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Foreign Direct Investment and Trade Openness: The Case of South Asian Economies

Ali Asghar

Department of Economics, University of Gujrat, Pakistan

ABSTRACT: This paper examined the relationship between Foreign Direct Investment inflows and trade openness in the South Asian economies. In literature there had been diversification about this relationship. Some studies approved positive and significance relationship between FDI and Trade Openness and some found it insignificant. Our study examined the relationship of 7 countries for the time period of 12 years from 1998 to 2010 with panel data. On our data random effects were estimated. Trade openness was measured by three indicators, in terms of imports, exports and a joint combination of both the factors. The results suggested that there is significance relationship between trade openness and foreign direct investment inflows. Trade openness has positive and significance effects for FDI inflows in South Asian countries.

KEYWORDS: FDI, Trade openness. South Asian Economies, Government final consumption expenditure, Exchange rate volatility.

1 INTRODUCTION

Is there any relationship exist between trade an FDI? There has been a lot of literature in order to explain this relationship between trade and FDI. But answer is not straightforward. Even there exist differences and sometimes conflicts in these studies. In this research paper I have tried to explain the relationship between trade liberalization and foreign direct investment.

Foreign direct investment plays a major role in the development of a nation. One of the major issues of the developing economies is that they do not have sufficient capital or national savings to sponsorship their investments. Same is the case with developing nations of South Asian region. As a result they always look towards the developed nation to invest more in their countries in which they have more abundant resources and labor. So they are always looking for capital in form of direct and indirect investments. After 1980s debt crises, many countries were forced to rethink about their investment policies. So most suitable solution to attract the capital was the FDI. Thus it became a popular source of bank loans as a source of capital inflow. So now days many developing countries has made FDI as a major source of capital inflow and promoting FDI to attract foreign investors in different ways.

It has been seen that foreign direct investment (FDI) had strong influence on the economic growth in the world since the last three decades. According to Omisakin et al (2009) FDI is an important source for proving the funds for Domestic investment which leads to the capital formation. Now days, number of economies are offering incentives like tax free zone, subsidies to foreign firms, market preferences and some monopoly rights as well (Bouoiyour (2003). Because it is seen that FDI inflows can give a hand to the economy by numerous ways like enhancement in service sector including telecommunication, banking, finance and transport. Similarly the same case has been with wholesale, retail trade, business and legal services. In this time period there had been different studies in literature regarding the FDI inflows and its determinants in the developed as developing economies.

UNCTAD (2009) explains that a number of developing countries as well some least developed ones could manage only a small quantity of FDI inflows in their economies. In the view of more globalizing world they made many efforts towards economic liberalization. But it has been seen that FDI inflows are in very limited economies. Because demand side of FDI theory explains that mostly investment goes to countries where there is large enough support to production by scale of

economies (Trevino and Mixon 2004). Grosse and Trevino (1996) finds that mostly FDI moves to developed economies rather than developing because historically it always has been marketing seeking. So developing countries have to make a contest with developed countries in order to attract the higher percentage of FDI inflows in them.

This study is focused in finding the impact of trade openness on FDI inflows. It will be tested that either South Asian markets are more likely to attract the FDI inflows are not. We have divided our study in three sections. In first sections study discuses different the introduction and literature review. In second, we discussed data and indicators of openness and in third section study focus upon model estimations and results. And lastly conclusion is drawn from results and discussion.

2 LITERATURE REVIEW

FDI is basically an investment made to acquire lasting interesting enterprises operating outside the economy of the investor. There are two types of FDI, when local capital is invested abroad it is called outward FDI and when foreign capital is invested locally it is called inward FDI. The relation between FDI and trade is not a straightforward one but there exist differences and sometimes conflicts in the literature. These conflicts are sometimes due to the difference in methodology and data use in estimating relationship. (Andre marten 2008)

The major determinants of foreign direct investment are trade openness, market size, labor force growth, and infrastructure growth. FDI also depend upon the rate of return that an investor receives from the host country. In general south Asian nations must attain more openness in trade in order to improve FDI. (pravekar sahoo 2006)

