2,421	-0,871	-0,39 X

R denotes an observation with a large standardized residual
X denotes an observation whose X value gives it large influence.

Regression (2) used the same variables, but multiplied the predicted variables with other control variables, to test if the interaction between these control variables increase the

estimation of the affect on the growth. FDI variable was multiplied with the human capital indicator's variable "schooling life expectancy" to present the interaction between the human capital in the host developing country and the foreign direct investment. The aid per capita was multiplied with the public sector indicator "government expenditure" to present the interaction between relief and the public expenditure (to check whether this add positive investment in infrastructure and so foster growth in the economy). The purpose was to find if the interaction between the two variable role in effecting the dependant variable "growth" is better than as taken separately. Obviously the results of the regressions are quite different, significant of the predictable variables were increased and even the fit of the study was improved from 11.0% to 30.2%. Beside the positive change in R-Sq (despite the decreasing in the number of cases and degree of freedom in regression (2), because of the excluding cases with zero values according to the assumption, the multiplication created many cases with zero values). Obviously the change of the significant of the FDI variable when it multiplied with the human capital variable (FDI.H) support the very common and popular idea among the economists. That there is an interaction between foreign direct investment and human capital in the process of installing the foreign capital investment in the developing host country. Also the interaction between aid per capita and the government expenditure gives a better off situation for the process of estimating the effect of official aid and it's relationship with public sector and so it's role in obtaining a growth in the named host developing country. The governments usually get aid and relief for target developing projects and the level of that aid determining (for most poor developing countries) the amount of the public expenditure which goes to investment in infrastructure and so cause growth in the economy, this will look more clear in the next sub-section.

Regression (2)

```
The regression equation is
Average growth of GDP = 4,31 + 0,974 Foreign direct investment
+ 0,111 Schooling life expectancy - 0,111 GDP-per capita
- 0,116 Government expenditure + 0,0310 Private capital flows
+ 0,0390 Private domestic investment - 0,236 Aid per capita
- 0,0904 FDI.H + 0,00685 GE.AID
```

42 cases used 167 cases contain missing values

Predictor	Coef	SE Coef	T	P
Constant	4,309	4,694	0,92	0,366
FDI	0,9738	0,8575	1,14	0,265
Schoolin	0,1114	0,4154	0,27	0,790
GDP-per	-0,1114	0,2214	-0,50	0,618
Governme	-0,11642	0,08351	-1,39	0,173
PCF	0,03099	0,05715	0,54	0,591
Priv.Do.	0,03897	0,01805	2,16	0,038
Aid per	-0,2356	0,1046	-2,25	0,031
FDI.H	-0,09040	0,07196	-1,26	0,218
GE.AID	0,006847	0,003004	2,28	0,029

S = 3,660 R-Sq = 30,2% R-Sq(adj) = 10,6%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	9	185,55	20,62	1,54	0,177
Residual Error	32	428,72	13,40		
Total	41	614,26			

Source	DF	Seq SS
FDI	1	2,09
Schoolin	1	8,31
GDP-per	1	2,30
Governme	1	1,49
PCF	1	5,46
Priv. Domes.	1	94,14
Aid per	1	0,48
FDI.H	1	1,64
GE.AID	1	69,62

```
Unusual Observations
Obs  Foreign  Average   Fit      SE Fit   Residual   St Resid
 10    2,5     -6,300    1,508   1,058    -7,808       -2,23R
 70    4,3    -13,000   -0,834   1,670    -12,166       -3,74R
 8    19,5     5,100     6,394   3,405    -1,294       -0,96 X

R denotes an observation with a large standardized residual
X denotes an observation whose X value gives it large
influence.
```

4-3 Conditional capital flows and economic growth

> Over the years since its inception, the IMF has changed markedly. Founded on the belief that markets often worked badly, it now Champions market supremacy with ideological fervor. Founded on the belief that there is a need for international pressure on countries to have more expansionary economic policies-such as increasing expenditure, reducing taxes, or lowering interest rates to stimulate the economy- today the IMF typically provides funds only if countries engage in policies cutting deficits, raising taxes, or raising interest rates that lead to a contraction of the economy. Keynes would be rolling over in his grave were he see what has happened to his child.
>
> (Stiglitz 2002)

This start doesn't mean that the anger, of the sort of neglecting which used by the financial multilateral corporations towards the poorness and the basic economical needs of a lot of developing countries when they ask about a loan or fund for some developing projects, is influencing my view in finding reasonable results from my own analysis and the other previous works. But Stiglitz has very good experience in the international work and the multilateral work, as known he was one of the leaders of World bank beside his other experience and his contributions in Economics, so this view deserves to be considered.

Rodrik (1995) argued that the multilateral lending resides in certain informational functions; (a) monitoring of government policies and (b) exercising policy conditionality. This sounds like a supporting to the existence multilateral agencies, but its not because Rodrik mentioned that the multilateral institutions are not entirely consonant with their own

self-image, ranking the lending at the top and the conditionality at the bottom, and this could easily seen when we know that more than half of external debt are going only to 10 countries, figure 4-1 explains that with no needs for comments.

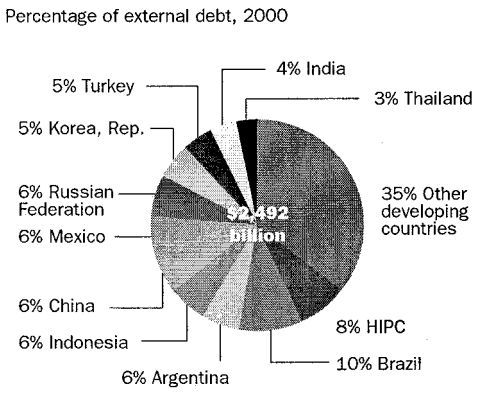

Figure (4-1) The top 10 debtors are responsible
For more than half of external debt

Source: World bank data, World development indicators (2002)

If we return back to regression (2) we will see that the aid per capita were found as a significant variable played effective role in determining the dependant variable "growth", the P value is quite good (0.031) indicating the significant of the variable, so the t test. Also we observe that the public sector expenditure was significant when it multiplied with the aid per capita variable, also see the P value (0.029) which indicating that the public expenditure is contributing in determining the economic growth when it combined with aid. That is very obvious in figure (4-1) and figure (4-2).

