Measuring the Impact of FDI and Private Domestic Investment on Growth— Case of South Asia

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ABSTRACT

This paper examines the impact of private domestic investment (PDI) on growth in comparison with the Foreign Direct Investment (FDI). It aims to conduct a cross country analysis of South Asia from 1975 to 2017. Trade Openness, Inflation, Government Expenditure, Human Capital, Exchange Rate are control variables of interest for the investment model used in this research. The countries tested are Bangladesh, India, Pakistan and Sri Lanka. Fixed Effects and Random Effects method is employed to test the panel data of the four South Asian countries. The results show that in case of South Asia on the whole, there is a positive and significant impact of PDI on growth. To further analyse the subject and put forward a potential policy for the region, the regression is decomposed into sectoral Private Domestic Investment: Primary, Secondary and Services. PDI affects the growth of South Asia, only when it is invested in the manufacturing or the primary sector.

Keywords: FDI (Foreign Direct Investment), PDI (Private Domestic Investment), Trade Openness

1. INTRODUCTION

Since 1970s, policy-makers from South Asia contended that Foreign Direct Investment (FDI) and Private Domestic Investment (PDI) can have positive impact on growth of the region. FDI is said to be a source of extensive technological spillovers. In addition to enhancing the level of technical advancement, it also helps foster skilful labour. Harrison (1999) argues that FDI because of its spillover effects leads to increase in the net development benefit for the host economy. This helps lower the accumulating deficit (Atkinson and Harrison, 1999). But South Asia needs to adopt trade openness in order for SAFTA to act as a catalyst for the process of regional integration. India and Pakistan need to expand their trade liberalisation as they continue to be the least integrated in SAARC expanse. This will help increase trade linkages which will lead to an increase in FDI [Weerakoon (2018)].

Al Faro (2003) also proposes that the increment in growth through capital flows is dependent on the sector it is invested in. In case of FDI, massive sectoral growth is resulted through the manufacturing sector. FDI causes greater spillover effects in the form of skilled labour training, and technological advances. In case of Private Investment, there are minimal spillovers extended from one industry to the other. Hence, it strives to process in the existential circumstances of the economy in South Asia [Al Faro (2003)].

Benefits traditionally attributed to FDI include job creation, transfer of technology and know-how (including modern managerial and business practices), access to international markets, and access to international financing.

Granted, some of these benefits also occur thanks to domestic investment. For instance, domestic investments create jobs in a host economy—usually many more than FDI. However: What FDI does well is enhance or maximise some of the benefits already generated by domestic investments in a developing economy.

To stay with the example of job creation: Foreign firms might not create as many jobs as the domestic private sector, but they often create better-paid jobs that require higher skills. That helps elevate the skills level in host economies. The same can be said for other FDI benefits.

They are widely perceived to be complements as the existence of one, will help the other form of investment to flourish [Wint (1996)].

Similarly, Borszentien (2006) propounds that FDI increases growth by atleast 0.018 percent for any country that has a base level of human capital development in it. Therefore it requires a sound level of education and training system especially for the labourers to process the working system of the foreign investors. Sri Lanka and India have been the highest recipients of FDI from developed countries. Bangladesh and Pakistan lacked in this aspect because of its poor infrastructural development. Therefore against an average of 16 percent, they have received 8.1 percent and 10.1 percent respectively. [Schneider and Frey (2018)]. But the impact of FDI on growth lacks consistency.

The inconsistent impact is evident in the fact that South Asia's foreign investment over the years has been fluctuating from an 18 percent of the world FDI share to 6.9 percent followed by 11.8 percent over the past three decades. In 2002, a bilateral and regional effort was launched towards the liberalisation of national FDI policy agenda. This led to the convergence of government policy towards the investment of multinationals investing in a foreign economy [Cheng (2015)]. Easing restrictions on FDI tax incentives and subsidies granted to attract foreign capital are the measures taken to counter the drying up of commercial bank lending in over 49 developing countries [World Bank (2017b)].

PDI, however, focuses on stimulating the involvement of small as well as large scale investors in the entrepreneurship scenario within the country. Ilegbinosa and Watson (2018) state that PDI assists in the increment of productivity for all the private owned firms which helps stabilise the local economy [Watson and Ilegbinosa (2018)]. Navaretti (2004) argues that for the developing countries growth is stimulated because of agents like private domestic investment. Despite its crowding out effect, it is apt to cope up with the changing political condition which FDI fails to do [Navaretti (2004)].

Cheng (2015) argues that in case of South Asia, PDI is a more convenient agent of growth. This is because Bangladesh, India, Pakistan and Sri Lanka have lacked a multilateral framework for FDI. PDI has been more common in Bangladesh, as opposed to other South Asian countries. The policy-makers claim that the intrusion of private sector in the entrepreneurship scenario creates employment opportunities for low income and less qualified groups [Cheng (2015)].