It is seen that there exist a positive and significant relation between trade openness and FDI. Trade openness boost up export oriented FDI inflows while trade restrictions attracts tariff jumping FDI. So we can say that trade openness of developing economies is positively related to the size of export oriented capital inflows. Other than trade liberalization, FDI also depends upon the political stability, exchange rate stability and market size of economy. So developing countries must stabilize their exchange rate and political situation along with trade openness in order to attract more FDI. (panagiotis liargovas and Skandalis 2010)

(Bloningen 2005) states that in literature it is found that FDI decisions depends on a diverse features of the host countries like exchange rate, market size and potential, openness, political stability (risk), labor cost, investment cost, trade costs, human capital, trade deficit, external debt, domestic investment, human capital, inflation, tax, budget deficit, government consumption and energy use. It also has been observed that economically sound environment is more suitable for foreign business which leads to FDI inflows (Kumar 2002). There are also some other factors which attracts the FDI inflows like institutional quality, physical infrastructure, imports tariffs, macroeconomic stability and political stability (Trevino et al. 2002). Furthermore Trevino et al 2002; Grosse and Trevino 1996 state that economic growth of host country also an attractive driver of FDI. According to Victor Mponda-Banda, infrastructure development has significant and positive impact on FDI but trade has insignificant influence on the FDI in the case of Malawi. He further argued that determinants of FDI which are proven or disproven in other countries may not hold in all countries so every region must be analyzed differently.

Dunning (1993) states that rent seeking, efficiency seeking, strategic asset and market seeking are also more attractive for FDI inflows. Foreign firms also tend to seek cheaper factors of production and inputs. Those firms which tend to capture markets for exports can increase their sales in host country. This will help those firms who want to minimize their different trade restrictions like high transport costs and rules of origin. The firms which want efficiency seeking use small number of countries as their host countries. Some other factors in this intension are location, government regulation and factors endowments. Finally the strategic-asset is an important motive for foreign firms to keep their international position and competitiveness.

Here in this study we focus on trade openness as important factor impacting upon FDI inflows. In literature openness can be discussed from different angles e.g. social or socio-economic prospects. But will discusses openness from the economic dimension i.e. trade. Trade openness always attracts export-oriented FDI while when there are trade restrictions tariff-jumping FDI will be attracted. And its target will be the attraction of domestic market (Kosteletou and Liargovas 2000).

Zhang (2006) tested the growth driven by FDI for the China with panel data techniques. The study mentioned possible channels through which FDI causes positive as well as negative impacts on economic growth; findings suggested that FDI is an important channel for economic growth.

Causality link between growth, openness to trade and capital inflow has been explored by Iqbal *et al* (2010). The study utilized quarterly data set over the period 1998-2009 and applied Vector Auto Regressive (VAR) model to test the existence of long run relationship, while direction of causality is found by multivariate VECM. Findings suggested bidirectional causality between trade sector growth and economic FDI is detected, while a positive and robust link has been suggested between FDI

and trade promotion in long run. A similar analysis by Abubaker Bujaasi Mayanja (2003), investigated whether FDI is important for accessing foreign technology by using industry level panel data from the census of production for 205 four-digit industries in United Kingdom.

Kim and Bang (2008) studied the same link between FDI and economic growth for Ireland. Empirical findings found statistically significant effects of foreign direct investment on economic growth in short run as well as long run. Granger causality results indicated that foreign direct investment leads to economic growth Katarina and John (2004) analyzed the relationship between foreign direct investment and economic growth for Western European and US economy and documented similar findings. Shah and Ahmad (2003) analyzed the diversity in modes of international transaction along with movement of resources across the border and found a direct effects on inward FDI flows in Pakistan.

Tentatively both trade restrictions and openness could affect FDI inflows in positive or negative ways. But some policies of trade openness produced healthy effecting attracting the FDI. We can take the example of free trade agreement (FTA) in several Latin American countries which are able to attract FDI significantly. According to Goldberg and Klein (1998) FDI increases the exports, substitutes for imports or enhances the trade in inter mediate inputs. While Raff (2004) suggests that under some specific conditions FTA does not lead to attract the FDI however FDI is welfare improving. But there are also some other studies which had found positive relationship between trade openness and FDI flows (Biglaiser and deRouen 2006; Chakrabarti 2001).

