FDI in Greenfield Investment vs M&A : Its impact on GD : A Comprehensive Analysis of Developed, BRICS & East Asian Economies

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Abstract

Capital formation is an important determinant of economic growth. While domestic investments add to the capital stock in an economy, FDI plays a complementary role in overall capital formation and in filling the gap between domestic savings and investment.
This paper attempts to examine the effect of two modes of FDI – Mergers &Acquisitions (M&As) and Greenfield FDI on GDP of a nation in different categories of countries – Developed Economies, BRICs and the 5 South East Asian (A5) nations. Using the VAR methodology, it was found that the GDP, cross border M&A and Greenfield FDI impact each other to some extent. There is a link between cross border M&A, Greenfield FDI and GDP. The extent varies according to the type of the country.

***Key words** : FDI in Mergers & Acquisitions (M&As), FDI in greenfield investment GDP, BRICS, East Asian Economics*

Introduction

A firm can supply its goods or services to different markets across the globe by either exporting from country of origin or producing those in destination market locally. If the firm decides to enter into the host country through production , it must decide whether to start from scratch and create an entirely new entity or acquire an existing firm in the country. Two later modes are termed as foreign Direct Investment (FDI) route.

Foreign Direct Investment (FDI) is a way to start operating in the new market with long term interests. According to IMF, FDI is defined as "an investment made to acquire lasting or long-term interests in enterprises operating outside of the economy of the investor". The investment is called 'direct' since the investor also seeks to control and manage the foreign enterprise. It is about the active participation of the foreign investor in the management of the concerned firm. Overall, FDI may include Mergers and Acquisitions, building new facilities, reinvesting profits earned from overseas operations and intra company loans. However, for this paper, we are considering only the cross border Mergers & Acquisitions and Greenfield FDI.

Greenfield FDI is a form of foreign direct investment where a parent company starts a new venture in a

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foreign country by constructing new operational facilities from the start. Thus, the Greenfield process creates new jobs, assets in the host country and helps in overall development of an economy. Merger and Acquisition are general terms used to refer to the consolidation of companies. A Merger is an amalgamation of two companies to form a new entity while an Acquisition is the purchase of one company by another in which no new company is formed. Each of the investments could bring different outstanding achievements and can develop and expand the company but there are also some differences between the two entry modes.

The basic difference between M&A and Greenfield Investment is in implementation. At the initial stage, foreign investors in the M&A Mode do not increase the host country's production capacity as they are not sure about the industry's market structure and the nature of competition. This may be the point of worry for the host country especially for developing countries. Greenfield investment creates capacity, builds enterprises' internal organization and resources initially in order to establish the new production entity. Then, as the scale of operation is obtained, investors purchase land, machinery and means of production from the host country's market. Yet, the nature of entry modes for both Greenfield and M&A could be different depending on the host countries market structure and resources.

The purpose of this paper is to analyze the dynamic relationship between foreign direct investments through cross border Merger & Acquisition and Greenfield investments with GDP growth. The paper is divided into following sections- Section 1 is on Literature Review, Section 2 is about Objective and Methodology, Section 3 gives the Analysis and Results. Finally, in section 4, conclusion is drawn.

Literature Review

Ignat Stepanok (2013) finds that empirically, there are three trends of FDI, viz. first, Greenfield investors are more productive than M&A firms. Second, the closer are the two countries, the more Greenfield FDI is chosen over M&A as the mode of entry. Third, the empirical evidence shows that exporters are more productive than non-exporters (Bernard and Jensen, 1999; Aw, Chung and Roberts, 2000 and Clerides,

Lach and Tybout , 1998)) and firms engaging in FDI are in turn more productive than exporting firms Girma, greenaway and Kneller (2002). Within the group of firms choosing FDI as an option for entering the foreign market, the more productive ones are involved in Greenfield FDI (Nocke and Yeaple , 2008). All these factors in turn lead to a higher growth of the host country. They confirm that both Greenfield FDI and cross-border M&A exist simultaneously and go both ways from Home to Foreign and from Foreign to Home.

Nocke and Yeaple (2008), on the other hand suggested that in case of asymmetric countries, M&A flows both ways. Greenfield FDI however, goes only from the richer to the poorer country. While as income differences between the two countries become smaller, Greenfield FDI decreases. Thus, there would be no Greenfield FDI between equally developed economies.

The inflow of foreign capital adds to gross domestic investment and fosters economic growth. The continued growth expands the middle class and increases income, employment and the savings rates (Adams, 2008). Therefore, the modernization hypothesis suggests a negative relationship between FDI and income inequality. However, the dependency hypothesis argues that FDI increases wages in international sectors with MNCs to a greater extent than those in traditional sectors (Girling, 1973; Rubinson, 1976; Bornschier and Chase-Dunn, 1985; Choi, 2006). Accordingly, the dependency hypothesis predicts that FDI is associated with rising income inequality.