It is assumed that the pre-requisites for FDI and Private Investment to affect growth positively include a stable banking system, a well developed financial market, political/regional stability and a distinguished level of human capital and structural development [Al Faro (2009)].

Despite the growth multiple studies conducted in light of FDI and PDI, the level of growth increment because of it still remains unclear. On the contrary, many theorists like Lipsey (2002) states that FDI and PDI do not necessarily bring positive spillovers and growth. Hanson (2001) argues that there is weak evidence of FDI causing GDP per capita to increase. It rather

causes the internationalisation of the product to the degree that the cost of production decreases and local output production also falls down. Hanson believes that this can in fact bring a negative impact. PDI is simultaneously a source of crowding out the public investment [Hanson (2001)]. This paper primarily intends to work on two channels: (i) Impact of both FDI and PDI on growth, (ii) Sectoral decomposition of private investment on growth.

This paper further analyses the impact of FDI and PDI on growth. The first phase of this paper works in an exploratory manner and is the major component of this paper as it stresses upon the policy implications for the country as well as the region on the whole. Section II of this paper discusses the literature in this topic concentration. Section III discusses the data variables under analysis and section IV shows the methodology and the empirical testing. Section V discusses the policy implications based on the results and findings and gives a conclusion.

2. SECTORAL DECOMPOSITION OF PRIVATE INVESTMENT

Private Investment in the Primary Sector

Agriculture, which is the largest sector of the national economy in terms of its contribution to total employment, is almost wholly in the private sector. In case of Pakistan, Agriculture fuels export base as it is the main supplier of raw materials for the export oriented industry (mainly textiles) and supports nearly two thirds of merchandise exports. The private sector investment facilitates agricultural land and generates primary and value added agricultural output. Public sector involvement in the agriculture sector is mainly concentrated in providing and maintaining irrigation infrastructure and developing waterways for cultivation as well as providing agriculture extension services and supporting agriculture research.

The major issues pertaining to the investment in the agriculture sector from a private sector perspective include inefficient agriculture and agriculture markets, distorted agricultural input and output pricing, and a continued inability to price and manage water. In addition to removing market distortions, there is a need for fundamental improvements in the market mechanisms in the agriculture sector, including reduction in government interventions and enforcement of more competitive behaviours [IMF (2018)].

Comprehensive private sector investment led agricultural growth requires strengthening the linkage with modern infrastructure, appropriate technology adoption, and the manufacturing base.

A review is required of what value addition processes can be adopted to generate a more competitive and efficient agriculture sector. Key value adding areas where the private domestic investment could play a critical role include horticulture and livestock which have the potential to increase agricultural productivity and incomes while also promoting the creation of intermediate and high growth and export Competitiveness [Lorie and Kiran (2016)].

With an expanded focus on livestock and horticulture, the private sector could profitably also invest in integrated transportation and delivery systems like standardised, palletised containerised transportation networks for transportation of high value livestock and horticultural produce. An expanded role of the private sector is also possible in food processing and agro-farm machinery industries. Private sector investments could also be considered in private sector hybrid seed production facilities. Inadequate cold chains are another weak area where the role of the private sector can be encouraged.

Mining and Quarrying: The mining and quarrying sector is mainly private running on private domestic investment within the South Asian region. Except for Bangladesh, the other countries rely mostly on PDI for its development with a diminishing public sector presence with only four public sector enterprises involved in mining. However, most private mining operations in Pakistan are small in scale and not equipped in terms of size and complexity to effectively exploit Pakistan's rich mineral sector potential. Mineral deposits are owned by the respective provinces which can lease out concessions to private sector parties and pay appropriate compensation in the event a discovery is made on private land.

International mining companies have responded favourably to the NMP National Mineral Policy and presently four of them are engaged in mineral exploration, development and exploitation projects including for copper, coal, and zinc deposits. Import of machinery for the mineral sector has been allowed free of tariffs and restrictions on repatriation of profits by foreign investors were lifted in 2000. There is however, no regulatory body to oversee the activities of mining firms in Pakistan, and over-mining remains a major threat with significant consequences for the environment.

In a recent review of the mining sector 9, it was concluded that that the major obstacles to the growth and development of the private domestic investment in this sector were inefficient mining methods and tools and techniques, lack of coordinated regulation and intervention at the federal and provincial government levels, opaque and cumbersome leasing procedures, poor definition and enforcement of property rights with respect to the surface land, inefficiency in the duty drawback/tax rebate system, lack of access to financing for the SME sector, and a poor transportation network. Further work is necessary to identify priority areas for reform in the mining sector in the country. To this end, an analysis of joint ventures and foreign investment in the mining sector globally should be undertaken to develop appropriate policy, regulatory and contractual structures based on international best practice to promote private sector investment in the sector.

Private Investment in the Secondary Sector

Manufacturing

Major manufacturing sub-sectors in South Asia include: textile which is the largest in terms of value added; food, beverage and tobacco; cement; and automobiles.