On the other side we can see that some others like (Seim 2009) explore a negative as well complex relationship between trade openness and FDI inflows. During research it needs some careful explanation which may depend on features of each case. Briefly, the impact of trade openness on FDI inflow may change according to the inspiration for appealing FDI activities (Markusen and Maskus 2002; Dunning 1993).

The present study takes part in the literature for finding the role of trade openness measured by three different variables which are used in the literature. It will investigated that either trade openness an active determinant of FDI inflows in South Asian countries which are relatively in more tough condition than other Asian countries.

3 DATA AND INDICATOR OF OPENNESS

Our panel data set contains 7 South Asian countries which cover the period of 1998 to 2010. The economies are: Pakistan, India, Bangladesh, Maldives, Nepal, Bhutan and Seri Lanka. We concentrate on the last decade time period because large investment was made all over the world in this period. We check this fact from the Figure 1 given below which is extracted from UNCTAD data base. The figure indicates the larger increase of world FDI after the time period of 1990 as compare to the time period of 1980's or earlier. There is upraising in FDI in almost every region of the world like developed economies, developing economies, transition economies and other territories. So in the study this upraises will be observed with respect to the South Asian economies in the trade openness prospective.

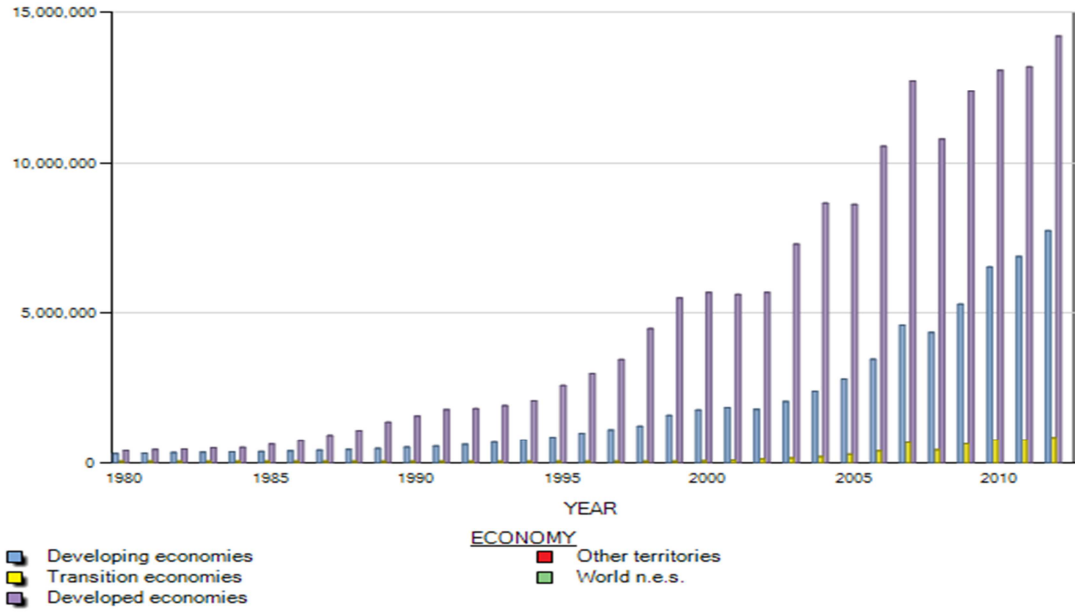

FIGURE 1

There is another table drawn from the UNCATD data base. It presents the same results as drawn from the above diagram. Over the time FDI inflows has been increased in the all segments of the world. Though its intensities had been different in all regions.

TABLE 1

YEAR	1970	1975	1980	1985	1990	1995	2000	2005	2010
ECONOMIES FDI INFLOWS									
Developing economies	3854.46	9709.49	7469.39	14164.7	34762.9	1169573	2645428	3345212	637063
Transition economies	0.00004	0.00004	23.6004	15.0004	75.2004	4106.78	7038.35	33611.8	75056.3
Developed economies	9491.25	16857.5	46575.1	41662.1	1725248	2224801	1141588	6214849	6964178

Another figure 2 also reveals same pattern of FDI inflows regarding South Asian economies. The abrupt more or less increase in FDI trend has been observed in all economies. In south Asian region Afghanistan and Iran are also included in some international reports (UNCTAD). But we are going to exclude these economies from our studies due to unavailability of data of our desired variables. Still we have missing values in our model so panel model will be used for the study because it carries meaning full results in the presence of missing values. In this way we may avoid from some complications which may arise in time series data.