From the plot of figure (4-1), we observe that the countries which got aid is obtaining growth (the dot plot is almost concentrating on the above zero scale area in the vertical column "the growth". Its interesting to see in both figures (4-1 and 4-2), that dots are agglomerated to the left which does mean that the required aid, if it should, is not big. Also that is observed when we compare with only government plot "in the appendix" and the multiplied one with the aid per capita, the first one is almost distributed horizontally, where the next is concentrated to the left.

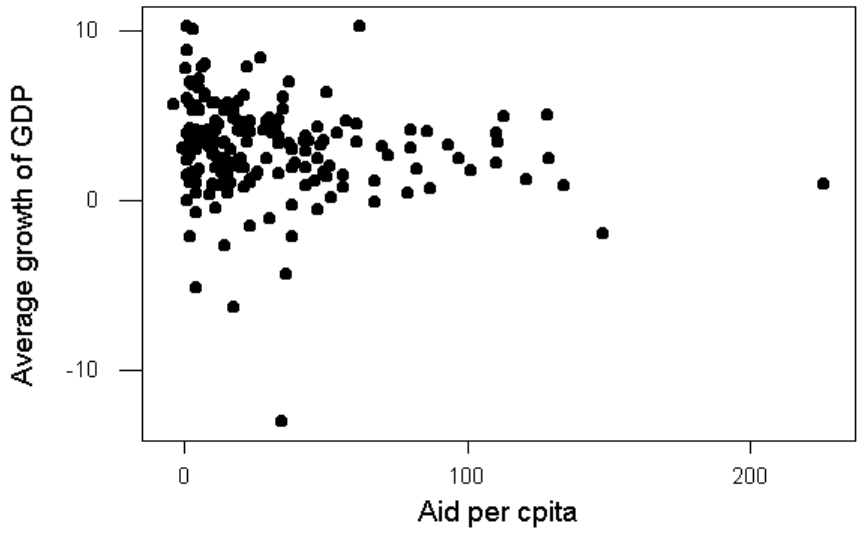

Figure (4-2): Plot for the Average growth * Aid per capita of GDP

Also I found many evidences from the real observations, that the developing countries which got financial aid, performing well and obtaining good level of economic growth. The space is enough to mention all of these observations, but let us check some[37]. Jamaica is not rich country and even it is not that industrial country. It lost the aid which it got in the 80s decade was minimized from 43 to 4 American dollars, and experienced shock decline in it's growth (from 2.0 to 0.5) even the foreign direct investment was marginally increased so the human capital. On the other hand its clear that the countries with good affiliation got better aid and so got better economic growth, like Jordan, Israel and others.

[37] The work sheet of this analysis is enclosed in the appendix.

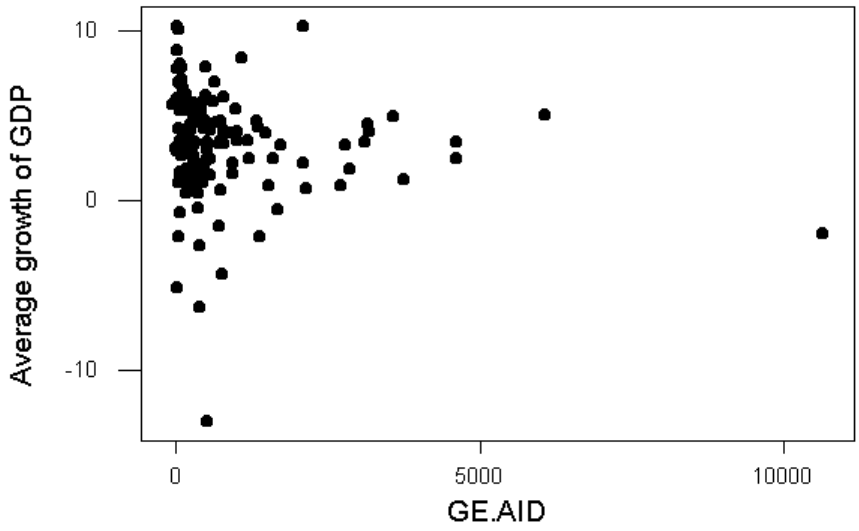

Figure (4-3): Plot to Average growth * government expenditure multiplied by aid per capita on growth.

This is not for all cases as Rodrik (1995) explained there should a mentoring for the economy performances to ensure the aid if it needs and it will use it well. Its normal in many African countries and other developing countries to corrupt the public wealth. Its also very normal to deviate the developing projects funds to fund war or other personal corrupted projects, which hurts the domestic economy (the work-sheet is rich with cases which got disturbances in their economies even of the aid, I will not comment on that, but its obviously clear). That why I'm concluding this sub-section claiming the fair mentoring to the developing economies from the multilateral funding corporations.

4-4 who gets better – off and who gets worse from the capital flows?

The analysis contains many good performers developing economies and also much bad in using the foreign capital flows. From sub-section 4-2, regressions (1 and 2) illustrated that the countries with good financial intermediations "high level of domestic investment means quality in translating savings to investment" could use the foreign capital inflows well. That gives them capabilities to obtain economic growth and vice-versa (the experience of Asian and some Latin American countries are good evidence to successful developing economies which gave the education input more care). Poor developing countries which lacking well built financial intermediations always failed in functioning foreign capital inflows and may

experience negative effect which hurts the economy and crowd out the domestic investment, so cause declining in economic growth “see the specified figure in the appendix II”.
Also the interaction between human capital and the foreign capital inflows is explained in sub-section 4-2. We saw how the multiplication of the FDI with the human capital gave significant result, which indicate that, developing countries which are rich with the human capital could perform better when they get foreign direct investment, so they could get benefit and achieve economic growth. The other poor developing countries which are lacking the human capital can not get benefit from FDI, and might get worse from FDI, which might works as a negative factor hurting the domestic producer, beside the west amount of profits which will flow out of the economy.
Figure 4-3 and 4-4 explain and plots the effect of FDI alone and then multiplied with human capital. The differences are obvious when we see the distribution of the plot in figure 4-4 above the 0 average growth of GDP in the scale line, which means that the interaction is fitting better and giving good result in effecting growth. While it is concentrating to the left in figure 4-3 which indicate the very low dependency on this variable and the low significant of the FDI alone.

