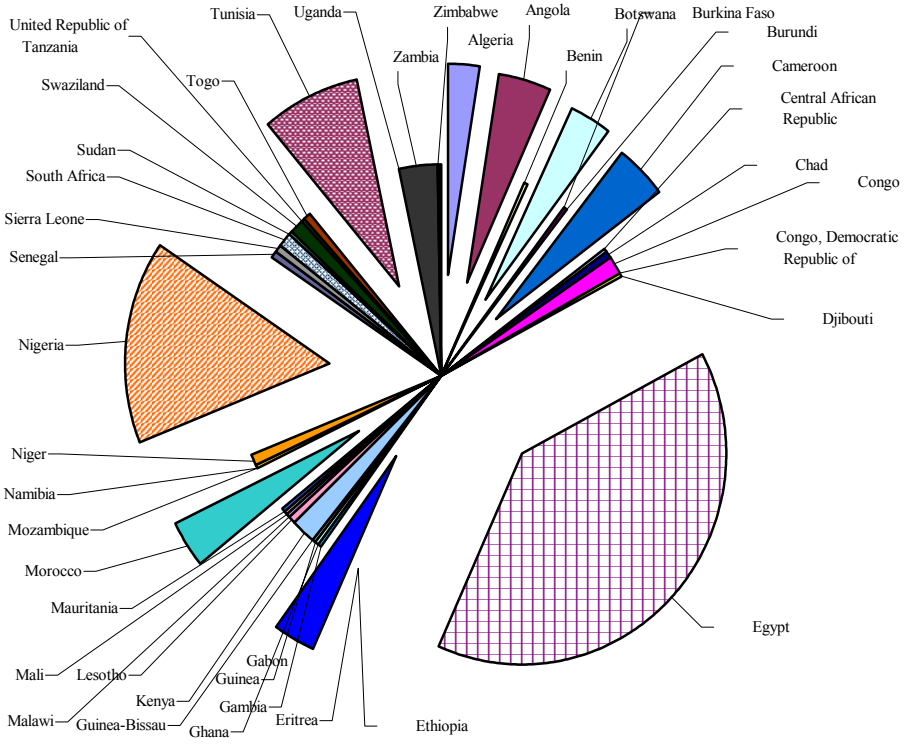
APPENDIX 1

FOREIGN DIRECT INVESTMENT FLOWS TO AFRICA

A.1 FOREIGN DIRECT INVESTMENT INFLOW AS A PERCENTAGE OF TOTAL INFLOW TO AFRICA

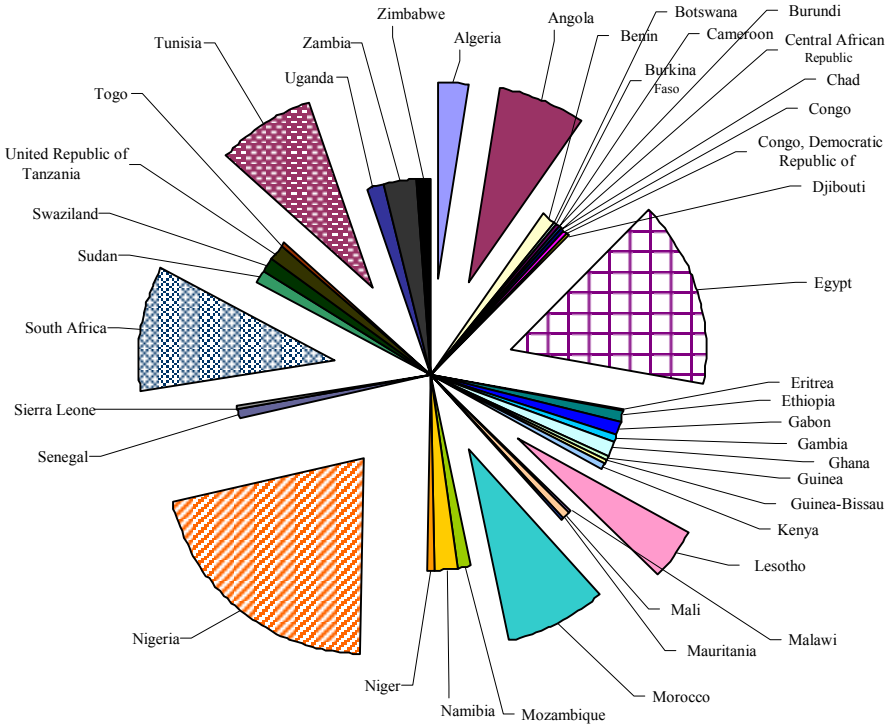
Figure A.1 and A.2 show the average FDI inflow to Africa as a percentage of the total inflow to Africa, in the periods 1980 to 1990 and 1990 to 2000 respectively. Only a few countries receive the major part of the FDI. From 1980 to 1990, nine countries, namely: Algeria, Angola, Botswana, Cameroon, Egypt, Gabon, Morocco, Nigeria and Tunisia received more than 85 per cent of these inflows. This list of top receivers didn't change much from 1990 to 2000, with Botswana, Cameroon and Gabon not appearing on this list and Lesotho and South Africa are added. These countries received more than 76 per cent of the total FDI inflows.

Figure A.1 FDI inflow to Africa as a percentage of the total inflow to Africa from 1980 to 1990



Source: Own Calculations (UNCTAD and WB data)

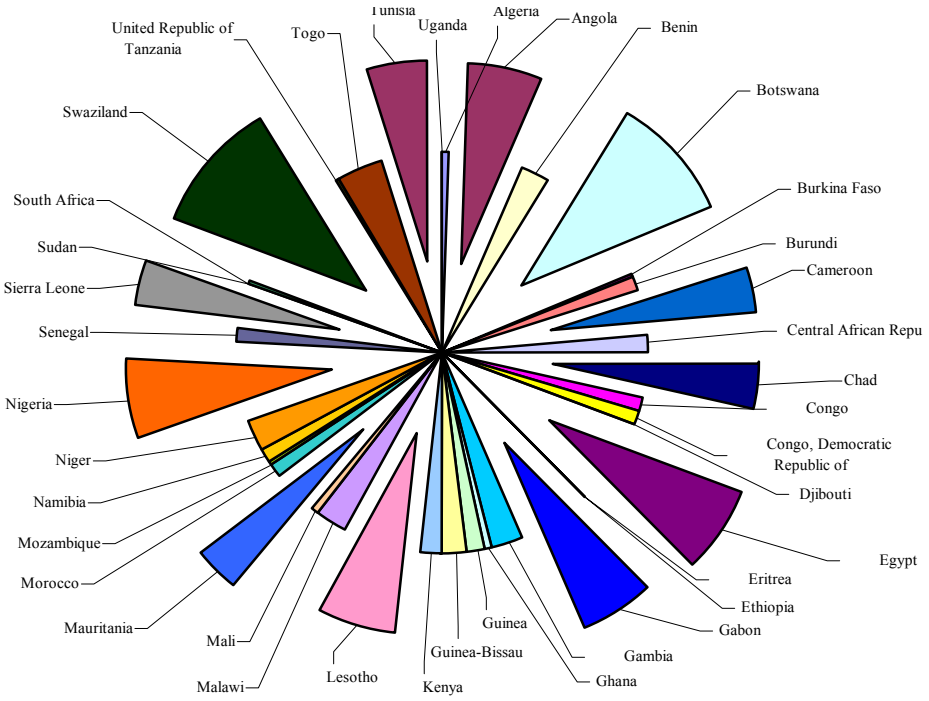
Figure A.2 FDI inflow to Africa as a percentage of the total inflow to Africa from 1990 to 2000.



Source: Own Calculations (UNCTAD and WB data)

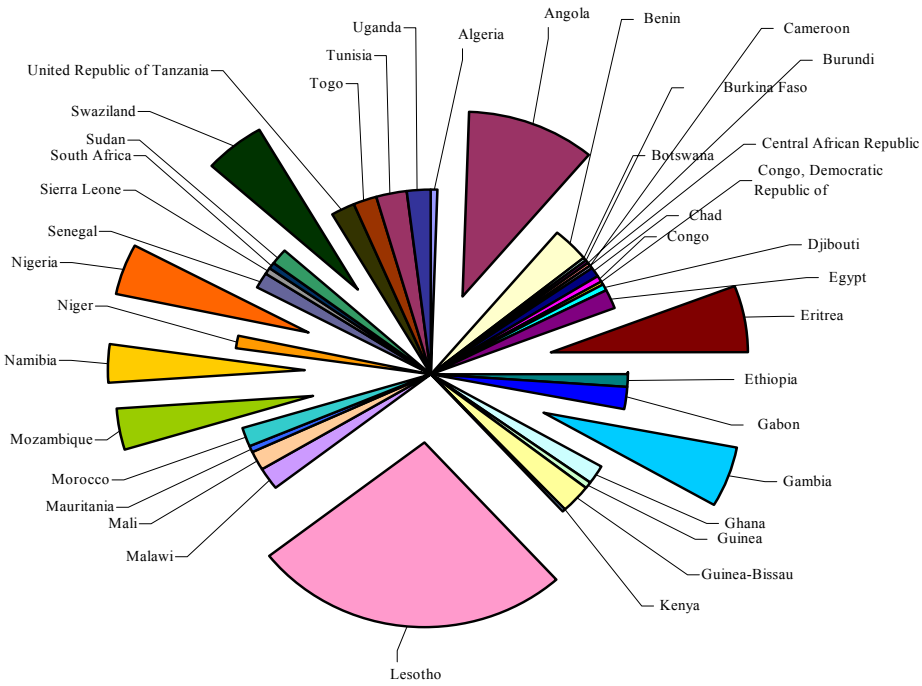
A.2 FOREIGN DIRECT INVESTMENT FLOWS TO AFRICA AS A PERCENTAGE OF GDP

Figure A.3 FDI inflows per GDP in Africa from 1980 to 1990



Source: Own Calculations (UNCTAD and WB data)

Figure A.4 FDI inflows per GDP in Africa from 1990 to 2000



Source: Own Calculations (UNCTAD and WB data)

Figure A.3 and figure A.4 show the FDI inflow as a percentage of the GDP for the period 1980 to 1990 and for the 1990 to 2000 respectively. In the period 1980 to 1990 this weighted FDI was distributed relatively evenly with almost 13 countries that received 4 per cent or more of the net inflows. Between the periods 1990 to 2000 this figure looked more screwed with two countries, namely Angola and Lesotho[57] receiving almost 30 per cent of the weighted net FDI inflows. Four neighbouring countries of South Africa, namely Swaziland, Namibia, Mozambique and Lesotho received 32 per cent of these inflows.

[57] The inflow to Angola was mainly concentrated in investments in petroleum activities after the civil war in the country and the large inflow to Lesotho was the result of large scale government privitasation during this period.

APPENDIX 2

EMPIRICAL LITERATURE AND CASE STUDIES ON FOREIGN DIRECT INVESTMENT

Table A2.1 List of dependent variables, functional form and explanatory variables used

Dependent variables	Functional form and explanatory variables	Description and meaning of variables	Sources and comments
y = Net FDI,	$y = \alpha + \beta X + \gamma I + \delta Z + \varepsilon$ Chakrabarti (2001) calculates weights through a likelihood function to estimate for instance a mean γ ($\gamma = \sum_j \omega_j \gamma_j$) *X* = a set of explanatory variables that have been relatively less controversial (market size – GDP, gdp) *I* = variables of interest (wage (*W*), openness (*OP*), real exchange rate (*REX*), tariff (*TAR*), trade balance (*NX*), growth rate of real GDP (*GRGDP*) and tax rate (*TAX*)). *Z* = are according to Chakrabarti (2001) 'doubtful' variables (inflation (*INF*), budget deficit (*DEF*), domestic investment (*di*), external debt (*ed*), government consumption (*GC*) and political stability (*PS*))	*NET FDI* = Per-capita net FDI in US dollars at current market prices. *gdp* = Per capita gross domestic product in US dollars at current market prices. *GDP* = Gross domestic product in US dollars at current market prices. *TAX* = Tax on income, profits and capital gains (% of current revenue). *W* = Industrial wage rate measured in US dollars at current market prices. *OP* = Ratio of exports and imports to GDP. *REX* = Real exchange rate in terms of US dollars. *def* = Per-capita budget deficit in US dollars at current market prices. *INF* = Annual percentage change in consumer price index (CPI). *TAR* = Average tariff on imports. *GRGDP* = Annual percentage change in GDP. *nx* = Per-capita value of exports less imports in US dollars at current market prices. *di* = Per-capita domestic investment in US dollars at current market prices. *ed* = Per-capita external debt in US dollars at current market prices. *PS* = Business Environmental Risk Intelligence (BERI) political stability index.	Chakrabarti (2001) $R^2 = 0.112$ N = 135

Dependent variables	Functional form and explanatory variables	Description and meaning of variables	Sources and comments
$(FDI/GDP)_t$ the share of foreign direct investment (as per balance of payment) in *GDP*	$\left(\frac{FDI}{GDP}\right)_{it} = g(GDP_{it}, GDPPC_{it}, GR3_{it-1}, INV_{it}, GSIZE_{it}, \Delta RER_{it}, INST_{it}, POL_{it}, SKILL_{it}, INFR_{it}, OPEN_{it})$	where *i* indexes country and *t* year. With: GDP_t = real GDP_t, $GDPPC_t$ = real *GDP* per capita, . $GR(3)_{t-1}$ = the average real *GDP* growth rates over past 3 years. INV_t = the share of gross domestic investment in *GDP*. $GSIZE_t$ = the share of government consumption in *GDP* (proxy for government size), $\Delta(RER)_t$ is the change in real exchange rate between year *t* and year *t-1*. The real exchange rate for country *i* is defined as $RER_i = E_{i/\$} . \frac{P_{US}}{P_i}$, where *E* is the exchange rate (local currency per US$), P_{US} is the US wholesale price index, and P_i is country *i*'s consumer price index. Increases in *RER* means real depreciation. DSX_t = the debt-service ratio (a proxy for transfer risk). $INST_t$ = an index of institutional quality, defined as the product of ICRG's "rule of law" and "corruption in government" indices and POL_t is a index of policy instability, defined as the standard deviation of *GSIZE* over the past 4 year, including the current year. $SKILL_t$ = the secondary school gross enrolment ratio (a proxy for national skill level), $INFRA_t$ is the number of telephone mainlines per thousand of the population (a proxy for telecommunication infrastructure), and $OPEN_t$ = trade openness that is defined as the value of exports plus imports divided by *GDP*.	Ancharaz (2003) Use an unbalanced panel R^2 = 0.22 to 0.34 Estimation methods = Fixed effects, GLS Total sample of 84 counties Period 1980 to 1997 N = 21 to 55
USFDI Total US FDI from the US Department of Commerce	(No specific functional form were specified)	*TAX* = corporate tax rate from Price Waterhouse's country books. *INFDI* = index of the degree of general openness to capital flows constructed from the IMF's Annual Report on Exchange Rate Arrangements and	Gastanaga, *et al* (1998) 7 panels are used and are specified

