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Exploring the Literature: Does Foreign Direct Investment Affect Total factor productivity in Developing Economies?

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NOTE FROM AUTHOR

As this study is based on analysis of existing literature, many studies have been cited in which Author's original words have been stated. All such citations also mention the page numbers of original article from where the exact words have been taken.

Abstract:

This paper analyzes the relationship between Foreign Direct Investment inflows (FDI) and Total Factor Productivity (TFP) by studying the existing literature on the topic. Numerous studies have been conductive to test the relationship between these two variables but there is no consensus regarding the direction of affiliation. The basic purpose of this study is to find the reason behind different answers and for this reason the existing body of literature on this topic has been referred to. In addition, the concepts of FDI and TFP have been discussed along-with the effects of FDI on developing countries and its importance. After analyzing different studies relevant to this topic, it has been concluded that the difference in results are mainly due to econometric techniques applied by different researchers to test the relationship empirically. Furthermore, some statistical figures and their analysis have been presented in appendix.

Keywords

Foreign Direct Investment, Total Factor Productivity, Developing economies.
Jel Classification Codes: F21, O47, O57

1. Introduction

The debate over relationship between foreign direct investment inflows (FDI) and growth indicators of developing economies has attracted researchers from all over the world to explore the relationship. A FDI inflow not only bring capital, but new techniques, updated technical know-how and makes such a transformation in developing economies that the process of development accelerates and many under-developed economies are now moved up-to the level of developing economies and that time is not far that these developing economies will transform into developed economies.

No country can ignore the importance of FDI inflows but everything has both positive and negative aspects. Where FDI inflows are bringing many positive changes, the complete package of FDI also contains some negative aspects. the main purpose of this study is to cover all sides of FDI inflows (though there are many limitations in the form of different answers due to difference in empirical research techniques, difference in data: panel or time series and most importantly difference in variables or sectors). Although there is a huge literature on impacts of FDI on growth indicators, and relationship with other variables, still much work needs to be done. Therefore this paper discusses existing literature which throws light on relationship between FDI inflows and TFP. The further observe the effects of FDI inflows, the appendix of paper makes a comparison of three most emerging economies; China, India and Pakistan.

2. Foreign Direct Investment (FDI)

There are different concepts and definitions of FDI but the most widely used by Economists, is the one given by **[1]**

"Direct investment is a category of cross-border investment made by a resident in one economy (the direct investor) with the objective of establishing a lasting interest in an enterprise (the direct investment enterprise) that is resident in an economy other than that of the direct investor. The motivation of the direct investor is a strategic long-term relationship with the direct investment enterprise to ensure a significant degree of influence by the direct investor in the management of the direct investment enterprise. "(Page 80)

Based on the above definition, FDI can be beneficial for host country or it can cause harm to

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host country's economy, the exact effect depends on the adjustment of two opposing forces.

Lately, however, the exceptional advantages of FDI and mainly the kinds of motivations offered to foreign firms in practice, have become questionable. Moving on with this debate, the empirical evidence for FDI generating positive spillovers for host countries is showing ambiguous results at both the micro and macro levels.

According to **[2]**, there is weak evidence that FDI generates positive spillovers for host economies. Empirical research thus provides little support for the idea that promoting FDI is warranted on welfare grounds. However, there is a need for more research related to effects of FDI on recipient country as higher taxes result in decrease in FDI. In addition, the behavior of Multinational Enterprises (MNEs) tend to behave differently based on location where investment is made.

[3] Used panel dataset covering 72 developed and developing countries in order to analyze the relationship between FDI inflows and economic growth. The study performs both a cross-sectional OLS analysis as well as a dynamic panel data analysis using GMM. The paper concludes that there is no robust link running from inward FDI to host country economic growth.

On the other hand, **[4]** carried out an empirical analysis using cross country data between 1975 and 1995. They divided their model in two data sets; first data set consists of 20 OECD countries and 51 non-OECD countries whereas second data set includes 20 OECD countries and 20 on-OECD countries. The main emphasis of their study is based upon examining relationship among FDI, financial market and economic growth. Their findings suggest that countries with better financial system attract more FDI, however the impact of FDI on economic growth is ambiguous.

The secretary general of United Nations **[5]** summarized the importance of FDI to the developing economies as follows ''*With the enormous potential to create jobs, raise productivity, enhance exports and transfer technology, foreign direct investment is a vital factor in the long-term economic development of the developing countries*'' (United Nations, 2003 page iii).

Different Economists and policy makers give diverse conclusions but most of them have consensus that the policies and environment of host country play the vital role in determining the impact of FDI.

