

Assessing The Factors of Greenfield Investment's Growth Time Span from 2001 to 2018 in Case of Pakistan

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ABSTRACT

An effort is made to analyze the drivers that are responsible to involve in making the relationship of Green Field Investment by considering Pakistan's economy time span from 2001 to 2018. In making an econometric model to analyze the impact on Greenfield investment (GFI), the following indicators such as GDP, market capitalization (MP), Capital Productivity, import and exports as well as Corporate Tax (CP) and Net Foreign Assets (NFA) are involved to make the model more realistic and statistically significant. In order to measure relationship, reliability and causality correlation, regression and t-test are utilized by using quantitative data. After analyzing the results, in the end of the study the policies and implication are given in the shape of recommendation for corrective measures.

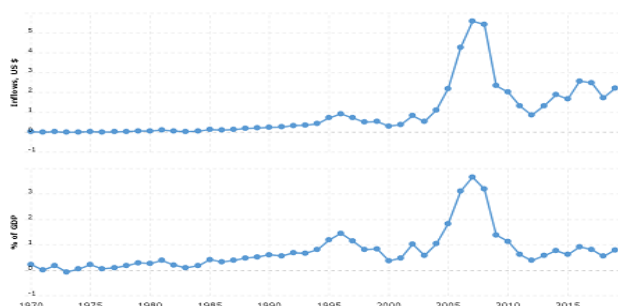
Keywords

MC, NFA, GFI, Pakistan, Regression, Correlation

Introduction

FDI refers to direct investment in a business of a company of a foreign company into a host country. According to World Bank's statistics Pakistan is at 61th rank in the world in receiving FDI. FDI has been counted as one of the source of higher economic growth of the country but if we analyze the climate for FDI in Pakistan, it has remarkably attractive climate for FDI especially in agriculture, IT, telecommunication, power and service sector. So, if there is an increment in FDI in Pakistan it would enhance the strength of currency of home country's GNP, managerial skills and productivity of country

FDI Trend in Pakistan



1.1 Types of FDI:

There are two main types of FDI:

- Green Field Investment
- Brown Field Investment

Green Field Investment is defined as the investment made in business or production by parent country by employing its new plants as well as operational facilities to foreign country. On the other hand Brown field Investment refers to merger and acquisitions.

According to Investopedia:

"Green field investments occur when multinational corporations enter into developing countries to build new factories and/or stores". In order to attract Greenfield investment particularly by developing countries policies such as tax-breaks, offering different subsidies and many other policies are implemented. It is generally observed that Officials are in favor in reducing corporate tax revenue than losing jobs and effecting adverse effect on human capital of the country. This policy also enhanced the stage of technology that is necessary for long term economic growth.

1.2 Role of Green Field Investment in an Economy:

Green Field Investment is beneficial for an economy in the following ways:

- Create new jobs in the host Country
- Increase Production in Country
- Allocation of Resources
- Enhance competition for the local industry
- Contribute in GDP of Country

- Flow of Capital
- Helps to avail Foreign goods
- Cuts Imports
- Helps to increase exports

1.3 Determinants of Green Field Investment in Pakistan:

The following factors are the determinants of Green Field Investment in an economy:

- Tariff reforms
- Tax rates
- Repatriation Policy of Profit
- Market size
- Infrastructure of Country
- Political stability
- Financial Stability

1.4 Scope of Study:

This study will be beneficial for:

- Government of Pakistan to develop strategies for those factors which are influencing negatively and positively green field investment.
- State Bank to adopt policies which can create favorable environment for growth of economy.
- Ministry of Finance to take reforms which are beneficial for investors and economy as well.
- For investors to avail investment opportunities in Pakistan.