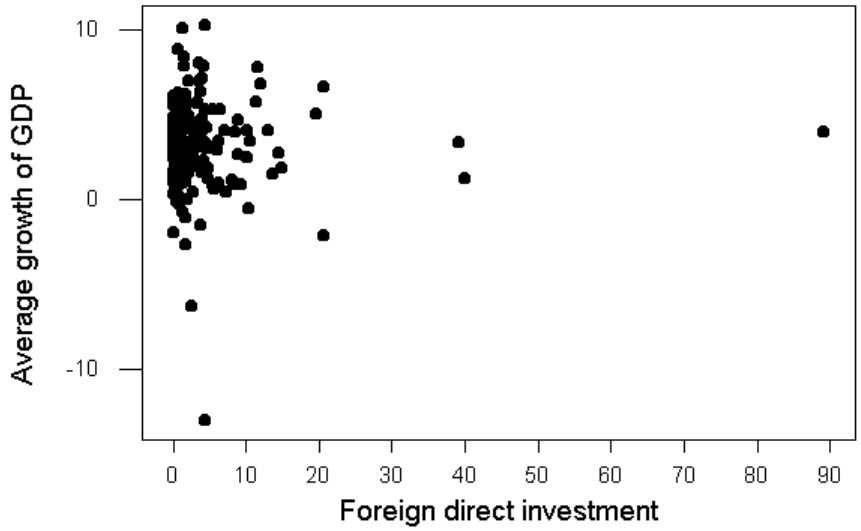

Figure (4-4): Plot for the average growth * foreign direct investment

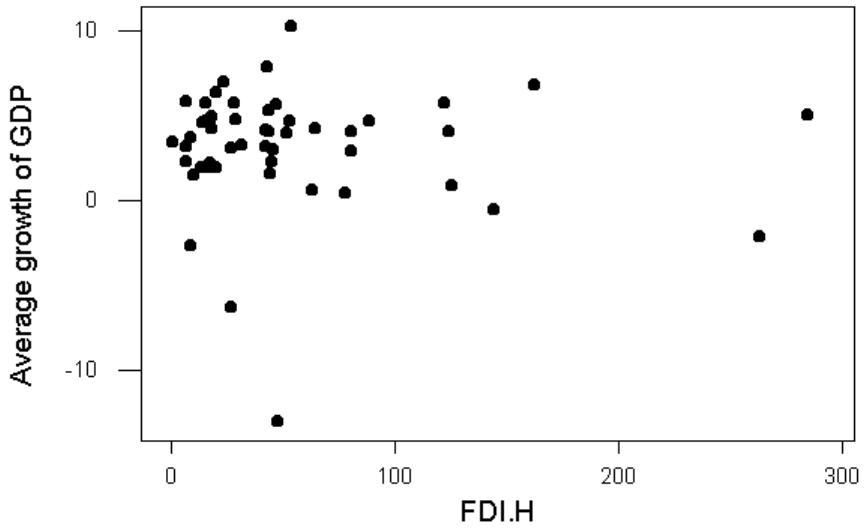

Figure (4-5: Plot for the Average growth * FDI after multiplied with Human capital

5 Conclusion

The dynamics of the successful developing economies in interpreting the foreign capital inflows as a growth has always been controversial among the economists. As previous mentioned in section 2, most of them named human capital as the major factor in the determination of the success in using flows of foreign capital. A group of economists due that to efficient implementation to the work of the economy's component as one body, the accumulation of economy's factors. The results of this paper can be listed in four points as follows:

Firstly, the paper's investigation found that the human capital variable "schooling years" is a significant in determining the dependant variable "growth", and the capital inflow to the host developing countries was found significant when it multiplied by human capital (the interaction between human capital and FDI). That explains the strong complementary effect between the capital flow "if it combined FDI or flow free" and the stock of human capital in that host developing country. Moreover the developing countries which are rich with human capital are always the winners in the process of attracting foreign capital from the international market and the better performance in obtaining growth in their domestic

economies from this process. On the other hand the poor developing countries which lack good stock of human capital suffering from the failure in using that capital flows. Moreover they might fail basically in providing good image to the international capital and the multinational enterprises to move to their countries. If the movement happened that might rather hurting the domestic economies and domestic industries and domestic investment so far. Obviously this result is supporting the first group of economists who claiming the existence of good level of human capital stock in the developing countries to succeed in performing the foreign capital positively.

Second, the paper is also investigate the role of domestic intermediations in the process of implementing the capital mobility to the developing countries, introducing the private domestic investment as a predictable variable in the model. The test of the effect of domestic investment on economic growth was found significant in the regression equation. This result suggest that the financial intermediations which translating big level from the domestic saving to investment are qualified to attract foreign capital and this financial intermediation is an important factor in the link between foreign capital flows and economic growth. This presenting good evidence in the importance of domestic financial development in the capital mobility process. Beside that the paper analysis demonstrates the role of net private capital flows in determination of economic growth, by inserting a predictable variable "private capital flows" to find an estimation to its effect in the economic growth. The test also found the private capital flows variable significant and when we omit the domestic private investment from the model the significantly of the private capital flows is minimized[38]. This is an evidence of the existence relationship between the foreign capital movement and the domestic financial intermediation. There is a lot of individual evidences in the work-sheet (Appendix II), many developing countries presenting observations which the capital inflows promote an economic growth in existence of high level of domestic private investment "Singapore, Malaysia, Philippines, Hong Kong, Argentina, Mexico and many". This result is unlike the first one, support the second view of the next group of economists, who declare the importance of the accumulation of economic factors in explaining growth. The domestic financial institution can adopt a good policy (with good stock of the human capital) to perform the investment projects efficiently and to provide good and reasonable investment opportunities to the international capital.

[38] See the specified regression in the appendix.

Third, the paper tried to shade a light on the forgotten part of the developing countries, the poor developing countries which experienced a failure and bad consequences in one or two previous chances in implementing the foreign capital flows. The part which is still expecting to fail in using the foreign capital inflows. That part which presenting no good reason to attract the international capital to flow to them, and even was suspending to get lending or relief from the multilateral corporations. This could alone present an interesting topic to investigate and study, and it is unfairness to specify a little space to topic like this. However the paper's analysis presented predicted variable "Aid per capita"[39] to introduce the multilateral role or the foreign capital which flows in type of relief. This variable "aid per capita" was found significant which shows that the aid that funded the developing projects in the poor developing countries effect the economic growth. The poor developing countries are obviously lacking the important feature of the well built institutions, so its expected that these countries are poor in human capital stock and the financial intermediations are little primitive and not in the same qualification of the other emerging countries. For all these reasons its not fair to expect any positive results from the foreign capital flows to these countries and even its not fair to exclude them from the international capital market. Many emerging countries and even developed industrial countries were poor and lacking those institutions and even got damaged[40], and they got their affiliation and relief programme until they emerged out again and found to be good developed economies. What are the obstacles in offering the existence poor countries the same fund programmes? Was Keynes economic suggestions valid only in that period only? Like Stiglitz meant. Also the work –sheet which enclosed in the appendix are presenting a lot of observations which reflecting the lacking of mentoring system in offering aid and relief to poor countries.