3. Total Factor Productivity (TFP)

According to **[6],**

"TFP is the part of output that is not attributed to the use of capital and labor. In other words, TFP represents the efficiency with which the production inputs are utilized. The importance of TFP in economic growth is indisputable." (Page 11)

Another important statement given by author (quoting author's words)

"TFP reflects not just technology but also organizational innovations, improvements in the allocation of capital and labor, and returns to scale, for example. Technology and innovation constitute a big portion of TFP and FDI is said to positively contribute to such innovations by bringing in new technology, which results in knowledge spillovers and durable increase in the productivity."

Regarding determinants of TFP, there is an ongoing debate where different researchers have pointed out different determinants but as in the case of FDI, TFP is also affected by a country's policy, environment, availability of educational facilities etc.

According to **[7]**, the factors which are important for increasing TFP include macroeconomic policy, human capital, institutional and socioeconomic factors.

[8] Empirically examined the relationship between FDI and TFP using a sample of 33 developing countries covering the time period of 1980-2005. After applying panel Cointegration techniques, the results suggested that FDI has a positive effect on TFP over a long run time period and there exists a bi-directional causation between FDI and TFP.

Measurement of TFP is a separate and complex exercise. According **[9]**

"By linking the TFP growth rate to innovation, endogenous growth models shed light on the determinants of TFP growth. R&D subsidies and an abundance of skilled labor reduce the marginal cost of conducting R&D and increase the rate of innovation development and therefore, the TFP growth rate. Increases in the size of markets increase the innovators' revenues, leading to more innovation and higher TFP growth." (Page 2)

[10] States

"From the outset, it is assumed that capital intensity is one of the main determinants of TFP and that policies that encourage investment also have a positive impact on TFP growth. Both a medium- and long-term view of determinants are provided. "(Page 1)

BASED ON THESE VIEWS TFP CAN BE MEASRED USING CAPITAL FORMATION AS A PROXY VARIABLE

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In case of developing countries, it is argued that as FDI inflows bring technology transfer, it has spillover effects over labor productivity and "A simple labor" is transformed into "human resource or human capital".

Because of new technology and technical know-how in host country, the labor learns new and better ways to perform assigned work more properly and in a better way

According to **[11]**

"*Contact with firms of a higher level of efficiency enables the relatively backward ones to improve not only by copying or imitating but also by inducing them to "try harder," as in the well-known Avis motto. As in many fields of human endeavor, the visible example of a high standard can inspire those with a lower level of achievement to perform better*". The Relationship and Methods

[12] States that FDI inflows can help increase productivity in developing countries, there has been little research that examines directly the linkage between FDI and productivity at the macro level. The author examined the link between FDI and TFP in fourteen Sub-Saharan economies by applying Granger Causality test [(4)]. The results found limited evidence that FDI inflows contribute to higher TFP.

According to **[13]**, the role of FDI for developing countries is well known but the relationship between FDI and TFP is furnished with mix results. Major reason pointed out by the author is the presence of endogeneity factor and the inability of recipient country to absorber new technology. The study used panel data for 49 countries over the time period 1974-2008 and found that increased FDI stock leads to higher productivity growth.

There is another interesting aspect of relationship between FDI and TFP which has been explored by **[14]**. They performed cross- country regressions on a sample of 69 developing countries and their results suggested that FDI contributes more to growth and domestic investment. Moreover they found that there is a strong complementary effect of FDI and human capital. Their empirical results imply that FDI is more productive than domestic investment only when the host country has a minimum threshold stock of human capital.

[15] Used panel data approach to study the effects of FDI on TFP in a sample of 5 BRIC countries and Turkey. Results suggest that FDI has a negative impact on TFP for these countries.

In case of developing countries, an important factor which gives them extra benefit is that they do not need to introduce a new technology. As **[16]** states

"Fortunately, the developing countries need not recreate the technology that has already been created in advanced countries since they can benefit from technological diffusion. The most effective and less costly channel through which technology transfers from developed to developing countries is via Foreign Direct investment (FDI)". (Page 1)

The study constructs an alternative analytical model, within the externalities type endogenous growth theory, in which technological spillovers from FDI generates long run growth of the host economy, through its positive effect on its TFP and tested the model using panel data from 22 Sub-Saharan African countries. The empirical results obtained from both static and dynamic panel models conform to the theoretical model according to which FDI has positive effect on TFP in the long-run and negative effect in the short run.

Although it seems that FDI has a positive impact on TFP, but there are so many different answers.

A comprehensive study by **[17]** points out the reasons for getting different results. According to the author, there are three types of studies

- CASE STUDIES which are specific for a country and their result cannot be generalized although they are very informative and use many variables.
- Industry level studies using CROSS-SECTIONAL DATA. Author states:

"Their disadvantage is the difficulty in establishing the direction of causality. It is possible that this positive association is caused by the fact that multinationals tend to locate in high-productivity industries rather than by genuine productivity spillovers. The positive correlation may also be a result of FDI inflows forcing less productive domestic firms to exit and/or of multinationals increasing their share of host country market, both of which would raise the average productivity in the industry." (Page 605)

- Third type of study is based on firm level PANEL DATA, which is based on examining the correlation between the productivity of domestic firms and presence of foreign investment.