Dependent variables	Functional form and explanatory variables	Description and meaning of variables	Sources and comments
Bureau of Economic Analysis (BEA) as a % of GDP *USMAN* Manufacturing US FDI from US BEA as a % of GDP (use the ratio)		Restrictions, which ranges from "0" if restrictions are high to "10" if low or non-existent. *CORRUP* = index of absence of corruption from Mauro (1995), which ranges from "0" (most corrupt) to "10" (least corrupt). *BMP* = black Market Premium from the World Bank. Growth = rate of growth of real GDP, calculated using real GDP from the UN's MEDS and from the IMF's IFS. *TARIFF* = tariff revenue as a fraction of the value of imports, in domestic currency. Tariff revenue is from the IMF's Government Financial statistics (GFS) Yearbook, imports from the IMF's IFS. *CONTRACT* = contract Enforcement index from BERI, which ranges from "0" if enforcement is poor to "4" if good". *BURDELAY* = bureaucratic delay index from BERI, which ranges from "0" if delay is high to "4" if low. *NATRISK* = nationalization Risk index from BERI, which ranges from "0" if risk is high to "4" if low. *OILPRICE* = dummy variable for oil exporter multiplied by an index of real oil prices.	as follows: - Cross-section OLS = R^2 0.38 to 0.52 - Pooled OLS R^2 = 0.57 to 0.79 - Fixed effects estimation R^2 = 0.55 to 0.85 - Pooled OLS BEA manufacturing R^2 = 0.11 to 0.15 - Pooled OLS BEA total FDI data R^2 = 0.039 to 0.18 49 less-developed countries Period 1970 to 1995
*FDI = (FDI/GDP)*100*	No specific functional form	*OPEN* = (Imports + Exports)/GDP*100 This is also used as a measure of trade restriction (sign depend on type of investment). *INFRAC* = log(Phones per 1000 population) (+) *RETURN* = log(1/real GDP per capita) to measure the return on capital (an by implication higher per capita income should yield a lower return and therefore real GDP per capita should be inversely related to FDI). Africa dummy Africa =1 *GDP* growth as a measure of the attractiveness of the host country's market. Government consumption/GDP*100 as a measure of	Asiedu (2002) 4 Cross country regressions - average from 1988 to 1997 OLS estimation with different combinations of the independent variables and one panel estimation

Dependent variables	Functional form and explanatory variables	Description and meaning of variables	Sources and comments
		the size of government (smaller +). Inflation rate as a measure of the overall economic stability of the country (lower +). *M2/GDP*100* to measure the financial depth (+). Political Stability – used the average number of assassinations and revolutions as in Barro and Lee (1993) (sign not a priori determined). OPEN*AFRICA INFRAC*AFRICA RETURN*AFRICA	R^2 = 0.57 to 0.71
Net FDI/Population	No specific functional form - Political model - Economic model - Amalgamated model - Political-economic model	Economic Determinants - Real GNP per capita - Growth of real GNP - Rate of inflation - Balance of payments deficit - Wage cost - Skilled work force Political Determinants - Institutional Investors credit rating - Political instability - Government ideology (right = 1, left = 0) - Bilateral aid received - *From communist countries* - *From Western countries* Political and economic multi lateral aid	Schneider and Frey (1985) Different Cross-sections for 1976, 1979 and 1980 Comparison of 54 less developed countries R^2 = 0.38 to 0.75
FDI/population	$PCFDI = a_{11}+a_{12}PCGDPGR + a_{13}PCGDP + a_{14}PCTB + a_{15}NW + e_1$ $PCGDPGR = a_{21} + a_{22}(PCFDI/PCGDP) + a_{23}GDSGDP$ $= a_{24}EMPLGR + a_{25}FDISGDP + a_{26}EXGR +$ $a_{27}(PCFDI/PCGDP) \times D(i) + a_{28}(PCFDI/PCGDP)$ $\times D(i + 1)$(or $a_{27}FDISGDP \times D(i) + a_{28}FDISGDP$ $\times D(I + I)) + e_2$, $i = 1, 3$	Where: *PCFDI* = per capita FDI. *PCGDP* = per capita gross domestic product. *PCGDPGR* = annual growth rate of PCGDP. *PCTB* = per capita trade account balance. *NW* = nominal hourly rate of pay in manufacturing sector. *GDSGDP* = gross domestic savings as proportion of GDP. *FDISGDP* = stock of FDI as proportion of GDP. *EMPLGR* = rate of growth of employment. *EXGR* = rate of growth of employment.	Tsai (1994) Use 2SLS to estimate the parameters (R^2 doesn't have the normal interpretation) Include less developed and developing

Dependent variables	Functional form and explanatory variables	Description and meaning of variables	Sources and comments
		D(1) = high income LDC's, PCGDP exceeds US$1300 in 1975-1978 (US$1500 in 1983-1986), dummy variable. *D(2)* = median income LDCs, PCGDP lies between US$600 and 1300 in 1975-1978 (US$700 and 1500 in 1983-1986), dummy variable. *D(3)* = African LDCs, dummy variable. *D(4)* = Asian LDCs, dummy variable. e_1, e_2 = stochastic disturbance terms.	countries. Their samples size for each period is determined by the availability of data. 62 countries are included the seventies and 51 in the eighties.
FDI_{ij}—foreign affiliates of country *j* in country *i* as a per cent of total foreign affiliates of country *j*.	$FDI_{ij} = FDI_{ij}(LANGUAGE_{ij}, NEIGHBOUR_{ij}, GDPOPEN_j, LABPROD_j, GDCGF_j, DISTANCE_{ij}, TARIFF_{ij})$	$GDPOPEN_j$ =GDP of 1980 in constant prices of 1975 of country j, corrected for openness of the country. $GDPOPEN_j = GDP_j + \sum \frac{X_{ij}}{GDP_j} GDP_i$ $LANGUAGE_{ij}$= Dummy, 1 if country *i* and *j* share the same language, o otherwise. $NEIGHBOUR_{ij}$ = Dummy, 1 if country *i* an *j* are neigbours 0 otherwise. $LABPROD_j$ = hourly wages in US $ divided by labour productivity. $CFCF_j$ = Gross fixed capital formation as a % of GDP (this include transport, machinery, equipment and residential construction, as a proxy for the presence of an adequate infrastructure. $DISTANCE_{ij}$ = Ticketed point mileage between the most important airport of country *i* and country *j*. $TARIF_{ij}$ = Tariff average (of all industrial products) between country *i* and country *j*).	Veugelers (1991) County cross section for 1980 Including OECD countries OLS $R^2 = 0.46$
EXP_{ij}—exports of country *j* to country *i* as a per cent of total exports of country *j*.	$EXP_{ij} = EXP_{ij}(LANGUAGE_{ij}, NEIGHBOUR_{ij}, GDP_j, LABPROD_j, GDCGF_j, DISTANCE_{ij}, TARIFF_{ij})$		Exports regarded as a substitute or complement to local production in serving foreign markets. Thus, both FDI_{ij} and

Dependent variables	Functional form and explanatory variables	Description and meaning of variables	Sources and comments
			EXP$_{ij}$ are entered as measures of foreign enetration of country *i* by country *j*. $R^2 = 56$
FDI$_{ab}$/*GNP*$_a$ = the share of *FDI* in money terms that flow from country a to country b.	$\frac{FDIab}{Ya} = a_0 + a_1 yb_{-1} + a_2 \delta yb + a_3 STRb$ $+ a_4 ULCb + a_5 \left(\frac{Xab}{Ya}\right)_{-1} + a_6 (INTb - INTw) + \varepsilon$ According to Culem (1988) except for the introduction of three new variables $ULCb, \left(\frac{Xab}{Ya}\right)_{-1}$ and $(INTb - INTw)$ this correspond to the 'usual specification of the models of FDI determinants as demand equations. Where: yb_{-1} is a measure of the market size (lagged GNP) (+) δyb is a measure of the market growth (percent growth in the real GNP) (+) *STRb* is a measure of the tariff barriers (proxied by share in % of 1968 tariffs applied on industrial imports. *ULCb* unit labour cost (-) $\left(\frac{Xab}{Ya}\right)_{-1}$ to test the impact of prior exports on current FDIs (the lagged share of exports from country a ti country b in the GNP of country a) (+) $(INTb - INTw)$ is the nominal interest rate differential between the host country and the rest of the world. $\frac{FDIab}{Ya} = b_0 + b_1 yb_{-1} + b_2 (\delta yb - \delta ya) + b_3 STRb$ $+ b_4 (ULCb - ULCa) + b_5 \left(\frac{Xab}{Ya}\right)_{-1} + b_6 (INTb - INTw) + \gamma$	GNP is introduced to control for the size of the investing country, except when the sample covers only one investing country. Generally, larger countries are expected to invest abroad more than smaller ones. Recorded *FDI*s are pure financial flows. That is, they are neither equivalent to foreign financial involvement in domestic industries, nor to the growth of the net assets of foreign affiliates, nor to capital expenditure on fixed assets.	Culem (1988) FDI flows among 6 industrialised countries. Estimations by GLS and all regression coefficients are to be divided by 10^5) $R^2 = 0.37$ to 0.38

Dependent variables	Functional form and explanatory variables	Description and meaning of variables	Sources and comments
	Culem (1988) also developed a second model to test the difference between unit labour cost of the host and the source country and the difference in the real GNP growth rate between host and source country.		
FDI as a % of GDP	$FDI = \beta_{f1j} + \beta_{f2} FDI(-1) + \beta_{f3}\ I + \beta_{f4} DY + \beta_{f5} DY(-1) + \beta_{f6}\ \mathrm{Re}\,s2$	*FDI* = foreign direct investment, net inflows (% of GDP) (+). *I* = Gross Domestic Investment (% of GDP) (+) *DY* = Annual percentage growth rate of GDP at market prices based on constant local currency (+) *Res2* = Restrictions on Current Account (+) Transaction (No controls = 0, Controls = 1) *j* = Country index.	Razin (2002) Make use of 4 equations for a gravity model of which one is the FDI equation. Estimate OLS and TSLS R^2 = 0.13 to 0.29 64 developing countries from 1976 to 1997
K_2 = stock of foreign direct capital held by the US (home) in South Africa (host)	$\ln(K_2^*) = \beta_0 + \beta_1 \ln(w_1) + \beta_2 \ln(r_1) + \beta_3 \ln(w_2) + \beta_4 \ln(r_2) + \beta_5 \ln(Q_T) + \beta_6 \ln(m) + \beta_7 \ln(n)$ $\beta_1 > 0;\ \beta_2 > 0;\ \beta_3 < 0;\ \beta_4 < 0;\ \beta_5 > 0;\ \beta_6 < 0$ *and* $\beta_7 < 0$ Estimated as: $LFDI = \beta_0 + \beta_1 LWAGERSA + \beta_2 LUCRSA + \beta_3 LWAGERUSA + \beta_4 LUCUSA + \beta_5 Q + \beta_6 LUNCREV + \beta_7 LUNCEX$	w_i = cost of labour, nominal wage bill of the investor – approximated by an index for nominal wages *WAGERSA* wage rate SA and *WAGEUSA* wage rate *USA*. r_1 = cost of capital r_i = price of capital ((interest $rate_i$)-inflation $rate_i$)+(rate of $depreciation_i$)+(risk $premium_i$))/(1-tax $ratio_i$). *(LUCRSA* = user cost of capital in *SA* and *LUCUSA* is user cost in *US*. *Q* = market size, this can be substituted by *LQTOT* that is the total output requirement. m or LUNCREV = the demand uncertainty. n or LUNCEX = exchange rate uncertainty. Everything is estimated in log form	Van der Walt (1997) 1970 to 1994 OLS cointegration time series estimations for US FDI in SA UK FDI in SA R^2 = 0.98 R^2 = 0.99

Table A2.2 Selected determinants of FDI

	Determinants of FDI		Positive significant (Significance level between 1% and 10%)	Range of Coefficients[58]		Cross-section, time series or Panel	Negative significant (Significance level between 1% and 10%)	Range of Coefficients[1]		Cross-section, time series or Panel	Insignificant
Economic Determinants	Market size	**Real GDP**	Ancharaz (2003)								Ancharaz (2003)
		Nominal GDP	Lipsey (1999)	17.2	Unit Δ	CS					
		Real GDP (or GNP) per capita **Host**	Schneider and Frey (1985)	0.06 to 0.07	Unit Δ	CS	Edwards (1990)				Loree and Guisinger (1995)
			Tsai (1994)	0.02	Unit Δ	CS	Japersen, Aylward and Knox (2000)				Wei (2000)
			Lipsey (1999)	0.367 to 0.454		CS	Asiedu (2001)[60]	0.91 to 2.22	Log	CS	Hausmann and Fernandex-Arias (2000)
			Chakrabarti (2001)	0.01	Unit Δ			-2.1	Log	Panel	Ancharaz (2003[61])
			Chakrabarti (2003)	(+)			Asiedu (1997)	-4.66 to -6.47	Log	Panel	
			Van der Walt (1997)[59]	2.23 ($B_5 > 0$)	Log	CS	Ancharaz (2003)	-0.00187	Unit Δ	Panel	
		Rival	Chakrabarti (2003)	(+)							
		Lagged GNP	Culem (1988)	0.105 to 0.115	Unit Δ	Panel					
	GDP or GNP or per capita	**Growth**	Schneider and Frey (1985)	5.06 to 5.47	Unit Δ	CS					Asiedu (2001)
			Gastanaga *et al.* (1998)	0.328 to 0.718		CS					Razin (2002)
			Culem (1988)	1.07	Unit Δ	Panel					Lipsey (1999)
			Razin (2002)	0.01 to 0.02	Unit Δ	Panel					Tsai (1994)
		$Growth_{t-1}$	Gastanaga *et al.* (1998)	0.025 to 0.033		Panel					
				0.022 to 0.041		Panel[B]					
		$Growth_{t-2}$	Gastanaga *et al.* (1998)	0.029 to 0.030		Panel					Razin (2002)
				0.033 to 0.034		Panel[B]					
			Ancharaz (2003)[62]	0.05[C, D]		Panel					
		Growth Differential	Culem (1988)	1.803	Unit Δ	Panel					

[58] Coefficients depend on type of analysis and variables used in specific regression.

[59] Uses combined GDP of the home and host country and Van der Walt does not make use of Cross-section but of OLS time series and in this case between South African and the US by making use of and ECM as illustrated by Engle and Yoo, 1987).

[60] The inverse of the real GDP per capita is used to measure the return on capital; this inverse relationship may also reflect a perception that investment risk rises as per capita GDP declines. As a consequence investors may require higher returns to offset the perceived greater risk.

[61] The results are insignificant except for the SSA sample.

[62] The results are significant except for the SSA sample.