Textile Sector: Privately owned, Pakistan's textile sector is its most important component of the manufacturing sector. It contributes 46 percent to the value added of manufacturing Pakistan—Growth and Export Competitiveness [IMF (2016)]. To prepare for the post-quota global trading environment that demands greater efficiency and an enhanced competitiveness level, the textile sector invested with a focus on spinning, weaving, textile processing, and making up sectors. After faring well for the first year in the post quota environment, textile exports dramatically slowed down in the South Asian region.

This is a concern not only from the perspective of the textile industry but also for the overall export performance of the country of Pakistan and the subsequent impact on the trade account and the balance of payments. It also brings to the fore the need to have a diversified industrial and export base to reduce dependence of the economy on any single sector in the contemporary competitive global trading environment.

Food, Beverages and Tobacco: Out of all the South Asian countries, this contributes to the major components of Pakistan's food, beverages and tobacco industry are vegetable ghee, sugar, cigarettes, cooking oil, wheat milling, tea, beverages and cigarettes. Pakistan's major exports include rice, seafood, fruits, vegetables, tobacco and raw meat.

Automobile Sector: Pakistan's automobile sector is wholly private sector owned. There are automobile assembling units in the private sector set up as joint ventures in India, Bangladesh, Pakistan and Sri Lanka. The automobile industry, however, continues to be of modest size in terms of its contribution to GDP and employment particularly when compared to other Asian economies like the Japan, Korea, Malaysia, China and Thailand which have all exploited the catalytic role of the automobile industry in promoting broad based manufacturing sector growth. The sector unfortunately has not had the desired impact in Pakistan for various reasons. It continues to remain protected with high import duties and other barriers to entry and competition which make it uncompetitive. The deletion program mandates a certain portion of domestically produced content. In doing so, the program provides non-tariff based protection to both domestic assemblers of motor vehicles as well as domestic producers of parts and components. These policies discourage domestic and foreign competition and allows for small, inefficient yet profitable domestic automobile producers. Unless these structural issues are resolved, it might not be possible for an efficient Pakistani automobile sector to emerge at this stage a hefty amount of PDI is needed to flourish this rewarding sector.

Fertiliser Industry: The fertiliser industry is totally in the private sector after successful privatisations in recent years. In case of Pakistan, Fauji Fertiliser is the major player in the market with a market concentration of 44 percent with Engro following at 17 percent market concentration. Engro is on its way to expanding its capacity and by 2020 it is expected that its market share will increase. The structure of the fertiliser industry is thus expected to become a virtual duopoly,

raising potential competition related issues, especially when the fertiliser industry is also marked by price distortions. The Government subsidises input costs for the industry by selling feedstock gas for urea (the major fertiliser produced in Pakistan).

This subsidy has had a significant impact on increasing fertiliser use as a majority of the farmers use urea without conducting proper soil tests to identify fertiliser and micronutrient requirement. The impact of the fertiliser subsidy on market structure and long-term agricultural productivity needs to be studied and an appropriate policy response formed to mitigate its adverse impacts. Private Domestic Investment in this sector has been fruitful in terms of production.

Cement Industry: The cement industry is witnessing a major boom on the back of both greater domestic consumer demand for housing generated by higher incomes as well as by the Government's increased spending on public sector development projects in India, Pakistan and Sri Lanka.

Construction: The construction sector in Pakistan is also almost wholly in the private sector. A recent revival in this sector has been led by international private developers, mainly from the Middle East on the back of the growing housing requirements of an expanding population. Also, given the expanding private sector development program and huge investment requirements, the future prospects of the sector remain bright. The sector has the potential to export services worth US$ 1 billion per year [IMF (2017)]. But there remain various issues of concern in the construction sector from the point of view of encouraging greater private investment. First, due to lack of available financial services, very little credit penetration has taken place with the bulk of investment in property still being financed through direct equity. Moreover, there is a high transfer fee, the transactions are undervalued. Another major issue is an inefficient land registration system requiring interface with multiple official agencies that employ archaic, complex and non-transparent record keeping. This adversely impacts property rights and gives birth to legal issues that are known to drag on in courts for long periods and that remove, in most cases, a very major asset—land—from the mix of viable collateral utilisable by financial institutions formats [ADB (2017)].

Private Investment in the Tertiary Sector

Services Sector

The services sector in South Asia consists mainly of wholesale and retail trade, transport, storage and communications, and financial and insurance services. The services sector in recent years has been the contributor to employ workforce of Pakistan. The services sector has been steadily gaining a larger share of the economy over the past few years.

Wholesale and Retail Trade: Mostly private, wholesale and retail trade has shown a growing trend and employs a large part of the services sector labour force,

with most jobs based in the informal sector. Sub- areas in the wholesale and trade sector include, among others, import and export of goods, activities of purchase and sale agents, and those of brokers and auctioneers. A significant portion of the domestic economy is linked to trade through its forward and backward linkages.