1.5 Objective of Study:

This study is conducted to determine the influence of the following on Green Field Investment in Pakistan from 2001-2012:

- Gross Domestic Product(GDP)
- Exports
- Imports
- Productivity of Capital
- Net Foreign Assets
- Corporate Tax Rate
- Market Capitalization

Literature Review:

Following literatures are reviewed in order to understand relationship among variables:

Prof.Talat Afza published in an article named green field investment in Pakistan regarding economic growth and green field investment in developed and developing countries and stated that FDI is highly affected by socio economic and geographic location of country. In order to investigate the relationship among variables he took socio economic political factors and geographical factors as independent variables. He also highlighted role of financial institution in attracting FDI in an economy.

In 2011, Mr.Philipp Harms and Mr. Pierre Guillaume Meon published in an article named “The growth effects of green field investment and mergers and acquisition in developing countries” and stated that the some macro economic variables do not give impact on FDI while other macroeconomic variables have side effects on FDI such as currency appreciation or other factors.

In 2011,Mr.Ralf Kruger published in an article of UNCTAD named “Foreign Direct Investment-Trends and Determinants “and found that in developing countries Green field investment is at the peak but do not hold shares in Energy sectors.

In 2008, Mr.Muhammmad Zakaria published in an article of MPRA named “Investment in Pakistan” and stated that government of Pakistan should focus on short term priority of foreign earning and investment sector. In addition he suggested policies to government to improve investment policies regarding foreign sector of earning.

In 2011, Mr.Larry D.Qiu and Mr.Shengzu Wang published in the journal “Review of International Economics “named “FDI policy-Green field investment and cross border mergers” and stated that green field investment and mergers-acquisitions are welfare for host country. In addition they also focused on entry mode of different organizations for green field investment and mergers.

In 2010 Mr.Xueli published in journal of International Business and research vol.3.No.1 named “A literature review on the relationship between FDI and Economic growth” regarding impact of economic growth in developing countries and stated that FDI has positive impact on economic growth and can bring technological change in economy.

In 2004, Mr.Cesar Calderon published in research journal named “Green field Foreign Direct investment and mergers and acquisition: feed back and macroeconomics variables” regarding impact of FDI on developing countries and stated that FDI is the main cause of expansion of M&A sales.

In 2011, Mr.Khalil Hamdani published in an article in Columbia FDI profiles named “Inward FDI policy and its policy context” regarding policy regimes and FDI in Pakistan and suggested that there is a need of consideration in private sector market potential to attract investors.

In 2002, it is published in article of OECD named “Foreign Direct Investment for development” regarding role of FDI for development of economic growth and stated that FDI creates competition in host country between domestic and foreign investment and drives efficient and low cost production in a country.

In 2012, Mr.Hyung-suk-Byung published in journal, JEL classification F21, F23, G15 named “Assessing and examining factors influencing green field and mergers in developing countries” and stated that regional and global factors spillovers on Greenfield and mergers decision. He further said that financial stability of emerging countries is negatively associated with M&A sales.

In an article named “Determinants of Green field investment in business services “using panel data method in BRICS countries and found that corporate tax rate is highly correlated with FDI in Greenfield business service sector.

In 2011, Mr.Muhammad Arshad Khan published in PIDE working papers named “FDI and Economic growth-A sectoral analysis “and stated that there is a unidirectional causality between FDI and real output.

In 2012, Mr.Martin Falk published in FIW research report named “Factors affecting FDI location choice in knowledge incentive business service” stated that corporate tax, low costs, labor wages, education and common language play a vital role in FDI.

In 2013, Ms.Deepa Mani published in a paper named “Green field Investment versus Acquisitions: Capital market drivers of R&D organization in technology” regarding pros and

cons of Greenfield investment and acquisition and stated that returns, profitability and growth of market are highly correlated with GDI wholly owned subsidiaries. She further stated that”¹ Firms should be wary if this is not the case and the stock market is driving the firm’s R&D organization decisions since such decisions will have an adverse impact on long-term fundamentals and lead to negative investor reactions in the long-term. Indeed, if future research finds that the response of the firm to market performance and expectations is not efficient; firms may be required to disclose detailed information on their R&D activities.”

