# WHERE IN SOUTH ASIA  THE EFFICIENCY SEEKING FDI IS GOING?
# A CROSS COUNTRY ANALYSIS

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## CERTIFICATE

This is to certify that this thesis entitled: **"Where in South Asia the Efficiency Seeking FDI is Going? A Cross Country Analysis".** submitted by **Mr. Muhammad Ali Zeb** is accepted in its present form by the School of Economics, Pakistan Institute of Development Economics (PIDE), Islamabad as satisfying the requirements for partial fulfillment of the degree in Master of Philosophy in Economics and Finance.

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## Author's Declaration

I Muhammad Alizeb hereby state that my MPhil thesis titled "Where in South Asia the Efficiency Seeking FDI is Going? is my work and has not been submitted previously by me taking any degree from the Pakistan Institute of Development Economics or anywhere else in the country.

At any time if my statement is found to be incorrect even after the completion of my degree the university has a right to withdraw my MPhil degree.

Muhammad Alizeb

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# ABSTRACT

The target of this study is to analyze where in South Asia efficiency-seeking FDI is going, or the FDI arriving at these countries is looking for benefit from the highly productive labor of South Asian countries. This type of FDI will be a long-run FDI that brings benefits to the host country in terms of (technological transfer, skill development, and growth,)

The exploration shows that labor market factors or centered factors of our review, like output labor cost ratio, which is extracted from the balance of output and ratio of labor, employment in manufacturing, and output of manufacturing moderating, affect the inflows of FDI into a nation. Besides, we utilize controlled factors like GDP Growth rate, Trade Openness, and exchange rate of a country to evaluate the impact of monetary factors on characterizing inflows into a country. A Panel Data Analysis is utilized to examine the effects of Focused and controlled factors on a reliant variable (FDI). Measurements used information from 2000 - 2020. Because of these discoveries, a nation's output-labor cost ratio is critical for characterizing foreign investment in a country. There is ample proof that OLC, GDP Growth, Exchange rate, and Trade openness affects inflows of FDI in South Asian countries. There are two ways our examination adds to the literature: First we demonstrate high productivity with low-cost labor (efficient labor) is critical for looking for FDI in a nation; second, we utilize the labor market variables as a mediator component.

Keywords: Manufacturing, labor, productivity, FDI

# CHAPTER 1

# INTRODUCTION

According to the internationally accepted UN definition, "FDI is made to establish a lasting interest in or effective management control over an enterprise in another country. According to John Smith Based on the investor's intention, there are four basic types of FDI. "efficiency-seeking" FDI is the classic manifestation of neoliberalism; efficiency entails reducing costs, particularly the cost of labor. The focus on efficiency FDI is driven by the desire to give businesses new competitive advantages and it moves to regions with cheaper manufacturing costs. Recent research in Pakistan shows that Pakistan is failed to attract efficiency-seeking FDI so this study tries to check whether the FDI Coming to South Asian countries (Pakistan, India, Bangladesh, Sri Lanka) are efficiency-seeking, if they are efficiently seeking then Pakistan is lacking behind in some policies of manufacturing Sector. To integrate their economies with the rest of the world, the five South Asian nations—India, Pakistan, Bangladesh, Sri Lanka, and Nepal—have been adhering to a uniform set of economic reform policy initiatives that emphasize the market economy. Therefore, all countries except Pakistan have seen better economic development and an improvement in the majority of macroeconomic indices in both the domestic and international economies. The South Asian region has experienced some of the world's fastest growth in recent years. Overall, during the 1990s and more so in recent years, South Asian countries' FDI environments underwent a fundamental shift. With their FDI approach being more liberalized and ongoing improvements to the FDI policy framework. (Sahoo,Pravakar ,2006).