Communications: With CPEC taking a multifaceted path, Pakistan is prospering in the transportation department. Road transport and trucking is almost fully in the private sector. The public sector still dominates the air and railways. To attract private sector investment in the electronic media, the Government issued a Pakistan Electronic Media Regulatory Ordinance, which allowed the establishment of television channels in the private sector. Today, more than 50 private TV channels are on air in Pakistan. Likewise, new FM band radio licenses have been issued and a number of private channels are on air. In the telecommunication sector, with the creation of an enabling investment environment in the sector, the mobile phone industry is dominated by the private sector with several foreign affiliated companies providing a range of telecommunication services.

Finance: For South Asia, the financial sector is mainly dependent on the commercial banks and insurance institutions.

For Pakistan, besides the State Bank of Pakistan, the finance and insurance sector includes scheduled commercial banks, DFIs, and leasing and insurance companies.

Commercial Banks: The banking sector has seen a major shift in ownership from the public to the private sector following a successful financial sector privatisation program. The share of private sector banks in aggregate assets of the banking industry in surging in South Asia. PDI hastened a decline in asset concentration within the banking sector and enabled consolidation of the erstwhile weak financial institutions in South Asia [ADB (2017)].

3. LITERATURE REVIEW

The Literature focuses on investigating if FDI and PDI do in fact positively impact growth of a country. According to theorists, public investment and private domestic investment can often be resolute as second degree agents of growth. Subsequently, global sources of development, for example, developmental foreign aid, financial market portfolio streams and FDI turn out to be exceedingly sought after things on a country's economic and financial agenda. Contrasted with different sources of worldwide capital, FDI seemingly offers huge favourable circumstances, basically on the grounds that it gives the host nation diversified advances which are not possible through other types of capital inflows. Other than polishing technical expertise and causing work force aptitude procurement in the host nation, it also builds employment opportunities and increases trade and exchange. It makes the region far more connected [Raza and Iqbal (2017)].

Findlay (1978) discussed the spillover impact that has been distinguished as an essential channel through which domestic corporations' advantage from

FDI. It is likewise viewed as an important conduit through which FDI advances development in a host economy through the effect on the potential of products available. Acknowledgment of this and different advantages emerging from FDI has incited governments to energise FDI inflow as compared to private investment in India [Fan (2002)].

However, the impact of FDI on growth may rest upon its determinants in an economy. In South Asian countries like Sri Lanka and India, wage is characterised to be the most important determinant of FDI. Although, other key economic determinants such as exchange rates, the level of external trade, GDP and interest rates are also given due deliberation in policies designed to attract FDI inflows. Having followed prohibitive and strict trade barriers after gaining independence in 1948 and 1947 respectively, Sri Lanka adhered to import substitution, followed by the liberalisation policy, leading to a sky-rocketing increase in the foreign investment sector. The annual revenue in excess has been US 200 million dollars. The FDI inflows were collectively as high as 47.4 percent in 2004, therefore characterising the foreign investment to be an agent to finance the current account deficit. Perceptions recommend that nations with high labour wages can in any case draw in FDI if higher production can make up for higher wage rates [Wijhveera (2008)].

Private domestic investment is then seen as a secondary force to impact the GDP of the economy. It acts as a complemented bi-part of FDI because the improvement of infrastructure and labour work ethic naturally benefits the private investor's work projects as well [Ilhan and Ozturk (2007)].

Ozturk and Ilhanarugue suggest that agents like private domestic investment are favourable to any financial system, but for FDI to have a significant and positive effect there is need for the economy to have a minimum level of infrastructural development and technological advancement. Simultaneously, if the economy has inward oriented trade openness, and educational standard, growth will increase otherwise the result is null [Ozturk and Ilhanarugue (2015)]. Raza (2017) characterises this to be a prime reason for the LDCs to have low or less drastic effect of the FDI inflows. The poor literacy and development rate causes Pakistan to lag behind in FDI reception [Raza (2017)].

Similarly, Firebaugh (1992) reflects on why FDI may be less profitable than the domestic investment for the host economy. He believes that good political status-quo and infrastructure is the main determinant of foreign investment in a country. Although it acts as a collateral benefit, may also bring in crowding out of private domestic investment. Private investment leads to growth in the capital stock and aggregate demand. It causes a plummeting increase in growth.

He acknowledges the fact that FDI is a cost-efficient way for third world or developing countries, but in case of South Asia and South East Asia, there is lack of infrastructural development and the political instability which lessens the

chances of foreign investment capital accumulation in the right direction, thus ruling out the possibility of allocating the funds towards human capital development [Kamal, Ullah, Qingxiang, and Ali (2015)].

On the contrary, a developed or developing country's GDP increases by over 1 percent through the accumulation of foreign investment capital provided they avail the technological advances consistently. However, FDI inflows do come with minute potential drawbacks, such as the competition in national markets facing negative impacts because of the repatriation of profits as well as the deterioration of balance of payments [Iamsiraroj and Ulubaşoğlu (2015)].