Determinants of FDI			Positive significant (Significance level between 1% and 10%)	Range of Coefficients[58]		Cross-section, time series or Panel	significant (Significance level between 1% and 10%)	Range of Coefficients[1]		Cross-section, time series or Panel	Insignificant
Labour	Labour cost or wage	Host	Wheeler and Mody (1992)				Chakrabarti (2003) Schneider and Frey (1985) Van der Walt	(-) -0.74 to -0.76 -1.883 (w_2<0)	Unit Δ Log	CS TS	Tsai (1994) Loree and Guisinger (1995) Lipsey (1999)
		Rival	Chakrabarti (2003)	(+)							
		Home	Van der Walt (1997)	2.164 (B_1>0)	Log	TS					
	Labour productivity										Veugelers (1991)
	Unit labour cost differential						Culem (1988)	-0.134	Unit Δ	Panel	
	Labour cost wage per worker divided by output per worker		Lipsey and Kravis (1982)								
	Skilled work force		Schneider and Frey (1985)	0.64 to 0.71	Unit Δ	CS					Schneider and Frey (1985)
Capital	Cost of Capital	Host	Van der Walt (1997)		Log			-0.278 (B_2 < 0)		TS	
		Home	Van der Walt (1997)	0.193 (B_1 > 0)	Log	TS					
	Nominal interest rate differential		Culem (1988)	18 to 19.536	Unit Δ	Panel					
Inflation rate							Schneider and Frey (1985)	-1.27 to -1.31	Unit Δ	*CS*	Asiedu (2001)
Balance of Payments deficit							Schneider and Frey (1985)	-0.50 to -0.54	Unit Δ	*CS*	
Per capita trade account balance							Tsai (1994)	-0.04	Unit Δ	CS	
Domestic investment			Razin (2002)	0.03 (OLS) 0.07 (TSLS)		Panel Panel					
Exchange rate or Δ (Exchange rate)			Chakrabart (2003)	(+)			Chakrabart (2003) Ancharaz (2003) Van der Walt (1997)	(-) -0.01E-4[C] -7.13E-4[D] -0.006 (B_7 < 0)	 Log	 CS CS	

	Determinants of FDI		Positive significant (Significance level between 1% and 10%)	Range of Coefficients[58]		Cross-section, time series or Panel	Negative significant (Significance level between 1% and 10%)	Range of Coefficients[1]		Cross-section, time series or Panel	Insignificant
	GDPOPEN		Veugelers (1991)	0.004	Unit Δ	CS					
	Openness (X +Z)/GDP		Edwards (1990) Gastanaga *et al.* (1990) Hausmann and Fernandez-Arias (2000) Asiedu (2001) Gastanga *et al.* (1998) Ancharaz (2003)	 0.03 to 0.035 0.18 to 0.47, 0.07 0.059 to 0.078[D] 0.03[C], 0.04[D]	 Unit Δ	CS & Panel CS Panel Panel[B] Panel					
	FDI_{-1}		Gastanga *et al.* (1998) Razin (2002)	0.74 to 0.84 0.32 to 0.43 0.60 (OLS) 0.50 (TSLS)		Panel[A] Panel[B] Panel Panel					
	Taxes and tariffs	**Host**					Loree and Guisinger (1995) Wei (2000) Chakrabarti (2003) Gastanga *et al.* (1998)	 (-) -2.090 -3.313 to -3.425		 Panel Panel[B]	Wheeler and Mody (1992) Lipsey (1999) Gastanaga *et al.* (1998) Veugelers (1991)
		Rival					Chakrabart (2003)	(-)			
Social/political	**Political instability or Policy instability**	**Host**					Schneider and Frey (1985) Edwards (1990) Chakrabart (2003) Ancharaz (2003)	-0.50 to -0.55 (-) -0.09[C], -0.07[D]	Unit Δ	CS CS	Loree and Guisinger (1995) Jaspersen *et al* (2000) Hausmann and Fernandez-Arias (2000) Asiedu (2001)
		Rival					Chakrabart (2003)	(-)			
	Government consumption or size						Ancharaz (2003)	-0.08[C], -0.06[D]		Panel	Asiedu (2001)
	***Language*$_{ij}$ (dummy, 1 if the same language is shared)**		Veugelers (1991)	5.598	Unit Δ	CS					

	Determinants of FDI	Positive significant (Significance level between 1% and 10%)	Range of Coefficients[58]		Cross-section, time series or Panel	Negative significant (Significance level between 1% and 10%)	Range of Coefficients[1]		Cross-section, time series or Panel	Insignificant
	***Neighbour*$_{ij}$ (dummy, 1 if a common border)**	Veugelers (1991)	5.67	Unit Δ	CS					
Other	***Distance*$_{ij}$ (ticketed point mileages between the key airports of countries)**	Veugelers (1991) Lipsey and Weiss (1981)	1.243	Unit Δ	CS	Lipsey and Weiss (1981)				
	Transportations cost	Chakrabart (2003)	(+)			Chakrabart (2003)	(-)			
	Demand uncertainty					Van der Walt (1997)	-0.0360 ($B_6 < 0$)	Log	TS	
	African dummy/(SSA)					Asiedu (2001)	-1.34 to -1.45 -1.52	Unit Δ	CS Panel	Ancharaz (2003)
	Institutional quality	Ancharaz (2003)	0.03[C], 0.04[D]		Panel					
	BMP									Gastanga *et al* (1998)
	Infrastructure quality	Wheeler and Mody (1992) Kumar (1994) Loree and Guisinger (1995) Asiedu (2001)	0.574 to 1.399	Log	CS					
	Trend	Schmitz and Bieri (1972)								

[A] Pooled OLS estimation
[B] Fullest potential panel with fixed effects
[C] Fixed Effects
[D] GLS

APPENDIX 3

TECHNICAL DISCUSSION

A3.1 PANEL DATA

Panel data models can be estimated as

$$y_{it} = \alpha_{it} + X_{it}^{'}\beta + \varepsilon_{it} \tag{A3.1}$$

where y_{it} is the dependent variable and x_{it} and β_i are k-vectors of non-constant regressors and parameters for $i = 1, 2, \ldots, N$ cross-sectional units; each for a period $t = 1, 2, \ldots, T$.

Most panel data applications utilize a one-way error component model for the disturbances, with

$$\varepsilon_{it} = \varepsilon_i + v_{it} \tag{A3.2}$$

where ε_i denotes the unobservable individual specific effect that must be estimated and v_{it} denotes the remainder disturbance (v_{it} *is* $IID(0,\sigma_v^2)$).

The basic specification treats the pool specification as a system of equations and estimates the model using systems OLS. This specification is appropriate when the residuals are contemporaneously uncorrelated and time-period and cross-section homoskedastic

$$\Omega = \sigma^2 I_N \otimes I_T \tag{A3.3}$$

the residual covariance matrix is given as

$$\Omega = E(\varepsilon\varepsilon^{'}) = E\begin{pmatrix} \varepsilon_1\varepsilon_1^{'} & \varepsilon_2\varepsilon_1^{'} & \cdots & \varepsilon_N\varepsilon_1^{'} \\ \varepsilon_2\varepsilon_1^{'} & \varepsilon_2\varepsilon_2^{'} & & \vdots \\ & & \ddots & \\ \varepsilon_N\varepsilon_1^{'} & \cdots & & \varepsilon_N\varepsilon_N^{'} \end{pmatrix} \tag{A3.4}$$

A3.2 FIXED EFFECTS (*Within* and LSDV)

The fixed effects estimator allows α_i to differ across cross-section units by estimating different constants for each cross-section. The fixed effects can be computed by subtracting the *within* mean from each variable and estimating OLS using the transformed data

$$y_i - \bar{x}_i = (x_i - \bar{x}_i)'\beta + (\varepsilon_i - \bar{\varepsilon}_i) \tag{A3.5}$$

$$\text{where } \bar{y}_i = \frac{\sum_t y_{it}}{N}, \bar{x}_i = \frac{\sum_t x_{it}}{N}, \text{ and } \bar{\varepsilon}_i = \frac{\sum_t \varepsilon_{it}}{N} \tag{A3.6}$$

The OLS covariance formula applied to

$$\text{var}(b_{FE}) = \hat{\sigma}^2 w(\tilde{X}'\tilde{X})^{-1} \tag{A3.7}$$

gives the coefficient covariance matrix estimates, where $\tilde{X}$ represents the mean difference X, and

$$\hat{\sigma}_W^2 = \frac{e_{FE}'e_{FE}}{NT - N - K} = \frac{\sum_{it}(\tilde{y}_{it} - \tilde{x}_{it}'b_{FE})^2}{NT - N - K} \tag{A3.8}$$

$e_{FE}'e_{FE}$ is the sum of squared residuals (SSR) from the fixed effects model.

The fixed effects are not estimated directly, but are computed from

$$\hat{\sigma}_i = \frac{\sum_t (\bar{y}_i - \bar{x}_i'b_{FE})}{N} \tag{A3.9}$$

The *within* method gives the same results as the LSDV with the major difference – the t statistics of the *within* model are not present, because the cross-section specific effects are estimated, but computed.

A disadvantage with the w*ithin* method is that *demeaning* the data means that X-regressors which are themselves dummy variables, cannot be used.

The total individual effect is the sum of the common constant and the constructed individual component (Baltagi, 2001: 11-13 and EViews Help file).

A3.3 CROSS -SECTION WEIGHTING

The Cross-section weighted regression is appropriate when the residuals are cross-section heteroskedastic and contemporaneously uncorrelated:

$$\Omega = E(\varepsilon\varepsilon') = E\begin{pmatrix} \sigma_1^2 I_{T_1} & 0 & \cdots & 0 \\ 0 & \sigma_2^2 I_{T_2} & & \vdots \\ & & \ddots & \\ 0 & \cdots & & \sigma_N^2 I_{T_N} \end{pmatrix} \qquad \text{(A3.10)}$$

A FGLS is performed where $\hat{\sigma}_i^2$ is estimated from the first-stage pooled OLS regression; and the estimated variances are computed as

$$\hat{\sigma}_i^2 = \frac{\sum_{t=1}^{T_1}(y_{it} - \hat{y}_{it})^2}{T_i} \qquad \text{(A3.11)}$$

where $\hat{y}_{it}$ are the OLS fitted values.

A3.4 SEEMING UNRELATED REGRESSIONS (SUR)

A SUR model is popular because it makes use of a set of equations, which allows for different coefficient vectors that capture the efficiency due to the correlation of the disturbances across equations. According to Baltagi (2001: 105), Avery (1977) was the first to consider the SUR model with error component disturbances. This method estimates a set of equations, which allow different coefficient vectors to capture efficiency due to the correlation of disturbances across equations.

One of the pitfalls is that it can not be used for a large number of cross-sections or a small number of time periods. The average number of periods used to estimate, must at least be as large as the number of cross-sections used (EViews Help file).

The SUR weighted least squares are estimated by using a feasible GLS specification assuming the presence of cross-section heteroskedasticity and contemporaneous correlation.

$$\Omega = E(\varepsilon\varepsilon') = \begin{pmatrix} \sigma_{11}I_T & \sigma_{12}I_T & \cdots & \sigma_{1N}I_T \\ \sigma_{21}I_T & \sigma_{22}I_T & & \vdots \\ & & \ddots & \\ \sigma_{N1}I_T & \cdots & & \sigma_{NN}I_T \end{pmatrix} = \sum \otimes I_T \qquad \text{(A3.11)}$$

where $\sum$ is the symmetric matrix of contemporaneous correlations

$$\sum = \begin{pmatrix} \sigma_{11} & \sigma_{12} & \cdots & \sigma_{1N} \\ \sigma_{21} & \sigma_{22} & & \vdots \\ & & \ddots & \\ \sigma_{N1} & \cdots & & \sigma_{NN} \end{pmatrix} \qquad \text{(A3.12)}$$

with typical element $\hat{\sigma}_{ij} = \dfrac{\sum_t (y_{it} - \hat{y}_{it})^2}{\max(T_i, T_j)}$ (A3.13)

According to the *EViews* help file, the *max* function is used in the case of unbalanced data by down-weighting the covariance terms.

APPENDIX 4

A4.1 UNIT ROOT TESTS FOR PANEL DATA

A4.1.1 Introduction

In time-series econometric studies, testing for unit roots in time series – by making use of the (augmented) Dickey-Fuller (DF) and Phillips-Perron (PP) tests – is standard practice. However according to Maddala (1999: 631) the use of these tests lacks power in distinguishing the unit root from stationary alternatives and in using panel data unit root tests, power of unit root tests based on a single time series can be increased.

Banerjee (1999: 607) states that the literature on unit roots and cointegration in panel data is a recent trend that has turned out to be a rich study area. It mainly focuses to combine information from the time-series dimension with data from cross-sections. This is done in the hope that inference about the existence of unit roots and cointegration can be made more straightforward and precise by taking account of the cross-section dimension, especially in environments where the time series for the data may not be very long, but similar data may be available across a cross-section of units such as countries, regions, firms or industries.

The most widely used panel unit root tests that have emerged from the literature, are those developed by Levin and Lin (1992, 1993), Im, Pesaran and Shin (1997) and Maddala and Wu (1999).

A4.1.2 Levin and Lins's LL test

Levin and Lin (1993), consider a stochastic process $\{y_{it}\}$ for $i = 1,\ldots,N$ and $t = 1,\ldots,T$ which can be generated by one of the following three models:

$$\text{Model 1}: \quad \Delta y_{it} = \beta_i y_{it-1} + \varepsilon_{it} \tag{A4.1}$$

$$\text{Model 2}: \quad \Delta y_{it} = \alpha_i + \beta_i y_{it-1} + \varepsilon_{it} \tag{A4.2}$$

$$\text{Model 3}: \quad \Delta y_{it} = \alpha_i + \delta_i t + \beta_i y_{it-1} + \varepsilon_{it} \tag{A4.3}$$

where Δy_{it} follows a stationary ARMA process for each cross-section unit and

$$\varepsilon_{it} \sim IID(0, \sigma^2)$$

The null and alternative hypotheses are expressed by

$$\begin{aligned} H_o &: \beta_i = 0 \text{ for all } i \\ H_A &: \beta_i < 0 \text{ for all } i \end{aligned} \qquad \text{(A4.4)}$$

The LL test requires β_i to be homogenous across *i* for this hypothesis. This implies testing a null hypothesis of all series in the panel being generated by a unit root process versus the alternative that not even one of the series is stationary. This homogeneity requirement is a disadvantage of the LL test. Levin and Lin (1993) show that the test has a standard normal limiting distribution. According to Maddala and Wu (1999: 635) the null makes sense under some circumstances, but it does not make sense to assume that all the countries in the sample will converge at the same rate if they do converge.

A4.1.3 Im, Pesaran and Shins's IPS Test

Im *et al.* (1997) propose a *t*-bar statistic to examine the unit root hypothesis for panel data that is based on the average of the individual ADF *t*-statistics. The IPS test achieves more accurate size and higher power relative to the LL test, when allowance is made for heterogeneity across groups (Im *et al.*, 2003). For a sample of *N* groups observed over *T* time periods, the panel unit root regression of the conventional ADF test is written as:

$$\Delta y_{it} = \alpha_i + \beta_i y_{it-1} + \sum_{j=1}^{P_i} \gamma_{ij} \Delta y_{it-j} + \varepsilon_{it}, \quad i = 1,...,N; \quad t = 1,...,T \qquad \text{(A4.5)}$$

The null and alternative hypotheses are defined as:

$$\begin{aligned} H_o &: \beta_i = 0 \text{ for all } i \\ H_A &: \beta_i < 0 \text{ for at least one of the cross-sections} \end{aligned} \qquad \text{(A4.6)}$$

The IPS test, tests the null hypothesis of a unit root against the alternative of stationarity and allows for heterogeneity, which is not allowed in the LL test. Two alternative specifications are tested by IPS, the first being that of a unit root with an intercept, as in equation A4.5, or a unit root around a trend and intercept, which would require the inclusion of a trend variable $\{\delta_i t\}$ in equation A4.5. The final test statistic is given by equation A4.7.

$$Z_{\tilde{t}\,bar} = \frac{\sqrt{N}\{\tilde{t}\,bar_{NT} - N^{-1}\sum_{i=1}^{N} E(\tilde{t}_{T_i})\}}{\sqrt{N^{-1}\sum_{i=1}^{N} Var(\tilde{t}_{T_i})}} \Rightarrow N(0,1) \qquad \text{(A4.7)}$$

where $\tilde{t}\,bar_{NT}$ is the average ADF t-statistic, while $E(\tilde{t}_{T_i})$ and $Var(\tilde{t}_{T_i})$ are the respective mean and variance. The means and variances are computed based on Monte-Carlo simulated moments and depend on the lag order, time dimension and deterministic structure of the performed ADF test. These mean and variance values are tabulated in Im *et al.* (2003). The IPS test is a one-sided lower tail test, which asymptotically approaches the standard normal distribution. A test statistic which is less than the standard normal critical value, would lead to the rejection of the null of non-stationarity and render the relevant panel variable stationary.

