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THE IMPACT OF FOREIGN DIRECT INVESTMENT AND REMITTANCES ON GDP GROWTH RATE OF SOUTH ASIAN ECONOMIES: AN ECONOMETRIC ANALYSIS

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Dr. Nazia Abdul Rehman[1] | Dr. Khurram shakir[2] | Abdul Samad Shaikh[3] | Ibrahim Noorani[4]

Abstract

The quantitative research study was undertaken to determine the impact of Foreign Direct Investment (FDI), Remittances, Inflation, Interest Rate and Exchange Rate on GDP Growth Rate of South Asian Economies i.e. Pakistan, India, Srilanka and of Chinaand of which FDI and Remittances were our main interested independent variables whereas Inflation, Interest Rate,and Exchange Rate were used as controlled variables, and GDP Growth Rate was used as a dependent variable.Since FDI and Remittances are the essential macroeconomic variables for determining the GDP Growth Rate of any country, therefore, we took these variables to see their impact on the GDP Growth Rate of South Asian Economies. Meanwhile, we extracted the yearly data of FDI, Remittances of South Asian Economies from 2001 to 2019 time period. Firstly, we performed Unit Root for checking the stationarity of the data and the results of this test revealed that the data was stationary except the data of Remittances which were made stationary after taking its 1st difference. The results of the Co-integration table revealed that there was no long-term relationship between independent variables and the dependent variable, and FDI and Remittances could not explain the long-term relationship with GDP Growth Rates and the results revealed that at 1st and 2nd difference hypothesis were rejected. Lastly, VECM Test (Model) was applied to evaluate the short-term relationship (short-run) that whetherrelationship and impact existed between independent and dependent variable or not, and the results of table revealed that FDI was significant i.e. FDI hada short-run relationship with GDP Growth Ratewhile Remittances were insignificant which suggestedthat there was no short-run relationship of Remittances with GDP Growth Rate of South Asian Economies.

Key words: *Foreign Direct Investment (FDI), Remittances, GDP Growth Rate.*

Author's Affiliation:
Institution: Benazir Bhutto Shaheed University Lyari Karachi[1,2,3]
Country: Pakistan[1,2,3]
Corrsponding Author's Email: *

INTRODUCTION

Foreign Direct Investment (FDI) iswhen a person or firm of one country invests in business interests situated in other countries is known as FDI, and it is recognized asthe lucrative way to drawinflows from sources located outside of theircountry. Meanwhile, the usage of FDI has toturn out to bea substantial facet to buildwealth in developing and in emerging countries around the world.Investment's sharefrom developing and emerging countries in other states has been lessening over the prior years. Further, the positive effect of FDI becomes agradually popular instrumentfor the growth of economic for developing &emerging economies (Surge &Andrew, 2008).The durableobjectives of the implementation of foreign direct investment are the rise in aggregate productivity, the surge in opportunities of employment, sheer outflow of export & technological advancement exchange between investors and countries.

Moreover, the presence of foreign direct investment FDI in developing and in emerging countries assists in the generation of employment and helps exploitation of human and natural resources, and assists in implementing creative and innovative business practices in the context of management and marketing, andsupports in lessening of the budget deficit. Besides,another benefit of foreign direct investment is, it constitutes the external debt's risks and regulationsand augments value in human capital throughon-the-job-trainingprovisions. Countries which encountera dearth of technological expertise, and a dearth of capital, regularly experience slower growth than those countries which possess this technological expertise and capital. According to other studies, FDI can function as a source of technology and knowledge's relocation (Dunning & Hamdani, 1998).

Furthermore, remittances suggesta transference of money from international immigrants to their family members in their home which is based in their ownstate. Remittances are distinct fromother exteriormoney inflows such as FDI, loans from outside of the country, etc.Additionally, remittances are the biggest source of earnings of foreign exchange of developing and emerging economies. Several rising countries have beenexperiencing a rampant rise in the remittance's inflow from the previous twenty years.Remittances transfer manpower for creating remittances. It is the source of alleviation of poverty, improvedhealthcare&education, and it is an important way for growing investments & consumptionsfor the receiver countries. Also, the surge in investments & consumption is an indication of the developmentof the economy, andforeign remittances assist in the alleviation of the dearth of money. Remittances run to the poorest population's group and thus it directly adds to alleviating poverty.Remittances can play a part ingreater investments in human capital.Besides, itcan be harmful if they are justused for consumption and not for investment,then they cannot generate adequate money which is essential for the economy's development.

The key focus of this report would be to evaluate the effect of FDI and remittances on growing and developing economies' gross domestic product growth, i.e. Pakistan, Sri Lanka, India, and China. GDP growth is our dependent variable in this analysis, while FDI and international remittances are our independent variables. GDP growth is a hope for every country to achieve as GDP growth plays an essential role in poverty alleviation. In comparison, FDI and global remittances are essential factors that influence the economic development of developed and emerging economies. As refugees from developed and emerging countries are sent to their respective home countries, foreign remittances are slowly and steadily rising. Therefore, this rise in flow provides support for the payment balance& for poverty alleviation.

Analyzing Economic growth based on changes in financial and macroeconomic variables remains a specific issue for researchers in Asian economies.FDI and Remittances are having a significant relationship with economic growth in developed and developing economies. Therefore, in our research study, we wanted to determinehow foreign direct investment and remittances have a relationship and impact on the GDPGrowthRateof South Asian Economies.