Endogenous growth models as well as neoclassical models of growth present the basis for majority of the empirical work on the FDI-growth nexus. The literature from endogenous theorists maintains that FDI can solely contribute to economic growth through augmentation of knowledge level caused by skill acquirement, labour training as well as capital formation.

The relationship explains four main channels: (i) determinants of FDI, (ii) role of multinational firms in host countries, and (iii) determinants of growth (iv) direction of causality between the two variables. They argue that there is a distinctive framework for the FDI to affect growth positively it firstly increases capital accumulation, through the upgraded inputs to the economy in the form of technical diversity. Secondly, the knowledge level is raised as an attempt to gain the "know-how" of inputs. Lastly, the competition is increased by overcoming the upheld entry barriers, which reduces the market power of existing firms. The Neoclassical growth theory argues that economic growth is stimulated through two main routes; factor accumulation and total factor production [Mavrotas and Chowdhury (2005)].

It is further extended that the advantages conveyed by FDI differ across primary, secondary and service sector. The World Investment Report (2010) issued by UNCTAD puts forward with the provision of empirical results that the scope for the primary sector to grow because of FDI is improving. With introduction of new machinery for activities like technical farming methods that require skilled expertise, FDI can be significantly helpful. Similar is the case with the tertiary sector, the service industry has its production divided into discrete stages, in which subcontracting is common. The effect of FDI is positive to ambiguous, depending on the kind of service industry. On the contrary, manufacturing is composed of a broad spectrum of linkage activities, which require accumulated knowledge to produce extensively. Hence, it has a significant degree of growth through FDI accumulation.

Al Faro (2003) provides an explanation for FDI to stimulate growth in the manufacturing sector. When a foreign firm invests in a local company, foreign companies contend with domestic producers whilst creating supplementary demand for locally produced intermediary goods. This is done through collaboration with local suppliers. This way the intermediary goods sector is

entered by the domestic firms which results in low costs, low final and retail price, which increases demand, and thus profits domestic firms that are producing final goods. Multinationals are hence the imperialist predators that alter the domestic firms through the transfer of human capital, at the cost of exploitation of resources. This is characterised as the extractive nature of FDI, to flourish the manufacturing sector [Alfaro (2003)].

Alfaro, *et al*. (2009) maintain that a country with better financial regulation and a sound banking system is the key to achieve a higher growth rate. They can exploit FDI and PDI efficiently. This allows entrepreneurs to gain credit to start a new business (PDI) or expand an old one (FDI).

This shows that there is high degree need to reform the financial system within an economy [Alfaro, Ozcan, and Sayek (2009)].

4. ECONOMETRIC MODEL AND DESCRIPTION OF VARIABLES

Econometric Model and Hypothesis

Following Al Faro (2003). Borszentien (2006) and Raza (2017), our initial model is set to investigate the impact of FDI and Private Investment on growth. This is a cross country analysis of South Asia. The four countries included in the data set are; Bangladesh, India, Pakistan and Sri Lanka. The main aim of this study is to investigate if PDI and FDI impact growth positively. The hypothesis is that FDI and/or PDI promote growth. Secondly, it hypothesises that FDI causes higher growth than PDI. Growth is taken as an explained variable whereas FDI and PDI are explanatory variables amidst other control variables.

The control variables which are expected to have an effect on growth, in terms of the private, foreign investment and trade scenario are taken, consequently, the model set out is:

$$\text{Growth}_{it} = \beta_{0it} + \beta_1 \text{EXRate}_{it} + \beta_2 \ln\text{GEXP}_{it} + \beta_3 \ln\text{TRAEX}_{it} + \beta_4 \ln\text{HC}_{it}$$
$$+ \beta_5 \text{INFL}_{it} + \beta_6 \ln\text{FDI}_{it} + \beta_7 \ln\text{PDI}_{it+} \, u_{it} \, (1)$$

Where

Growth_i = the Gross Domestic Product per Capita Bangladesh, India, Pakistan and Sri Lanka over a period of 1975 to 2017

EXRate = Real Exchange Rate from 1975 - 2017 GEXP= Total Government Spending for the 42 year span

TraEX   = Trade Openness for the same time frame HC= Level of Human Capital from 1975 to 2017 INFL= Percentage changes in GDP deflator FDI= Foreign Direct Inflows from 1975 to 2017

PDI = Private Domestic Investment from 1975 to 2017

Variables Description

Dependent Variable

Growth reflects to be the output level of the country. The data reflects the growth of real per capita GDP.

Independent Variables

EXRate: This is the real exchange rate of each country under study for each respective year as it is a variable that completes the model having its impact on the inflows and outflows within the economy [Al Faro (2003)].

A country's real exchange rate over a certain period of time usually a year; being variable, it has a large impact on an economy's inflows and outflows.

GEXP: Gross national expenditure (formerly domestic absorption) is the sum of household final consumption expenditure (formerly private consumption), general government final consumption expenditure (formerly general government consumption), and gross capital formation (formerly gross domestic investment). This is the gross public spending carried out throughout a year.