Wang and Wong (2009) show that Greenfield FDI improves economic growth while M&As have negative effects on the host country's economic growth. Conyon et. al. (2002) present findings that M&As contribute to an increase in the labor productivity in the United Kingdom. Liu and Zhou (2008) find that Greenfield FDI in Chinese high-technology industries is associated with both intra-industry and inter-industry spillovers and M&As only exhibit inter-industry spillovers. In practice, world M&As have been predominantly driven by acquisitions. Cross-border mergers represented only 3 percent of cross-border M&As in 1999.

Macroeconomic studies tend to conclude that FDI boosts growth via higher productivity and/or physical investment although some papers argue that this requires the destination economy to satisfy certain conditions and yet, others find no significant impact of FDI on investment nor on growth. Ram and Zhang (2002) discussed some points which supports the notion that FDI promotes growth. In general, FDI provides ready access to the world markets and acts as a conduit for the host country to participate in the globalization process (Dondeti and Mohanty, 2007).

Objective and Methodology:

The objective of this paper is to analyze the dynamic relationships between variables such as GDP growth, Foreign Direct Investments through Cross border Merger or Acquisition and Greenfield investments. Specifically, the paper examines how the behavior of given variables – Greenfield FDI, Mergers & Acquisitions FDI, and GDP growth are related to the future behavior of dynamic factors such as (1) FDI provides the financial resources needed by the host country, (2) FDI acts as a vehicle for the transfer of advanced manufacturing technologies from the DCs(Developed countries) to the LDCs(less Developed countries), (3) FDI increases competition in the host country's markets, (4) FDI helps the host countries improve their foreign exchange reserves (or balance-of-payments position) by increasing exports, (5) FDI brings along with it the management know-how needed to run the facilities, (6) FDI enhances the training and employment opportunities for the people of the host country, (7) FDI reduces the burden of imports on the host countries through import substitution, (8) FDI acts as catalyst for increasing domestic savings and investment. The paper also examines whether changes in a given variable have a lasting impact on another and the time precedence. The hypothesis for each set of countries is as follows:

For the effect of Greenfield investments on growth,

H_0 = Greenfield FDI is not affected by the GDP, Cross border Merger & Acquisition and Greenfield investments of an economy

H_1 = Greenfield FDI is effected by the GDP, Cross border Merger & Acquisition and Greenfield investments of an economy

For the effect of investments due to Cross Border Mergers & Acquisitions on Growth.

H_0 = Cross Border M&A is not affected by the GDP, Cross border Merger or Acquisition and Greenfield investments of an economy

H_1 = Cross Border M&A is effected by the GDP, Cross border Merger or Acquisition and Greenfield investments of an economy

For the effect of Greenfield FDI on Cross Border M&A

H_0 = Greenfield FDI is not affected by the GDP, Cross border Merger or Acquisition and Greenfield investments of an economy

H_1 = Greenfield FDI is not affected by the GDP, Cross border Merger or Acquisition and Greenfield investments of an economy

Data

The sample consists of 15 countries for the period 2003-12. The sample is divided into 3 groups: developed countries (USA, England, Germany, France, Japan), the BRICS nations (Brazil, Russia, India, China, South Africa) and the A5 nations (Indonesia, South Korea, Malaysia, Philippines and Thailand). The countries are taken in a manner so as to include the developed, industrial economies and developing economies. The countries have been grouped since developed and developing countries may exhibit different relationships among the variables concerned.

Data of FDI and GDP are compiled from the UNCTAD database which also gives access to separate investments in Greenfield and cross border M&A on annual frequency of data.

For cross border M&A, sales are calculated on net basis as follows: Sales of companies to foreign TNCs in the host economy minus (-) Sales of foreign affiliates in the host economy. Data cover only those deals that involved an acquisition of an equity stake of more than 10%. Data refer to net sales by the region/economy of the immediate acquired company.

For Greenfield investments, data refer to estimated amounts of capital investment.

There may be variation in data due to various factors for example, for M&A, the timing of transactions, their coverage, and the definition of the foreign and target companies are important. While FDI is measured on an accruals basis, M&As are recorded at the time of announcement or closure of each specific deal. Further, these deals may include transactions involving a sequence of payments over several years. Also, data on cross-border M&As may include funds raised in local and international financial markets which would not qualify as FDI.

We must also consider the methodological differences between M&A and FDI regarding the countries of origin and destination namely, FDI flows are usually compiled on the basis of immediate host and immediate home countries whereas data on cross-border M&As (as reported by UNCTAD) uses different combinations of immediate and ultimate country. All these facts suggest caution when comparing cross-border M&As and total FDI for a given country.