According to Maddala and Wu (1999: 635) the IPS test is proposed as a generalisation of the LL test, but the IPS test is a way of combining the evidence on the unit root hypothesis from the N unit root tests performed on the N cross-section units. In theory only balanced panel data is considered, but in practice, if unbalanced data is used, more simulations have to be carried out to get critical values.

A4.1.4 Maddala and Wu's Fisher test

The test statistic proposed by Maddala and Wu (1999) is based on combining the *P*-values of the test statistics of *N* independent ADF regressions from equation A4.8. The test is non-parametric and is based on Fisher (1932). This test is similar to the IPS test in the sense that is allows for different first-order autoregressive coefficients and tests the null of non-stationarity. Apart from testing for a unit root around an intercept or trend, as is the case with the IPS test, the Fisher test also tests for a unit root without including a trend or intercept. The Fisher test statistic is given by

$$P(\lambda) = -2\sum_{i=1}^{N} \ln(\pi_i) \qquad \text{(A4.8)}$$

where π_i is the P-value of the ADF test statistic for cross-section i. The Fisher test statistic $P(\lambda)$ follows a chi-squared distribution with $2N$ degrees of freedom. The test achieves more accurate size and higher power relative to the LL test (Maddala and Wu, 1999). The advantage it has over the IPS test, is that it allows for a specification of the ADF equation in A4.8, which does not include a trend or an intercept. The main conclusion from Maddala and Wu (1999: 650) "…is that the Fisher test is simple and straightforward to use and is a better test than the LL and IPS tests".

Results of the IPS test performed on the data used in the empirical estimation in the developed, emerging and African panels, are shown and discussed in the following section.

A4.2 TESTS FOR STATIONARITY

Table A4.1 shows the results of the IPS test performed on the developed, emerging and African data sets. Table A4.2 shows the result of the IPS test performed on the host-neighbouring country data.

Table A4.1 IPS-test on variables from Developed, Emerging and African Countries

	Developed		Emerging		Africa	
Variable	**Individual intercept**	**Individual intercept and trend**	**Individual intercept**	**Individual intercept and trend**	**Individual intercept**	**Individual intercept and trend**
FDI	10.54	7.51	3.72	0.34	-8.22***	-9.42***
EP	1.99	-0.55	-0.71	0.72	1.93	4.22
ES	2.84	1.44	6.16	2.22	3.45	1.64
ET	5.45	1.91	4.47	0.84	2.25	3.56
ET/EP	5.99	1.96	4.16	0.94	0.31	0.66
MS	5.55	-2.06**	1.99	-1.12	2.50	-0.45
G	-5.97***	-3.62***	-7.84***	-6.71***	-16.38***	-13.92***
T	0.47	0.59	6.75	2.69	20.58	11.30
OPN1	9.90	-0.90	3.19	-1.81**	0.069	-3.72***
OPN2	9.77	-1.74**	3.68	-2.29**	-2.26***	-0.45
FH	-0.17	0.48	-0.035	0.69	-10.48***	-2.68***
CC/MS	-3.34***	2.49	-3.12	-1.75**	-2.68***	-1.42*
CC	1.08	2.47	-2.76***	-2.37***	-1.51*	-1.57*
R	-4.02***	-1.43*	-	-	-	-
INFL	-5.70***	-2.56***	-	-	-	-

	Developed		Emerging		Africa	
PURB	4.5	5.86	-3.68***	3.21	-8.75***	4.26
PIT	-	-	1.74	-0.67	-	-
REE	1.07	-1.17	-	-	-	-

***(**)[*] Significant at 1(5)[10] per cent

Table A4.2 IPS-test performed on variables form neighbouring countries

	Developed neighbours		Emerging neighbours		African neighbours	
Variable	**Individual intercept**	**Individual intercept and trend**	**Individual intercept**	**Individual intercept and trend**	**Individual intercept**	**Individual intercept and trend**
N_MS	4.04	-1.08	2.12	-3.63***	0.008	-0.67
N_CC/ N_MS	-0.56	-0.93	-2.30***	-6.81***	-4.49***	-3.14***
N_CC	-0.71	-0.70	-3.67***	-1.92**	-2.31**	1.94
N_G	-6.98***	-4.23***	-7.26***	-4.94***	-56.25***	-51.50***
N_ET/ N_EP	1.48	1.39	-0.79	-2.37***	6.48	2.75
N_EP	1.50	-3.52***	4.99	6.17	7.2	2.06
N_ES	-0.15	-0.59	11.94	6.31	1.94	2.87
N_ET	1.99	2.52	4.26	-0.46	5.67	0.18
N_FH	1.08	0.96	-1.05	-2.52**	-0.29	-3.37***

***(**)[*] Significant at 1(5)[10] per cent

A4.3 TEST FOR COINTEGRATION

According to McCoskey and Kao (1999) this test of the null hypothesis was first introduced in the time series literature as a response to some critiques of the null hypothesis of no cointegration. They state that the test for the null of cointegration rather than the null of no cointegration could be very appealing in applications where cointegration is predicted a priori by economic theory. Failure to reject the null of no cointegration could be caused in many cases by the low power of the test and not by the true nature of the data.

It follows that:

H_0: None of the relationships is cointegrated.
H_A: At least one of the relationships is cointegrated.

The model presented allows for varying slopes and intercepts:

$$y_{i,t} = \alpha_i + \delta_i t + \beta_i x_{i,t} + e_{i,t}, \quad t = 1,...,T \quad \text{and} \quad i = 1,...,N \tag{A4.9}$$

$$x_{it} = x_{it-1} + \varepsilon_{it} \tag{A4.10}$$

$$e_{it} = \gamma_{it} + u_{it}, \tag{A4.11}$$

and

$$\gamma_{it}\gamma_{it-1} + \theta u_{it} \tag{A4.12}$$

The null of hypothesis of cointegration is equivalent to $\theta = 0$

The LM statistic that follows:

$$\overline{LM} = \frac{\frac{1}{N}\sum^{N}\frac{1}{T^2}\sum_{t=1}^{T} S_{i,t}^{+2}}{\hat{\varpi}_{1.2}^{2}} \tag{A4.13}$$

where $\hat{\varpi}_{1.2}$ estimates $\varpi_{1.2}^2 = \varpi_1^2 - \varpi_{12}\Omega_{22}^{-1}\varpi_{12}$

and

$S_{i,t}^{+}$ is a partial sum of the residuals

$$S_{i,t}^{+} = \sum_{k=1}^{t} \hat{e}_{i,t} \tag{A4.14}$$

In this case, the system must be estimated under H_0 using a consistent estimator of cointegrated regressions such as Fully Modified.

$$LM^{+} = \frac{\sqrt{N}\left(\overline{LM} - \mu_v\right)}{\sigma_v} \Rightarrow N(0,1) \tag{A4.15}$$

The final test statistic is based on a one-tailed test, upper tail of the distribution.

The results (table A4.3) show that the residuals of the developed sample (Res_dev), residuals of the emerging sample (Res_em) and the residuals of the African sample (Res-afr) reject the null hypothesis that none of the relationships is cointegrated. In equation 6.1, where the relationship in the African top-10 (Res_afr_top10) FDI per GDP receiving countries is shown, the null hypothesis is not rejected.

Table A4.3 McCoskey and Kao cointegration tests on the host countries

	Res_dev	Res_em	Res_afr	Res_afr_top10
Equation 6.1	-7.302***	-4.302*	-7.537***	-2.735
Equation 6.2	-9.640***	NA	NA	NA
Equation 6.3	NA	-11.102***	NA	NA
Equation 6.4	NA	NA	-10.206***	-5.977***

***(**)[*] Significant at 1(5)[10] per cent

Equations 7.1 and 7.2 (table A4.4) include the influence of the neighbouring countries. In equation 7.1 the null hypothesis of no cointegration, is not rejected in the African top 10-countries (Res_n_afr_top10) sample. In equation 7.3 the null hypothesis is not rejected in the developed country sample (Res_n_dev) as well as in the emerging country sample (Res_n_em)

Table A4.4 McCoskey and Kao cointegration test on the equations including neighbouring countries

	Res_n_dev	Res_n_em	Res_n_afr	Res_n_afr_top10
Equation 7.1	-6.663***	-5.268***	-10.628***	-4.118
Equation 7.3	-4.270	-3.278	-7.918***	-5.081***

***(**)[*] Significant at 1(5)[10] per cent

APPENDIX 5

HYPOTHESIS TESTING

A5.1. CROSS-SECTION SPECIFIC FIXED EFFECTS

This test performs an F-test (simple Chow test) to test for the joint significance of the dummies, given the simple panel data regression with N cross-sections and T time periods:

$$y_{it} = \alpha + X_{it}'\beta + \mu_{it} \qquad i = 1,...,N; \quad t = 1,...,T \tag{A5.1}$$

and

$$\mu_{it} = \mu_i + v_{it} \tag{A5.2}$$

where μ_i is a dummy variable denoting the unobservable individual cross-section specific effect and v_{it} denotes the remainder disturbance, the aim is to test whether μ_i is significant. The μ_i's are assumed to be time-invariant fixed parameters to be estimated and the remainder disturbances stochastic with $v_{it} \sim$ IID$(0, \sigma_v^2)$. A panel regression with a disturbance structure as in equation A5.2 is commonly known as the Least Square Dummy Variable (LSDV) regression.

The null and alternative hypotheses are given by equation A5.3.

$$\begin{aligned} &H_0 : \mu_1 = \mu_2 = ... = \mu_{N-1} = 0 \\ &H_A : \text{not all equal to zero} \end{aligned} \tag{A5.3}$$

From equation A5.3 it is evident that rejection of the null would imply that there are significant individual effects across countries. The joint significance of these cross-section specific fixed effects can be tested by means of the F-test with a test statistic as stipulated in equation A5.4.

$$F = \frac{(RRSS - URSS)/(N-1)}{URSS/(NT-N-K)} \sim F_{N-1,N(T-1)-K} \qquad \text{under } H_0 . \qquad \text{(A5.4)}$$

This is a Chow test with the restricted residual sum of squares (RRSS) being that of the simple OLS pooled model, while the unrestricted residual sum of squares (URSS) is taken from the *LSDV* model.

The null hypothesis of no fixed effects is rejected if the calculated *F*-statistic is greater than the corresponding table value.

Table A5.1 shows the F-statistics for cross-section specific effects with equations as specified in chapters 6 and 7.

Table A5.1 Validity of fixed effects

Cross-section specific fixed effects		Equation	F –statistic
$F_{N-1,N(T-1)-K}$ $H_0 : \mu_1 = \mu_2 = ... = \mu_{N-1} = 0$ $H_A : not\ all\ equal\ to\ zero$	Developed	Eq 6.1	12.716***
	Emerging	Eq 6.1	7.767***
	Africa	Eq 6.1	11.343***
	African top-ten	Eq 6.1	12***
	Developed	Eq 6.2	11.164***
	Emerging	Eq 6.3	2.23***
	Africa	Eq 6.4	NA
	African top-ten	Eq 6.4	17.54***
	Developed	Eg 7.1	8.832***
	Emerging	Eq 7.1	8.832***
	Africa	Eq 7.1	10.287***
	African top-ten	Eq 7.1	8.54***
	Developed	Eg 7.3	18.26***
	Emerging	Eq 7.3	20.824***
	Africa	Eq 7.3	9.417***
	African top-ten	Eq 7.3	12.635***

***(**)[*] Significant at 1(5)[10] per cent

A5.2. DURBIN-WATSON (DW) AND LAGRANGE MULTIPLIER (LM) SERIAL CORRELATION TEST FOR PANEL DATA

The panel data DW-test is an extension of the time-series DW-test, and the null and alternative hypothesis are given by

$$H_0 : \rho = 0$$
$$H_A : |\rho| < 1 \qquad \text{(A5.5)}$$

The null of no serial correlation is evaluated against an alternative of positive serial correlation. The DW_ρ test statistic is given by:

$$DW_\rho = \frac{\sum_{i=1}^{N}\sum_{t=2}^{T}\left(\tilde{v}_{it} - \tilde{v}_{i,t-1}\right)^2}{\sum_{t=1}^{N}\sum_{t=2}^{T}\tilde{v}_{it}^2} \qquad \text{(A5.6)}$$

where $\tilde{v}$ is a vector of stacked *within* residuals.

The DW_ρ statistics are shown in table A5.2 and do not follow a well-known distribution and critical values need to be calculated. This is a major disadvantage of the DW_ρ test compared to the LM test. As a rule of thumb, a DW_ρ value of less than 2 is an indication of positive serial correlation.

The LM test for first order serial correlation given fixed effects, is constructed under:

$$H_0 : \rho = 0 \text{ (given } \mu_i \text{ are fixed)} \qquad \text{(A5.7)}$$

where

$$LM = \sqrt{NT^2/(T-1)(\tilde{v}_1 - \tilde{v}_{-1}/\tilde{v}'\tilde{v})} \sim N(0,1) \qquad \text{(A5.8)}$$

and $\tilde{v}$ are the *within* residual.

Table A5.2 shows that there are positive serial correlation in the data.