Finally this paper results suggest the importance of accumulating all economy's factors in the developing country to ensure that capital flows can foster an economic growth. The human capital stock is important to create a positive spill over combining with the foreign capital flows. But also the financial intermediations are quite important to attract and perform foreign capital to reach economic growth in the host developing countries. Poor developing countries which lacking these features need to get aid to help these countries to establish the economic institutions before claiming interests and paying back loans from

[39] The chosen of aid to present the multilateral role, not lending is due to the previous failure of that lending which caused 42 countries to be HIPC and many are potential to get the same end.
[40] Many countries were damaged after the second war, many relief fund programme were raised to the development programme "Marshal fund as a good example"

them, gradualism was the successful policy for the emerging countries. Mentoring these poor countries are important to get rid of corruptions and other disturbances to international lending programmes.

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Appendix I

Regression (3): Omitting GDP per capita from the equation:

The regression equation is

Average growth of GDP = 4,24 + 1,10 Foreign direct investment
+ 0,060 Schooling life expectancy - 0,116 Government expenditure
+ 0,0243 Private capital flows + 0,0378 Private domestic investment
- 0,219 Aid per capita - 0,101 FDI.H + 0,00640 GE.AID

42 cases used 167 cases contain missing values

Predictor	Coef	SE Coef	T	P
Constant	4,236	4,638	0,91	0,368
FDI	1,1023	0,8093	1,36	0,182
H	0,0603	0,3982	0,15	0,881
G. E.	-0,11589	0,08255	-1,40	0,170
PCF	0,02430	0,05495	0,44	0,661
Priv. Do.	0,03779	0,01769	2,14	0,040
Aid per	-0,21888	0,09810	-2,23	0,033
FDI.H	-0,10093	0,06807	-1,48	0,148
GE.AID	0,006404	0,002839	2,26	0,031

S = 3,619 R-Sq = 29,7% R-Sq(adj) = 12,6%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	8	182,15	22,77	1,74	0,126
Residual Error	33	432,11	13,09		
Total	41	614,26			

Source	DF	Seq SS
FDI	1	2,09

H	1	8,31
G. E.	1	0,76
PCF	1	6,48
Priv. Do	1	96,15
Aid per	1	0,49
FDI.H	1	1,23
GE.AID	1	66,64

Unusual Observations

Obs	Foreign	Average	Fit	SE Fit	Residual	St Resid
10	2,5	-6,300	1,371	1,011	-7,671	-2,21R
70	4,3	-13,000	-0,598	1,584	-12,402	-3,81R
88	19,5	5,100	6,520	3,358	-1,420	-1,05 X

R denotes an observation with a large standardized residual

X denotes an observation whose X value gives it large influence.

Regression (4): The equation before multiplying G.E. by Aid per capita:

The regression equation is

Average growth of GDP = 2,49 + 0,260 Foreign direct investment

- 0,107 Schooling life expectancy + 0,037 GDP-per capita
- 0,0164 Government expenditure + 0,0027 Private capital flows
+ 0,0459 Private domestic investment - 0,0032 aid per capita
- 0,0229 FDI.H

42 cases used 167 cases contain missing values

Predictor	Coef	SE Coef	T	P
Constant	2,495	4,912	0,51	0,615
FDI	0,2597	0,8475	0,31	0,761
H	-0,1070	0,4291	-0,25	0,805
GDP-per	0,0367	0,2247	0,16	0,871
G. E.	-0,01640	0,07544	-0,22	0,829

PCF	0,00272	0,05923	0,05	0,964
Priv.Do.	0,04593	0,01888	2,43	0,021
Aid per	-0,00320	0,02510	-0,13	0,899
FDI.H	-0,02291	0,06963	-0,33	0,744

S = 3,886 R-Sq = 18,9% R-Sq(adj) = 0,0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	8	115,92	14,49	0,96	0,483
Residual Error	33	498,34	15,10		
Total	41	614,26			

Source	DF	Seq SS
FDI	1	2,09
H	1	8,31
GDP-per	1	2,30
G. E.	1	1,49
PCF	1	5,46
Priv. Do.	1	94,14
Aid per	1	0,48
FDI.H	1	1,64

Unusual Observations

Obs	Foreign	Average	Fit	SE Fit	Residual	St Resid
10	2,5	-6,300	1,366	1,121	-7,666	-2,06R
70	4,3	-13,000	1,581	1,370	-14,581	-4,01R
88	19,5	5,100	2,962	3,243	2,138	1,00 X

R denotes an observation with a large standardized residual

X denotes an observation whose X value gives it large influence.

Regression (5): The equation before inserting Private domestic investment:

The regression equation is

Average growth of GDP = 2,79 + 1,28 Foreign direct investment
+ 0,428 Schooling life expectancy - 0,050 GDP-per capita
- 0,141 Government expenditure + 0,0525 Private capital flows
- 0,267 Aid per capita - 0,121 FDI.H + 0,00795 GE.AID

42 cases used 167 cases contain missing values

Predictor	Coef	SE Coef	T	P
Constant	2,787	4,892	0,57	0,573
FDI	1,2760	0,8917	1,43	0,162
H	0,4283	0,4096	1,05	0,303
GDP-per	-0,0497	0,2314	-0,21	0,831
G. E.	-0,14083	0,08721	-1,61	0,116
PCF	0,05250	0,05932	0,89	0,383
Aid per	-0,2671	0,1092	-2,45	0,020
FDI.H	-0,12062	0,07440	-1,62	0,114
GE.AID	0,007945	0,003120	2,55	0,016

S = 3,858 R-Sq = 20,0% R-Sq(adj) = 0,7%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	8	123,09	15,39	1,03	0,431
Residual Error	33	491,18	14,88		
Total	41	614,26			

Source	DF	Seq SS
Foreign	1	2,09
Schooling	1	8,31
GDP-per	1	2,30
Governme.	1	1,49

Private	1	5,46
Aid per	1	0,06
FDI.H	1	6,85
GE.AID	1	96,52

Unusual Observations

Obs	Foreign	Average	Fit	SE Fit	Residual	St Resid
10	2,5	-6,300	2,656	0,964	-8,956	-2,40R
70	4,3	-13,000	0,168	1,691	-13,168	-3,80R
88	19,5	5,100	6,036	3,585	-0,936	-0,66 X

R denotes an observation with a large standardized residual

X denotes an observation whose X value gives it large influence.