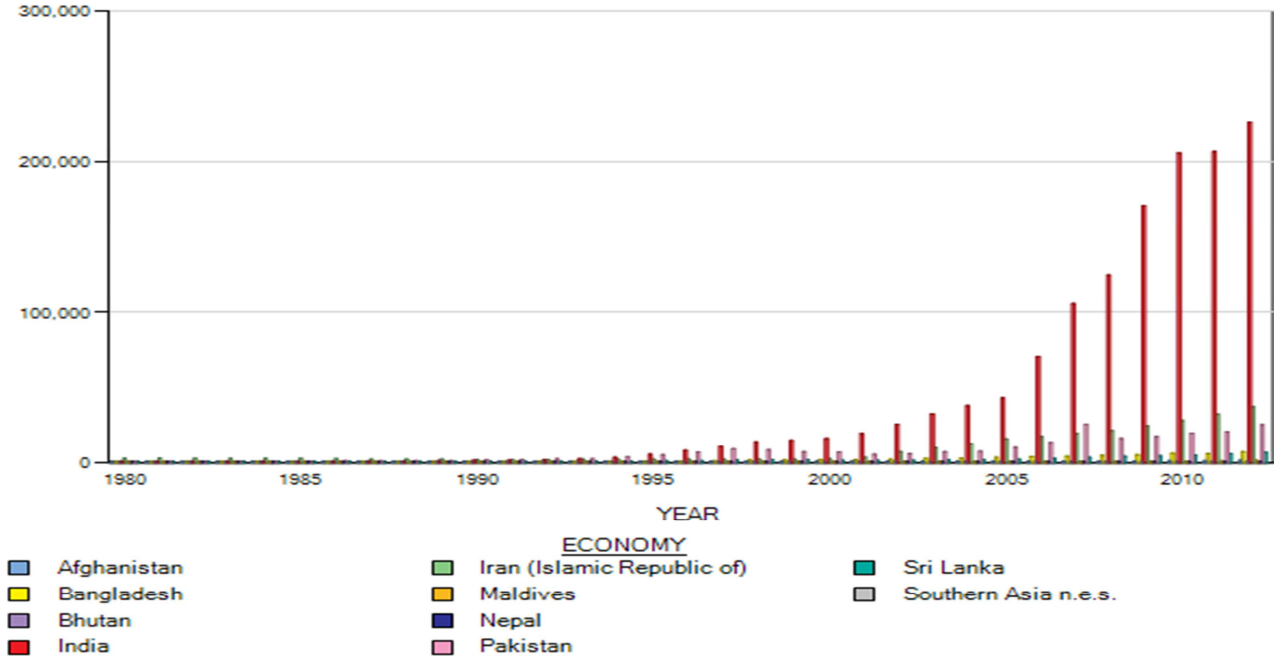

FIGURE 2

Study includes Foreign Direct Investment inflows as dependent variable. Chakrabarti (2001) and Bardhyl Dauti (2008) used these variables in the study. Here we determine six main variables as determinants of FDI from the literature. These are exchange rate stability, GDP, GDP per Capita, political risk and trade openness and government final consumption expenditures.

TABLE 2

Variable	Definition	Source
FDI	Foreign direct investment inward outward flows	UNCTAD
Trade Openness=m/GDP	Imports/GDP	WDI
Trade Openness=x/GDP	Exports/Imports	WDI
Trade Openness=x+m/GDPper capita	Exports Imports/GDPpercapita	WDI
Political stability	Proxy of political risk. Ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance)	WGI
Government final consumption expenditure	Government final consumption expenditure in a year	WDI
GDP	Gross domestic product	WDI
GDP per capita	GDP per capita	WDI
Exchange rate volatility	Measured by standard deviation of exchange rate	www.oanda.com

Table 2 describes the definitions of out variables and their data sources. The data of all variables had been taken from World Development Indicators except Exchange rate volatility, FDI and Political stability. There data has been collected from OANADA data base, UNCTAD and World Governance Indicators respectively.