Table A5.2 Serial correlation tests: Panel Durbin-Watson (DW) and Lagrange Multiplier (LM)

		Equations					
	Estimation Method	**Eq 6.1**	**Eq 6.2**	**Eq 6.3**	**Eq 6.4**	**Eq 7.1**	**Eq 7.3**
Developed country sample							
DW_ρ	Pool	0.658	0.687	NA	NA	0.575	0.566
DW_ρ	LSDV	1.07	1.08	NA	NA	1.05	1.05
LM	Pool	9.06	8.54	NA	NA	9.864	9.308
LM	LSDV	4.11	3.65	NA	NA	4.047	4.128
Emerging country sample							
DW_ρ	Pool	0.499	NA	0.836	NA	0.589	0.44
DW_ρ	LSDV	0.72	NA	0.868	NA	0.85	0.936
LM	Pool	10.4	NA	7.931	NA	9.718	10.61
LM	LSDV	8.49	NA	7.525	NA	7.685	7.402
African country sample							
DW_ρ	Pool	0.23	NA	NA	0.246	0.44	0.445
DW_ρ	LSDV	1.362	NA	NA	NA	0.71	0.709
LM	Pool	14.96	NA	NA	794.21	19.18	19.1
LM	LSDV	1.1	NA	NA	NA	15.161	15.16
African top-ten sample							
DW_ρ	Pool	0.278	NA	NA	NA	0.343	0.363
DW_ρ	LSDV	1.447	NA	NA	NA	1.515	1.483
LM	Pool	7.249	NA	NA	NA	7.035	6.975
LM	LSDV	-0.5	NA	NA	NA	-0.562	-0.045

A5.3. TESTING FOR HETEROSKEDASTICITY

Estimations with heteroskedastic errors under the assumption of homoskedasticity will yield consistent but inefficient coefficients. If it is expected that heteroskedasticity among the residuals is generated by the remainder of disturbance, v_{it}, in equation A5.7, then the error variance is expected to change over time between the cross-sections, irrespective of the significance of the time-period specific fixed effect.

$$\mu_{it} = \mu_i + \lambda_t + v_{it} \qquad \text{(A5.9)}$$

$$v_{it} \sim \text{IID}\ (0,\ \sigma_i^2)$$

The hypothesis for the testing of heteroskedasticity is

$$H_0 : \sigma_1^2 = \sigma^2 \text{ for all } i$$

$$H_A : \sigma_1^2 \neq \sigma^2 \text{ for all } i \qquad \text{(A5.10)}$$

The LM test is

$$LM = \frac{T}{2}\sum_{i=1}^{N}\left[\frac{\hat{\sigma}_i^2}{\hat{\sigma}^2} - 1\right]^2 \sim \chi^2_{(n-1)} \qquad \text{(A5.11)}$$

where

$$\hat{\sigma}_i^2 = \frac{1}{T}\sigma_i^2 \text{ and } \hat{\sigma}^2 = \frac{1}{NT}\sigma^2 \qquad \text{(A5.12)}$$

If the null hypothesis of homoskedasticity is true, the $\frac{\hat{\sigma}_i^2}{\hat{\sigma}^2}$ ratios should be approximately unity and this statistic should be very small. It is distributed as a chi-square with *N-1* degree of freedom.

From table A5.3 it seems as if the residuals are heteroskedastistic distributed.

Table A5.3 LM test for heteroskedasticity

		Equations					
	method	**Eq 6.1**	**Eq 6.2**	**Eq 6.3**	**Eq 6.4**	**Eq 7.1**	**Eq 7.3**
Developed country sample							
LM	Pool	123.436	100.282	NA	NA	91.595	91.494
LM	LSDV	126.44	104.324	NA	NA	127.279	119.331
Emerging country sample							
LM	Pool	62.385	NA	82.277	NA	80.704	70.892
LM	LSDV	8.723	NA	84.746	NA	131.297	130.01
African country sample							
LM	Pool	1516.422	NA	NA	276.54	1253.601	1155.198
LM	LSDV	3310.69	NA	NA	NA	2862.364	2112.653
African top-ten sample							
LM	Pool	234.579	NA	NA	225.269	198.477	144.942
LM	LSDV	243.802	NA	NA	199.926	268.859	207.686

APPENDIX 6

A6.1 COUNTRIES

The countries used in the panel estimation, were chosen on the basis of data availability. The developed countries were taken from the HDI 2001 list of top 20 countries.

Table A6. 1 Countries used

Africa		Emerging		Developed	
Algeria	DZA	Argentina	ARG	Australia	AUS
Angola	AGO	Brazil	BRA	Austria	AUT
Benin	BEN	Chile	CHL	Canada	CAN
Botswana	BWA	China	CHN	Denmark	DNK
Burkina Faso	HVO	Colombia	COL	Finland	FIN
Burundi	BDI	China, Hong Kong SAR	HKG	France	FRA
Cameroon	CMR	India	IND	Germany	GER
Central African Republic	CAF	Indonesia	IDN	Italy	ITA
Chad	TCD	Malaysia	MYS	Japan	JPN
Congo	DRC	Mexico	MEX	Netherlands	NLD
Congo, Democratic Republic of	COG	Philippines	PHL	New Zealand	NZL
Egypt	EGY	Thailand	THA	Norway	NOR
Ethiopia	ETH	Venezuela	VEN	Sweden	SWE
Gabon	GMB			Switzerland	SWT
Ghana	GHA			United Kingdom	UNK
Guinea	GIN			United States	USA
Guinea-Bissau	GNB				
Kenya	KEN				
Lesotho	LSO				
Malawi	MWI				
Mali	MLI				
Mauritania	MRT				
Morocco	MAR				
Mozambique	MOZ				
Namibia	NAM				
Niger	NER				
Nigeria	NGA				
Senegal	SEN				
Sierra Leone	SLE				
South Africa	ZAF				
Sudan	SDN				
Swaziland	SWZ				
United Republic of Tanzania	TZA				
Togo	TGO				
Tunisia	TUN				
Uganda	UGA				

Table A6.2 presents a list of countries and their neighbouring countries and average weight that was used to construct the data set for each host county's neighbouring countries. All the data for the different variables are weighted from 1980 to 1998 by making use of the specific years' GDP weighting structure. The average of the GDP weights of the neighbouring countries are shown in brackets. The neighbouring countries are chosen as countries adjoining. If countries do not have common borders with neighbours, the nearest countries were chosen to be neighbours.

Table A6.2 Neighbouring countries for which data were collected (weights in parenthesis)

African	Neighbouring countries	Weights	Developed Countries	Neighbouring countries	Weights	Emerging	Neighbouring countries	Weights
Algeria	Tunisia	(0.30)	**Australia**	New Zealand	(0.44)	**China**	Pakistan	(0.12)
	Niger	(0.04)		Indonesia	(0.56)		India	(0.67)
	Mali	(0.04)					Nepal	(0.01)
	Mauritania	(0.02)	**Austria**	Germany	(0.63)		Vietnam	(0.03)
	Morocco	(0.60)		Italy	(0.29)		Lao PDR	(0.001)
				Switzerland	(0.08)		Philippines	(0.17)
Angola	Namibia	(0.29)						
	DRC	(0.71)	**Canada**	Alaska	(0)	**Hong Kong**	China	(0.86)
				USA	(1)		Philippines	(0.14)
Benin	Nigeria	(0.83)						
	Niger	(0.06)	**Denmark**	Germany	(0.91)	**India**	Pakistan	(0.1)
	Burkina Faso	(0.06)		Swede	(0.09)		China	(0.89)
	Togo	(0.04)					Nepal	(0.01)
			Finland	Spain	(0.1)			
Botswana	Namibia	(0.02)		Italy	(0.19)	**Indonesia**	Philippines	(0.15)
	South Africa	(0.98)		Switzerland	(0.06)		Malaysia	(0.13)
				Germany	(0.42)		Australia	(0.72)
Burkina Faso	Mali	(0.18)		Belgium	(0.05)			
	Niger	(0.15)		England	(0.19)	**Malaysia**	Thailand	(1)
	Benin	(0.14)						
	Togo	(0.10)	**France**	Spain	(0.10)	**Philippines**	China	(0.86)
	Ghana	(0.42)		Italy	(0.19)		Indonesia	(0.14)
				Switzerland	(0.06)		Hong Kong	(0)
Burundi	Tanzania	(0.25)		Germany	(0.42)			
	DRC	(0.75)		Belgium & Luxembourg	(0.05)	**Singapore**	Malaysia	(0.47)
				England	(0.19)		Indonesia	(0.14)
Cameroon	Central African Republic	(0.04)						
	Chad	(0.04)	**Germany**	Denmark	(0.06)	**Taiwan**	Japan	(0.89)
	Nigeria	(0.83)		Austria	(0.08)		China	(0.02)
	Congo	(0.08)		Switzerland	(0.11)		Hong Kong	(0.09)
				France	(0.52)			
Central African	Chad	(0.05)		Belgium	(0.09)	**Thailand**	Lao PDR	(0.02)

African	Neighbouring countries	Weights	Developed Countries	Neighbouring countries	Weights	Emerging	Neighbouring countries	Weights
Republic								
	Sudan	(0.22)		Netherlands	(0.14)		Cambodia	(0.02)
	DRC	(0.29)					Malaysia	(0.96)
	Congo	(0.09)	**Italy**	France	(0.74)			
	Cameroon	(0.34)		Switzerland	(0.15)	**Argentina**	Chile	(0.07)
				Austria	(0.11)		Uruguay	(0.01)
Chad	Sudan	(0.13)		Joego-Slawia			Paraguay	(0.01)
	Central African Republic	(0.03)					Brazil	(0.90)
	Cameroon	(0.22)	**Japan**	Korea-North			Bolivia	(0.01)
	Nigeria	(0.58)		Korea- South	(1)			
	Niger	(0.05)				**Brazil**	Uruguay	(0.02)
			Netherlands	Germany	(0.64)		Argentina	(0.53)
DRC	Angola	(0.26)		Belgium	(0.07)		Paraguay	(0.02)
	Tanzania	(0.11)		England	(0.29)		Bolivia	(0.001)
	Burundi	(0.05)					Peru	(0.11)
	Uganda	(0.17)	**New Zealand**	Australia	(1)		Colombia	(0.17)
	Sudan	(0.25)					Venezuela	(0.16)
	Central African Republic	(0.05)	**Norway**	Sweden	(0.44)		Guyana	(0.001)
	Congo	(0.11)		Finland	(0.24)			
				Denmark	(0.32)	**Chile**	Argentina	(0.81)
Congo	DRC	(0.43)					Bolivia	(0.02)
	Central African Republic	(0.06)	**Sweden**	Germany	(0.88)		Peru	(0.17)
	Cameroon	(0.51)		Denmark	(0.07)			
				Finland	(0.05)	**Colombia**	Ecuador	(0.02)
Egypt	Sudan	(1)					Peru	(0.06)
			Switzerland	France	(0.29)		Brazil	(0.82)
Ethiopia	Kenya	(0.58)		Germany	(0.46)		Venezuela	(0.09)
	Sudan	(0.42)		Austria	(0.04)		Panama	(0.01)
				Italy	(0.21)			
Ghana	Togo	(0.41)				**Mexico**	Guatemala	(0.001)
	Burkina Faso	(0.59)	**United Kingdom**	France	(0.7)		US	(1)
				Belgium & Luxembourg	(0.12)	**Venezuela**	Colombia	(0.11)
Guinea	Sierra Leone	(0.13)		Netherlands	(0.18)		Brazil	(0.89)
	Mali	(0.30)					Guyana	(0)
	Senegal	(0.54)	**United States**	Canada	(0.66)			
	Guinea Bissau	(0.03)		Mexico	(0.34)			
Guinea Bissau	Guinea	(0.29)						
	Senegal	(0.73)						
Kenya	Ethiopia	(0.29)						
	Sudan	(0.36)						
	Tanzania	(0.14)						
	Uganda	(0.22)						

African	Neighbouring countries	Weights	Developed Countries	countries	Weights	Emerging	Neighbouring countries	Weights
Lesotho	South Africa	(1)						
Malawi	Mozambique	(0.60)						
	Tanzania	(0.40)						
Mali	Algeria	(0.80)						
	Niger	(0.04)						
	Burkina Faso	(0.04)						
	Guinea	(0.04)						
	Senegal	(0.08)						
Mauritania	Algeria	(0.87)						
	Mali	(0.05)						
	Senegal	(0.09)						
Morocco	Algeria	(1)						
Mozam-bique	South Africa	(0.97)						
	Malawi	(0.01)						
	Tanzania	(0.02)						
	Swaziland	(0.01)						
Namibia	South Africa	(0.94)						
	Botswana	(0.02)						
	Angola	(0.04)						
Niger	Chad	(0.02)						
	Nigeria	(0.30)						
	Algeria	(0.50)						
	Tunisia	(0.19)						
Nigeria	Benin	(0.12)						
	Niger	(0.13)						
	Chad	(0.09)						
	Central African Republic	(0.07)						
	Cameroon	(0.60)						
Senegal	Gambia	(0.06)						
	Guinea Bissau	(0.04)						
	Guinea	(0.32)						
	Mali	(0.41)						
	Mauritania	(0.17)						
Sierra Leone	Guinea	(1)						
South Africa	Namibia	(0.29)						

African	Neighbouring countries	Weights	Developed Countries	Neighbouring countries	Weights	Emerging	Neighbouring countries	Weights
	Botswana	(0.34)						
	Mozambique	(0.20)						
	Swaziland	(0.10)						
	Lesotho	(0.07)						
Sudan	Egypt	(0.72)						
	Chad	(0.02)						
	Central African Republic	(0.02)						
	DRC	(0.12)						
	Ethiopia	(0.07)						
	Uganda	(0.06)						
Swaziland	South Africa	(0.99)						
	Mozambique	(0.01)						
Tanzania	Mozambique	(0.09)						
	Malawi	(0.05)						
	DRC	(0.32)						
	Burundi	(0.04)						
	Uganda	(0.16)						
	Kenya	(0.33)						
Togo	Benin	(0.20)						
	Burkina Faso	(0.21)						
	Ghana	(0.59)						
Tunisia	Algeria	(0.96)						
	Niger	(0.04)						
Uganda	Sudan	(0.24)						
	Kenya	(0.33)						
	Tanzania	(0.11)						
	DRC	(0.33)						

Table A6.3 shows the list of top oil exporting countries and the number of barrels these countries export, are shown in the second column.

Table A6.3 List of top oil producing countries in Africa

	Country	Description
1.	Nigeria	1.9 million barrels per day
2.	Libya	1.25 million barrels per day
3.	Algeria	1.25 million barrels per day
4.	Gabon	283,000 barrels per day
5.	Congo, Democratic Republic of the	255,000 barrels per day
6.	Egypt	219,213 barrels per day
7.	Sudan	194,500 barrels per day
8.	Equatorial Guinea	180,000 barrels per day
9.	Cameroon	50,167 barrels per day
	Total	5.58 million barrels per day
	Weighted Average	951,353.54 barrels per day

Source: http://www.nationmaster.com/graph-T/ene_oil_exp_net/AFR

Table A6.4 represents the ranking of the developed countries according to the Human Development Index.