The study uses firm level Panel data set from Lithuania. The empirical results find that productivity benefits are associated partially with FDI.

[18] Used time series data for eight East Asian countries and found a positive relation between FDI and total Factor productivity.

[19], conducted a research on Taiwan's manufacturing sector. They used firm-level data and found that FDI has a positive spillover effect on

productivity and suggested that developing economies should adopt encouraging policies for attracting FDI, in this way there would be more spillover effects in the form of technology and knowledge.

[20] Conducted a study on Pakistan using time series data covering the sample from 1960 to 2003 and found a positive relation between FDI and TFP.

The impact of FDI on TFP has largely been explored by many researchers but the empirical literature shows mixed results. [21], discuss this problem in much detail. In their research, they have used both time series and panel data analysis for a sample of OECD and non-OECD countries in the period 1970-90.

Their study makes a comparison between Time Series and Panel data models for examining the impact of FDI on TFP in host countries.

"Empirical work on cross-country and time series growth has been directed at dealing with two basic problems; namely, the lack of unconditional convergence of growth rates across countries and high estimates of the elasticity of output with respect to capital stocks. Although conventional neo-classical growth in the Solovian tradition predicts that the elasticity of output with respect to capital should be equal to the capital share in output, cross-country estimates point to a much higher value. High capital elasticities can nevertheless be explained on the grounds of simultaneity and omitted variable biases."(Page 133)

According to their empirical findings, time series analysis shows that there is a positive relation between FDI and TFC via knowledge transfer. In case of Panel data analysis, FDI appears to have a positive impact on TFP in the OECD Panel where as in the non-OECD Panel there seems to be a negative relation between FDI and TFP.

"This is because it is well known that, in the case of cross-country and times-series estimations, the correlation between the error term and the regressors in standard growth accounting-based, time-series production function estimations leads to simultaneity and omitted variables biases." *(Page143)*

[22] Conducted an empirical study by using firm level data of Venezuela and found that more foreign presence in the same industry would decrease the productivity of domestic firms. This happens because multinationals crowd out the latter by market stealing effect.

According to **[23]** and **[24]**, the problem of endogeniety between FDI and growth has not been taken into consideration in most of the cross sectional studies, moreover the time-invariant factor has been ignored.

[24] Used panel data for 84 countries over the period of 1970-99 and found a significant endogenous relation between FDI, economic growth and productivity in case of developing countries. There is not enough evidence of positive relation between FDI and TFP because very few studies have used TFP as a dependent variable.

[25] Empirically investigated the effect of FDI on TFP by using a large sample of 90 countries in 1970-2000 and found a positive relation whereas the absorptive capacities do not affect the impact of FDI.

According to **[26]** and **[27]**, FDI is favorable for growth only if host country has strong financial institutions but later they found that countries with well-developed financial institutions achieve significantly from FDI via TFP improvements. Both studies are based on cross country models.

[28] used panel data approach to examine the relation between FDI and TFP in a sample of 16 OECD countries and found a positive relation between two variables and the reason mentioned by the author is that this positive relation is may be due to the possibility that FDI is a channel trough which technologies are transferred internationally.

According **[29]**],

"Most empirical studies conclude that FDI contributes to both factor productivity and income growth in host countries, beyond what domestic investment normally would trigger. It is more difficult, however, to assess the magnitude of this impact, not least because large FDI inflows to developing countries often concur with unusually high growth rates triggered by unrelated factors." (Page 9)

Based upon above studies, results are summarized in a table.

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RELATIONSHIP RESULTS AND EMPIRCAL APPROACH

RESEARCHER/ RESERCHERS	DATA TYPE	COUNTRIES AND TIME PERIOD	RESUULTS/ CONCLUSIONS
Herzer (2010)	Panel Cointegration Techniques	33 Developing countries (1980-2005)	Positive and Long-Run relationship between FDI and TFP
Thiam (2007)	Time Series	14 Sub-Saharan (1970-2004)	Limited evidence that FDI inflows result in higher TFP
Baltabaev (2013)	Panel data	49 countries (1974-2008)	Increased in FDI higher stock leads to productivity growth.
Borensztein et el (1998)	Cross- country regressions	69 developing countries (1970-2011)	Positive relation but FDI is more productive than domestic investment only when the host country has a minimum threshold stock of human capital.
Filiz (2014)	Panel data	Sample of 5 countries BRIC countries and Turkey (1990-2012)	FDI has a negative impact on TFP for BRIC.
Senbeta (2008)	Panel data	22 Sub-Saharan African countries (1970-2000)	FDI inflow has negative short-term effects and positive long-run effects on total factor productivity.
Javorick (2004)	Firm level Panel data set	Lithuania (1996–2000)	Partial association between FDI inflows and TFP
Pratoomchat (2012)	Time Series	Eight East Asian countries Rolling regression technique for 20 Periods, starting from 1980-1990 to 1999-2009.	Positive relation between FDI inflows and TFP.
Lin and Chuang (1999)	Firm level Panel data set	Taiwan (census data 1991)	FDI has a positive spillover effect on productivity
Khan (2006)	Time Series	Pakistan (1960-2003)	positive relation between FDI and TFP