These are the objectives of our research study which are given as under:
1. To identify the relationship of foreign direct investment on GDP growth of South Asian Economies.
2. To determine theimpact of FDI onthe South Asian Economy’s growth of GDP.
3. To identify the relationshipof foreign remittances onthe South Asian Economy’sgrowth of GDP.
4. To determinethe impact of foreign remittances onthe South Asian Economy’sgrowth of GDP.

This research study will be helpful for economies of developing and emerging countries as this research will let them understand how foreign direct investment and remittances can play their part in the GDP growth of these countries.
This research study will be conducted in developing and emerging countriesi.e. Pakistan, India, Srilanka,and China. Further, this study will assist former countries in how foreign direct investment FDI and remittances have a relationship in GDP growth, and what is the impact of foreign direct investment FDI and remittances on the economic growth of developing and emerging country’s economies.

We collected data of developing and emerging countries and will not collect data of developedones as we want to see how foreign direct investment and remittance can have an impact on the GDP growth of developing and emerging countries.Further, we are confined to accomplish our research study withinfour months.

LITERATURE REVIEW

The aim of this research was to evaluate the relationship and effect of FDI and remittances for foreign direct investment on developed and emerging countries' GDP growth. Since FDI and remittances play a key role in the country's economic development, as through FDI, individuals and companies are involved in the business of another country; and through remittances, individuals pass their money to a person in their home country and as a result of that economy's ability to generate goods and services is increased. In a literature review, weoverviewed the prior work ofthe relationship andthe impact of FDI and foreign remittances onthe South Asian Economy’s GDP growth and gave our own understanding after attempting the researcher's previous work on this particular topic.

Foreign Direct Investment

The presence of economic development could also be seen in 2500 BC. Before this, Sumerian traders regulated their overseas trade through foreign citizens. The development of the East India Company in 1960 and the existence of the Virginia Business at Jamestown in 1606, the very first FDI in America, delineated the idea of foreign investment in human history (Wilkins, 1970). The need for foreign investment was motivated by the manufacturing and trade revolution to improve production efficiency (Hussain, 2004).

European firms were recognized in Asia, Latin America and America by the 19th century. Further, European industries shifted their capital overseas for cheaper raw material & greater returns. The Neo-classical Theoretical Perspective, based on the paradigm of Heckscher and Ohlin, also defined the transfer of capital for higher returns, and the proportional rate of return principle was correlated with this conventional investment theory. Overseas investment in a developed world is motivated by the larger promise of capital gains. In addition, the cheap accessibility of raw materials for higher returns is augmented by market-size theories. In order to grow the anticipated sales of the economy, a company raises expenditure in response to (Markowitz, 1959). International industry formation is mainly worried with economies of scale, non-marketable innovations, host economies' management & diversification, limiting attractiveness (Hymer, 1976). In addition, the commodity cycle theory will carry out another validation of foreign investment. A creative firm according to demand for the product at homeproducesa new product. Later, the new product is traded to another country because the new product's maturity at home requires a firm for investing in a foreign country. MNEs generate new knowledge & improve local labor, alleviating production costs in the host economies.On the other side, host economies favor resource and competence seeking foreign direct investment in their labor demanding economy, and it creates local labor's technical skills alongside infrastructure. Furthermore, MNEs prefer regions that have uniformity in their social, political and economic conditions (Dunning & Hamdani, 1998).). These integrated markets provide shared communication infrastructure, trade patterns, and thestructure of networking and inexpensive raw material to MNEs.Europe's MNEs adapted this regional pattern in Asia, Latin America and Africa for exploiting lesser-cost inputs for worldwide integration(Dunning& Hamdani, 1998).

Falki (2009) A research on the effect of foreign direct investment (FDI) on the growth of Pakistan 's economy was conducted and data from the Pakistan Economy Handbook 2005 was collected from this study. Data that were extracted were of 1980-2006 and held labor force and foreign-invested capital variables. Further, Falki (2009), applied Endogenous Theory of Growth and an Analysis of Regression and he concluded, foreign direct investment has a negative impact on GDP. Likewise, Agarwal (2001), depicted an increase in foreign direct investment in countries of South Asia was related with the exponential investment made by indigenous investors, provided a belief of association between foreign direct investment & gross domestic product, and the impact of FDI on GDP was negative until 1980.

Further, in the subsequent years, in the initial1980s,the association was slightly positive and got strengthened in the late 1980s to 1990s.

At the same time, Adam & Tweneboah (2009), a Chinese economist, carried out a study on foreign direct investment and the development of Ghana's stock market and found that Ghana's foreign direct investment had a substantial effect on economic growth and stock market results. The study contained market capitalization data as a total of native GDP and exchange & inflow of net FDI of the divisions in Ghanacedi & Dollar in the years 1991-2006. In addition, with the use of the Multivariate Co-IntegrationAnalysis and Vector Error Correction Model, the results shown by the relation between foreign direct investment and the Ghanaian stock market will be useful in the long run for the region. By implementing the Granger Non-Causality Technique from the 1972-2001 period in Pakistan, the causal relation between foreign direct investment, exports, and production was inspected (Ahmad, et.al, 2003) and they discovered a major impact of FDI on domestic output.