Exchange rate stability is measured by exchange rate volatility. According to Kosteletou and Liargovas (2000) as exchange rate volatility increases FDI decreases. Its other meanings are that if there is stable exchange rate then it will affect FDI positively. So risk aversion firms may from entering foreign markets in the presence of exchange rate volatility. In literature different standards have been used by researches to measure the exchange rate volatility. Anderton and Skudely (2001) used the variance of weekly nominal exchange rate to measure the exchange rate volatility. Similarly Zubair and Jega (2008) used standard deviation of series to measure the exchange rate volatility. And Gujarati (2003) measures exchange rate volatility in terms of mean adjusted and squared deviation of variance each series. But we will use the Zubair and Jega (2008) method in the study because it is used in many times in the literature and trouble-free to deal with it. And GDP captures the overall size of the market in an economy. It is probable that wider markets extract more FDI inflows. GDP of an economy also defines the purchasing power of an economy at international comparable standard. Butler and Joaquin (1998) define Political risk as risk to a government in host country which can alter the institutional environment in which business is established. From fiscal point of view, political risk changes the flows of operating cash due to specific inequitable and regulations. However many studies presented mixed results about the political risk and FDI inflows (Grosse and Trevino 1996; Tallman 1988), it is expected that an economy having more political risk will less attract foreign investors.

There is huge diversity regarding the trade openness in the literature. Some emphasize export-led growth and there is other who forces openness to imports. Squalli and Wilson (2009) tried to incorporate both approaches. Therefore we will also include these approaches in our study. So we exercise:

- Exports divided by GDP (X/GDP)
- Imports divided by GDP (M/GDP)
- And total trade divided by GDP per capita (X+M/GDPpercapita).

These measures are mostly used in the literature to explain trade intensities. These indicators are appropriate measure of openness variable. Furceri and Borelli (2008) and Asiedu (2002) explored that these indicators had significant relationship with FDI inflows. So we will incorporate these variables in our study for the measurement of openness. With the help of these indicators of trade openness, we will investigate the association of trade openness and FDI inflows by escaping from measurement issues. But one thing is clear that none of the above indicator of trade openness could estimate the trade barriers.

These indicators are measure of trade dependence. But trade dependence might have other reasons than trade barriers. For example larger economies of the world had less dependence upon trade while G7 had more. Similarly Australia is an isolated economy and it also had low dependence than Canada which has common boundaries with United States. Those

economies which concentrate on exports may also have more dependence. However it is away from the scope of this study to include such indicators which can measure trade barriers.

4 MODEL ESTIMATION AND RESULTS

Our model is expressed in following way:

$$Yit = \beta o + \beta 1EXCHit + \beta 2GDPnomit + \beta 3GDPrecapit + \beta 4POLOTICALit + \beta 5OPENit + \beta 6GovtConit + \mu it$$

Chakrabarti (2001) used these variables in the study. Panagiotis G. Liargovas *et al* (2012) used this model in their study. Where Yit is the variable of foreign direct investment inflows (dependent variable) in country i and time t. EXCHit, OPENit, GDPnomit, GDPpercapit, POLITICALit and GovtConit stand for Exchange Rate Stability, the variables of Openness, GDP, Per Capita GDP ($),Political stability and Government final consumption expenditure respectively. We incorporated panel data estimations in our study due to many reasons which have been discussed in the literature. Our data is has some missing values so according to Hsiao (2003) and Klemarken (1989) panel data minimizes the risk of obtaining the biased estimations. Because it describes that all units of analysis are heterogeneous in nature. Similarly panel data has less collienearity among independent variables, more degree of freedom, more efficiency and more informative inputs for estimations. Precisely panel data give chance to measure and detect those effects which are measurable in cross-sectional and time-series data.

In our study, we selected random effects model (Table 5) on the biases of Hausman specification test (Table 6). So Table 4, Table 5, Table 6 describes our estimations results. We use a cross country panel data model to determine the effects of a number of trade openness indicators on FDI inflow in South Asian countries of our sample. We regressed panel lest squares regression with a time series component of twelve years (1998-2010).