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Luiz and de Mello (1999)	Both Time series and Panel data	OECD and non-OECD countries (1970-1990)	Time series analysis shows that there is a positive relation between FDI and TFC via knowledge transfer. In case of Panel data analysis, FDI appears to have a positive impact on TFP in the OECD Panel where as in the non-OECD Panel there seems to be a negative relation between FDI and TFP.
Aitken and Harrison (1999)	Firm level Panel data	Venezuela (1976-1989)	More foreign presence in the same industry decreases the productivity of domestic firms.
Li and Liu (2005)	Panel data	84 countries (1970-1999)	Significant endogenous relation between FDI and TFP
Woo (2009)	Both cross-sectional and Time series	90 countries (1970-2000)	Positive relation whereas the absorptive capacities do not affect the impact of FDI
Alfaro et al. (2004, 2009)	Cross-country regression	For (2004) 20 OECD countries and 51 non-OECD countries. (1975-1995) For (2009) 62 countries (1975–1995)	FDI is favorable for growth only if host country has strong financial institutions but later they found that countries with well-developed financial institutions achieve significantly from FDI via TFP improvements
Pessoa (2005)	Panel data	16 OECD (1985-2002)	Positive relation between FDI and TFP

Source: Author(s) All results in this table are based on literature discussed above

Effects of FDI

No doubt, FDI inflows have helped developing countries in reducing dual gaps: saving-investment gap and export-imports gap. Moreover, all economists have consensus that FDI brings a complete package including technology, technical know-how, growth, and increase in productivity and many others.

According to **[29]**,

"*Given the appropriate host-country policies and a basic level of development, a preponderance of studies shows that FDI triggers technology spillovers, assists human capital formation, contributes to international trade integration, helps*

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create a more competitive business environment and enhances enterprise development. All of these contribute to higher economic growth, which is the most potent tool for alleviating poverty in developing countries. Moreover, beyond the strictly economic benefits, FDI may help improve environmental and social conditions in the host country by, for example, transferring "cleaner" technologies and leading to more socially responsible corporate policies." *(Page 5)*

Coming towards negative aspect, the role of Multinationals is the most heated topic. In most developing countries, it has been observed that they are harmful to domestic firms as MNEs with their lower marginal costs increase production relative to their domestic competitor, when imperfectly competitive firms of the host country face fixed costs of production. In this environment, foreign firms that produce for the domestic market draw demand from local firms, causing them to reduce the production. The productivity of local firms falls as their fixed costs are spread over a smaller market which forces them to back up their average cost curves.

According to **[22]**, when the productivity decrease from this demand effect is large enough, total domestic productivity can diminish even if the MNE transfers technology or its firm-specific asset to local firms.

Regarding wages and productivity, there can be both positive and negative spillovers. According to **[30]**, if foreign firms hire the best workers, domestic firms will be left with relatively lower quality workers and wage spillover could be negative. On the other hand, productivity spillovers could be negative if foreign firms take a major share of market and domestic firms have limited share in market, leading to reduction in productivity.

Although there are many different viewpoints about the impact of FDI inflows on host country and it is hard to arrive at a single conclusion. Whether FDI inflows are beneficial or harmful, the outcome depends upon liberalization policies, environment, infrastructure, availability of productive resources etc. Moreover, all countries do not benefit at the same level, the above mentioned factors vary from country to country, more favorable circumstances will attract more FDI inflows and as a result more are the gains and vice versa. In addition, the impact of FDI depends on the behavior of multinationals in host countries.

4. Conclusion

This study tries to find out whether FDI inflows affect TFP and for this purpose the existing literature has been studied in detail. The impact of FDI on TFP cannot be ignored whether it is positive, negative or has partial results. There are so many different answers and it may be due to difference in techniques, variables, methodology and the right question being tested by researcher. Same data can give different results depending on Panel, cross-country or time-series technique.

In my view, Panel Data provides best results if sample size is large (e.g. analysis of many countries, many firms or a large number of variables of interest). Cross- country provides accurate results when a comparative study is being carried out. If only one country is being analyzed, then data availability becomes an issue. Moreover in case of single country analysis, the number of variables cannot be large enough to make a proper Panel Data study.