INFL: Inflation is a quantitative measure of the rate at which the average price level of a basket of selected goods and services in an economy increases over a period of time. Often expressed as a percentage, inflation indicates a decrease in the purchasing power of a nation's currency. This is measured as the percentage change in cost to the average consumer and GDP deflator is most commonly used proxy for inflation as it offers model completion [Fan (2015)].

FDI: World Bank describes FDI as the sum of reinvestment earnings, short term, long term and equity capital acquired to earn a managing interest of 10 percent from the host economy being operated in through the input of a foreign organisation. It augments to bring growth to the host economy through the development of infrastructure, reformed managerial practices, knowledge stock and diffusion of technological spillovers [World Bank (2016)]. We take into account the FDI inflows for this paper [Al Faro (2007)].

It is the investment, long or short term and equity capital by a foreign organisation into a host economy. It can also be reinvestment earnings for infrastructure development, reformed managerial practices, knowledge stock and diffusion of technological spillovers.

PDI: Private Domestic Investment is measured using the gross fixed capital formation, as it denotes the Private investment within a country that covers gross outlays contributed by the private sector in addition to the fixed domestic assets (inclusive of the private non-profit agencies) [World Bank (2016)]. It includes the gross fixed capital formation within a country covering the fixed domestic assets and the contribution of the private sector (including the

private non-profit agencies). WE use gross fixed capital formation as a measure as it enunciates the requirement of the model to holistically complete it. GFCF is widely used by authors as a proxy as it takes into account the net capital formed as per the inclusion from private sector [Al Faro (2007)].

TRAEX: This is allocated as the gross exports of services and goods as it represents the value of all market services and goods provided to the rest of the world. It is inclusive of the value of merchandise, license fee, travel charge, royalties and other financial, communication and informative services. They exclude factor services and transfer payments [Levine, *et al.* (2000)].

The market value of all goods and services provided to the rest of the world. It includes value of merchandise, license fee, travel charge, royalties, and other financial, communication and informative services. Factor services and transfer payments are excluded. We use the total export volume as a percentage of GDP [Kamal, Ullah, Qingxiang, and Ali (2015)].

HC: Barro and Lee (1996), maintain that a country cannot enjoin growth or GDP increment through foreign or private investment, unless there is a minimum level human capital and its accumulation simultaneously. We take this variable as a proxy of the net secondary school enrolment as it can be rationalised as the measure of funds allocation of a minimum level of investment in knowledge for South Asia [Schneider and Frey (2018)].

Maintains that a country needs to have a minimum level of human capital accumulation to enjoin growth or GDP increment through foreign or private investment. The variable is taken as a proxy of net secondary school enrolment; it can be rationalised as the measure of funds allocation of a minimum level of investment in knowledge for .South Asia. Secondary school enrolment ratio is used as a proxy of the human capital [Iamsiraroj and Ulubaşoğlu (2015)].

Data

The data is secondary and panel in nature. It takes into account values from 1975 to 2017 for 4 countries, which makes it a total of 172 observations. The data has been taken from leading secondary sources like the World Development Indicators and data for the sector wise Private Domestic Investment is taken from UNCTAD and Central Bank of the respective countries under study.

5. METHODOLOGY

The data depicts nature of time and cross-section characteristics, hence making it to be panel. This model uses Fixed Effects (FE) and Random Effects as per the replication of the model used by Al Faro. The initial model set (1) in 3.1 is to see the impact of FDI and PDI on growth for South Asia. Fixed Effects and Random Effects assume all countries to be with differences in external forces influencing the political, social or economic scenario [Al Faro (2003)].

Therefore, FE and RE regression are done as it takes into account the difference of each country in the data set.

Also, a natural log is taken to depress the figures.

We later use the Hausman test to verify whether which model should be incorporated. Hausman Test: *Chi=(b-B)' -Cov(b-B)'.*

In order to analyse the data we firstly see the four countries and check for its variable statistics. Seeing the tabular representation of the data shows how there is similarity within its characteristics, thus removing the element of heterogeneity amongst the investment climate.

Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ygwt	172	5.176	2.2564	–5.238	10.259
traex	172	16.567	9.118	2.895	39.01
fdi	172	0.7615	0.736	–0.0514	3.668
hc	172	2.08	3.30	2.31	7.32
gexp	172	9.33	3.083	3.016	17.61
infl	172	8.89	7.69	2.63	8.56
pdi	172	17.900	6.248	0 .2	31.33
exrate	172	5.238	2.1163	–5.23	10.259

We further conduct a correlation test to check whether the variables are sufficient to complete the model or not. The correlation matrix shows the correlation coefficients between variables in our growth-investment model. Each cell in the table shows the correlation between all the variables. It is used as a way to summarise data, as an input into a more advanced analysis, and as a diagnostic for advanced analyses of PDI and FDI's impact on growth.