For our analysis, we would be using the 3 separate groups to carry out our estimations. Thereafter, we also have a combined testing including all the countries to come up with a general observation.

Methodology:

Granger Causality

We want to examine whether a variable, say *x*, helps forecast the other variable in the system, say *y*, beyond what the past history of *y* predicts. This is a test of Granger-causality, it amounts to testing if the coefficients of the lag polynomial related to x are statistically significantly different from zero.

Our hypotheses for Granger Causality Test are:
Ho = The variables do not have a causal effect on each other

H_1 = The variables exhibit causal effect on each other

The causality test is conducted for each set of countries separately and presented in Table -1.

Vector Auto Regression

Since we are interested in the impact of changes in a primary variable, say *x*, on the other, say *y*. The effect of *x* on *y*, based on their past history, is given by the sum of the coefficients on all lagged *x*. Using the properties of the lag operator, this impact is equal to the coefficient of x for a country at a given time. From estimation of the Vector AutoRegression, we can obtain the point estimate of this impact and for the purpose of statistical inference, its associated standard deviation.

The long-run effect takes into account both the impact of x on y given the past history of y, and the autoregressive properties of y. Provided that y follows a stable process, the long-run effect of *x* on y is given by coefficient of x / [1- coefficient of y].

The methodology consists of estimating the bivariate vector autoregressions (VAR) for panel data (that is, combining cross-country and time-series observations). The VAR equations have the following form,

$$y_{i,t} = A(L)y_{i,t} + B(L)x_{i,t} + \eta_t + \mu_i + \varepsilon_{i,t}$$

where: y and x : two variables of interest;

L: lag operator;

A and B: vectors of coefficients;

η_t: unobserved time effects;

μ_i: unobserved country effects,

$\varepsilon_{i,t}$: regression residuals.

The subscripts i and t denote country and time, respectively
In actual estimation of the VAR we consider two lags for each variable. The short sample size along the time dimension (10 years, as discussed below) does not allow longer lag specifications.

Description of the Regressors

The following model is utilized to explore potentially different effects of M&As and greenfield FDI in host country ion its Gross Domestic Product.

$$GDP_i = \alpha\, GDP_i + \beta\, M\&A_i + \gamma\, GFI_i + \varepsilon$$

Where GFI_i would be the Greenfield investment into the country and $M\&A_i$ would be the fund invested through merger or acquisition into a country. GDP is gross domestic product at market price.

In the empirical analysis, we use the following definitions for the variables of interest. Economic growth is the log difference of real GDP in consecutive years. Cross border Mergers & Acquisitions FDI is the amount of foreign capital destined to obtain at least 10 percent of a domestic firm's equity, given as a ratio to current GDP. Greenfield FDI is equal to gross FDI inflows minus the value of mergers & acquisitions, also expressed as a ratio to current GDP.

Analysis and Results

Granger Causality

Analysis of the test results for developed countries, BRICS, East Asian economies and all the countries together indicate the following (the results are shown in Table 1)

Developed Countries: Cross border M&A has a causal effect on the GDP of the country and so does Greenfield FDI. However, when it comes to reverse relationship where GDP does affect the cross border M&A, it has no significant impact on Greenfield FDI. Green fields investment does not cause the cross broader M&A but cross boarder M&A is caused by Greenfield FDI.

BRICS Countries: The cross border M&A have no significant effect on GDP. However, GDP of the country influences the flow of cross-border M&A in the country. Greenfield FDI has an impact on GDP and GDP also affects Greenfield FDI. This can also be logically explained by the fact that investors look for growth parameters when deciding on their investments in a country. Green filed FDI does not causes cross broader M&A.

South East Asian Economies: The cross border M&As affect GDP of the country and GDP also has a causal effect on the cross border M&A. Greenfield FDI do affect GDP of countries but GDP doesn't affect the Greenfield investment inflows.

Overall Countries: Considering all economies together, both Greenfield investments and the cross border investment due to Mergers and Acquisitions have a significant impact on GDP of the economy. GDP in turn is affected by cross boarder M&A and Greenfield FDI.

VAR Results

The estimation results are summarized in Table 2-5 for each group of countries. For each vector auto-regression, we observe coefficients on the lagged terms of each variable together with the p-value for hypotheses to check the significance of the statistics.

For developed nations, we observe that GDP depends on its preceding year's values. The cross boarder M&A is dependent on the GDP of the previous year's investments made for M&A and the Greenfield investment in the previous years. The Greenfield FDI is dependent on Greenfield and the M&A investments in the former years. These deductions can be made using the p-values of the co-efficient associated with the variables (Table 2).

The model for developed nations has high value for R-Squared for GDP and Greenfield investments. For cross border M&A, the variance is not completely explained and hence we can say that other factors influence the M&A in developed nations.