No matter, whatever the technique is, it cannot be ignored that FDI is beneficial for developing countries as they are in need of capital, technology and innovations. The spillover effects are clearly observed in case of increase in productivity whether it is factor productivity or productivity of sectors; industry, agriculture or services.

Negative or harmful effects are a part of package; they can be in the form of inequality, monopoly power of multinationals, hidden conditionalities or interference in culture or traditional values.

The gains for every country depends on net effect of these two opposing factors. More liberal an economy is, more FDI it attracts and more benefits are gained from FDI but FDI does increase growth, resources and productivity and this fact has not been ignored by researches.

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Appendix 1

DATA OF PAKISTAN

YEARS	FDI	CF	GDP (PC)
1994	421024638.5	19.54642	420.3678
1995	722631560.7	18.54552	478.6193
1996	921976182.5	18.99666	486.7648
1997	716253125.4	17.9192	467.3242
1998	506000000	17.7112	453.4948
1999	532000000	15.56494	447.9562
2000	308000000	17.22663	514.158
2001	383000000	16.99636	492.3817
2002	823000000	16.58276	483.0319
2003	534000000	16.75802	546.1541
2004	1118000000	16.57801	631.4978
2005	2201000000	19.08126	693.1767
2006	4273000000	19.332	853.071
2007	5590000000	18.78707	929.5874
2008	5438000000	19.20584	1018.381
2009	2338000000	17.54948	986.9541
2010	2018000000	15.80456	1023.196
2011	1308770000	14.12137	1212.419
2012	858730000	15.07596	1252.42
2013	1307000000	14.56922	1275.302
2014	1867000000	14.98356	1315.268
2015	979000000	15.11762	1428.988

FDI = Foreign direct investment, net inflows (BoP, current US$)

CF = Gross capital formation (%of GDP)

GDP (PC) = GDP per capita (current US$)

Data from database: World Development Indicators

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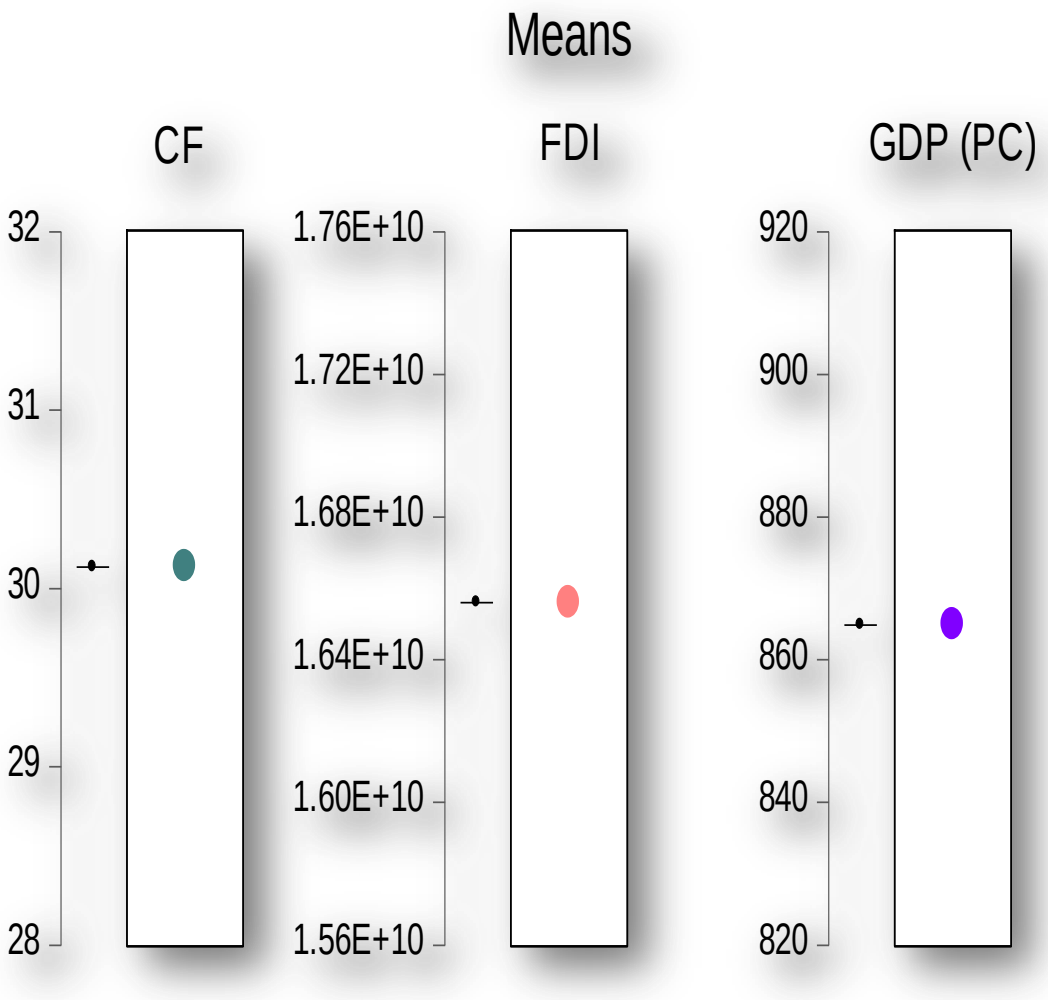
DESCRIPTIVE STATISTICS