Research Methodology:

Data Collection Technique:

As there are two methods of collecting data Primary and Secondary, but this study is totally based on Secondary data.

Sources of Secondary Data:

- World Bank Statistics
- Articles, Journals and Publications
- State bank of Pakistan’s annual records of trade and payments
- Financial market data from State Bank of Pakistan
- Monetary policy Statements
- Economic Intelligence Unit
- Fiscal Policy Statements

Sample Size:

Time period from 2001-2012 is taken as a sample period because in this era two different regimes ruled in the country and many reforms are implemented.

Variables:

Dependent Variable:

• *Green Field Investment:*

Green field investment is taken as dependent variable which is an important economic factor in investment perspective of any country.

¹ Published in paper of Deepa Mani in capital market drivers of R&D organization

Independent Variables:

- **Gross Domestic Product(GDP):**

Gross domestic product is taken as an independent variable in order to check the degree of influence of GDP on Green field investment. Low GDP will show low output in a country which will drive the need of increasing production in a country.

- **Exports:**

Export is another independent variable which shows that how decrease in exports give impact on Green field investment in a country.

- **Imports:**

Import as an independent variable, is taken in order to highlight that either imports derive needs of local production or not.

- **Productivity of Capital:**

Productivity of capital refers to investment in fixed assets. It is taken as independent proxy variable indicating infrastructure developments.

- **Net Foreign Assets:**

Net foreign assets indicate financial stability of an economy. Increase in Net foreign assets behaves as collateral for the foreign investors.

- **Corporate Tax Rate:**

Corporate tax rate is taken as an independent variable to check the impact of fiscal policy on potential investors.

- **Market Capitalization:**

Market capitalization is a proxy independent variable for market size of a country. Increase in market capitalization indicates increase in market size for investments.

Modeling Frame work:**Econometric Model:**

$$Y = \beta_0 + \beta_1 (\chi_1) + \beta_2 (\chi_2) + \dots + \mu$$

Model Driven:

$$\begin{aligned} \text{GRNFLD} = & \beta_0 + \beta_1 \\ & \text{CORPTAX} + \beta_2 \text{EXPORTS} + \beta_3 \text{GDP} + \beta_4 \text{IMPORTS} \\ & + \beta_5 \text{MCAP} + \beta_6 \text{NFA} + \beta_7 \text{PRODCAP} + \mu \end{aligned}$$

EXPECTED SIGNS:

- $\beta_0 = ?$
- $\beta_1 < 0$
- $\beta_2 < 0$
- $\beta_3 < 0$
- $\beta_4 > 0$
- $\beta_5 > 0$
- $\beta_6 > 0$
- $\beta_7 > 0$

HYPOTHESIS:

Hi₁: Corporate Tax rate gives impact on Green field investment.

H₀₁: Corporate Tax rate does not give impact on Green field investment.

Hi₂: Exports give impact on Green field investment.

H₀₂: Exports do not give impact on Green field investment.

Hi₃: GDP gives impact on Green field investment.

H₀₃: GDP does not give impact on Green field investment.

Hi₄: Imports give impact on Green field investment.

H₀₄: Imports do not give impact on Green field investment.

Hi₅: Corporate Tax rate gives impact on Green field investment.

H₀₅: Corporate Tax rate does not give impact on Green field investment.

Hi₆: Net Foreign Assets give impact on Green field investment.

H₀₆: Net Foreign Assets do not give impact on Green field investment.

Hi₇: Productivity of Capital gives impact on Green field investment.

H₀₇: Productivity of Capital does not give impact on Green field investment.