Remittances

We have to find studies on the connection between foreign remittances and it is a trend in which the relationship between remittances and the growth of the economy of the world has been debated. Meanwhile,it was foundthatthe growth of the economy in Pakistan is affected byforeign remittances, exports & money supply too. Further, time-series data was used fromthe 1976-2009 period and found a significant effectof foreign remittances onPakistan's growth of the economy. Whilst,Javid, Arif & Qayyum, (2012),documentedthe significance of foreign remittances on thecountry's economic progress. His study was relianton the district-wise reduction of poverty, and it was depicted foreign migrants werecontributing positively tothe alleviation of poverty in3 provinces i.e. Punjab, Sindh,andBaluchistan. Additionally, he added, in the long run,foreign remittances inflow leads for the country'sgrowth and it contributes tothe alleviation of poverty. Javid (2012) sheds light on foreign remittance'ssignificance on Pakistan's economic growth. He used data from 113 countries from the time of2003 till 2009. His results suggested a substantialconnectionbetween foreign remittances andthe growth ofthe economy of former countries. His results depicted, low and middle-income countries were fastly joining with each other in comparison to countries ofhigher-income. Abdih, Chami,Dagher, and Montiel(2012), too talked about foreign remittances in his paper. A costa (2007) explored the effect of foreign money transfers on the economic development of the region, and found an influence of foreign remittances on poverty, schooling, and health in eleven Latin American countries. In addition, the findings revealed that foreign remittances contribute significantly to poverty alleviation and have a substantial impact on health and education.

Economic Growth

The long-run path of growth of the economy is one of the chief questions of economics. Augmentation in the gross domestic product of any country is usually taken as an augmentation in the residents' standard of living.According to (Acharyya, 2009) Economic growth is an increase in production over the time specified and, secondly, an increase in the population; and such an economy yields with finite capital. In addition, an improvement in an economy's economic capacity may be depicted by an external change in the economy's Production Probability Frontier. Two groups, which are consumption goods and capital goods, measure the economic growth of every region. An outward shift in the easiest way depicts economic development to cram all goods into the category of intermediate and industrial goods, whereas an alternative perspective of an Output Possibility Frontier shows that during the given timeframe the national economy has expanded its production capacity. Further, economists' have examined the association of foreign direct inflow and the economy's growth of any country. They determinedly believethe more there is an amplified inflow of foreign direct investment, the more there is likely growth of the economy.Besides, they elaborated the essential characteristics of growth i.e. state of the art technology, connection with international and regional trade market in the worldwide and virtual world, masses' purchasing power, development of infrastructure, the stability of politics, healthy society, the ratio of literacy and meeting the gaps between social and economics demands atthe international and national level. The growth in the inflow of foreign direct investment leads to reducing the gaps between investment strength and domestic savings.

Furthermore, the literature review depicts economic growth relies on several factors among other foreign direct investments as a key determining factor for the growth of the recipient country. They determined that the path for any economy's development is a foreign direct investment which promises the growth with positive signs. According to Salisu, and Sapsford (1996) foreign direct investment is one sort of investment made by an individual of one country to the borders of another country for expecting an anticipated interest in the form of individual, enterprises, ventures via public or private ways by complying trade policies. According to Greenaway, Sousa, and Wakelin (2004), there is an unavoidable connection between foreign direct investment increase anorganization's domestic productivity. Nevertheless, we cannot underrate other factors i.e. political instability (Alesina, Ozler, Roubini, & Swagel, 1996), law & order situation (Aqeel, Nishat, & Bilquees, 2004), purchasing power of general masses' (Goldemberg &Mielnik, 2002) and measures of capacity building.

In addition, the field of transfer payments is a concept in which the effect of external debt on industrial growth, the growth of the financial system, savings, consumer inequalities, the enhancement of deprivation and the development programs are addressed in depth. Nevertheless, if remittances have a significant and optimistic effect on economic development, there are apprehensions. In the meantime, the predominant proof of the effect of remittances on the development of the economy is insufficient and brings us mixed outcomes. In addition, studies have been carried out to demonstrate that remittances have an effect on the growth of the economy, and some planned remittances have an influence on the growth of the economy by exports or the financial development phase of the region. Ledesma and Piracha (2001) confirmed that foreign workers have a huge effect on Central and Eastern European countries' development and employment through their impact on demand and expenditure. A simultaneous Keynesian model was designed by Glytsos (2002) to explore the effect of remittances on demand, expenditure and production of eight countries consisting: Algeria, Egypt, Greece, Jordan, Morocco, Portugal, Syria and Tunisia for the period from 1969 to 1993 and then expanded further in the second analysis from 1969 to 1998. The related outcomes of both studies showed that the impact of remittances on growth was half-done and that the detrimental effects of remittances on growth was found for many years.

Impact of Foreign Direct Investment on GDP Growth Rate

The substantive literature clarifies the effect of FDI on the industrial development of developed countries. The FDI, meanwhile, affects the economic development of the host nation by its impact on the accumulation of internal physical resources; others by its impact on the aggregation of personnel resources and by boosting technical developments, in particular by spillovers. Present literature provides information on the influence of FDI on the development of the economy in developed countries. Furthermore, existing literature emphasises the processes by which financial development contributes significantly to the economic growth of a region.