Sample: 1994 2015

	CFI	FDII	GDP (PC)
Mean	30.12118	1.66E+10	864.9002
Median	31.42613	6.52E+09	694.9125
Maximum	38.03419	4.42E+10	1581.589
Minimum	22.05740	9.73E+08	354.8549
Std. Dev.	5.564276	1.53E+10	468.7199
Skewness	-0.030365	0.518644	0.452657
Kurtosis	1.318355	1.703057	1.557597
Jarque-Bera	2.477666	2.528189	2.658444
Probability	0.289722	0.282495	0.264683
Sum	632.5448	3.64E+11	19027.80
Sum Sq. Dev.	619.2233	4.92E+21	4613665.
Observations	21	22	22



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Appendix 2

DATA OF INDIA

YEARS	FDI	CF	GDP (PC)
1994	9.73E+08	23.19394	354.8549
1995	2.14E+09	26.05334	383.5509
1996	2.43E+09	22.0574	410.8184
1997	3.58E+09	24.51326	427.2362
1998	2.63E+09	23.51399	425.4453
1999	2.17E+09	26.82388	455.4735
2000	3.58E+09	24.11475	457.2835
2001	5.47E+09	25.57282	466.2142
2002	5.63E+09	24.96828	486.6405
2003	4.32E+09	26.13817	565.3355
2004	5.77E+09	32.45414	649.7106
2005	7.27E+09	34.27964	740.1143
2006	2E+10	35.87169	830.1632
2007	2.52E+10	38.03419	1068.679
2008	4.34E+10	35.5254	1042.084
2009	3.56E+10	36.29696	1147.239
2010	2.74E+10	36.52843	1417.074
2011	3.65E+10	36.3866	1539.606
2012	2.4E+10	34.69901	1503.004
2013	2.82E+10	31.42613	1498.872
2014	3.387E + 10	34.09285	1576.818
2015	4.420E + 10	N.A	1581.589

FDI = Foreign direct investment, net inflows (BoP, current US$)

CF = Gross capital formation (%of GDP)

GDP (PC) = GDP per capita (current US$)

Data from database: World Development Indicators

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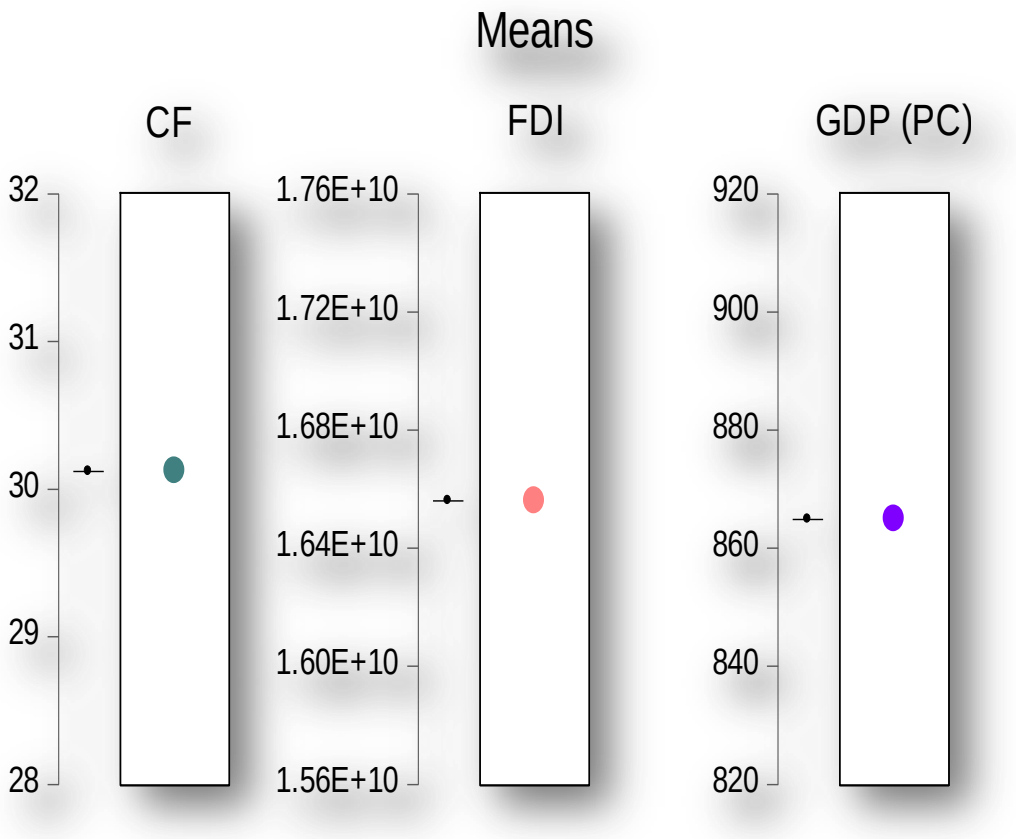
DESCRIPTIVE STATISTICS