The correlation matrix confirms that the variables are correlated in a way that they depict the Removal of heterogeneity, as well as remove any suspicion of the variables being out of place in terms of variance of the model.

Correlation Matrix

ygwt	traex	fdi	hc	gexp	pdi	infl	extrate
ygwt	1						
traex	0.1114	1					
fdi	0.2037	0.4973	1				
hc	0.304	–0.0338	0.236	1			
gexp	0.1421	0.2493	0.1992	0.2497	1		
pdi	0.2441	0.79	0.5906	0.1129	0.1731	1	
infl	–0.3164	0.0215	–0.0178	–0.1792	–0.0348	–0.0752	1
exrate	0.2032	0.0819	0.2572	0.3017	0.1252	0.2669	-0.1211
exratr	1						

Results

Table 1

Variables	(1) ygwt	(2) ygwt
Traex	-0.0310	-0.0264
	(0.0321)	(0.0296)
Hc	1.3008**	1.3008**
	(5.3609)	(5.1709)
Gexp	0.0485	0.0441
	(0.0549)	(0.0531)
Pdi	0.0961**	0.0877**
	(0.0503)	(0.0457)
Infl	−0.107***	−0.0814***
	(0.0232)	(0.0207)
Exrate	0.0379	0.0448
	(0.0939)	(0.0817)
Fdi	0.308	0.145
	(0.380)	(0.279)
Constant	3.762***	3.742***
	(0.791)	(0.751)
Observations	172	172
R-squared	0.282	
Number of year code	43	43

Standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 1 shows that in case of Fixed Effects regression (column 1) that Inflation is significant at 0.01 levels, which means that it has a negative impact on growth. When the inflation rate increases by one percent, the GDP falls by 0.107 percent. The human capital and government expenditure show a weakly significant relationship with growth. As human capital and Government expenditure rise by 1 percent, GDP increases by 1.3008 percent and 1.3008 percent respectively. The PDI however is strongly significant in both Fixed Effects and Random Effects Regression (column 2). It shows a highly significant impact of private investment and GDP growth of South Asia. In both cases, increasing PDI by 1 percent positively impacts GDP by over 0.0961 percent.

Hence, the hypothesis that FDI and/or PDI promote growth is significant. The hypothesis that FDI results in higher growth than PDI is rejected.

Sectoral PDI

We intend to focus on the policy implications of this research and after carrying out the first model, we see that PDI is holistically significant and impacts growth for the region positively. We move forward towards investigating whether which sector is the most fruitful in terms of private investment so that the growth is most highly influenced. Hence, the first model is pursued to produce model 2, to set a hypothesis which aims to analyse if PDI invested in specific sectors can result in growth [Al Faro (2003)]. We set up a second model:

$$\text{Growth}_{it} = \beta_{0it} + \beta_1 \text{EXRate}_{it} + \beta_2 \text{lnGEXP}_{it} + \beta_3 \text{lnTRAEX}_{it} + \beta_4 \text{lnHC}_{it}$$
$$+ \beta_5 \text{INFL}_{it} + \beta_6 \text{lnFDI}_{it} + \beta_7 \text{lnPDI}_{it} + \beta_8 \text{lnPPDI}_{it} + \beta_9 \text{lnMPDI}_{it}$$
$$+ \beta_{10} \text{lnSPDI}_{it} + u_{it} \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad (2)$$

Where

PPDI= PDI invested in the primary sector of the host economy of Bangladesh, India, Pakistan and Sri Lanka, over a period of 1975 to 2017.

MPDI: PDI invested in the manufacturing sector in Bangladesh, India, Pakistan and Sri Lanka, from 1975 to 2017.

SPDI: PDI invested in the service sector of the host economy for the same time frame.

Cheng, Borszentien and Al Faro have each used RE and FE to analyse the models [Al Faro, *et al.* (2009)].

The model than incorporates three more variables; PDI invested in the primary sector (PPDI), PDI invested in manufacturing sector (MPDI) and PDI contributed in the services sector (SPDI) [Borszentien (2006)]. The model still investigates the impact on Bangladesh, India, Pakistan and Sri Lanka from 1975–2017.

Table 2 shows the empirical evidence which supports the hypothesis that in terms of sectoral investment of PDI, manufacturing results in highest growth. In case of FE, increasing PDI investment in primary sector raises GDP by 0.09 percent, whereas in RE it increases by 0.03 percent. With increase in manufacturing PDI by 1 percent, GDP rises by 3.85 percent and 2.65 percent in FE and RE respectively. In both cases, inflation is still strongly significant, impacting growth negatively by 8.95 percent in FE and 8.35 percent in RE.

Hence, the empirical evidence supports the hypothesis that positive growth results from PDI investment in the manufacturing sector.

To further analyse the accuracy of the models run, we employ the Hausman Test. The results (Figure 3) show that the null hypothesis is accepted owing to the p value 0.099, which makes us accept the Random Effects over the Fixed Effects.