TABLE 3

Variables	coefficient	std.error	t	p
C	6.56E+09	3.02E+09	2.17	0.03
Std.deviatin	-9.39E+08	5.67E+08	-1.66	0.098
tdOpPrecp	84.12817	41.01884	2.05	0.04
tdoppim	1.55E+09	6.91E+09	2.24	0.025
Gdp	-2.76E-01	3.93E-02	-7.02	0
Pcy	2.31E+05	1.60E+06	0.14	0.885
GovtCon	2.13E+00	1.07E-01	19.86	0
Ps	-1.69E+09	9.91E+08	-1.71	0.087
tdopxpgdp	8.42E+09	8.00+09	1.05	0.293

$R^2 = 0.97$

$Chi^2 = 2831.79(0.000)$

Table 3 describes the estimated results. It appears from Table 3 that the variable of our interest, openness, is significant in the two three of them. More specifically M/GDP (tdoppim) and X+M/GDP per capita (tdOpPrecp) are positive as well have significant impact, while X/GDP is only positive but not significant. These results were extracted by Furceri and Borelli (2008), Asiedu (2002) and Gastanaga et al. (1998) who reported that open economies are more likely to influence the initiation of foreign capital. Furthermore interesting result is that market size as described by the variables GDP (Gdp) and Government final consumption expenditure (GovtCon) affects positively and significantly the FDI inflows in our regression. These results lie with Trevino et al (2002) and Grosse and Trevino (1996). On the other hand political stability (PS), per capita income (pcy), and exchange rate (std.deviatin) had negative relationship with FDI. Azam and Khattak (2009), Danish and Adiqa (2012) also estimated same results. And R^2 and Chi^2 values are also significant. This tells that most of the variations are within the model and overall model is significant.

5 CONCLUSION

This study explored the significance relationship of Foreign Direct Investment inflows with Trade Openness in South Asian Economies which according to UNCTAD attracts only small amount of FDI. Using panel data and random effects the relationship found positive and significant relationship. Other than trade openness, Government final consumption expenditure and GDP are also found significant and positive and had significant influence on FDI existence.

So it is suggested that trade should be open in the South Asian region to attract more FDI inflows. This will ultimately enhance the GDP of these countries. Another important aspect of this study is that FDI should bring sustainable development. Because Per Capita income has not significant relationship with FDI inflows so governments should keep eye at this aspect while formulating policies regarding Trade openness.

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APPENDIX

TABLE 3. POOLES OLS

```
. reg  fdi ps gdp pcy govtconsm stddeviation tdopprecap tdoppimgdp tdopxpgdp
```

Source	SS	df	MS		
Model	9.3526e+22	8	1.1691e+22	Number of obs	= 71
Residual	2.0477e+21	62	3.3027e+19	F(8, 62)	= 353.97
				Prob > F	= 0.0000
				R-squared	= 0.9786
				Adj R-squared	= 0.9758
Total	9.5573e+22	70	1.3653e+21	Root MSE	= 5.7e+09

fdi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ps	-1.69e+09	9.91e+08	-1.71	0.092	-3.68e+09	2.87e+08
gdp	-.275821	.0393066	-7.02	0.000	-.3543938	-.1972481
pcy	230944.5	1596037	0.14	0.885	-2959487	3421376
govtconsm	2.134455	.1074642	19.86	0.000	1.919637	2.349273
stddeviation	-9.39e+08	5.67e+08	-1.66	0.103	-2.07e+09	1.94e+08
tdopprecap	84.12817	41.01884	2.05	0.045	2.132667	166.1237
tdoppimgdp	-1.55e+10	6.91e+09	-2.24	0.029	-2.93e+10	-1.68e+09
tdopxpgdp	8.42e+09	8.00e+09	1.05	0.297	-7.58e+09	2.44e+10
_cons	6.56e+09	3.02e+09	2.17	0.034	5.27e+08	1.26e+10