Appendix II

Figure (Appendix II-1): Plot Average growth of GDP * Schooling life expectancy

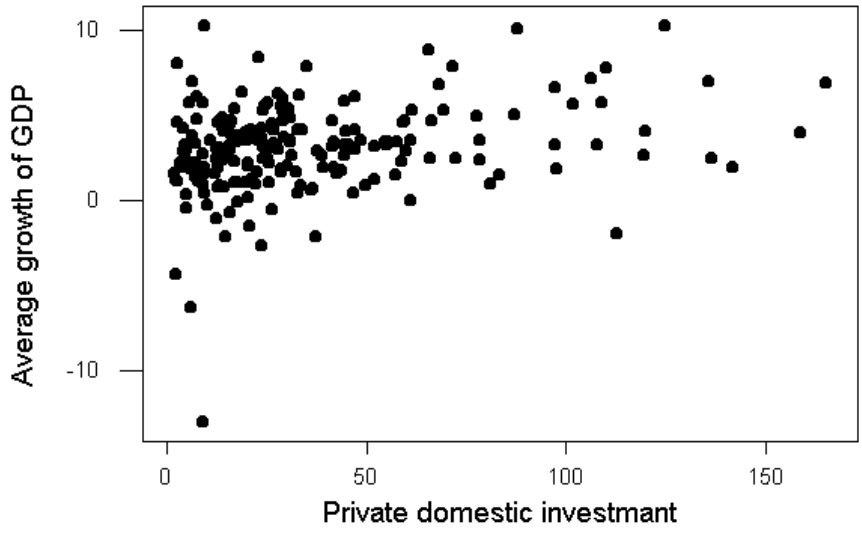

Figure (Appendix II-2): Plot Average growth * Private domestic investment

Appendix III

Data set: Work sheet [41]

Country	Date	H	G	GDP	FDI	PCF	Ad	Pri. Do.	G. E.	FDI+PCF	FDI.H	FDI+PCF.H	GE.AID
Albania	1980-1990	10,8	1,5	1,604		18	56						
Albania	1990-2000	10,9	3,3	2,991	3,8	6,5	93	4,5	29,8	10,3			2771
Algeria	1980-1990		2,7	4,732	0	2,6	11	44,4		2,6			
Algeria	1990-2000	11,5	1,9	5,388			5	6,1	30,4				152
Angola	1980-1990		3,4	1,143	3,3	10,1	37			13,4			
Angola	1990-2000		1,3	0,974	39,9	44,9	23	2,1		84,8			
Argentina	1980-1990	14,1	-0,7	9,931	1,3	8,2	4	15,6	10,6	9,5			42,4
Argentina	1990-2000	14,3	4,3	12,73	4,5	10,9	2	23,8	17	15,4	64,35	220,22	34
Azerbaijan	1980-1990			1,807			15	9,4					
Azerbijan	1990-2000	10,6	-6,3	3,024	2,5	3	17	5,9	22,7	5,5	26,5	58,3	385,9
Benin	1980-1990		2,1	1,266	3,7	10,7	51	20,3		14,4			
Benin	1990-2000	7	2	1,001	2,8	13,4	38	12,6		16,2	19,6	113,4	
Bolivia	1980-1990		2,5	2,968	0,7	3,1	97	24	16,4	3,8			1591
Bolivia	1990-2000	9,9	4,7	2,518	8,9	14,2	57	59,5	23,1	23,1	88,11	228,69	1317
Botswana	1980-1990	11,9	10,3	3,616	4,4	9,1	62	9,4	33,8	13,5			2096
Botswana	1990-2000	12	4,7	6,557	1,4	6,9	19	16,1		8,3	16,8	99,6	
Brazil	1980-1990	13,3	2,7	6,115	0,4	1,9	2	38,9	34,9	2,3			69,8
Brazil	1990-2000	13,4	2,9	6,477	6	10,9	2	37,6	26,8	16,9	80,4	226,46	53,6
Bulgaria	1980-1990	12,7	3,4	4,476	39,2	0	14	7,2	55,1	39,2			771,4
Bulgaria	1990-2000	12,7	-2,1	6,228	20,7	8,4	38	14,6	35,7	29,1	262,9	369,57	1357
Burkina Faso	1980-1990		3,6	1,038	0	1,1	49	19	15	1,1			735
Burkina Faso	1990-2000	2,8	4,9	0,978			30	14					
Burundi	1980-1990		4,4	0,694	0,1	3,7	47	13,7	28,7	3,8			1349
Burundi	1990-2000	4,9	-2,6	0,707	1,7	6,4	14	23,5	26,1	8,1	8,33	39,69	365,4
Cambodia	1980-1990	7,3		0,671	1,7	3,2	52			4,9			
Cambodia	1990-2000	7,3	4,8	1,289	3,9	6,8	33	7,3		10,7	28,47	78,11	
Cameron	1980-1990		3,4	2,043	1,1	15,5	33	26,7	21,2	16,6			699,6
Cameron	1990-2000		1,7	1,645			26	9,3	15,9				413,4
Central African Republic	1980-1990		1,4	1,651	0,5	2,2	50	7,2		2,7			
Central African Repubic	1990-2000		2	1,705			20	4,5					
Chad	1980-1990	3,9	6,1	0,902	0	5,6	35	7,3	21,8	5,6			763
Chad	1990-2000	5,2	2,2	0,93			17	3,4					
Chile	1980-1990	13	4,2	12,22	2,2	15	11	47,2	20,4	17,2			224,4
Chile	1990-2000	13,5	6,8	9,988	12	24,1	3	68	23,9	36,1	162	487,35	71,7
China	1980-1990		10,1	3,804	1,2	2,5	3	87,7	10,1	3,7			30,3
China	1990-2000	12,4	10,3	3,535	4,3	12,7	1	124,6	10,9	17	53,32	210,8	10,9
Hong Kong, China	1980-1990		6,9	22,23			3	165,1					
Hong Kong, China	1990-2000		4	25,1	89,2	188,8	1	158,7		278			
Colombia	1980-1990	10,9	3,6	6,176	1,3	3,1	4	30,8	11,6	4,4			46,4
Colombia	1990-2000	11	3	6,196	4,5	12,3	4	27,7	19,1	16,8	45	168	76,4
Congo, Dem. Rep.	1980-1990		1,6	0,687			4	1,8	18,8				75,2
Congo, Dem. Rep.	1990-2000	4,3	-5,1	0,578			4		0,1				0,4
Congo, Rep	1980-1990		3,3	1,466	0	6,6	48	15,7	35,6	6,6			1709
Congo, Rep.	1990-2000		-0,4	1,071			11	4,8	32,8				360,8
Costa Rica	1980-1990		3	7,007	2,9	7	10	15,8	25,6	9,9			256