On analyzing the BRICS nations, we observe that the GDP depends on its previous years and the Greenfield FDI and cross boarder M&A in the preceding years. Cross boarder M&A is not dependent on GDP, Greenfield FDI and cross broder M&A. Greenfield FDI is dependent on previous years GDP and Greenfield FDI. Since investments made earlier will start giving results after a time gap, it is understandable. We may say that Greenfield investments follow an initial processes, while M&A appears to follow a memory-free process. It is determined by the prevailing factors (Table 3).

For GDP and Greenfield FDI adjusted R square value is high which supports that there is a strong relationship among variables which were considered for the study. For cross boarder M&A, adjusted R square value is low. One can inference that there could be other factors that effects cross boarder M&A of BRICS nations like regulatory aspects, economic and business environment etc.

Looking at the South East Asian economies, GDP depends on its previous values and Greenfield investments made earlier. The cross border M&A depends on Greenfield FDI. Greenfield investments depend on previous GDP and the preceding year's Greenfield investments. For GDP adjusted R square value is high. It is very low for cross border M&A and Greenfield FDI which supports the point that cross border M&A and Greenfield FDI are effected by other factors not considered in the study (Table 4).

Overall, we can say that the GDP is dependent on its previous years GDP, cross border M&A, and Greenfield FDI. Greenfield FDI depends on the former year's (up to a lag of two years) GDP, M&A and the Greenfield investments. The cross border M&A depends on the preceding year's GDP, M&A and Greenfield FDI.High values of R Squared indicate that our analysis is fairly accurate (Table 5).

GDP, cross border M&A and Greenfield FDI impact each other to some extent. We see the link between of M&A, Greenfield FDI and growth rate and how these three precede one another. The degree of impacts varies according to the type of the country.

For developed countries, Greenfield FDI precedes cross border M&A investments, for BRICS, there seems to be no significant relation between the cross border M&A and Greenfield investments. For south East Asian economies, the cross border M&A depends to a low extent on Greenfield investments made previously. Overall, crossborder M&A depends meagerly on the investments made in the preceding years.

For developed economy, the growth of an economy is independent on the investments made in a developed economy. However, in BRICS, GDP is dependent to a large extent on the preceding year's GDP and more importantly on Greenfield investments made in such a country. In south East Asian economies, the rise in GDP is preceded by the inflow of Greenfield investment. Overall, the growth of an economy depends heavily on Green field FDI inflows into the country in the preceding years.

Conclusion

Appendix

Table-1 : Causality Results (F-Statistic)

	Developed	BRICS	A5	Overall
Green Field FDI to M & A	1.872	1.984	2.053	1.566
M & A to Green Field FDI	19.239	1.009	0.491	8.94
Green Field FDI to Growth	2.558	2.632	7.652	17.945
Growth to Green Field FDI	3.884	2.413	1.865	4.445
M & A to Growth	2.814	3.915	0.579	9.422
Growth to M & A	2.068	2.425	1.03	5.185

Vector AutoRegression Results

Developed Nations

GDP = C(1)*GDP(-1) + C(2)*GDP(-2) + C(3)*CB_M_A_IN(-1) + C(4)*CB_M_A_IN(-2)

+ C(5)*GF_FDI_IN(-1) + C(6)*GF_FDI_IN(-2) + C(7)

CB_M_A_IN = C(8)*GDP(-1) + C(9)*GDP(-2) + C(10)*CB_M_A_IN(-1) +

C(11)*CB_M_A_IN(-2) + C(12)*GF_FDI_IN(-1) + C(13)*GF_FDI_IN(-2) + C(14)

GF_FDI_IN = C(15)*GDP(-1) + C(16)*GDP(-2) + C(17)*CB_M_A_IN(-1) +

C(18)*CB_M_A_IN(-2) + C(19)*GF_FDI_IN(-1) + C(20)*GF_FDI_IN(-2) + C(21)

System : UNTITLED
Estimation Method : Least Squares
Date : 03/20/14 Time : 07:43
Sample : 2005-2012
Included observations : 40
Total system (balanced) observations 120

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	1.334382	0.208134	6.411181	0.0000
C(2)	-0.298659	0.216568	-1.378938	0.1710
C(3)	-1.771908	1.236721	-1.432747	0.1551
C(4)	0.319264	1.694537	0.188408	0.8509
C(5)	-5.794607	6.132548	-0.944894	0.3470
C(6)	6.32306	4.570364	1.387703	0.1683
C(7)	-19281.87	73720.95	-0.261552	0.7942
C(8)	0.068146	0.032850	2.074469	0.0406
C(9)	-0.067624	0.034184	-1.978222	0.0507
C(10)	0.473223	0.195193	2.424382	0.0171
C(11)	0.427850	0.267451	1.599732	0.1128
C(12)	-2.005158	0.967908	-2.071642	0.0409
C(13)	1.690708	0.721346	2.343823	0.0211
C(14)	7.277150	11635.47	0.000625	0.9995
C(15)	0.008177	0.005923	1.380357	0.1706
C(16)	-0.007807	0.006164	-1.266599	0.2083
C(17)	0.152029	0.035197	4.319370	0.0000
C(18)	0.056332	0.048226	1.168063	0.2456
C(19)	0.122679	0.174532	0.702904	0.4838
C(20)	0.372006	0.130072	2.859992	0.0052
C(21)	987.2263	2098.096	0.47053	0.6390
Determinant residual covariance		2.28E+27		