Data Handling:

Data is handled through EVIEWS software by analyzing statistical tests:

Statistical Tests:

➤ level of significance=95%

➤ Probability $\leq$ 0.05

➤ Correlation

Results Estimation and Discussion:**Discriptive Statistics Table:**

	CORPTAX	EXPORTS	GDP	GRNFLD	IMPORTS	MCAP	NFA	PRODCAP
Mean	0.389417	1.90E+10	1.36E+11	2016.033	2.66E+10	33122.34	6.40E+11	28.29917
Median	0.361500	1.99E+10	1.35E+11	1397.900	3.01E+10	34925.55	6.45E+11	28.80000
Maximum	0.500000	2.98E+10	2.18E+11	5276.600	4.04E+10	70262.00	9.67E+11	30.99000
Minimum	0.350000	1.06E+10	7.23E+10	357.0000	1.11E+10	4944.000	1.21E+11	23.94000
Std. Dev.	0.053313	5.71E+09	5.08E+10	1697.377	1.16E+10	17983.47	2.25E+11	2.172416
Skewness	1.034590	0.138489	0.211663	0.963789	-0.210441	0.272964	-0.872257	-0.76042
Kurtosis	2.607639	2.329601	1.803908	2.467133	1.454013	2.803777	3.536897	2.449929
Jarque-Bera	2.217727	0.263076	0.804921	1.999752	1.283609	0.168270	1.665792	1.307772
Probability	0.329934	0.876746	0.668673	0.367925	0.526342	0.919307	0.434788	0.520021
Sum	4.673000	2.28E+11	1.64E+12	24192.40	3.19E+11	397468.1	7.68E+12	339.5900
Sum Sq. Dev.	0.031265	3.59E+20	2.84E+22	31691965	1.49E+21	3.56E+09	5.54E+23	51.91329
Observations	12	12	12	12	12	12	12	12

The above table shows the mean, median, standard deviation of each variable, the highest

the mean and standard deviation show highest deviation in data.

Correlation Matrix:

	CORPTAX	EXPORTS	GDP	GRNFLD	IMPORTS	MCAP	NFA	PRODCAP
CORPTAX	1.000000	-0.869373	-0.842923	-0.531339	-0.89746	-0.764874	-0.86193	-0.778657
EXPORTS	-0.869373	1.000000	0.961486	0.211360	0.933784	0.587552	0.763462	0.694472
GDP	-0.842923	0.961486	1.000000	0.152719	0.959169	0.519387	0.676225	0.619695
GRNFLD	-0.531339	0.211360	0.152719	1.000000	0.380198	0.663551	0.525946	0.353292
IMPORTS	-0.89746	0.933784	0.959169	0.380198	1.000000	0.562209	0.683020	0.587775
MCAP	-0.764874	0.587552	0.519387	0.663551	0.562209	1.000000	0.874438	0.735726
NFA	-0.86193	0.763462	0.676225	0.525946	0.683020	0.874438	1.000000	0.759054
PRODCAP	-0.778657	0.694472	0.619695	0.353292	0.587775	0.735726	0.759054	1.000000

The data has analyzed through Eviews software by using correlation and regression. The

correlation test indicates the relationship between the variable

Estimated Equation:

Dependent Variable: GRNFLD
 Method: Least Squares
 Date: 07/07/13 Time: 00:02
 Sample: 2001 2012
 Included observations: 12

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-20245.54	3079.625	-6.574026	0.0028
CORPTAX	29243.43	4329.313	6.754750	0.0025
EXPORTS	-2.75E-07	3.99E-08	-6.902598	0.0023
GDP	-8.44E-08	4.62E-09	-18.26139	0.0001
IMPORTS	5.26E-07	2.60E-08	20.21037	0.0000
MCAP	0.021724	0.006215	3.495698	0.0250
NFA	5.70E-09	7.25E-10	7.861816	0.0014

PRODCAP	326.9151	48.82900	6.695101	0.0026
R-squared	0.997125	Mean dependent var	2016.033	
Adjusted R-squared	0.992095	S.D. dependent var	1697.377	
S.E. of regression	150.9133	Akaike info criterion	13.10601	
Sum squared resid	91099.31	Schwarz criterion	13.42928	
Log likelihood	-70.63606	F-statistic	198.2193	
Durbin-Watson stat	2.814846	Prob(F-statistic)	0.000065	