[41] This work-sheet including data from various reliable source of data, there is some exception about GDP per capita which was not got from the same economical corporations, I observed many contradiction that why I exclude it from some regressions "the result was found to be almost the same, see regression (3). The work sheet was created in Minitab and then removed to Excel format for the typing purpose, that explains why the numbers of countries schedule are missing.

Costa Rica	1990-2000	10,1	5,3	6,626	4,3	10,2	3	24,1	21,5	14,5	43,43	146,45	64,5
Cote d'Ivoire	1980-1990		0,7	1,608	0,4	3,5	87	36,5	24,5	3,9			2132
Cote d'Ivoire	1990-2000		3,5	1,598	2,5	6,5	22	17,2	22,4	9			492,8
Croatia	1980-1990	11,7		5,581			12		37,6				451,2
Croatia	1990-2000	11,9	0,6	5,745	5,5	19,8	15	36,2	48,3	25,3	62,7	288,42	724,5
Cuba	1980-1990	11,7		1,669			6						
Cuba	1990-2000	12	4,2	1,717			4						
Czech Republic	1980-1990	13		11,76			14						
Czech Republic	1990-2000	13,5	0,9	12,9	9,3	23,7	43	49,7	35,5	33	125,6	445,5	1527
Ecuador	1980-1990			4,218	1,2	10,7	20	13,2	14,5	11,9			290
Ecuador	1990-2000		0,9	2,822	5,3	31,5	12	33,4		36,8			
Egypt, Arab Rep.	1980-1990	10,1	5,4	2,926	1,7	6,8	35	30,6	27,8	8,5			973
Egypt, Arab Rep.	1990-2000	10,3	4,6	3,552	1,3	6,7	21	59,3	30,6	8	13,39	82,4	642,6
El Salvador	1980-1990	9,6	0,2	2,956	0,8	2	52	20,1		2,8			
El Salvador	1990-2000	10,6	4,7	3,848	1,5	9,3	29	41,3	16,3	10,8	14,7	105,84	472,7
Estonia	1980-1990	12,7	2,2	5,519	2	3,7	39	20,2	23,7	5,7			924,3
Estonia	1990-2000	14,1	-0,5	10,33	10,2	26,4	47	26,3	35,6	36,6	143,8	516,06	1673
Ethiopia	1980-1990	4,2	1,1	0,519	0	2	16	19,5	27,2	2			435,2
Ethiopia	1990-2000	4,3	4,7	0,595		3,4	11	29					
Gabon	1980-1990		0,9	6,537	8,4	18	134	13	20,2	26,4			2707
Gabon	1990-2000		2,8	6,305	14,5	24,5	10	8,9		39			
Gambia, The	1980-1990		3,6	1,024	0	0,9	42	11	23,6	0,9			991,2
Gambia, The	1990-2000		3,1	1,063			38	12,5					
Georgia	1980-1990			2,331			39						
Georgia	1990-2000	11	-13	4,57	4,3	4,9	34	8,8	15	9,2	47,3	101,2	510
Ghana	1980-1990	6,4	3	1,817	0,3	2,7	38	4,9	13,2	3			501,6
Ghana	1990-2000	7	4,3	1,88	2,1	4,5	32	14,1		6,6			
Guatemala	1980-1990		0,8	3,79	0,6	2,9	21	14,2		3,5			
Guatemala	1990-2000		4,1	3,561	10,1	22,4	23	20,1		32,5			
Guinea	1980-1990			1,232	0,6	3,9	63	3,5	22,9	4,5			1443
Guinea	1990-2000	9,9	4,3	1,313	1,8	4	21	4	21,2	5,8	17,82	57,42	445,2
Guinea-Bissau	1980-1990		4	0,856	0	23	110	22		23			
Guinia-Bissau	1990-2000		1,2	1,975		1,3	67	7,9					
Hondoras	1980-1990		2,7	2,256	1,4	7,2	72	31,3		8,6			
Hondoras	1990-2000	8,7	3,2	2,654	4,8	9,5	70	41,3		14,3	41,76	124,41	
India	1980-1990		5,8	1,78	0	0,8	2	25,2	16,3	0,8			32,6
India	1990-2000		6	2,136	0,6	3	1	29	15,9	3,6			15,9
Indonesia	1980-1990		6,1	2,714	1	4,1	7	46,9	18,4	5,1			128,8
Indonesia	1990-2000	10	4,2	2,863	4,2	8,5	8	20,9	20,1	12,7	42	127	160,8
Iran, Islamic Rep.	1980-1990		1,7	5,297	0	2,6	3	32,5	19,9	2,6			59,7
Iran, Islamic Rep.	1990-2000	11,3	3,5	6,245	0	2,3	2	30,7	25,6	2,3	0	25,99	51,2
Israel	1980-1990	14,4	3,5	18,04	6,2	6,7	61	57,6	50,7	12,9			3093
Israel	1990-2000	14,6	5,1	18,56	19,5	0,7	128	86,9	47,4	20,2	284,7	294,92	6067
Jamaica	1980-1990	10,4	2	3,317	3,3	9,1	43	39		12,4			
Jamaica	1990-2000	10,8	0,5	3,639	7,2	15,7	4	32,9	39,1	22,9	77,76	247,32	156,4
Jordan	1980-1990	9	2,5	3,201	1,7	6,3	129	72,3	35,8	8			4618
Jordan	1990-2000	12,3	5	3,357	2	5,9	113	77,6	31,5	7,9	18	71,1	3560
Kenya	1980-1990	7,9	4,2	1,486	0,7	3,6	28	32,8	27,5	4,3			770
Kenya	1990-2000	7,8	2,1	1,482	1,1	6,6	17	30,1	26	7,7			442
Korea, Rep.	1980-1990	14,6	8,9	13,18	0,7	6,2	1	65,5	16,2	6,9			16,2
Korea, Rep.	1990-2000	15,3	5,7	15,96	3,2	11,5	-4	101,9	17,4	14,7	46,72	214,62	-69,6
Kuwait	1980-1990		1,3	22,7	1,3	19,3	2	52,1	55,3	20,6			110,6
Kuwait	1990-2000	8,7	3,2	14,35	0,7	43	1	51,9	43,3	43,7	6,09	380,19	43,3
Lesotho	1980-1990	9,5	4,5	2,193	2,7	9,4	61	15,8	51,7	12,1			3154