Lee and Tcha(2004) suggest that external debt is the most successful way to achieve economic development, and most scholars agree that foreign direct investment is a crucial tool for economic growth in the recipients region. In 2002, the Economic Cooperation Organisation reported that foreign direct investment was regarded as the only driver of economic development and economic improvement for countries. Carkovic and Levine(2002) suggested that developed countries attach considerable importance to and handle foreign direct investment in a specific way. In addition, developed countries depend on the inflow of foreign direct investment for capital because they do not have significant savings. There are several instances of distinct treatment provided by developed countries to international entrepreneurs, such as tax holidays, import taxes waiver, and certain direct subsidies. Thus, these are some typical examples that have been valued in the recipient countries to promote FDI. In order to draw international investment into the country through the use of public funds, Ford et al (2008) suggested that countries have public institutions of their own and have been assigned the mission of attracting foreign investment. It indicates, however, that governments are prepared to retain those expenditures to encourage investment. Through moving wealth, i.e. money, technology, and management assets, FDI has played a positive role in the development of the recipient country's economy. It was later mentioned that these assets have the ability to stimulate the development of the economy of the receiving countries, and the amazing thing is that these resources can be exported to the host country only by fdi.

Har et al (2008) investigated the relationship of global direct contribution and industrial growth in Malaysia and, as a consequence of their research, found fdi to be a strong sector of the economy. In the recipient country, foreign direct investment takes accompanying capital several advantages and they can be: new infrastructure, management resources, and affordable commodities. Balasubramanyam et al. (1996) analysed the effect of foreign direct investment on emerging economies by cross-sectional regression and OLS regression. Foreign direct strategy had a positive effect on certain countries that are internationally centered on trade policy, rather than those that are currently based on trade policy, he found.

Although FDI is known as the vector for the strength of the nation of the recipient country, certain uncertain profits may seem uncertain when the recipients economy is unable to take advantage of the skills shared by foreign direct investment in new technologies. Durham (2004) used statistics from 80 countries to analyse the impact of international direct investment on the development of the economy. He observed that often fdi has an irrelevant and detrimental impact on the development of the economy of developed countries. He assumed that foreign direct investment was contingent on the absorptive ability of the host nation. It has been shown that the impact of foreign direct investment can be positive as well as negative. For instance, foreign direct investment from Greenfield has a more favourable impact than acquisition and mergers or, at occasions, takeovers and collaborations have external costs on the economy 's development in the receiving region.

Carkovic and Levine (2002) studied the effect of FDI on the economic growth and the result of their analysis was that FDI has a insignificant impact on the growth of the economy of the recipient region. In their report, Mello (1999) claimed that the impact of foreign direct investment depends on the social climate of the recipient country and its environmental efficiency. Environmental efficiency is the financial growth and savings of the recipient country, trade transparency, development of manpower, and technical development. Therefore, the effect of FDI on the development of the economy of the recipient nation is still undecided. Several surveys have been done to discover the impact of foreign direct investment on the economy, but unanimity is not present. Some studies have shown that foreign direct investment has a positive effect on the economy, although others have shown negative effects.

H1: There is a significant impact of FDI on GDP Growth Rateof South Asian Economies.

Impact of Remittances on GDP Growth Rate

As per Chami and Jahjah (2003), remittances from immigrants have a negative effect on per capita income development. Three-style statistics were discussed in the report, firstly, the large proportion of remittances; secondly, a lower amount of remittance funds go to investments or investment; and thirdly, the strategies in which remittances are spent in housing, land or jewels are not fundamentally successful for the economy overall. The Chamiet al. (2003) thesis was criticized for not taking the issue of endogeneity into account. The study showed that remittances extend credit restraints to the vulnerable, increase the distribution of resources and increase the development of the economy. Remittances are typically consumed on investments in tangible resources alongside investments in labor capital, for example: education and health that promote economic growth .Natalia et al. (2006) Using the study of Complex Panel Results, the effect of remittances on the growth of the economy was analyzed. They noticed that the positive effect of remittances on the development of the economy was positive, and they also determined that a comprehensive institutional climate could affect the amount and efficiency of investment.

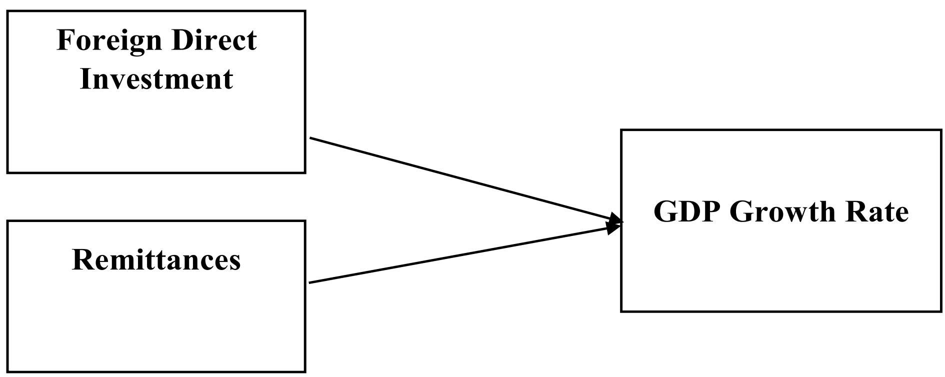
A study was undertaken to seethe influence of worker's remittances on economic growth and alleviation of povertyindeveloping countries. The results depicted, remittances of workers have a substantial influence on poverty alleviation via augmenting income, smooth consumption, and easing restraints of the capital of the poor but they have minimal influence on growth through domestic investment and manpower development.

Another study was conducted to examinethe connection between poverty and the remittances of workers for the 1973-2006 time period. Their study revealed, remittances brought an alleviation in the poverty the 1973-2006 period.