Sample: 1994 2015

	CFI	FDII	GDP (PC)
Mean	30.12118	1.66E+10	864.9002
Median	31.42613	6.52E+09	694.9125
Maximum	38.03419	4.42E+10	1581.589
Minimum	22.05740	9.73E+08	354.8549
Std. Dev.	5.564276	1.53E+10	468.7199
Skewness	-0.030365	0.518644	0.452657
Kurtosis	1.318355	1.703057	1.557597
Jarque-Bera	2.477666	2.528189	2.658444
Probability	0.289722	0.282495	0.264683
Sum	632.5448	3.64E+11	19027.80
Sum Sq. Dev.	619.2233	4.92E+21	4613665.
Observations	21	22	22



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Appendix 3

DATA OF CHINA

YEARS	FDI	CF	GDP (PC)
1994	3.38E+10	42.20333	469.2128
1995	3.58E+10	41.89593	604.2284
1996	4.02E+10	40.44153	703.1207
1997	4.42E+10	37.94713	774.4675
1998	4.38E+10	37.10113	820.8658
1999	3.88E+10	36.74463	864.7308
2000	3.84E+10	35.11864	949.1781
2001	4.42E+10	36.26769	1041.638
2002	4.93E+10	37.86585	1135.448
2003	4.95E+10	41.20296	1273.641
2004	6.21E+10	43.26315	1490.38
2006	1.33E+11	42.97174	2069.344
2007	1.69E+11	41.73775	2651.26
2008	1.87E+11	44.04627	3413.589
2009	1.67E+11	48.24343	3748.504
2010	2.73E+11	48.21862	4433.341
2011	3.32E+11	48.26513	5447.309
2012	2.96E+11	48.65982	6092.782
2013	3.48E+11	49.28513	6807.431
2014	2.68097E+11	46.19884	7587.289
2015	2.49859E+11	N.A	7924.654

FDI = Foreign direct investment, net inflows (BoP, current US$)

CF = Gross capital formation (%of GDP)

GDP (PC) = GDP per capita (current US$)

Data from database: World Development Indicator

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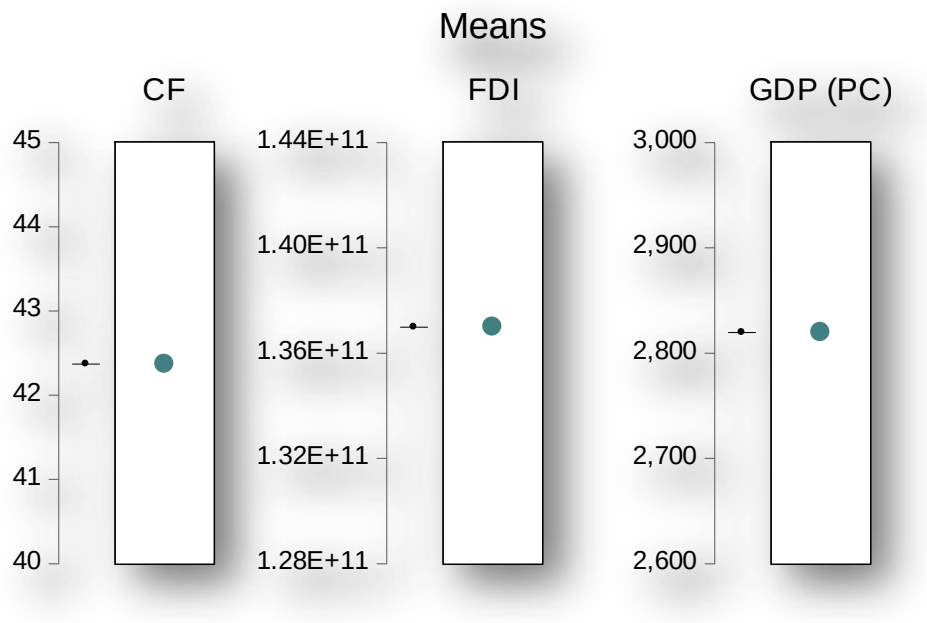
Ayesha Serfraz