In addition to being export-focused, efficiency-seeking FDI is essential for export diversification. Efficiency-seeking FDI, though often more challenging to acquire, can become more than just a source of funding by generating new jobs that are more varied, productive, and valuable. It may also result in the transfer of knowledge and technology, advancing R&D and the economy in the process. (Cecile

Fruman ,2016) So for an LDC nation like Pakistan efficiency-seeking FDI is more beneficial to survive in the world. So an attempt is made to study the type of FDI inflows in South Asian nations. The OLI (Ownership, Location, and Internationalization) paradigm is the widely utilized Foreign Direct Investment (FDI) hypothesis. According to this hypothesis, there are four types of FDI, market-seeking FDI, resource-seeking FDI, efficiency-seeking FDI, and strategic asset-seeking FDI. Efficiency-seeking FDI is the desire to provide new sources of profitability for businesses, which goes where manufacturing costs are cheaper (Dunning 1979). According to the Best Countries survey (2019), Pakistan is ranked 8th out of 80 countries in the Countries for Cheap Manufacturing list. For efficiency, this thesis incorporates the variable OLC (output to labor cost ratio) which is extracted from the research conducted in the United States by Kostas Axarloglou in 2007 to check the efficiency of the manufacturing sector of the host country in terms of foreign inflows.

Foreign direct investment inflows should intentionally be focused on the manufacturing sector to promote significant output. (Afolabi et al. 2019). So, an attempt is made to study the type of FDI inflow in South Asian countries.

## FDI inflows to top four South Asian countries
### (in US$ billion)



- India  - Bangladesh  - Pakistan  - Sri Lanka
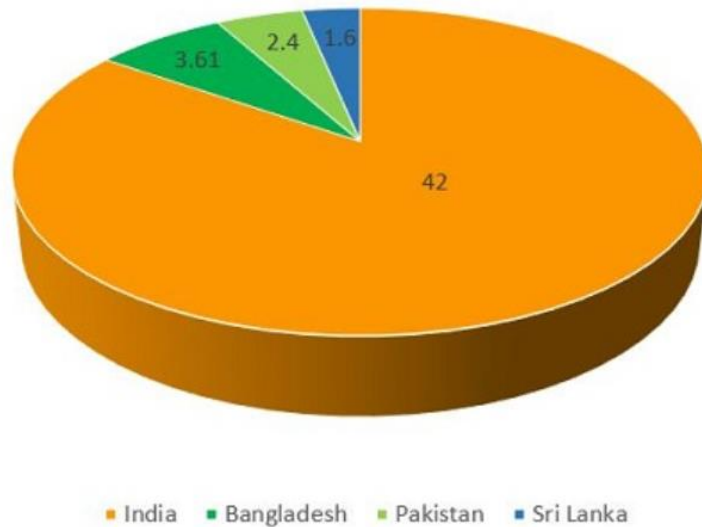
Posted on June 29, 2019, in a news article of textile today where they claim that Bangladesh is the second largest host of FDI inflows. According to this report, Bangladesh has reached the country's highest-ever level in its history. While China became the leading investor with $1.03 billion in Bangladesh. FDI inflows in South Asia grew by 4% in 2018 to $54 billion. FDI to India, which accounted for 70 to 80% of inflows in the sub-region, increased by 6 % to $42 billion. Inflows in Sri Lanka also reached a record level of $1.6 billion, pushed by robust Asian investments, including those from China, India, and Singapore. Pakistan, the fourth largest recipient of FDI in the sub-region, registered a 27% decrease in investment to $2.4 billion. Nepal's FDI received $1.6 billion and the Maldives received $0.55 billion.

Figure: source https://www.textiletoday.com

### 1.1. Problem Statement

A vital tool for Pakistan's sustained economic and technical development is a foreign direct investment (FDI). FDI is essential for the country to achieve its socioeconomic objectives. Pakistan is one of the nations with a physical capital shortage, thus foreign investments could help improve the standard of living here. For the people of Pakistan, FDI opens up a variety of employment opportunities, aids in skill development through the transfer of technological and managerial strategy, and aids in the integration of the national economy with the global economy. Efficiency-seeking foreign direct investors are driven by the need to rationalize their manufacturing, distribution, and marketing operations through shared governance and the creation of synergies across geographically dispersed companies. These two factors—the benefits of regional disparities in the cost of production factors and the economies of both size and scope—are the major drivers of that kind of rationalization (Dunning 1993).