Rao and Hassan (2009) explicate the remittance's effects on the growth of the economy by applying the Solow growth model, and the results of the study depict migrant remittances have a positive but minimal effect on economy's growth.Kumar (2010) investigated the connection between remittances inflow andPhilippine's growth of the economy by applying the analysis of the Bound Test. Their result depicted remittances that have positively influenced the growth of the economy.
H2: There is a significant impact of Remittances on GDP Growth Rate of South Asian Economies.

Theoretical Framework
The Monetary Transmission Channel Theory of Mishkin (1995) was used as a support for our research study. Meanwhile,it delineates that several medium by which monetary policy performs actions as precise by variations in nominal money stock or by variation in short-term nominal interest rate which affects aggregate productivity and employment. Further, thistheory suggests thatmany macroeconomic factors are affecting economic growth considerably, interest rates,inflation and exchange rates which are taken as controlled variables in our research. Moreover, the nature of macroeconomic variables that we took in our research i.e. FDI and Remittances is also the same therefore we used this research theory to support our research study.

Conceptual Framework



Adapted: Source:Falki & Javed (2009), Jawaid (2012)

The rationale behindthe conceptual framework is that it describes the impact that independent variables establish over the dependent variable. Besides, the research experts also want to determine the correlation and integration of independent variables on the dependent variable in the research, and our purpose is also to set the boundaries for our research topic and thus working on it. Further, the independent variables of our research study are: foreign direct investment, remittances whereas the dependent variable is the GDP Growth Rate.

Foreign direct investment: Investopedia defines (FDI) is an investment done by a firm/ individual of one country to another country where their business interests are situated. Remittance: Wikipedia defines remittance asthe transfer of money by a foreign worker to an individual in their home countrywhile Gross Domestic Product (GDP) Growth: Wikipedia defineseconomic growth as the augmentation in the market value of the goods and services produced by an economy in the inflation-adjusted period. It is orthodoxly measured as the % rate augmentation in the real gross domestic product.

Literature Framework (1996-2012) – Foreign Direct Investment, Remittances, and GDP Growth Rate

Authors	Year and Country	Variables	Results/Findings
Balasubramanyam et al.	1996, India	Foreign Direct Investment	They investigated the foreign direct investment's impact on developing economies' by performing cross-section and OLS regression
Carkovic and Levine	2002,Latin America	Foreign Direct Investment	They indicated that developing countries give sheer significance to foreign direct investment and they treat it specially.
Ahmad, et.al,	2003, Pakistan	Foreign Direct Investment	They found a significant effect of FDI on domestic output.

Lee and Tcha	2004, China	Foreign Direct Investment	Theyspecifiedforeign direct investment is the most effective way for achieving growth of the economy and, the majority of the authors recognize foreign direct investment is a key instrument for the growth of the economy in a recipient country.
Har et al	2008, Malaysia	Foreign Direct Investment	They examined foreign direct investment and economic growth's association in Malaysia, and the result of their study considered a foreign direct investment as a good source for the growth of the economy.
Falki	2009,Pakistan	Foreign Direct Investment	Foreign Direct Investment has a negative impact on GDP.
Glytsos	2002, Algeria, Egypt, Greece, Jordan, Morocco	Remittances	The findings of this study pointed out the remittance's effect on growth was half-done and in several years' negative

Natalia et al.	2006, India	Remittances	They examined the remittance's influence on the growth of the economy by using the analysis of Dynamic Panel Data. They found the positive influence of remittances on the growth of the economy, and they also determined a comprehensive institutional environment can influence the investment's volume and efficiency.
Acosta	2007, United States of America	Remittances	He discovered the significance of foreign remittances on the country's economic growth, and he found an impact of foreign remittances on poverty, education, and on health
Abdih, Chami,Dagher and Montiel(2012),	2012, Pakistan	Remittances	He found that remittances contribute positively to the Economic Growth.
Javid, Arif & Qayyum	2012, Pakistan	Remittances	Foreign Remittances werecontributing positively to the alleviation of poverty.

RESEARCH METHODOLOGY

Research methodology provided the blueprint of action that we performed in our research study and it guided us where we could go wrong. Further, it lets usoptfor the method to undertake the research study, and providedus withits justification. Meanwhile,our research study was quantitativeas we will quantify the extracted dataof developing and emerging countries, and will perform certain analysis on E-views of extracted data. Therefore,our research wasquantitative.

Research Design

The choice of researcher illustrates the standpoint of the researcher towards research. The research position defines the research design alongside the view of the researcher towards knowledge which he is intending to achieve from research (Saunders, 2009). Meanwhile, research design comprisesa research philosophy and paradigm, research approach, research strategy, research method, research techniques, and data collection methods (Creswell, 2006). Since our research design was quantitative and we haveextracted secondary data and have quantified the same by using E-views software.

Epistemology was the research philosophy when we built our experience to provide countries a fresh way to examine the problems that are prevalent in setting expectations and that have given knowledge expansion. Since epistemology is the research and study of information and understanding enlargement. In addition, when we provided the explanations for falsification, we used the post-positivism model. It explains the connection between a hypothesis and research work because we have two approaches to conducting work: "deductive approach," where we evaluate and prove a theory, and "inductive approach," where we construct theory through data collection. Meanwhile, we used the "deductive approach" in our research analysis, and this method reflects the relationship of variables we choose for our style.

Three forms of study may be embarked upon, and there are three types of research: exploratory research, descriptive research, and explanatory research. In the meantime, we used an explanatory analysis technique that explains a cause and its effects as a strategy used for quantitative research. In addition, we showed how the dependent variable was shaped by independent factors, i.e. FDI, remittances, i.e. Growth in GDP, and how they built a friendship.