Equation : GDP = C(1)*GDP(-1) + C(2)*GDP(-2) + C(3)*CB_M_A_IN(-1) + C(4)*CB_M_A_IN(-2) + GF_FDI_IN(-1) + C(6)*GF_FDI_IN(-2) + C(7) Observations : 40			
R-squared	0.997343	Mean dependent var	5509015
Adjusted R-quared	0.996860	S.D. dependent var	4539439
S.E. of regression	254390.0	Sum squared resid	2.14E+12
Durbin-Waston stat	1.842553		
Equation : CB_M_A_IN = C(B)*GDP(-1) + C(9)*GDP(-2)+ C(10)*CB_M_A_IN(-1) + C(11)*CB_M_AIN (-2) + C(12) * GF_FDI_IN(-1) + C(13)*GF_FDI_IN(-2) + C(14) Observations : 40			
R-squared	0.591155	Mean dependent var	49355.31
Adjusted R-quared	0.516819	S.D. dependent var	57761.46
S.E. of regression	40150.68	Sum squared resid	5.32E+10
Durbin-Waston stat	2.061744		
Equation : OF_FDI_IN = C(15)*GDP(-1) + C(16)*GDP(-2) + C(17)*CB_M_A_IN(-1) + C(18)*CB_M_A_IN (-2) + C(19) * GF_FDI_IN(-1) + C(20)*GF_FDI_IN(-2) + C(21) Observations : 40			
R-squared	0.898818	Mean dependent var	26865.31
Adjusted R-quared	0.880422	S.D. dependent var	20936.69
S.E. of regression	7239.929	Sum squared resid	1.73E+09
Durbin-Waston stat	2.205275		

Table 2 VAR Results for Developed Nations

BRICS

$$GDP = C(1)*GDP(-1) + C(2)*GDP(-2) + C(3)*CB\_M\_A\_IN(-1) + C(4)*CB\_M\_A\_IN(-2) +$$

$$C(5)*GF\_FDI\_IN(-1) + C(6)*GF\_FDI\_IN(-2) + C(7)$$

$$CB\_M\_A\_IN = C(8)*GDP(-1) + C(9)*GDP(-2) + C(10)*CB\_M\_A\_IN(-1) +$$

$$C(11)*CB\_M\_A\_IN(-2) + C(12)*GF\_FDI\_IN(-1) + C(13)*GF\_FDI\_IN(-2) + C(14)$$

$$GF\_FDI\_IN = C(15)*GDP(-1) + C(16)*GDP(-2) + C(17)*CB\_M\_A\_IN(-1) +$$

$$C(18)*CB\_M\_A\_IN(-2) + C(19)*GF\_FDI\_IN(-1) + C(20)*GF\_FDI\_IN(-2) + C(21)$$

System : UNTITLED
Estimation Method : Least Squares
Date : 03/20/14 Time : 07:47
Sample : 2005-2012
Included observations : 40
Total system (balanced) observations 120

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	1.038165	0.197193	5.264707	0.0000
C(2)	0.118424	0.235889	0.502032	0.6168
C(3)	-8.955530	5.025726	-1.781937	0.0778
C(4)	-13.05180	6.611504	-1.974104	0.0512
C(5)	-1.392658	1.988310	-0.700423	0.4853
C(6)	3.786564	1.880290	2.013819	0.0467
C(7)	36608.38	58253.56	0.628432	0.5312
C(8)	0.004352	0.006921	0.628780	0.5309
C(9)	-0.003806	0.008279	-0.459682	0.6468
C(10)	-0.002879	0.176396	-0.016322	0.9870
C(11)	-0.367694	0.232055	-1.584512	0.1163
C(12)	-0.017231	0.069787	-0.246902	0.8055
C(13)	0.039578	0.065996	0.599711	0.5501
C(14)	5655.801	2044.623	2.766183	0.0068
C(15)	0.028540	0.016070	1.775988	0.0788
C(16)	-0.035398	0.019223	-1.841429	0.0686
C(17)	-0.047541	0.409559	-0.116079	0.9078
C(18)	-0.489354	0.538788	-0.908249	0.3660
C(19)	0.270864	0.162032	1.671667	0.0977
C(20)	0.623919	0.153230	4.071790	0.0001
C(21)	8910.254	4747.231	1.876937	0.0635

| Determinant residual covariance | | 2.46E+26 | | |

Equation : GDP = C(1)*GDP(-1) + C(2)*GDP(-2) + C(3)*CB_M_A_IN(-1) +
C(4)*CB_M_A_IN(-2) + GF_FDI_IN(-1) + C(6)*GF_FDI_IN(-2) + C(7)