DESCRIPTIVE STATISTICS

Sample: 1994 2015

	CFC	FDIC	GDP (PC)
Mean	42.37037	1.37E+11	2819.706
Median	42.09902	8.67E+10	1610.753
Maximum	49.28513	3.48E+11	7924.654
Minimum	35.11864	3.38E+10	469.2128
Std. Dev.	4.496380	1.11E+11	2473.413
Skewness	0.072439	0.645757	0.905664
Kurtosis	1.846591	1.897270	2.375695
Jarque-Bera	1.182424	2.643685	3.364779
Probability	0.553656	0.266644	0.185929
Sum	889.7777	3.01E+12	62033.54
Sum Sq. Dev.	404.3487	2.58E+23	1.28E+08
Observations	21	22	22



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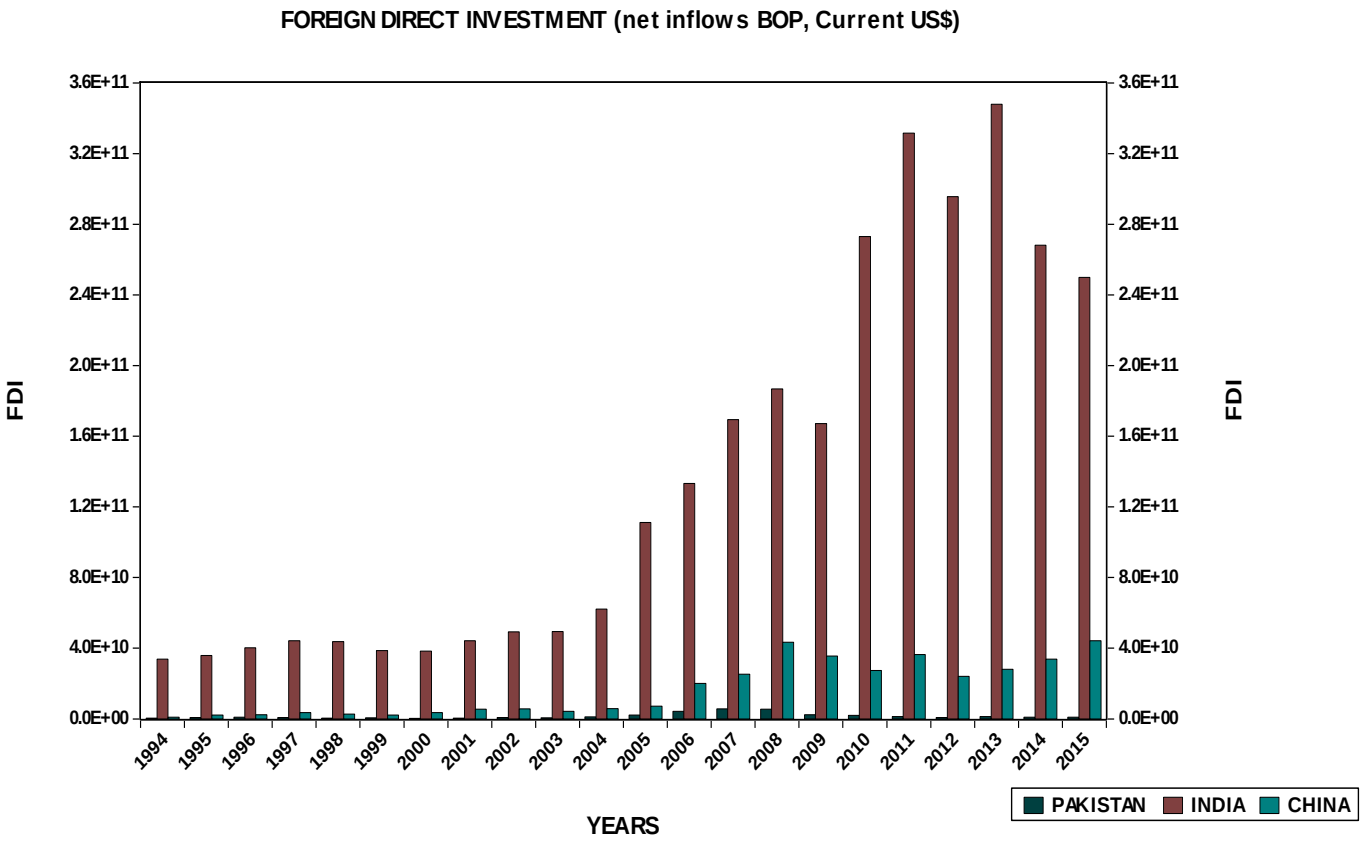
Appendix 3

COMPARATIVE ANALYSIS



Ranking of countries according to FDI inflows

1- China
2- India
3- Pakistan