Research Data and Sources of Data Collection

The secondary data forSouth Asian Economies i.e. Pakistan, India, Srilanka, and China wereextracted from Thomson Reuterswhich was yearly in nature. Meanwhile, the rationale behind extracting yearly data was that firstly, it has a larger frequency and secondly, it is less complicated to having access to it.

Variables and Proxies

Variables	Proxies	Source of Data Collection
Foreign Direct Investment- (FDI)	$ Value	Thomson Reuters
Remittances	$ Value	Thomson Reuters
Inflation	CPI	Thomson Reuters

Interest rates	TBR	Thomson Reuters
Exchange Rates	FX rates	Thomson Reuters
Economic Growth	GDP Growth Rates	Thomson Reuters

Foreign direct investment and remittances were used as independent variables and the $ value was used as their proxies and inflation, interest rate and exchange rates were used as controlled variables with their proxies CPI, TBR,and FX respectively. Meanwhile, foreign direct investment, remittances, inflation, interest rate, and exchange rates data of South Asian Economies were extracted from Thomson Reuters whereas Economic Growth was used as the dependent variable and GDP Growth rate was used as its proxy, and the data of Economic Growth of South Asian Economies was alsoextracted from theThomson Reuters.

Econometric Model

Since we used panel data of South Asian Economies i.e. Pakistan, India, Srilanka, and China, therefore, we used Panel Cointegration, and by using E-views software we performedthe analyses.Further, the econometric model of our research study is given as under:

$$\text{GDPG} = \beta 0 + \beta 1\text{FDI} + \beta 2\text{Rem} + \beta 3\text{Int rate} + \beta 4\text{Inf} + \beta 5\text{Exc rate} + \epsilon$$

Where,
FDI= Foreign Direct Investment
Rem= Remittances
Int Rate= Interest Rate
Inf= Inflation
Exc Rate=Exchange Rate
GDPG= Gross Domestic Product Growth
β0,β1,β2,β3,β4,and β5 are the parameters
□=Stochastic Error Term

The above-mentioned Multiple Regression Model was run on E-views for finding out the impact of foreign direct investment, remittances on GDP Growth of South Asian Economies. Further, in this multiple regression model,Foreign direct investment and Remittances were used as independent variables and Interest rate, Inflation, Exchange rate were used as controlled variables whereas, dependent variable was GDP Growth Rate

Hypothesis Development

H01: There is no significant relationship between foreign direct investment in the GDP growth rate of South Asian Economies.
H02:There is no significant relationship betweenforeign remittancesonthe South Asian Economy’sgrowth ofGDP.

Tools used for Data Analysis

The numerical data were extracted from Thomson Reuters and which was a panel in nature, and we used E-views software and performedthe different analyses. E-views coherently evaluated panel data, and a In order to evaluate the relationship between foreign direct investments and GDP growth rate remittances, a multiple regressive model was used. Further, we also evaluated how these two independent variablescan have an impact on the GDP Growth Rate of South Asian Economies. Besides, we usedthe econometric method to build and to prove the relationship andto determine the impact of independent variables onthe dependent variable. For quantifying the relationship and determining theimpact of independent variables ona dependent variable, we used E-views software for examining the extracted data.

EMPIRICAL DATA ANALYSIS

Test of Stationary of Data

Data has been extracted from Thomson Reuters and results reveal that data is stationary except remittances which have been made stationary by taking its first difference. Meanwhile, this test was performed due to the variation of variables. We have extracted yearly data of four South Asian countries namely: Pakistan, India, Srilanka, and China. Further, the Unit Root Test was checked by performing the Augmented Dicky Fuller (ADF), and this test lets us identify whether the data is stationary or not. While running this test, if it creates a problem and gives unsatisfactory result then it is established that data is non-stationary. Meanwhile, the elementary aim of performing this test was to escape the inappropriate results and reaching out to the accurate result according to the requirement. If we run a regression on non-stationary data then it will give inappropriate results, therefore, before performing regression analysis, the data ought to be checked and it must be stationary. The null hypothesis is the base beforeperforming unit root test that there is no unit root in the data of variables under consideration.

H0= There is no unit root in the data series (data is stationary)

Variable	At LEVEL	The critical value of t at 5%	Decision	1st Difference	Decision of Hypothesis
FDI	6.69	-2.88	Accepted	20.14	Accepted
REM	2.69	-2.88	Rejected	11.87	Accepted
GDPGR	18.3	-2.88	Accepted	26.26	Accepted

Table 1: Unit root test ADF

The unit root test is a feature of some stochastic processes that concludes the problems in statistical inference involving time-series data. The above table clearly defines that the data is stationary except remittances data which was later on made stationary after taking its 1st difference. Further, as the table depicts that there is no unit root in the foreign direct investment and GDP Growth Rate data hence their null hypothesis is accepted. In addition, remittances value at level was 2.69 which was less than the required value i.e. -2.88, therefore, its null hypothesis was rejected at the level, and after taking its first difference, its value came above the required value then the null hypothesis was accepted.

Models Analysis-1 Hausman Test

The basic aim of the Hausman Test was to detect the regressors within the model, because if the model is having any endogenous regressors then it would affect the results in the models. Endogenous variables have some specific value that would be under consideration with the other variables in the system. These regressors will cause ordinary least square estimators to fail. One of the predictions of OLS is that there is no relation between an error term and a predictor variable. The alternative of this test can be implemented as instrumental variables estimators in this case. The first step is not to decide on the best effort basis regression method but to figure out the predictor variables are endogenous. This is the reasonthe Hausman test is really important first.