Observations : 40

R-squared	0.990078	Mean dependent var	1943204.
Adjusted R-quared	0.988274	S.D. dependent var	1843198.
S.E. of regression	199595.2	Sum squared resid	1.31E+12
Durbin-Waston stat	2.249007		

Equation : CB_M_A_IN = C(B)*GDP(-1) + C(9)*GDP(-2) + C(10)*CB_M_A_IN(-1)
+ C(11)*CB_M_AIN (-2) + C(12) * GF_FDI_IN(-1) +
C(13)*GF_FDI_IN(-2) + C(14)

Observations : 40

R-squared	0.166111	Mean dependent var	6802.313
Adjusted R-quared	0.014495	S.D. dependent var	7056.860
S.E. of regression	7005.526	Sum squared resid	1.62E+09
Durbin-Waston stat	1.768705		

Equation : OF_FDI_IN = C(15)*GDP(-1) + C(16)*GDP(-2) + C(17) *CB_M_A_IN(-1) + C(18)*CB_M_A_IN (-2) + C(19) * GF_FDI_IN(-1) + C(20)*GF_FDI_IN(-2) + C(21)

Observations : 40

R-squared	0.826839	Mean dependent var	47184.38
Adjusted R-quared	0.795355	S.D. dependent var	35955.73
S.E. of regression	16285.53	Sum squared resid	8.73E+09
Durbin-Waston stat	1.921475		

Table 3 VAR Results for Developed Nations

<u>South East Asian Economies</u>

$$GDP = C(1)*GDP(-1) + C(2)*GDP(-2) + C(3)*CB\_M\_A\_IN(-1) +$$

$$C(4)*CB\_M\_A\_IN(-2) + C(5)*GF\_FDI\_IN(-1) + C(6)*GF\_FDI\_IN(-2) + C(7)$$

$$CB\_M\_A\_IN = C(8)*GDP(-1) + C(9)*GDP(-2) + C(10)*CB\_M\_A\_IN(-1) +$$

$$C(11)*CB\_M\_A\_IN(-2) + C(12)*GF\_FDI\_IN(-1) + C(13)*GF\_FDI\_IN(-2) + C(14)$$

$$GF\_FDI\_IN = C(15)*GDP(-1) + C(16)*GDP(-2) + C(17)*CB\_M\_A\_IN(-1) +$$

$$C(18)*CB\_M\_A\_IN(-2) + C(19)*GF\_FDI\_IN(-1) + C(20)*GF\_FDI\_IN(-2) + C(21)$$

System : UNTITLED
Estimation Method : Least Squares
Date : 03/20/14 Time : 07:47
Sample : 2005-2012
Included observations : 40
Total system (balanced) observations 120

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	1.209841	0.145606	8.308982	0.0000
C(2)	-0.201875	0.154765	-1.304395	0.1951
C(3)	2.766105	3.542424	0.780851	0.4368
C(4)	2.122757	3.870567	0.548436	0.5846
C(5)	-3.009756	1.256746	-2.394880	0.0185
C(6)	4.752031	1.257096	3.780164	0.0003
C(7)	423.5210	17693.10	0.023937	0.9810
C(8)	0.009275	0.006831	1.357785	0.1776
C(9)	-0.010842	0.007261	-1.493258	0.1385
C(10)	0.087141	0.166196	0.524325	0.6012
C(11)	-0.129322	0.181591	-0.712161	0.4780
C(12)	-0.043122	0.058961	-0.731361	0.4663
C(13)	0.122529	0.058978	2.077543	0.0403
C(14)	795.9678	830.0874	0.958896	0.3399
C(15)	0.038357	0.019458	1.971235	0.0515
C(16)	-0.041933	0.020682	-2.027513	0.0453
C(17)	0.322005	0.473395	0.680204	0.4980
C(18)	-0.573348	0.517246	-1.108463	0.2703
C(19)	0.631887	0.167946	3.762434	0.0003
C(20)	-0.063603	0.167993	-0.378607	0.7058
C(21)	4769.726	2364.432	2.017282	0.0464
Determinant residual covariance		2.71E+23		