TABLE 4. PANEL EASTIMATION

```
. xtreg  fdi ps gdp pcy govtconsm stddeviation tdopprecap tdoppimgdp tdopxpgdp, fe

Fixed-effects (within) regression               Number of obs      =        71
Group variable: cntry                           Number of groups   =         7

R-sq:  within  = 0.9828                         Obs per group: min =         6
       between = 0.9968                                        avg =      10.1
       overall = 0.9079                                        max =        11

                                                F(8,56)            =    401.16
corr(u_i, Xb)  = -0.8991                        Prob > F           =    0.0000
```

fdi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ps	-9.44e+08	1.29e+09	-0.73	0.467	-3.52e+09	1.64e+09
gdp	.0603667	.0794788	0.76	0.451	-.0988485	.2195819
pcy	-2154232	1787229	-1.21	0.233	-5734481	1426018
govtconsm	1.283907	.2027312	6.33	0.000	.8777879	1.690027
stddeviation	-1.54e+08	4.18e+08	-0.37	0.715	-9.91e+08	6.84e+08
tdopprecap	-61.20201	45.41157	-1.35	0.183	-152.1723	29.7683
tdoppimgdp	4.00e+08	6.28e+09	0.06	0.949	-1.22e+10	1.30e+10
tdopxpgdp	1.26e+09	5.56e+09	0.23	0.821	-9.87e+09	1.24e+10
_cons	-1.08e+10	3.37e+09	-3.22	0.002	-1.76e+10	-4.09e+09
sigma_u	2.566e+10					
sigma_e	3.671e+09					
rho	.97994053	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(6, 56) =    15.99                 Prob > F = 0.0000
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TABLE 5

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. xtreg  fdi pcy gdp ps stddeviation govtconsm  tdopprecap  tdoppimgdp tdopxpgdp, re

Random-effects GLS regression                   Number of obs      =        71
Group variable: cntry                           Number of groups   =         7

R-sq:  within  = 0.9720                         Obs per group: min =         6
       between = 0.9868                                        avg =      10.1
       overall = 0.9786                                        max =        11

                                                Wald chi2(8)       =   2831.79
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

fdi	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
pcy	230944.5	1596037	0.14	0.885	-2897230	3359119
gdp	-.275821	.0393066	-7.02	0.000	-.3528606	-.1987814
ps	-1.69e+09	9.91e+08	-1.71	0.087	-3.64e+09	2.48e+08
stddeviation	-9.39e+08	5.67e+08	-1.66	0.098	-2.05e+09	1.72e+08
govtconsm	2.134455	.1074642	19.86	0.000	1.923829	2.345081
tdopprecap	84.12817	41.01884	2.05	0.040	3.732711	164.5236
tdoppimgdp	1.55e+10	6.91e+09	2.24	0.025	-2.90e+10	-1.95e+09
tdopxpgdp	8.42e+09	8.00e+09	1.05	0.293	-7.26e+09	2.41e+10
_cons	6.56e+09	3.02e+09	2.17	0.030	6.44e+08	1.25e+10
sigma_u	0					
sigma_e	3.671e+09					
rho	0	(fraction of variance due to u_i)				

```
. estimates store fe
```

TABLE 6

```
. hausman fe

Note: the rank of the differenced variance matrix (4) does not equal the number of
        coefficients being tested (8); be sure this is what you expect, or there may be
        problems computing the test.  Examine the output of your estimators for anything
        unexpected and possibly consider scaling your variables so that the coefficients
        are on a similar scale.
```

	Coefficients (b) fe	(B) .	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
ps	-1.69e+09	-1.69e+09	.0000587	48
gdp	-.275821	-.275821	-4.44e-16	8.67e-09
pcy	230944.5	230944.5	7.21e-08	.0220971
govtconsm	2.134455	2.134455	5.33e-15	2.25e-08
stddeviation	-9.39e+08	-9.39e+08	9.66e-06	21.16601
tdopprecap	84.12817	84.12817	-6.82e-13	6.73e-06
tdoppimgdp	-1.55e+10	-1.55e+10	.0000229	652.6745
tdopxpgdp	8.42e+09	8.42e+09	-.0005274	362.0387

```
                b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        0.00
                Prob>chi2 =      1.0000
                (V_b-V_B is not positive definite)
```