Hausman test was utilized for choosing between models in panel data. Hausman test analyzes the existence of endogeneity in the panel data. The utilization of panel model information gives extensive focal points over just cross-sectional or time-series data; however, the detail of the model is to be utilized that comprises of incredible significance for getting predictable results. One of the most common tests that areused to portray an appropriate model is called a Hausman test, which indicates whether a random effects panel model or fixed model will be applicable or not. (Sune Karlsson, 2014)

In any case, relatively few publications have been published well and are appropriate in this regard. Numerous research papers like Wong (1996), Herwartz and Neumann (2007), Bole and Rebec (2013) center around bootstrapping Hausman test keeping in mind the end goal to enhance its limited example properties and to locate the genuine dissemination of the test. However, there is less research effort done regarding the matter of Hausman test's properties in particular. Jeong and Yoon (2007) investigated the impact of instrumental factors on the execution of the Hausman test through the construction of information. (Sune Karlsson, 2014).

Dependent Variable: GDP_GRWOTH_RATE
Method: Panel EGLS (Cross-section random effects)
Sample (adjusted): 2002 2019
Periods included: 16
Cross-sections included: 4
Total panel (balanced) observations: 64

Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.090650	0.637369	11.12487	0.0000
DREM	-3.40E-05	1.70E-05	-2.003233	0.0496
FDI	9.24E-12	6.14E-12	2.503938	0.0378

Table 2: Results of the Hausman Test

Hausman Test analyzes the random effect of the variables and based on t-statistics analysis the FDI is having a positive relationship with the GDP Growth Rate with thet-statisticsvalue of 2.5 whereas remittances are having a negative relationship with GDP Growth Rates withthe t-statistics value of -2.0. Further, this shows that change in FDI causesa positive effect on GDP Growth Rate and change in Remittancescausinga negative impact on GDP Growth Rate and both show the random effect and Hausman Test explain the significant effect.

There is a factthat has been quoted in different studies that the population which was surveyed through questionnaires showedthe authenticity of the study but the result and relationship between the variables which were observed correctlydepended on the sample size and experiments. Relevant research needs specific and audience-centric sample size through which it examines the accurate and desired result but what test will be run on those sample size is also a very essential tool to identify, and that ultimately correct the authenticity of the findings and gives us a more meaningful purpose of the study.

The null hypothesis defines the default position and provides a general statement that shows there is no relationship between two variables. The core motive is to reject the null hypothesis and thus concluding the fact that there is no platform to believe that there is a relationship exist between the two phenomena or not. The null hypothesis is termed as the central task in modern practice and has been treated as a measured effect in the research. The field of statistics defines the specific eligibility criteria for rejecting the null hypothesis.

Models Analysis-2 Fixed Effect Model

A fixed model illustrates a factual framework in which the results of the network are fixed. This is different than hybrid models and models of random effects in which one or a subset of the parameter estimates are called irregular variables.

The fixed-effect model referred to as a regression model in which group or associated concern is on a fixed basis whereas the random effect model is that in which the groupdefined as a random sample from the entire population. The result of the research depicts that the foreign direct investment (FDI) and remittances are significantly determining the relation with the GDP Growth Rate ofSouth Asian countries. FDI and remittancesare the important tools in the model because these are providing the interpretation that whether these are affecting the GDP Growth Rate of theSouth Asian countries i.e. Pakistan, India, Srilanka, and China.

Variable	Co-efficient (B)	Std.Error	t-statistics	Probability
C	7.647898	0.419165	18.24554	0.0000
FDI	3.65	1.98	2.844367	0.0402
DREM	5.95	8.21	-2.072444	0.0342

Table 3: Fixed Effect Model

The Fixed Effect Model was applied the way we apply Regression. Meanwhile, we appliedthe Fixed Effect Model to evaluate the impact of FDI and Remittances on GDP Growth Rate of South Asian Economies. Moreover, we saw the Fixed Effect Modelbased on t-statistics value and when its value comes greater than 2 then it means it is significant.Here, FDI shows a positive relationship whereas Remittances reveal a negative relationship and both are significant i.e. Fixed Effect Model is also significant and there is an impact of both of these variables.

Statistics	Values
R Square	0.54
Adjusted R2	0.50
F-statistic	13.9
Prob (F-Statistic)	0.000
Durbin Watson stat	1.19

Table 4: Model Summary

This table shows the model summary. Here, the value ofR Square is 0.54 which depicts that all entered variables together explained 54% variation in the dependent variable. Therefore, foreign direct investment (FDI), remittances explained variation in the GDP Growth Rate of 54%, and there are certain other macroeconomic factors i.e. Interest rate, Inflation and Exchange rate which can influencethe remaining GDP Growth Rate of South Asian Economies. Higher the value of R square means better the model fit. Moreover, the value of F-statistics is 13.9 at 0.000 significancelevel which suggests that our overall model is significant.