Table A6.4 Countries According to the Human Development Index

	Country	Ranking
1	Norway	0.942
2.	Sweden	0.941
3.	Canada	0.940
4.	Belgium	0.939
5.	Australia	0.939
6.	United States	0.939
7.	Iceland	0.936
8.	Netherlands	0.935
9.	Japan	0.933
10.	Finland	0.930
11.	Switzerland	0.928
12.	United Kingdom	0.928
13.	France	0.928
14.	Austria	0.926
15.	Denmark	0.926
16.	Germany	0.925
17.	Ireland	0.925
18.	Luxembourg	0.925
19.	New Zealand	0.917

Source: http://www.nationmaster.com/graph-T/eco_hum_dev_ind

APPENDIX 7

MODELS WITH COUNTRY SPECIFIC EFFECTS

A7.1 DEVELOPED COUNTRIES

Table A7.1 CC/MS as a Cross-country specific coefficient

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 16
Total pool (unbalanced) observations: 301
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(ET?/EP2?)	0.772749	0.065268	11.83969	0.0000
T?	-3.057636	0.301128	-10.15394	0.0000
OPN1?	8.000852	0.203001	39.41288	0.0000
FHA?	-0.485265	0.077704	-6.245039	0.0000
C	13.99586	1.195866	11.70354	0.0000
_AUS--LOG(CC2_AUS/MS2_AUS)	-0.190946	0.177826	-1.073776	0.2838
_AUT--LOG(CC2_AUT/MS2_AUT)	0.485747	0.161659	3.004772	0.0029
_CAN--LOG(CC2_CAN/MS2_CAN)	0.304952	0.182048	1.675118	0.0950
_DNK--LOG(CC2_DNK/MS2_DNK)	0.279576	0.157342	1.776863	0.0767
_FIN--LOG(CC2_FIN/MS2_FIN)	0.275113	0.174683	1.574929	0.1164
_FRA--LOG(CC2_FRA/MS2_FRA)	0.005903	0.170785	0.034566	0.9725
_GER--LOG(CC2_GER/MS2_GER)	0.254730	0.168595	1.510895	0.1319
_ITA--LOG(CC2_ITA/MS2_ITA)	0.218970	0.175756	1.245875	0.2139
_JPN--LOG(CC2_JPN/MS2_JPN)	-0.352662	0.163327	-2.159233	0.0317
_NLD--LOG(CC2_NLD/MS2_NLD)	0.446062	0.174285	2.559384	0.0110
_NOR--LOG(CC2_NOR/MS2_NOR)	0.429314	0.161470	2.658792	0.0083
_SWE--LOG(CC2_SWE/MS2_SWE)	0.125501	0.171974	0.729769	0.4661
_SWT--LOG(CC2_SWT/MS2_SWT)	0.249926	0.151562	1.649006	0.1003
_UNK--LOG(CC2_UNK/MS2_UNK)	-0.428053	0.185799	-2.303849	0.0220
_USA--LOG(CC2_USA/MS2_USA)	-0.326932	0.178067	-1.836009	0.0674
_NZL--LOG(CC2_NZL/MS2_NZL)	-0.156027	0.180495	-0.864436	0.3881

Weighted Statistics

R-squared	0.972451	Mean dependent var	2.598884
Adjusted R-squared	0.970484	S.D. dependent var	5.869000
S.E. of regression	1.008313	Sum squared resid	284.6746
F-statistic	494.1931	Durbin-Watson stat	1.975012
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.549821	Mean dependent var	1.117922

Sum squared resid	231.2875	Durbin-Watson stat	1.111781

Table A7.2 Open as a Cross-country specific coefficient

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 16
Total pool (unbalanced) observations: 301
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(CC2?/MS2?)	-0.664055	0.129932	-5.110794	0.0000
LOG(ET2?/EP2?)	0.572733	0.076797	7.457760	0.0000
T?	-0.974544	0.303512	-3.210887	0.0015
FHA?	-0.187800	0.047271	-3.972828	0.0001
C	2.276520	0.882714	2.579002	0.0104
_AUS--OPN1_AUS	1.441194	0.400014	3.602864	0.0004
_AUT--OPN1_AUT	11.49535	0.704293	16.32184	0.0000
_CAN--OPN1_CAN	5.434486	0.545395	9.964311	0.0000
_DNK--OPN1_DNK	9.041429	0.666239	13.57086	0.0000
_FIN--OPN1_FIN	7.234870	0.676020	10.70216	0.0000
_FRA--OPN1_FRA	4.081477	0.251941	16.20013	0.0000
_GER--OPN1_GER	6.800201	0.288047	23.60794	0.0000
_ITA--OPN1_ITA	5.168488	0.341280	15.14441	0.0000
_JPN--OPN1_JPN	3.317423	0.141958	23.36899	0.0000
_NLD--OPN1_NLD	24.94835	2.208966	11.29413	0.0000
_NOR--OPN1_NOR	11.37286	0.810210	14.03692	0.0000
_SWE--OPN1_SWE	6.108395	1.520750	4.016699	0.0001
_SWT--OPN1_SWT	8.950156	0.709377	12.61693	0.0000
_UNK--OPN1_UNK	0.614840	0.343575	1.789536	0.0746
_USA--OPN1_USA	2.734218	0.134105	20.38864	0.0000
_NZL--OPN1_NZL	-0.514987	1.043483	-0.493527	0.6220

Weighted Statistics

R-squared	0.956690	Mean dependent var	1.806017
Adjusted R-squared	0.953596	S.D. dependent var	4.596579
S.E. of regression	0.990175	Sum squared resid	274.5252
F-statistic	309.2486	Durbin-Watson stat	1.890055
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.553222	Mean dependent var	1.117922
Sum squared resid	229.5399	Durbin-Watson stat	1.104677

Table A7.3 FH as a Cross-country specific coefficient

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 16
Total pool (unbalanced) observations: 301
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(CC2?/MS2?)	-0.423837	0.200496	-2.113936	0.0354
LOG(ET2?/EP2?)	0.493815	0.068003	7.261711	0.0000
T?	-2.634635	0.333353	-7.903451	0.0000
OPN1?	6.504900	0.217443	29.91549	0.0000
C	9.537989	1.182623	8.065113	0.0000
_AUS--FHA_AUS	0.453958	0.177526	2.557140	0.0111
_AUT--FHA_AUT	-2.888834	0.175421	-16.46798	0.0000
_CAN--FHA_CAN	-1.577746	0.180873	-8.722948	0.0000
_DNK--FHA_DNK	-1.984779	0.263733	-7.525715	0.0000
_FIN--FHA_FIN	-1.345096	0.170335	-7.896754	0.0000
_FRA--FHA_FRA	-0.511455	0.093653	-5.461178	0.0000
_GER--FHA_GER	-1.371573	0.085950	-15.95774	0.0000
_ITA--FHA_ITA	-1.242010	0.098759	-12.57621	0.0000
_JPN--FHA_JPN	0.575811	0.078524	7.332945	0.0000
_NLD--FHA_NLD	-2.302446	0.341692	-6.738375	0.0000
_NOR--FHA_NOR	-2.677606	0.218815	-12.23688	0.0000
_SWE--FHA_SWE	-0.934825	0.412427	-2.266644	0.0242
_SWT--FHA_SWT	-1.990964	0.225923	-8.812585	0.0000
_UNK--FHA_UNK	1.167757	0.151242	7.721120	0.0000
_USA--FHA_USA	1.055121	0.113424	9.302425	0.0000
_NZL--FHA_NZL	0.645187	0.322519	2.000458	0.0464

Weighted Statistics

R-squared	0.960094	Mean dependent var	2.272834
Adjusted R-squared	0.957243	S.D. dependent var	4.742466
S.E. of regression	0.980630	Sum squared resid	269.2581
F-statistic	336.8237	Durbin-Watson stat	1.964930
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.533471	Mean dependent var	1.117922
Sum squared resid	239.6872	Durbin-Watson stat	1.087683

A7.2 EMERGING COUNTRIES

Table A7.4 CC/MS as a Cross-country specific coefficient

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 12
Total pool (unbalanced) observations: 225
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(ET2?/EP2?)	0.375329	0.120167	3.123391	0.0020
T?	2.724545	0.159246	17.10903	0.0000
OPN1?	3.805371	0.282666	13.46241	0.0000
LOG(FHA?)	-0.182242	0.078547	-2.320161	0.0213
C	3.281321	0.438701	7.479627	0.0000
_ARG--LOG(CC_ARG/MS2_ARG)	0.719207	0.085843	8.378142	0.0000
_BRA--LOG(CC_BRA/MS2_BRA)	0.611234	0.095449	6.403804	0.0000
_CHL--LOG(CC_CHL/MS2_CHL)	0.774760	0.102676	7.545674	0.0000
_CHN--LOG(CC_CHN/MS2_CHN)	0.034169	0.168826	0.202390	0.8398
_COL--LOG(CC_COL/MS2_COL)	0.938496	0.113595	8.261796	0.0000
_IDN--LOG(CC_IDN/MS2_IDN)	1.208186	0.101712	11.87844	0.0000
_IND--LOG(CC_IND/MS2_IND)	0.811718	0.152407	5.325982	0.0000
_MEX--LOG(CC_MEX/MS2_MEX)	0.890918	0.099908	8.917341	0.0000
_MYS--LOG(CC_MYS/MS2_MYS)	0.696482	0.132292	5.264754	0.0000
_PHL--LOG(CC_PHL/MS2_PHL)	1.000600	0.095579	10.46878	0.0000
_THA--LOG(CC_THA/MS2_THA)	1.261834	0.106970	11.79610	0.0000
_VEN--LOG(CC_VEN/MS2_VEN)	1.137423	0.126811	8.969464	0.0000

Weighted Statistics

R-squared	0.965288	Mean dependent var	2.034195
Adjusted R-squared	0.962617	S.D. dependent var	5.083224
S.E. of regression	0.982819	Sum squared resid	200.9141
F-statistic	361.5067	Durbin-Watson stat	1.557640
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.651945	Mean dependent var	1.767192
Sum squared resid	262.5951	Durbin-Watson stat	0.790595

Table A7.5 OPN1 as a Cross-country specific coefficient

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 12
Total pool (unbalanced) observations: 225
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(CC?/MS2?)	0.574457	0.120864	4.752931	0.0000
LOG(ET2?/EP2?)	-0.466270	0.106283	-4.387069	0.0000
T?	3.974026	0.140477	28.28947	0.0000
LOG(FHA?)	-0.234030	0.105551	-2.217214	0.0277
C	-2.040550	0.486694	-4.192676	0.0000
_ARG--OPN1_ARG	2.491898	0.224831	11.08342	0.0000
_BRA--OPN1_BRA	2.897923	0.266362	10.87963	0.0000
_CHL--OPN1_CHL	1.654718	0.955794	1.731249	0.0849
_CHN--OPN1_CHN	-0.787170	0.585258	-1.344997	0.1801
_COL--OPN1_COL	3.902884	0.418005	9.336930	0.0000
_IDN--OPN1_IDN	18.02991	1.641295	10.98517	0.0000
_IND--OPN1_IND	1.168100	0.337180	3.464321	0.0006
_MEX--OPN1_MEX	3.518099	0.377724	9.313946	0.0000
_MYS--OPN1_MYS	6.223766	1.524700	4.081962	0.0001
_PHL--OPN1_PHL	-1.305725	0.590126	-2.212622	0.0280
_THA--OPN1_THA	2.026287	0.928069	2.183336	0.0301
_VEN--OPN1_VEN	6.037776	1.053156	5.733033	0.0000

Weighted Statistics

R-squared	0.969030	Mean dependent var	2.359369
Adjusted R-squared	0.966648	S.D. dependent var	5.269420
S.E. of regression	0.962336	Sum squared resid	192.6270
F-statistic	406.7589	Durbin-Watson stat	1.543031
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.654368	Mean dependent var	1.767192
Sum squared resid	260.7666	Durbin-Watson stat	0.795360

Table A7.6 FH as a Cross-country specific coefficient

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 12
Total pool (unbalanced) observations: 225
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(CC?/MS2?)	0.788065	0.088121	8.942997	0.0000
LOG(ET2?/EP2?)	0.334343	0.103633	3.226220	0.0015
T?	3.089341	0.141277	21.86732	0.0000
OPN1?	2.746812	0.259970	10.56588	0.0000
C	1.600271	0.350174	4.569932	0.0000
_ARG--LOG(FHA_ARG)	0.207756	0.155954	1.332158	0.1843
_BRA--LOG(FHA_BRA)	0.691192	0.157670	4.383778	0.0000
_CHL--LOG(FHA_CHL)	0.372100	0.172923	2.151823	0.0326
_CHN--LOG(FHA_CHN)	0.866095	0.168172	5.150064	0.0000
_COL--LOG(FHA_COL)	-0.374800	0.189364	-1.979256	0.0491
_IDN--LOG(FHA_IDN)	-1.331546	0.212141	-6.276699	0.0000
_IND--LOG(FHA_IND)	0.342163	0.179811	1.902902	0.0584
_MEX--LOG(FHA_MEX)	-0.107335	0.159059	-0.674809	0.5005
_MYS--LOG(FHA_MYS)	0.810393	0.363165	2.231475	0.0267
_PHL--LOG(FHA_PHL)	-0.067084	0.181332	-0.369953	0.7118
_THA--LOG(FHA_THA)	-0.688170	0.183699	-3.746185	0.0002
_VEN--LOG(FHA_VEN)	-1.546379	0.461328	-3.352019	0.0010

Weighted Statistics

R-squared	0.959593	Mean dependent var	3.500340
Adjusted R-squared	0.956484	S.D. dependent var	4.603289
S.E. of regression	0.960264	Sum squared resid	191.7984
F-statistic	308.7236	Durbin-Watson stat	1.458774
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.617857	Mean dependent var	1.767192
Sum squared resid	288.3129	Durbin-Watson stat	0.722116

A7.3 AFRICA

Table A7.7 CC/MS as a Cross-country specific coefficient

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 10
Total pool (unbalanced) observations: 171
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(ET?/EP?)	2.929108	0.551259	5.313486	0.0000
LOG(T?)	1.479287	0.459041	3.222558	0.0015
LOG(OPN1?)	0.773416	0.555238	1.392944	0.1656
LOG(FHA?)	-5.778236	0.951168	-6.074885	0.0000
C	16.48315	2.264113	7.280180	0.0000
_AGO--LOG(CCB_AGO/MS_AGO)	-3.403541	0.733735	-4.638649	0.0000
_DZA--LOG(CCB_DZA/MS_DZA)	1.069500	0.429832	2.488181	0.0139
_EGY--LOG(CCB_EGY/MS_EGY)	1.336492	0.454915	2.937893	0.0038
_LSO--LOG(CCB_LSO/MS_LSO)	-5.283640	0.932465	-5.666314	0.0000
_NER--LOG(CCB_NER/MS_NER)	-2.045240	0.699321	-2.924610	0.0040
_NGA--LOG(CCB_NGA/MS_NGA)	-2.034373	0.697376	-2.917184	0.0041
_SWZ--LOG(CCB_SWZ/MS_SWZ)	-0.716824	0.458311	-1.564055	0.1198
_TUN--LOG(CCB_TUN/MS_TUN)	0.092737	0.545709	0.169939	0.8653
_TZA--LOG(CCB_TZA/MS_TZA)	-3.216090	0.877867	-3.663527	0.0003
_UGA--LOG(CCB_UGA/MS_UGA)	-1.607088	0.585136	-2.746521	0.0067

Weighted Statistics

R-squared	0.734908	Mean dependent var	1.450642
Adjusted R-squared	0.711117	S.D. dependent var	1.700105
S.E. of regression	0.913769	Sum squared resid	130.2560
F-statistic	30.89101	Durbin-Watson stat	1.417476
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.514705	Mean dependent var	3.604368
Sum squared resid	2957.571	Durbin-Watson stat	0.610524