Estimated Regression Equation

$$\text{GRNFLD} = \beta_0 + \beta_1$$

$$\text{CORPTAX} + \beta_2 \text{EXPORTS} + \beta_3 \text{GDP} + \beta_4 \text{IMPORTS} + \beta_5 \text{MCAP} + \beta_6 \text{NFA} + \beta_7 \text{PRODCAP} + \mu$$

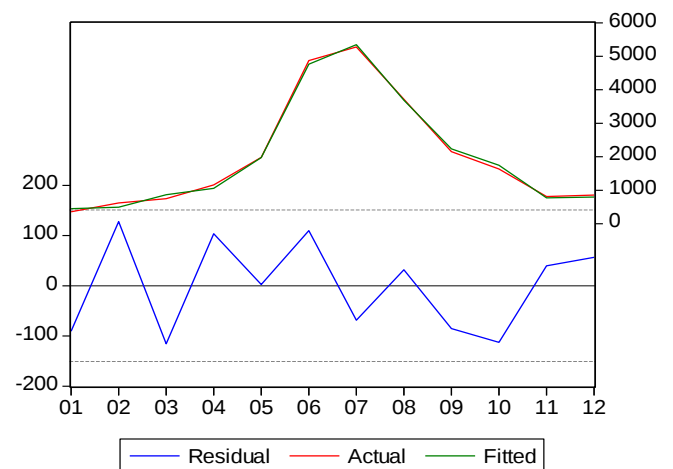
$$\text{GRNFLD} = -20245.54 + 29243.43 (0) - 2.75\text{E-}07(\text{EXPORTS}) - 8.44\text{E-}08(\text{GDP})$$

$$+ 5.26\text{E-}07(\text{IMPORTS}) + 0.021724(\text{MCAP}) + 5.70\text{E-}09(\text{NFA}) + 326.9151(\text{PRODCAP})$$

In the above equation: R Square show Coefficient of Determination defines the square of Coefficient of Correlation. The R Square value (0.997) means 99.7% reliable to be used for estimation of population. The Std. Error is important because they reflect how much sampling Fluctuation a statistic will show. The R change shows the differences between R-value & Adjusted R square. While value of constant with negative sign indicates the presence the push factors of green field investment in constant. The F change shows

the combination of all variable and overall significances of the Model.

Actual, Fitted, Residual Graph:



The above graph shows the tracing of model, the tracing of the model indicates minor error in a model as adjusted R-Squared indicated as well.

Ind. Variable	Coefficient	Prob.	Correlation	Hypothesis Accepted/Rejected
CORPTAX	29243.43	0.0025	-0.531339	Hi ₁ : Rejected H ₀₁ : Accepted, as sign of β is opposite
EXPORTS	-2.75E-07	0.0023	0.211360	Hi ₂ : Accepted H ₀₂ : Rejected
GDP	-8.44E-08	0.0001	0.152719	Hi ₃ : Accepted H ₀₃ : Rejected
IMPORTS	5.26E-07	0.0000	0.380198	Hi ₄ : Accepted H ₀₄ : Rejected
MCAP	0.021724	0.0250	0.663551	Hi ₅ : Accepted H ₀₅ : Rejected
NFA	5.70E-09	0.0014	0.525946	Hi ₆ : Accepted H ₀₆ : Rejected
PRODCAP	326.9151	0.0026	0.353292	Hi ₇ : Accepted H ₀₇ : Rejected

Conclusion & Policy Recommendations:

Green field Investment is the major source of creating income source of an economy. From mid

90's Green Field Investment was on the peak in Pakistan but from the mid of 2000's it started decline by 27.3% in 2012 according to State Bank

of Pakistan. So, this study is conducted to highlight those factors which are driving forces of Green Field Investment in Pakistan.