Models Analysis-3 Co-integration Analysis

Pedroni Residual Co-integration Test

Series: DREM FDI GDP_GRWOTH_RATE					
Sample: 2001 2019					
Included observations: 68					
Cross-sections included: 4					
Null Hypothesis: No co-integration					
Trend assumption: No deterministic trend					
User-specified lag length: 1					
				Weighted	
		Statistic	Prob.	Statistic	Prob.
Panel v-Statistic		-0.562220	0.7130	-1.152231	0.8754
Panel rho-Statistic		0.562425	0.7131	1.378243	0.9159
Panel PP-Statistic		-0.019842	0.4921	1.274958	0.8988
Panel ADF-Statistic		1.061396	0.8557	1.586383	0.9437
Alternative hypothesis: individual AR coefs. (between-dimension)					

Table 5: Co-integration

Co-integration explains the long-term relationship between independent variables and the dependent variable. Meanwhile, the researcher evaluated the relationship of Foreign Direct Investment and Remittances on GDP Growth Rate of South Asian Economies.In Panel Co-integration we used various criterion i.e. rho-statistics, Panel PP-test and ADF-Statistics. We analyzed it based on rho-statistics in which probability should be less than 0.05. Further, the probability value used to be at 95% Confidence Interval and 5% margin of error and here probability value is not less than 0.05 in any case which suggests that there is no Co-integration based on rho-statistics and it suggests that FDI and Remittances are insignificant to evaluate long-term relationship i.e. forecasting cannot be done for long-term forthe economic growth of South Asian Economies because of FDI and Remittances. Further, the results reveal that at 1st Difference and 2nd Difference hypothesis are rejected.

Models Analysis-4 VECM (Vector Error Correction Model)

Error Correction:	D(FDI)	D(DREM)

CointEq1	-0.006704	-2.28E-10
	(0.00491)	(9.0E-10)
	[-1.36412]	[-0.25450]
D(FDI(-1))	-0.051263	1.07E-07
	(0.14359)	(2.6E-08)
	[-0.35702]	[4.07249]
D(FDI(-2))	-0.006735	5.62E-08
	(0.18288)	(3.3E-08)
	[-0.03683]	[1.68534]
D(DREM(-1))	353664.4	0.118134
	(827070.)	(0.15088)
	[0.42761]	[0.78298]
D(DREM(-2))	1286165.	0.068157
	(780715.)	(0.14242)
	[1.64742]	[0.47855]
C	-1.53E+09	1234.529
	(4.4E+09)	(798.501)
	[-0.34951]	[1.54606]

Table 5: Vector Error Correction Model

VECM Test (Model) is applied to evaluate the short-term relationship (short-run) that whether relationship and impact are existing or not. As Cointegration explains no significant relationship, the VECM shows Foreign Direct Investment (FDI) is with values of -0.05 and -0.006 at 1st and 2nd Difference are significant and FDI is significant in short-run, while Remittances are insignificant as the value of probability is greater than 0.05 which suggests that there is no short-run relationship of Remittances with GDP Growth Rate.

Further, VECM rejects the hypothesis for Remittances and it suggests Remittances remain insignificant to impact GDP Growth Rate.

CONCLUSION

Findings and Discussion

The purpose of this research was to determine the impact of foreign direct investment, remittances, interest rate, inflation and of exchange rate on GDP Growth rate of South Asian Economies i.e. Pakistan, India, Srilanka and of China. Meanwhile, foreign direct investment, remittances were our main interested independent variables whereas interest rate, inflation and exchange rate were used as controlled variables, and GDP Growth rate was used as independent variables. Further, we collected the yearly data of the aforementioned variables from 2001 to 2019. Firstly, Unit Root was applied for checking the stationarity of the data and the results of this test revealed that the data was stationary except the data of Remittances which was made stationary by taking its 1st Difference. Secondly, we performed Descriptive Statistics and in it, we performed mean, mode, median, maximum, minimum, standard deviation, skewness,and kurtosis. Thirdly, results of Fixed Effect Model showed that 54% variation in the dependent variable is caused by Foreign Direct Investment and Remittances whereas there are other macroeconomic variables i.e. Inflation, Interest Rate and Exchange Rate which are controlled variables in our research can bring variation in the GDP Growth Rate of South Asian Economies. Fourthly, the results of the Co-integration table showthat there is no long-term relationship between independent variables andthe dependent variable, and Foreign Direct Investment and Remittances cannot explain the long-term relationship with GDP Growth Rates and the results reveal that at 1st Difference and 2nd Difference hypothesis are rejected.Fifthly, VECM Test (Model) was applied for evaluating the short-term relationship (short-run) that if relationship and impact existed or not and results of tables depicted that Foreign Direct Investment (FDI) is significant with values at 1st Difference and 2nd Difference are -0.05 and -0.006 respectively and Remittances are insignificant as their probability value is greater than 0.05, therefore, there is no short-term relationship of Remittances with GDP Growth Rate and the variable is insignificant.

Research Implications

This research will help South Asian Economies i.e. Pakistan, India, Srilanka,and China to get appropriate guidance about Foreign Direct Investment, Remittances impact their GDP Growth Rate. Further, it can help countries in giving results of Foreign Direct Investment and Remittances and later on these countries can analyze these results forbringing improvement in the aforementioned variables for their GDP Growth Rate. In addition, this research can assist academic students and those researchers who are keenlyinterested in studying macroeconomic factors tobetter understand the impact that these macroeconomic factors i.e. FDI, Remittances can bring on the GDP Growth Rate of any country.

Areas of Further Research

Besides FDI, Remittances, Inflation, Interest Rate and Exchange Rate, there are several other economic factors that we took in our analysis, and other economic determinants that can be conducted to see if these factors can add adjustments to a state's GDP growth rate. In addition, we conducted a South Asian Economies research report and it could be conducted on developing countries to see how much effect these macroeconomic factors would have on these countries' GDP growth rate.

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