Table A7.8 OPN1 as a Cross-country specific coefficient

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 10
Total pool (unbalanced) observations: 171
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(CCB?/MS?)	0.231745	0.555302	0.417331	0.6770
LOG(ET?/EP?)	1.311166	0.388198	3.377573	0.0009
LOG(T?)	0.822124	0.413170	1.989795	0.0484
LOG(FHA?)	-5.242696	1.098008	-4.774733	0.0000
C	15.66136	2.037751	7.685608	0.0000
_AGO--LOG(OPN1_AGO)	-2.232126	0.607441	-3.674637	0.0003
_DZA--LOG(OPN1_DZA)	13.04780	2.775353	4.701313	0.0000
_EGY--LOG(OPN1_EGY)	7.930154	1.954463	4.057460	0.0001
_LSO--LOG(OPN1_LSO)	28.46175	6.876394	4.139052	0.0001
_NER--LOG(OPN1_NER)	-0.761096	1.178178	-0.645994	0.5192
_NGA--LOG(OPN1_NGA)	-7.890944	2.573907	-3.065746	0.0026
_SWZ--LOG(OPN1_SWZ)	1.368584	2.965891	0.461441	0.6451
_TUN--LOG(OPN1_TUN)	1.259756	0.527920	2.386266	0.0182
_TZA--LOG(OPN1_TZA)	-0.750134	1.047027	-0.716442	0.4748
_UGA--LOG(OPN1_UGA)	0.690403	0.604108	1.142848	0.2549

Weighted Statistics

R-squared	0.541539	Mean dependent var	1.197345
Adjusted R-squared	0.500396	S.D. dependent var	1.235553
S.E. of regression	0.873323	Sum squared resid	118.9800
F-statistic	13.16208	Durbin-Watson stat	1.333264
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.414588	Mean dependent var	3.604368
Sum squared resid	3567.722	Durbin-Watson stat	0.509175

Table A7.9 FH as a Cross-country specific coefficient

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 10
Total pool (unbalanced) observations: 171
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(CCB?/MS?)	-1.083575	0.555160	-1.951826	0.0527
LOG(ET?/EP?)	1.623876	0.528769	3.071048	0.0025
LOG(T?)	2.120182	0.554298	3.824988	0.0002
LOG(OPN1?)	2.163413	0.676749	3.196775	0.0017
C	12.18414	1.985349	6.137023	0.0000
_AGO--LOG(FHA_AGO)	-1.443176	1.343519	-1.074176	0.2844
_DZA--LOG(FHA_DZA)	-10.46086	1.573457	-6.648331	0.0000
_EGY--LOG(FHA_EGY)	-10.30402	1.605671	-6.417266	0.0000
_LSO--LOG(FHA_LSO)	-0.548558	1.914005	-0.286602	0.7748
_NER--LOG(FHA_NER)	-4.136266	0.947315	-4.366305	0.0000
_NGA--LOG(FHA_NGA)	-4.712046	1.054631	-4.467958	0.0000
_SWZ--LOG(FHA_SWZ)	-7.966670	1.719591	-4.632886	0.0000
_TUN--LOG(FHA_TUN)	-6.955083	1.614131	-4.308871	0.0000
_TZA--LOG(FHA_TZA)	-3.620632	1.164075	-3.110308	0.0022
_UGA--LOG(FHA_UGA)	-4.474787	1.156307	-3.869896	0.0002

Weighted Statistics

R-squared	0.551519	Mean dependent var	1.008168
Adjusted R-squared	0.511270	S.D. dependent var	1.276777
S.E. of regression	0.892585	Sum squared resid	124.2864
F-statistic	13.70290	Durbin-Watson stat	1.400927
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.437557	Mean dependent var	3.604368
Sum squared resid	3427.740	Durbin-Watson stat	0.547182

APPENDIX 8

MODELS WITH NEIGHBOURING INFLUENCES

A8.1 DEVELOPED COUNTRY SAMPLE

Table A8.1 N_CC/N_MS as a fixed country specific variable in a SUR model

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 16
Total pool (unbalanced) observations: 301
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(N_ET2?/N_EP2?)	1.732950	0.037546	46.15509	0.0000
N_OPN1?	-0.471998	0.095310	-4.952255	0.0000
N_FH?	2.452806	0.163413	15.00985	0.0000
N_T?	-0.618635	0.209089	-2.958715	0.0034
N_G?	-0.017860	0.002192	-8.147716	0.0000
C	-1.476572	0.542742	-2.720578	0.0069
_AUS--LOG(N_CC2_AUS/N_MS_AUS)	-1.219660	0.085471	-14.26986	0.0000
_AUT--LOG(N_CC2_AUT/N_MS_AUT)	-0.930988	0.074622	-12.47612	0.0000
_CAN--LOG(N_CC2_CAN/N_MS_CAN)	-0.818436	0.079649	-10.27553	0.0000
_DNK--LOG(N_CC2_DNK/N_MS_DNK)	-0.982910	0.081369	-12.07959	0.0000
_FIN--LOG(N_CC2_FIN/N_MS_FIN)	-0.973966	0.097091	-10.03144	0.0000
_FRA--LOG(N_CC2_FRA/N_MS_FRA)	-0.994521	0.074548	-13.34062	0.0000
_GER--LOG(N_CC2_GER/N_MS_GER)	-0.851455	0.073459	-11.59090	0.0000
_ITA--LOG(N_CC2_ITA/N_MS_ITA)	-0.868059	0.072366	-11.99536	0.0000
_JPN--LOG(N_CC2_JPN/N_MS_JPN)	-1.387418	0.158482	-8.754431	0.0000
_NLD--LOG(N_CC2_NLD/N_MS_NLD)	-1.215361	0.092310	-13.16608	0.0000
_NOR--LOG(N_CC2_NOR/N_MS_NOR)	-0.891061	0.078119	-11.40640	0.0000
_SWE--LOG(N_CC2_SWE/N_MS_SWE)	-1.118426	0.105509	-10.60034	0.0000
_SWT--LOG(N_CC2_SWT/N_MS_SWT)	-0.973978	0.077620	-12.54797	0.0000
_UNK--LOG(N_CC2_UNK/N_MS_UNK)	-1.153922	0.084913	-13.58947	0.0000
_USA--LOG(N_CC2_USA/N_MS_USA)	-0.788751	0.082561	-9.553564	0.0000
_NZL--LOG(N_CC2_NZL/N_MS_NZL)	-1.391881	0.090636	-15.35688	0.0000

Weighted Statistics

R-squared	0.989992	Mean dependent var	-0.228714
Adjusted R-squared	0.989239	S.D. dependent var	9.781827
S.E. of regression	1.014742	Sum squared resid	287.2865
F-statistic	1314.203	Durbin-Watson stat	1.975535
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.517795	Mean dependent var	1.117922
Sum squared resid	247.7411	Durbin-Watson stat	1.082023

Table A8.2 Opn1 as a fixed country specific variable in a SUR model

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 16
Total pool (unbalanced) observations: 301
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(N_CC2?/N_MS?)	-1.342820	0.028384	-47.30913	0.0000
LOG(N_ET2?/N_EP2?)	1.539659	0.073851	20.84823	0.0000
N_FH?	-0.678540	0.182042	-3.727389	0.0002
N_T?	-1.078541	0.224475	-4.804717	0.0000
N_G?	0.016658	0.002474	6.732171	0.0000
C	-1.490435	0.703952	-2.117240	0.0351
_AUS--N_OPN1_AUS	-6.721656	0.627038	-10.71970	0.0000
_AUT--N_OPN1_AUT	2.825968	0.374588	7.544196	0.0000
_CAN--N_OPN1_CAN	1.171184	0.149037	7.858344	0.0000
_DNK--N_OPN1_DNK	2.151497	0.475219	4.527375	0.0000
_FIN--N_OPN1_FIN	3.857784	0.797740	4.835892	0.0000
_FRA--N_OPN1_FRA	1.674048	0.344118	4.864742	0.0000
_GER--N_OPN1_GER	6.254804	0.722219	8.660533	0.0000
_ITA--N_OPN1_ITA	3.625242	0.476707	7.604760	0.0000
_JPN--N_OPN1_JPN	-7.644277	0.259593	-29.44713	0.0000
_NLD--N_OPN1_NLD	-1.776786	0.114389	-15.53279	0.0000
_NOR--N_OPN1_NOR	5.363453	0.795316	6.743804	0.0000
_SWE--N_OPN1_SWE	0.037935	0.876807	0.043265	0.9655
_SWT--N_OPN1_SWT	2.005144	0.473912	4.231042	0.0000
_UNK--N_OPN1_UNK	-0.943395	0.642865	-1.467487	0.1434
_USA--N_OPN1_USA	2.324493	0.405802	5.728147	0.0000
_NZL--N_OPN1_NZL	-2.867152	0.602533	-4.758498	0.0000

Weighted Statistics

R-squared	0.986447	Mean dependent var	0.845801
Adjusted R-squared	0.985427	S.D. dependent var	8.134239
S.E. of regression	0.981969	Sum squared resid	269.0292
F-statistic	966.9728	Durbin-Watson stat	1.959136
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.525057	Mean dependent var	1.117922
Sum squared resid	244.0103	Durbin-Watson stat	1.067140

Table A8.3 N_FH as a fixed country specific variable in a SUR model

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 16
Total pool (unbalanced) observations: 301
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(N_CC2?/N_MS?)	-0.732541	0.047893	-15.29536	0.0000
LOG(N_ET2?/N_EP2?)	1.812931	0.102437	17.69801	0.0000
N_OPN1?	0.056742	0.148398	0.382363	0.7025
N_T?	-1.342205	0.326274	-4.113733	0.0001
N_G?	-0.027944	0.003261	-8.568434	0.0000
C	2.174622	1.043209	2.084550	0.0380
_AUS--N_FH_AUS	3.342937	0.244309	13.68321	0.0000
_AUT--N_FH_AUT	-1.919327	1.224489	-1.567452	0.1181
_CAN--N_FH_CAN	-10.92923	5.244091	-2.084104	0.0381
_DNK--N_FH_DNK	2.966942	2.137867	1.387805	0.1663
_FIN--N_FH_FIN	6.121366	6.817550	0.897884	0.3700
_FRA--N_FH_FRA	2.568156	1.085583	2.365693	0.0187
_GER--N_FH_GER	-10.72582	1.307856	-8.201076	0.0000
_ITA--N_FH_ITA	-7.334727	1.584912	-4.627844	0.0000
_JPN--N_FH_JPN	2.361281	0.339425	6.956718	0.0000
_NLD--N_FH_NLD	21.67505	3.404528	6.366535	0.0000
_NOR--N_FH_NOR	-4.414027	1.439841	-3.065636	0.0024
_SWE--N_FH_SWE	13.37328	4.277469	3.126448	0.0020
_SWT--N_FH_SWT	1.663792	2.141672	0.776866	0.4379
_UNK--N_FH_UNK	16.04136	3.262028	4.917605	0.0000
_USA--N_FH_USA	-1.413633	0.402589	-3.511359	0.0005
_NZL--N_FH_NZL	55.06795	7.095654	7.760800	0.0000

Weighted Statistics

R-squared	0.935983	Mean dependent var	0.826580
Adjusted R-squared	0.931164	S.D. dependent var	3.738797
S.E. of regression	0.980931	Sum squared resid	268.4612
F-statistic	194.2479	Durbin-Watson stat	1.967737
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.505554	Mean dependent var	1.117922
Sum squared resid	254.0304	Durbin-Watson stat	1.062250

Table A8.4 N_G as a fixed country specific variable in a SUR model

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 16
Total pool (unbalanced) observations: 301
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(N_CC2?/N_MS?)	-0.735372	0.022956	-32.03410	0.0000
LOG(N_ET2?/N_EP2?)	1.599829	0.078367	20.41461	0.0000
N_OPN1?	1.076602	0.140257	7.675920	0.0000
N_FH?	0.757441	0.204335	3.706860	0.0003
N_T?	-3.087064	0.237058	-13.02241	0.0000
C	7.070192	0.756063	9.351331	0.0000
_AUS--N_G_AUS	0.003766	0.002842	1.325028	0.1862
_AUT--N_G_AUT	-0.196123	0.026049	-7.528986	0.0000
_CAN--N_G_CAN	0.054671	0.030447	1.795599	0.0736
_DNK--N_G_DNK	-0.021586	0.036581	-0.590106	0.5556
_FIN--N_G_FIN	0.095625	0.019088	5.009800	0.0000
_FRA--N_G_FRA	-0.085765	0.016680	-5.141657	0.0000
_GER--N_G_GER	-0.369647	0.036647	-10.08675	0.0000
_ITA--N_G_ITA	-0.251758	0.022364	-11.25724	0.0000
_JPN--N_G_JPN	-0.004424	0.003026	-1.462243	0.1448
_NLD--N_G_NLD	-0.046907	0.003876	-12.10191	0.0000
_NOR--N_G_NOR	-0.055418	0.041901	-1.322580	0.1871
_SWE--N_G_SWE	0.162198	0.113156	1.433403	0.1529
_SWT--N_G_SWT	-0.001431	0.052194	-0.027408	0.9782
_UNK--N_G_UNK	0.289883	0.039078	7.418093	0.0000
_USA--N_G_USA	-0.162261	0.026240	-6.183796	0.0000
_NZL--N_G_NZL	0.418472	0.051623	8.106340	0.0000

Weighted Statistics

R-squared	0.979133	Mean dependent var	-0.299804
Adjusted R-squared	0.977562	S.D. dependent var	6.603737
S.E. of regression	0.989195	Sum squared resid	273.0034
F-statistic	623.3891	Durbin-Watson stat	1.885013
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.368305	Mean dependent var	1.117922
Sum squared resid	324.5442	Durbin-Watson stat	0.938058

A8.2 EMERGING COUNTRY

Table A8.5 N_CC/N_MS as a country specific variable in a SUR model

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1999
Included observations: 20 after adjustments
Cross-sections included: 13
Total pool (unbalanced) observations: 248
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(N_ET?/N_EP?)	-2.785368	0.372155	-7.484421	0.0000
N_OPN1?	6.891902	0.368672	18.69388	0.0000
N_FH?	2.456267	0.232204	10.57804	0.0000
N_T?	2.776524	0.194462	14.27798	0.0000
N_G?	0.032391	0.006435	5.033754	0.0000
C	-2.951099	0.810065	-3.643038	0.0003
_ARG--LOG(N_CC_ARG/N_MS_ARG)	-0.417411	0.036879	-11.31836	0.0000
_BRA--LOG(N_CC_BRA/N_MS_BRA)	-0.197048	0.055727	-3.535923	0.0005
_CHL--LOG(N_CC_CHL/N_MS_CHL)	-0.736144	0.054400	-13.53212	0.0000
_CHN--LOG(N_CC_CHN/N_MS_CHN)	-1.160437	0.150443	-7.713482	0.0000
_COL--LOG(N_CC_COL/N_MS_COL)	-0.439823	0.051789	-8.492638	0.0000
_HKG--LOG(N_CC_HKG/N_MS_HKG)	-0.553337	0.106772	-5.182415	0.0000
_IDN--LOG(N_CC_IDN/N_MS_IDN)	0.293948	0.084307	3.486633	0.0006
_IND--LOG(N_CC_IND/N_MS_IND)	1.630758	0.122249	13.33961	0.0000
_MEX--LOG(N_CC_MEX/N_MS_MEX)	-0.380988	0.055756	-6.833162	0.0000
_MYS--LOG(N_CC_MYS/N_MS_MYS)	-0.888201	0.190722	-4.657057	0.0000
_PHL--LOG(N_CC_PHL/N_MS_PHL)	1.242555	0.069937	17.76687	0.0000
_THA--LOG(N_CC_THA/N_MS_THA)	1.376080	0.100191	13.73464	0.0000
_VEN--LOG(N_CC_VEN/N_MS_VEN)	-0.497628	0.064457	-7.720304	0.0000