Equation : GDP = C(1)*GDP(-1) + C(2)*GDP(-2) + C(3)*CB_M_A_IN(-1) + C(4)*CB_M_A_IN(-2) + GF_FDI_IN(-1) + C(6)*GF_FDI_IN(-2) + C(7)

Observations : 40

R-squared	0.980780	Mean dependent var	449220.3
Adjusted R-quared	0.977286	S.D. dependent var	326647.4
S.E. of regression	49229.53	Sum squared resid	8.00E+10
Durbin-Waston stat	1.920889		

Equation : CB_M_A_IN = C(8)*GDP(-1) + C(9)*GDP(-2) + C(10)* CB_M_A_IN(-1) + C(11)*CB_M_AIN (-2) + C(12) * GF_FDI_IN(-1) + C(13)*GF_FDI_IN(-2) + C(14)

Observations : 40

R-squared	0.178959	Mean dependent var	1500.613
Adjusted R-quared	0.029678	S.D. dependent var	2344.702
S.E. of regression	2309.647	Sum squared resid	1.76E+08
Durbin-Waston stat	1.909411		

Equation : GF_FDI_IN = C(15)*GDP(-1) + C(16)*GDP(-2) + C(17)*CB_M_A_IN(-1) + C(18)*CB_M_A_IN (-2) + C(19) * GF_FDI_IN(-1) + C(20)*GF_FDI_IN(-2) + C(21)

Observations : 40

R-squared	0.459262	Mean dependent var	11328.16
Adjusted R-quared	0.360946	S.D. dependent var	8229.622
S.E. of regression	6578.828	Sum squared resid	1.43E+09
Durbin-Waston stat	1.955856		

Table 4 VAR Results for A5 Nations

Overall

$$GDP = C(1)*GDP(-1) + C(2)*GDP(-2) + C(3)*GF\_FDI\_IN(-1) + C(4)*GF\_FDI\_IN(-2)$$

$$+ C(5)*CB\_M\_A\_IN(-1) + C(6)*CB\_M\_A\_IN(-2) + C(7)$$

$$GF\_FDI\_IN = C(8)*GDP(-1) + C(9)*GDP(-2) + C(10)*GF\_FDI\_IN(-1) +$$

$$C(11)*GF\_FDI\_IN(-2) + C(12)*CB\_M\_A\_IN(-1) + C(13)*CB\_M\_A\_IN(-2) + C(14)$$

$$CB\_M\_A\_IN = C(15)*GDP(-1) + C(16)*GDP(-2) + C(17)*GF\_FDI\_IN(-1) +$$

$$C(18)*GF\_FDI\_IN(-2) + C(19)*CB\_M\_A\_IN(-1) + C(20)*CB\_M\_A\_IN(-2) + C(21)$$

System : UNTITLED
Estimation Method : Least Squares
Date : 03/20/14 Time : 07:47
Sample : 2005-2012
Included observations : 40
Total system (balanced) observations 120

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	1.314996	0.100601	13.07139	0.0000
C(2)	-0.281024	0.104684	-2.684501	0.0076
C(3)	-2.237318	1.499537	-1.492006	0.1368
C(4)	5.592304	1.371661	4.077029	0.0001
C(5)	-2.009596	0.798288	-2.517382	0.0123
C(6)	-0.545244	0.924012	-0.590083	0.5555
C(7)	-20619.13	24961.38	-0.926042	0.4094
C(8)	0.013509	0.006098	2.215291	0.0274
C(9)	-0.014253	0.006346	-2.246151	0.0253
C(10)	0.358328	0.090897	3.942132	0.0001
C(11)	0.461080	0.083146	5.545455	0.0000
C(12)	0.130062	0.048390	2.687807	0.0075
C(13)	0.002037	0.056011	0.036375	0.9710
C(14)	2153.138	1513.074	1.423022	0.1556
C(15)	0.025863	0.013082	1.976928	0.0489
C(16)	-0.023847	0.013613	-1.751737	0.0807
C(17)	-0.456591	0.195001	-2.341483	0.0198
C(18)	0.277163	0.178372	1.553851	0.1212
C(19)	0.539177	0.103810	5.193888	0.0000
C(20)	0.167472	0.120159	1.393753	0.1643
C(21)	2202.744	3245.993	0.678604	0.4979

| Determinant residual covariance | | 1.83E+27 | | |

Equation : GDP = C(1)*GDP(-1) + C(2)*GDP(-2) + C(3)*CB_M_A_IN(-1) + C(4)*CB_M_A_IN(-2) + GF_FDI_IN(-1) + C(6)*GF_FDI_IN(-2) + C(7)

Observations : 40

R-squared	0.997337	Mean dependent var	2633913.
Adjusted R-quared	0.997196	S.D. dependent var	3527753.
S.E. of regression	186806.2	Sum squared resid	3.94E+12
Durbin-Waston stat	2.053391		