Table 2

Variables	(1) YGWT	(2) YGWT
LnTRAEX	0.828	0.131
	(0.691)	(0.865)
LnEXRate	0.0823	0.106
	(0.184)	(0.186)
LnFDI	0.0944	0.0732
	(0.15)	(0.168)
LnHC	0.411	1.002
	(0.154	(0.905)
LnGEXP	0.0506	0.166
	(1.091)	(1.15)
LnPDI	4.217***	3.820***
	(1.23)	(1.298)
INFL	–0.08***	–0.08***
	(0.0216)	(0.022)
LnPRPDI	0.0908**	0.0267*
	(0.0415)	(0.0565)
LnMNPDI	3.85***	2.65**
	(0.139)	(0.162)
LnSRPDI	0.043	0.0963
	(0.0374)	(0.134)
Constant	18.14	3.384
	(0.5905)	(0.508)
Observations	172	172
R-squared	0.512	0.609
Number of year code	43	43

Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

Therefore, the two models show that inflation, gross expenditure, PDI, PDI in primary and manufacturing sector significantly impact growth of the South Asian region on the whole.

6. POLICY IMPLICATIONS

The results signal that PDI is a necessary ingredient for economic growth of the region. The study is significant as the empirical testing proves that in case of South Asia, FDI and PDI (invested in the manufacturing sector) are agents of GDP increment. The results suggest that South Asia must provide incentives for the private sector to move towards entrepreneurship. The banking system, which is the main determinant of PDI, needs to be simulated to provide credit to small scale investors. The barrier to provide loans to small scale investors should be lifted.

Whereas in case of Pakistan, PDI's positive impact is only restricted in the short run. Hence, its key focus for short run growth should be PDI.

Moreover, policy-makers need to focus on the allocation of foreign inflows in a sector that can increase GDP. Currently, Bangladesh and Sri Lanka invest 51.8 percent of their FDI inflows in the service sector, which has no impact on growth [Mathew and Mahtuga (2017)]. The tax on manufactured goods amongst other sectors is the highest. Its decrement will allow the cost to fall which will increase productivity and net profits [Raza (2017)]. Focus should be placed on improving the education system, which is a proxy of human capital. It significantly impacts growth. Government expenditure should be increased for developmental projects which can improve infrastructure of the region. A better infrastructure helps in availing the FDI benefits appropriately.

Furthermore, the government must provide incentives for the textile, construction and cement sector as they constitute a large portion of the manufacturing sector. There must be focus on improving the parameters of the cost of doing business, especially provision of uninterrupted energy (electricity to manufacturing sector). There should be provision of incentives financial/non-financial to farmers and miners. In case of Pakistan, focus should be on developing the private sector for short term as well as long term growth.

Service sector is on the boom for the millennial age, but for a region like South Asia, it is yet to reach its apex. The enabling environment for private services sector development needs to be further strengthened within an improved policy and regulatory framework that consists of a defined competitive policy, an investment policy, and stronger and capacitated regulatory institutions in key sectors of the economy. As one example of the latter, in case of Pakistan, there is a need to strengthen the capacity of the Securities and Exchange Commission with respect to regulating the non-bank financial sector including the insurance sector.

7. CONCLUSION

The overall level of the economic growth of the region owes to the constantly fluctuating level of growth is because of the economic and political instability. The lowest period of growth has been during the 90s. During this period (referred to as "The Lost Decade"), the growth level plummeted down to 4.4 percent collectively for the region. Both foreign and domestic investment fell by 14.14 percent. The public debt was highest for Pakistan and Sri Lanka [Mathew and Mahtuga (2014)]. The results support this claim, in which as PDI falls, growth also falls. This is most evident in 1995. PDI investment in manufacturing sector moves simultaneously with growth. Although, the economic nature of the country is a key determinant, growth can only be promoted if there is regional integration. There should be a joint initiative taken by the government of South Asia to start projects which enable intra trade

openness to help increase FDI inflows directed towards manufacturing industry. This can lead to the flourishing of the banking sector which can increase the private investment.

APPENDIX

Hausman Test

	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
traex	.0101587	-.0235729	.0337316	.0381588
fdi	.3611222	.5030915	-.1419694	.1527175
hc	7.65e-09	1.59e-08	-8.28e-09	1.28e-08
gexp	.0558721	.0919727	-.0361006	.0384782
pdi	.1233488	.1161691	.0071796	.0273773
infl	-.0769251	-.0796548	.0027297	.0038541
exrate	-.0088354	-.0117057	.0028703	.0103992
ppdi	.0766643	.0878549	-.0111906	.0261525
mpdi	.2303965	.2099718	.0204247	.0404266
srpdi	.0375241	.0273317	.0101924	.107355

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$chi2(9) = (b-B)'[(V\_b-V\_B)^{(-1)}](b-B)$$
$$= 1.02$$
$$Prob>chi2 = 0.9994$$

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