Weighted Statistics

R-squared	0.972010	Mean dependent var	1.985683
Adjusted R-squared	0.969809	S.D. dependent var	5.728076
S.E. of regression	0.995278	Sum squared resid	226.8425
F-statistic	441.7977	Durbin-Watson stat	1.702823
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.649160	Mean dependent var	1.929015
Sum squared resid	358.7670	Durbin-Watson stat	0.911283

Table A8.6 N_OPN1 as a country specific variable in a SUR model

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1999
Included observations: 20 after adjustments
Cross-sections included: 13
Total pool (unbalanced) observations: 248
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(N_CC?/N_MS?)	-0.360177	0.162317	-2.218976	0.0275
LOG(N_ET?/N_EP?)	2.641985	0.596610	4.428328	0.0000
N_FH?	3.631722	0.268154	13.54344	0.0000
N_T?	2.700546	0.523939	5.154313	0.0000
N_G?	0.017049	0.009197	1.853716	0.0651
C	-4.632431	1.224531	-3.783024	0.0002
_ARG--N_OPN1_ARG	1.218522	0.376644	3.235206	0.0014
_BRA--N_OPN1_BRA	3.146482	0.676692	4.649802	0.0000
_CHL--N_OPN1_CHL	1.090507	0.649583	1.678780	0.0946
_CHN--N_OPN1_CHN	-5.277890	1.124165	-4.694944	0.0000
_COL--N_OPN1_COL	0.691770	0.498849	1.386731	0.1669
_HKG--N_OPN1_HKG	-8.397983	1.911702	-4.392934	0.0000
_IDN--N_OPN1_IDN	7.874661	1.383231	5.692947	0.0000
_IND--N_OPN1_IND	7.087289	0.982767	7.211566	0.0000
_MEX--N_OPN1_MEX	3.727244	0.462065	8.066493	0.0000
_MYS--N_OPN1_MYS	-14.68410	2.784360	-5.273779	0.0000
_PHL--N_OPN1_PHL	9.542371	0.816576	11.68583	0.0000
_THA--N_OPN1_THA	-9.992643	1.227277	-8.142125	0.0000
_VEN--N_OPN1_VEN	0.833998	0.454754	1.833954	0.0680

Weighted Statistics

R-squared	0.937662	Mean dependent var	1.606958
Adjusted R-squared	0.932762	S.D. dependent var	3.828280
S.E. of regression	0.992684	Sum squared resid	225.6615
F-statistic	191.3621	Durbin-Watson stat	1.565115
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.470639	Mean dependent var	1.929015
Sum squared resid	541.3220	Durbin-Watson stat	0.625253

Table A8.7 N_FH as a country specific variable in a SUR model

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1999
Included observations: 20 after adjustments
Cross-sections included: 13
Total pool (unbalanced) observations: 248
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(N_CC?/N_MS?)	-0.019528	0.075166	-0.259792	0.7953
LOG(N_ET?/N_EP?)	-1.444679	0.392876	-3.677184	0.0003
N_OPN1?	4.012579	0.331997	12.08620	0.0000
N_T?	3.656637	0.246574	14.82978	0.0000
N_G?	0.021672	0.007806	2.776247	0.0060
C	-4.014083	0.752139	-5.336892	0.0000
_ARG--N_FH_ARG	1.895261	0.371713	5.098717	0.0000
_BRA--N_FH_BRA	0.006639	0.425358	0.015609	0.9876
_CHL--N_FH_CHL	4.864006	0.600728	8.096859	0.0000
_CHN--N_FH_CHN	7.436413	0.660557	11.25779	0.0000
_COL--N_FH_COL	2.606746	0.543584	4.795479	0.0000
_HKG--N_FH_HKG	6.515712	0.708620	9.194934	0.0000
_IDN--N_FH_IDN	-10.10101	1.424403	-7.091400	0.0000
_IND--N_FH_IND	-13.82699	1.045688	-13.22287	0.0000
_MEX--N_FH_MEX	-28.06062	7.019046	-3.997783	0.0001
_MYS--N_FH_MYS	7.957238	0.879786	9.044520	0.0000
_PHL--N_FH_PHL	-4.049027	0.311409	-13.00228	0.0000
_THA--N_FH_THA	-4.736803	0.605381	-7.824499	0.0000
_VEN--N_FH_VEN	2.635107	0.679975	3.875299	0.0001

Weighted Statistics

R-squared	0.898062	Mean dependent var	1.256292
Adjusted R-squared	0.890050	S.D. dependent var	3.026645
S.E. of regression	1.003597	Sum squared resid	230.6505
F-statistic	112.0818	Durbin-Watson stat	1.679632
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.624760	Mean dependent var	1.929015
Sum squared resid	383.7186	Durbin-Watson stat	0.896035

Table A8.8 N_G as a country specific variable in a SUR model

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1999
Included observations: 20 after adjustments
Cross-sections included: 13
Total pool (unbalanced) observations: 248
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(N_CC?/N_MS?)	-0.371139	0.069870	-5.311845	0.0000
LOG(N_ET?/N_EP?)	2.037757	0.449274	4.535667	0.0000
N_OPN1?	2.058533	0.327208	6.291213	0.0000
N_FH?	2.821804	0.452053	6.242196	0.0000
N_T?	0.438628	0.298325	1.470301	0.1429
C	-0.039909	0.926112	-0.043093	0.9657
_ARG--N_G_ARG	0.002974	0.022987	0.129370	0.8972
_BRA--N_G_BRA	-0.169365	0.060676	-2.791276	0.0057
_CHL--N_G_CHL	0.026165	0.036517	0.716524	0.4744
_CHN--N_G_CHN	0.255180	0.069990	3.645971	0.0003
_COL--N_G_COL	0.045544	0.037898	1.201772	0.2307
_HKG--N_G_HKG	0.258947	0.056293	4.599987	0.0000
_IDN--N_G_IDN	-0.282703	0.101075	-2.796970	0.0056
_IND--N_G_IND	-0.182795	0.059646	-3.064670	0.0024
_MEX--N_G_MEX	0.027406	0.052442	0.522591	0.6018
_MYS--N_G_MYS	0.231161	0.049032	4.714458	0.0000
_PHL--N_G_PHL	-0.139534	0.027688	-5.039544	0.0000
_THA--N_G_THA	-0.084672	0.035582	-2.379620	0.0182
_VEN--N_G_VEN	-0.026054	0.051925	-0.501775	0.6163

Weighted Statistics

R-squared	0.650137	Mean dependent var	0.963003
Adjusted R-squared	0.622637	S.D. dependent var	1.564894
S.E. of regression	0.961313	Sum squared resid	211.6242
F-statistic	23.64119	Durbin-Watson stat	1.408699
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.406931	Mean dependent var	1.929015
Sum squared resid	606.4691	Durbin-Watson stat	0.586091

A8.3 AFRICA TOP-TEN

Table A8.9 N_CC/N_MS as a fixed country specific variable in a SUR model

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 10
Total pool (unbalanced) observations: 176
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(N_FH?)	-0.734006	0.578895	-1.267944	0.2067
LOG(N_ET?/N_EP?)	5.992976	0.522114	11.47830	0.0000
LOG(N_T?)	-0.436587	0.324394	-1.345853	0.1803
LOG(N_OPN1?)	3.586757	0.556375	6.446653	0.0000
N_G?	0.017418	0.020400	0.853826	0.3945
C	35.70461	2.897131	12.32412	0.0000
_AGO--LOG(N_CCB_AGO/N_MS_AGO)	2.312816	0.392867	5.887014	0.0000
_DZA--LOG(N_CCB_DZA/N_MS_DZA)	4.217710	0.458163	9.205698	0.0000
_EGY--LOG(N_CCB_EGY/N_MS_EGY)	2.742259	0.561930	4.880070	0.0000
_LSO--LOG(N_CCB_LSO/N_MS_LSO)	0.108419	0.570996	0.189877	0.8496
_NER--LOG(N_CCB_NER/N_MS_NER)	4.237300	0.445760	9.505797	0.0000
_NGA--LOG(N_CCB_NGA/N_MS_NGA)	2.077615	0.522776	3.974194	0.0001
_SWZ--LOG(N_CCB_SWZ/N_MS_SWZ)	1.914390	0.479490	3.992557	0.0001
_TUN--LOG(N_CCB_TUN/N_MS_TUN)	4.072368	0.443396	9.184505	0.0000
_TZA--LOG(N_CCB_TZA/N_MS_TZA)	2.873280	0.456471	6.294547	0.0000
_UGA--LOG(N_CCB_UGA/N_MS_UGA)	3.257810	0.464803	7.009010	0.0000

Weighted Statistics

R-squared	0.876823	Mean dependent var	1.846598
Adjusted R-squared	0.865275	S.D. dependent var	2.575224
S.E. of regression	0.945235	Sum squared resid	142.9550
F-statistic	75.92929	Durbin-Watson stat	1.559804
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.569825	Mean dependent var	3.517808
Sum squared resid	2668.918	Durbin-Watson stat	0.699305

Table A8.10 N_FH as a fixed country specific variable in a SUR model

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 10
Total pool (unbalanced) observations: 176
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(N_CCB?/N_MS?)	2.932701	0.553258	5.300788	0.0000
LOG(N_ET?/N_EP?)	6.521786	0.564483	11.55357	0.0000
LOG(N_T?)	-0.107488	0.362827	-0.296251	0.7674
LOG(N_OPN1?)	3.703428	0.621881	5.955200	0.0000
N_G?	0.017574	0.021658	0.811445	0.4183
C	42.70244	3.760862	11.35443	0.0000
_AGO--LOG(N_FH_AGO)	-2.739533	0.767422	-3.569788	0.0005
_DZA--LOG(N_FH_DZA)	-7.404078	0.640892	-11.55277	0.0000
_EGY--LOG(N_FH_EGY)	-3.327509	0.797512	-4.172362	0.0000
_LSO--LOG(N_FH_LSO)	2.410974	1.448820	1.664096	0.0981
_NER--LOG(N_FH_NER)	-6.974049	0.576935	-12.08811	0.0000
_NGA--LOG(N_FH_NGA)	-2.117147	0.741956	-2.853466	0.0049
_SWZ--LOG(N_FH_SWZ)	-1.634434	1.072316	-1.524209	0.1294
_TUN--LOG(N_FH_TUN)	-6.664620	0.573380	-11.62340	0.0000
_TZA--LOG(N_FH_TZA)	-3.688569	0.603502	-6.111945	0.0000
_UGA--LOG(N_FH_UGA)	-4.353964	0.591286	-7.363554	0.0000

Weighted Statistics

R-squared	0.872816	Mean dependent var	1.279397
Adjusted R-squared	0.860892	S.D. dependent var	2.542749
S.E. of regression	0.948374	Sum squared resid	143.9060
F-statistic	73.20104	Durbin-Watson stat	1.571779
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.475320	Mean dependent var	3.517808
Sum squared resid	3255.258	Durbin-Watson stat	0.604144

Table A8.11 N_OPN1 as a fixed country specific variable in a SUR model

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 10
Total pool (unbalanced) observations: 176
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(N_CCB?/N_MS?)	-0.022473	0.560768	-0.040076	0.9681
LOG(N_ET?/N_EP?)	5.275332	0.577938	9.127846	0.0000
LOG(N_T?)	-0.781373	0.442359	-1.766378	0.0792
LOG(N_FH?)	-2.263555	0.642861	-3.521063	0.0006
N_G?	0.007593	0.025258	0.300642	0.7641
C	25.00682	3.265452	7.657995	0.0000
_AGO--LOG(N_OPN1_AGO)	7.800364	6.463784	1.206780	0.2293
_DZA--LOG(N_OPN1_DZA)	6.923556	0.581524	11.90588	0.0000
_EGY--LOG(N_OPN1_EGY)	1.910971	0.610235	3.131532	0.0021
_LSO--LOG(N_OPN1_LSO)	-6.425625	1.892306	-3.395659	0.0009
_NER--LOG(N_OPN1_NER)	8.102313	1.388498	5.835309	0.0000
_NGA--LOG(N_OPN1_NGA)	-3.220917	1.233545	-2.611107	0.0099
_SWZ--LOG(N_OPN1_SWZ)	0.439592	1.613219	0.272494	0.7856
_TUN--LOG(N_OPN1_TUN)	9.871806	1.181679	8.354051	0.0000
_TZA--LOG(N_OPN1_TZA)	-0.760174	1.215253	-0.625527	0.5325
_UGA--LOG(N_OPN1_UGA)	1.885707	0.847517	2.224979	0.0275

Weighted Statistics

R-squared	0.776535	Mean dependent var	1.380456
Adjusted R-squared	0.755585	S.D. dependent var	1.881866
S.E. of regression	0.930363	Sum squared resid	138.4922
F-statistic	37.06635	Durbin-Watson stat	1.455913
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.485900	Mean dependent var	3.517808
Sum squared resid	3189.614	Durbin-Watson stat	0.613345

Table A8.12 N_G as a fixed country specific variable in a SUR model

Dependent Variable: FDI2?
Method: Pooled EGLS (Cross-section SUR)
Sample (adjusted): 1980 1998
Included observations: 19 after adjustments
Cross-sections included: 10
Total pool (unbalanced) observations: 176
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(N_CCB?/N_MS?)	-2.055511	0.764899	-2.687296	0.0080
LOG(N_ET?/N_EP?)	1.431077	0.611040	2.342036	0.0204
LOG(N_T?)	-0.468897	0.444508	-1.054868	0.2931
LOG(N_FH?)	-3.567645	0.840643	-4.243948	0.0000
LOG(N_OPN1?)	0.107752	0.632175	0.170446	0.8649
C	6.785814	3.426521	1.980380	0.0494
_AGO--N_G_AGO	0.035926	0.150546	0.238638	0.8117
_DZA--N_G_DZA	-0.302462	0.130526	-2.317252	0.0218
_EGY--N_G_EGY	-0.050895	0.056265	-0.904560	0.3671
_LSO--N_G_LSO	0.537560	0.525775	1.022415	0.3081
_NER--N_G_NER	-0.102912	0.142634	-0.721509	0.4716
_NGA--N_G_NGA	0.222099	0.115054	1.930384	0.0553
_SWZ--N_G_SWZ	0.186275	0.329392	0.565512	0.5725
_TUN--N_G_TUN	0.086461	0.173327	0.498832	0.6186
_TZA--N_G_TZA	0.134476	0.108613	1.238123	0.2175
_UGA--N_G_UGA	-0.088979	0.081081	-1.097411	0.2741

Weighted Statistics

R-squared	0.441976	Mean dependent var	1.189984
Adjusted R-squared	0.389661	S.D. dependent var	1.168822
S.E. of regression	0.913133	Sum squared resid	133.4099
F-statistic	8.448393	Durbin-Watson stat	1.376330
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.284583	Mean dependent var	3.517808
Sum squared resid	4438.636	Durbin-Watson stat	0.479825