Equation : CB_M_A_IN = C(B)*GDP(-1) + C(9)*GDP(-2) + C(10)*CB_M_A_IN(-1) + C(11)*CB_M_AIN (-2) + C(12) * GF_FDI_IN(-1) + C(13)*GF_FDI_IN(-2) + C(14)

Observations : 40

R-squared	0.849106	Mean dependent var	28459.28
Adjusted R-quared	0.841094	S.D. dependent var	28406.17
S.E. of regression	11323.56	Sum squared resid	1.45E+10
Durbin-Waston stat	1.925597		

Equation : OF_FDI_IN = C(15)*GDP(-1) + C(16)*GDP(-2) + C(17)*CB_M_A_IN(-1) + C(18)*CB_M_A_IN (-2) + C(19) * GF_FDI_IN(-1) + C(20)*GF_FDI_IN(-2) + C(21)

Observations : 40

R-squared	0.644028	Mean dependent var	19219.41
Adjusted R-quared	0.625126	S.D. dependent var	39676.02
S.E. of regression	24292.41	Sum squared resid	6.67E+10
Durbin-Waston stat	2.117898		

Table 5 VAR Results for Developed Nations

References

Adams, S. (2008). "Globalization and Income Inequality: Implications for Intellectual Property Rights," *Journal of Policy Modeling*,

Aw, B.Y. Chung, S., Roberts, M. (2000). Productivity and Turnover in the Export Market: Micro Evidence from Taiwan and South Korea. *The World Bank Economic Review* 14 (1)

Bernard, A. B., Jensen, J.B., (1995). Exporters jobs and wages in U.S. Manufacturing, 1976-87. Brooking Papers on Economic Activity, Microeconomics.

Bernard, A. B., Jensen, J.B., (1999). Exceptional ExportersPerformance: Cause Effect or Both? *Journal of International Economics* 47(1),

Bornschier, V. and Chase-Dunn, C. (1985). *Transnational Corporations and Underdevelopment.* New York, NY: Praeger Press.

Choi, C. 2006. "Does Foreign Direct Investment Affect Domestic Income Inequality?" *Applied Economics Letters,* 13.

Clerides, S. Lach,S. Tybout J. 1998. Is Learning by Exporting Important? Micro Dynamic Evidence from Colombia, Mexico, and Morocco. *Quarterly Journal of Economics113.*

Conyon, M., Girma, S., Thompson, S. and Wright, P. 2002. "The Productivity and Wage Effect of Foreign Acquisition in the United Kingdom," *Journal of Industrial Economics,* 50,

Dondeti and Mohanthy.(2007). Impact of Foreign Direct Investment on the Gross Domestic Product, Exports and Imports of Four Asian Countries. *Delhi Business Review, 8.*

Girling, R. (1973). "Dependency and Persistent Income Inequality," In F. Bonilla & R. Girling (Eds.), Structures of Dependency (pp. 83-101). Stanford, CA: Institute of Political Studies.

Girma, S.. Greenaway, D. Kneller, R. (2002). Does Exporting Lead to Better Performance? A Microeconomic Analysis of Matched Firms. GEP Research Paper, vol. 02/09.

Gujarati, D.N. (2003). *Basic Econometrics.*(4th edition). New York: McGraw-hill.

Liu, X. and Zhou, H. (2008) . "The Impact of Greenfield FDI and Mergers and Acquisitions on Innovation in Chinese High-tech Industries," *Journal of World Business, 4.*

Ma H., Zhang W., (2010), Brief Analysis of the Issue of Cross Border Merger and Acquisition in BRICs, Research in World Economy, Vol. 1, No. 1.

Nocke, V. and Yeaple, (S. 2007). "Cross-Border Mergers and Acquisitions vs. Greenfield Foreign Direct Investment: The Role of Firm Heterogeneity," *Journal of International Economics, 72.*

Ram and Zhang. (2002). Foreign Direct Investment and Economic Growth: Evidence from Cross Country Data for the 19990s. *Economic Development and the Culture Change,51.*http://dx.doi.org/10.1086/345453.

Rubinson, R. (1976). "The World Economy and the Distribution of Income within States: A Cross-National Study," American Sociological Review, 41.

Stepanok I., (2013), Cross-Border Mergers and Greenfield Foreign Direct Investment, Kiel Institute for the World Economy, Kiel Working Paper No. 1805.

UNCTAD. World Investment Report. New York: United Nations. Various Issues.

Wang, M. and Wong, M. C. S. (2009). "What Drives Economic Growth? The Case of Cross- Border M&A and Greenfield FDI Activities," *Kyklos*, 62.

Zhuang H, Griffith D., 2013, The Effect of Mergers & Acquisitions and Greenfield FDI on Income Inequality, *International Journal of Applied Economics*, 10(1).