For this purpose Green Field Investment is taken as a dependent variable while GDP, Market Capitalization, Productivity of Capital, Net Foreign Assets, Corporate Tax rate, Imports and Exports are taken as independent variables. Data is analyzed through Eviews software, the above analysis shows that GDP, Market Capitalization, Productivity of Capital, Net Foreign Assets, Imports and Exports are statistically significant with beta sign because the value of probability lies on accepted region <5% with assumed beta sign while corporate tax rate also lies in acceptable region but sign of beta is opposite to the assumed sign. So, it is indicated that corporate tax rate is not giving as much impact on green field investment but remaining variables are growth drivers of green field investment in Pakistan.

This study recommends following points to attract Green Field Investment:

- Government of Pakistan should promote the policy of ease to doing business to restore the confidence of investors.
- Officials may create an environment to increase the fixed assets' investment or fixed capital.
- Net foreign assets must be balance to show financial stability of country.

Direction for further Research:

Brown field investment is declining in Pakistan during last decades. There is a need of study on Brownfield investment in order to cover following aspects:

- Push and Pull factors of Brownfield Investment
- Contribution in economic growth

References

- [1] www.sbp.org.pk/about/speech/2003.pdf/april/10/2012
- [2] www.finance.gov.pk/articals/pakistan%20export%20what%20need%20to%20be%20done.pdf/april/17/2011
- [3] www.jang.com.pk/thenews/mar2010-weekly/busrev-01-03-2010/p5.htm/april/21/2011
- [4] www.forexpk.com/sbpdialy/sbp-news/banking-sector-ref/may/05/2012
- [5] www.forexpk.com/sbpdialy/sbp-news/banking-sector-ref/may/15/2011
- [6] www.scribd.com/doc/38217389/Boom-of-Banking-Industry-in-Pakistan/may/15/2012
- [7] www.indianmba.com/Faculty_Column/FC499/fc499.html/may/15/2011
- [8] www.skyscrapercity.com/archive/index.php/t-380831-p-2.html/may/21/2012
- [9] www.tradingeconomics.com/
- [10] www.finance.gov.pk/
- [12] www.kse.com.pk/
- [13] www.worldbank.com/
- [14] Prof. Talat Afza, Ph.D. Dean (Management Sciences) COMSATS Institute Information Technology, Lahore-Pakistan. She can be contacted at talatafza@ciitlahore.edu.pk
- [15] Mr.Philipp Harms and Mr. Pierre Guillaume Meon Email:philipp.harms@uni-mainz.de. JEL classification: F21, F23, F43, O16.
- [16] Mr. Ralf Kruger published in Division on Investment and Enterprise, UNCTAD, Workshop on FDI in Advanced Fossil Fuel Technologies, Dushanbe, Tajikistan, and 13 September 2011
- [17] Mr.Muhammmad Zakaria published in an article MPRA Paper No. 11543, posted 12. November 2008
- [18] Mr.Larry D.Qiu and Mr.Shengzu publication of *Review of International Economics*, 19(5), 836–851, 2011.DOI:10.1111/j.1467-9396.2011.00984.x
- [19] Mr.Xueli publication on *International Business Research*,vol 3.no.1,January 2010
- [20] Mr.Cesar Calderon publication of *World Bank Policy Research Working Paper* 3192, January 2004
- [21] Mr.Khalil Hamdani published in *Country profiles of inward and outward foreign direct investment* issued by the Vale Columbia Center on Sustainable International Investment January 18, 2011
- [22] Mr.Hyung-suk-Byung publication in *journal*, JEL classification F21, F23, G15
- [23] Mr.Martin Falk published in *FIW-Research Reports* 2012/13
- [24] Ms.Deepa Mani publications of 35th DRUID Celebration Conference 2013, Barcelona, Spain, June 17-19

MULTIPLE GRAPHS OF EACH VARIABLE & LINE COMBINED GRAPH OF ALL VARIABLES