Lesotho	1990-2000	9,6	4,1	2,343	12,9	15,6	20	14,2	49,7	28,5	123,8	273,6	994
Madagascar	1980-1990		1,1	0,742	0,7	1,8	23	16,9	16	2,5			368
Madagascar	1990-2000	6,2	2	0,77	2,1	5	21	9,2	17,4	7,1	13,02	44,02	365,4
Malawi	1980-1990		2,5	0,905	0	3,2	47	12,3	25,4	3,2			1194
Malawi	1990-2000		3,8	0,891			43	6,2					
Malaysia	1980-1990	10,6	5,3	10,51	5,3	10,3	5	69,4	29,3	15,6			146,5
Malaysia	1990-2000	11,5	7	10,06	2	16,8	2	135,5	19,7	18,8	23	216,2	39,4
Mali	1980-1990		0,8	0,795	0,2	2	56	12,8		2,2			
Mali	1990-2000	2,1	3,8	0,827			33	17,5					
Mauritania	1980-1990		1,8	1,837	0,7	48,8	101	43,5		49,5			
Mauritania	1990-2000	6,7	4,2	1,966	0	40,6	80	26,7		40,6			
Mauritius	1980-1990	11,7	6,2	10,43	1,6	7,2	21	33,2	22,6	8,8			474,6
Mauritius	1990-2000	12	5,3	10,34	6,4	26,2	17	61,4	23,9	32,6			406,3
Mexico	1980-1990	11,4	1,1	8,625	1	9,2	4	17,5	17,9	10,2			71,6
Mexico	1990-2000	11,5	3,1	8,981	2,3	6,3	-1	13,2	15,5	8,6	26,45	98,9	-15,5
Morocco	1980-1990		4,2	3,585	0,6	5,5	19	34	28,8	6,1			547,2
Morocco	1990-2000	8,2	2,3	3,426	0,8	3	15	58,6	32,5	3,8	6,56	31,16	487,5
Mozambique	1980-1990	5	-0,1	0,979	0,4	0,4	67	17,6		0,8			
Mozambique	1990-2000	5,4	6,4	0,986	3,7	15,6	50	18,7		19,3	19,98	104,22	
Namibia	1980-1990	12,3	1,3	4,008	4,7	17	121	21	31	21,7			3751
Namibia	1990-2000	12	4,1	4,228	3,6	11,4	86	44,7	36,9	15	43,2	180	3173
Nepal	1980-1990		4,6	1,109	0	3,5	21	12,8	17,2	3,5			361,2
Nepal	11990-2000		4,9	1,333	0	4,8	17	30,7	16	4,8			272
Nicaragua	1980-1990		-1,9	2,597	0	9	148	112,6	72	9			10656
Nicaragua	1990-2000		3,5	2,663	10,6	22,1	111	54,5	41,5	32,7			4607
Niger	1980-1990	2,3	-1	0,953	1,6	2,8	30	12,3		4,4			
Niger	1990-2000	2,6	2,4	0,966			19	4,7					
Nigeria	1980-1990		1,6	0,896	2,1	5,9	2	9,4		8			
Nigeria	1990-2000		2,4	0,924	2,9	13	1	13,9		15,9			
Oman	1980-1990	8,7	8,4	7,737	1,4	3,8	27	22,9	39,5	5,2			1067
Oman	1990-2000	8,8	5,9	7,475	0,7	10,2	19	44,6	31,6	10,9	6,16	95,92	600,4
Pakistan	1980-1990		6,3	1,992	0,6	4,2	7	27,7	22,4	4,8			156,8
Pakistan	1990-2000		3,7	1,95	0,5	2,5	5	29,4	21,3	3			106,5
Panama	1980-1990	11,3	0,5	7,478	2,6	106,6	15	46,7	23,7	109,2			355,5
Panama	1990-2000	12,4	4,1	5,833	7,1	49,2	6	119,7	27,7	56,3	80,23	636,19	166,2
Papua New Guinea	1980-1990		1,9	2,354	4,8	5,7	82	28,6	34,7	10,5			2845
Papua New Guinea	1990-2000	6,1	4	2,416	8,4	27	54	15,8	27	35,4	51,24	215,94	1458
Paraguay	1980-1990	10,4	2,5	3,563	1,5	5,4	29	15,8	9,4	6,9			272,6
Paraguay	1990-2000	10,4	2,2	4,569	1,7	8,9	15	25,7		10,6	17	106	
Philippines	1980-1990		1	3,475	1,2	4,4	13	22,3	19,6	5,6			254,8
Philippines	1990-2000	11,2	3,3	3,742	2,8	48,4	8	44,5	19,7	51,2	31,36	573,44	157,6
Rwanda	1980-1990		2,2	0,816	0,3	2,8	110	6,9	18,9	3,1			2079
Rwanda	1990-2000		-0,2	0,875	0,8	2	38	10,1		2,8			
Saudi Arabia	1980-1990		0	8,673	1,8	9,8	1	61		11,6			
Saudi Arabia	1990-2000	9	1,5	10,2	1,1	10,8	1	57,1		11,9	9,9	107,1	
Senegal	1980-1990		3,1	1,662	1,3	4,8	80	26,5		6,1			
Senegal	1990-2000		3,6	1,556	4	8,8	44	20		12,8			
Sierra Leone	1980-1990	5,4	1,2		8	3,6	46	2,4	6	11,6			276
Serra Leone	1990-2000	6,1	-4,3	0,498			36	2,1	20,9				752,4
Singapore	1980-1990		6,7	23,61	20,7	48,5	5	97,4	21,4	69,2			107
Singapore	1990-2000		7,8	25,53	11,6	54,6	0	110	18,5	66,2			0
South Africa	1980-1990	13,4	1	6,819	0,2	2,2	10	81	30,1	2,4			301
South Africa	1990-2000	14,1	2	8,466	1,2	13,1	11	141,9	30,6	14,3	16,92	201,63	336,6
Sri Lanka	1980-1990		4	2,625	0,5	13,1	31	19,6	28,4	13,6			880,4

Sri Lanka	1990-2000		5,3	3,231	1,1	7,6	14	28,9	24,2	8,7			338,8
Sudan	1980-1990		0,4	0,929	0	0,3	9	4,8		0,3			
Sudan	1990-2000		8,1	0,989	3,4	4,6	7	2,4	9	8			63
Syrian Arab Republic	1980-1990	9	1,5	2,588	0	18	25	7,5	21,8	18			545
Syrian Arab Republic	1990-2000	9,5	5,8	3,043	1,6	17,8	10	9	23,5	19,4	15,2	184,3	235
Thailand	1980-1990	10,6	1,5	6,348	13,5	3	15	83,4	14,1	16,5			211,5
Thailand	1990-2000	10,8	5,8	6,683	11,3	2,8	11	108,8	25,1	14,1	122	152,28	276,1
Togo	1980-1990	10,5	1,7		1,1	9,6	49	22,6		10,7			
Togo	1990-2000	10,6	2,3	1,417	4,2	12,6	15	17		16,8	44,52	178,08	
Tunisia	1980-1990	13,5	3,3	5,483	0,6	9,5	8	55,1	34,6	10,1			276,8
Tunisia	1990-2000	13,7	4,7	6,471	3,9	9,3	23	66,2	31,6	13,2	52,65	178,2	726,8
Turkey	1980-1990		5,4	6,235	0,5	4,3	5	16,7	17,4	4,8			87
Turkey	1990-2000	9,5	3,7	6,677	0,9	9,3	5	23,7	38,1	10,2	8,55	96,9	190,5
Uganda	1980-1990		2,9	1,038	0	1,1	43	4		1,1			
Uganda	1990-2000		7	1,092	3,5	5	37	6,3	16,6	8,5			614,2
United Arab Emirates	1980-1990		-2,1	17,52			2	37,4	11,5				23
United Arab Emirates	1990-2000	10,7	2,9	22,07			1	60	11,2				11,2
Venezuela, RB	1980-1990	10,5	1,1	7,765	1,7	49,9	2	25,4	20,7	51,6			41,4
Venezuela, RB	1990-2000	10,9	1,6	6,113	4	12,3	3	12,1	19,4	16,3	43,6	177,67	58,2
Vietnam	1980-1990	9,7	4,6	1,817			11	2,5					
Vietnam	1990-2000	10,4	7,9	1,931	4,1	10,8	22	35,1	21,2	14,9	42,64	154,96	466,4
Yemen, Rep.	1980-1990			0,727	2,7	16,2	11	6,1	27,8	18,9			305,8
Yemen, Rep	1990-2000	8,5	5,8	0,797	3,3	6,9	15	5,5	27,4	10,2	28,05	86,7	411
Zambia	1980-1990	7,2	1	0,887	6,2	64,7	226	8,9		70,9			
Zambia	1990-2000	7	0,5	0,87			79	9,5					
Zimbabwe	1980-1990	9,5	3,6	2,336	0,1	1,7	43	23	27,3	1,8			1174
Zimbabwe	1990-2000	9,4	2,5	2,481			14	25,2	35,7				499,8
World	1990-2000		3,3	6,693	2,7	10,3		97,1	25,5	13			
World	1980-1990		2,7	7,081	8,8	29,1		119,5	25,2	37,9			
Low income	1990-2000		4,5		0,5	3	12	26,5	18,3	3,5			219,6
Low income	1980-1990		3,2		1,6	4,8	9	23,9	18,4	6,4			165,6
Middle income	1990-2000		3,3		1	7,6	10	45,4	21,5	8,6			215
Midle income	1980-1990		3,6		3,8	12	8	61,1	22,1	15,8			176,8
Lower middle income	1990-2000		4,1		1,1	5,4	10		15	6,5			150
Lower middle income	1980-1990		3,6		3,5	12,8	8	78,4	18,5	16,3			148
Upper middle income	1990-2000		2,7		0,9	8,7	11	38,9	25	9,6			275
Upper middle income	1980-1990		3,6		4	11,4	6	48,4	25,2	15,4			151,2
Low & middle income	1990-2000		3,5		0,9	6,7	14	41,6	21,1	7,6			295,4
Low & middle income	1980-1990		3,5		3,5	10,9	11	55,3	21,4	14,4			235,4
East Asian & Pacific	1990-2000		7,9		1,5	5,3	6	71,4	14,4	6,8			86,4
East Asian & Pacific	1980-1990		7,2		3,9	13,3	5	106,1	15	17,2			75
Europe & central Asia	1990-2000						25						
Europe & central Asia	1980-1990		-1,5		3,8	13,6	23	20,7	30,1	17,4			692,3
Latin America & Carib.	1990-2000		1,7		0,9	7,9	13	28,4	25,6	8,8			332,8
Latin America & Carib.	1980-1990		3,3		4,5	10,5	10	27,5	21,9	15			219
Middle East & N. Africa	1990-2000		2		0,9	11,5	21	41,6		12,4			
Middle East & N. Africa	1980-1990		3		1	7,5	16	47		8,5			
South Asia	1990-2000		5,6		0,6	1,4	4	24,6	17,6	2			70,4
South Asia	1980-1990		5,6		0,1	3,1	3	28,7	16,7	3,2			50,1
Sub-Saharan Africa	1990-2000		1,6		1	5,1	33	42,5	27,7	6,1			914,1
Sub-Saharan	1980-1990		2,5		1,8	11	20	66	26,9	12,8			538
High income	1990-2000		3,3		3	11		107,8	26,5	14			

High income	1980-1990	2,5	10,1	33,6	136,3	29,5	43,7
Europe EMU	1990-2000	2,4	2,9	14,1	78,4	36,6	17
Europe EMU		1,9	14,8	49,3	97,7	38,1	64,1