By keeping in view the byproducts of FDI, it seems to be an important indicator for a suffering economy like Pakistan. So This study tries to analyze whether the FDI inflows in South Asian nations are addressed by efficiency measures like wages in the manufacturing sector, Employment level, and wages then we can say that this type of FDI is efficiency-seeking. And it is already concluded by (Jalil, and Amin) that Pakistan is failed to attract efficiency-seeking FDI, So this study also comes up with some rectifications that are needed to compete for FDI in the South Asian region.

### 1.2. Research Questions

The foremost question of the thesis is whether the FDI coming to South Asian countries is efficiency-seeking.

### 1.3. The Objective of the Study

- To explore the issues regarding Efficiency seeking FDI attraction through the labor market.

- How can Pakistan compete with the neighboring countries and incorporate labor market components in the FDI policy

## 1.4. Significance of the Study

The study will identify the labor market indicators to attract FDI in South Asia. Examinations cannot develop the vital determinants of FDI without incorporating the labor market variables. As mentioned earlier about the maximum advantages of FDI, efficiency-seeking FDI is necessary for the host country. The analysis will use the manufacturing sector's cost-effective labor to show the nature of FDI as the manufacturing industry attracts more FDI (Felipe and Irving, 2018).

## 1.5. Hypothesis

- **H1:** GDP growth rate Positively and significantly affects FDI inflow in a country.
- **H2:** The exchange rate significantly affects the FDI inflow in a country**.**
- **H3**: Efficiency indicators such as wages in the manufacturing sector, output per worker, and labor force supply attracts the FDI.
- **H4:** Skilled labor force Positively and significantly affects FDI inflow in a country.

## 1.6. Organization of the Study

The study is comprised of six chapters. The first chapter introduces foreign investment and how FDI is significant for a country. The second chapter is based on a literature review. The third and fourth chapter of this study comprises Data and variables description and the methodology required to find accurate research results, respectively. The fifth chapter of this study includes Empirical Results, and the last chapter,six, is based on Conclusions, Policy Recommendations, and Future Research.

# CHAPTER 2

# LITERATURE REVIEW

The phenomenon of foreign direct investment (FDI) has grown over the past few decades with greater globalization and has become crucial for international trade. The Hecksher-Ohlin model states that when countries have varied levels of resource endowments, this results in differences in factor prices between the nations. Therefore, until the equalization of factor prices, a relatively capital-abundant country would either export the capital-intensive good to the host country or relocate its capital to other countries where there is a high return on capital and low return on labor.

Panel data regression analysis was used by Campos and Kinoshita (2003) to examine 25 transition economies between 1990 and 1998. They discovered that the size of the market, the cost of labor, and the accessibility of an abundance of natural resources have an impact on FDI for the group of countries. Trade openness and fewer restrictions on FDI inflows were additional important variables. Between 1990 and 1999, Garibaldi (2001) performed a dynamic panel regression on 26 transition economies. He examined a broad range of macroeconomic factors. They included bureaucracy, market size, fiscal deficit, inflation, exchange rate regime, country risk, economic reforms, trade openness, and the availability of natural resources. All of the variables were significant and showed the expected signals. Root and Ahmed (1978) tested FDI inflows in 41 developing nations, they discovered that factors affecting FDI included per capita GDP, export-import ratio, transport and communication ratio, and the degree of urbanization. An empirical study on US FDI in the UK manufacturing sector was conducted in 1996 by Milner and Pentecost. They used the export-sales ratio as a measure of comparative advantage, which can be substituted for the labor or skill intensity of a country, in their opinion. They substituted the UK's industrial production for market size. They used the export-import ratio to gauge

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industry competitiveness. A cross-sectional regression was conducted using 48 industrial categories. They discovered that market size, competitiveness, and competitive advantage were important explanatory variables.


## 2.1 .The Perspective of FDI in Pakistan:

Since Welcoming the position, the Tehreek-e-Insaaf (PTI) government has fought to spice up Foreign Direct Investment (FDI) in Pakistan, particularly within the touristry and business enterprise.  With its overseas investment policy, the PTI aims to boost FDI from USD 2.8 billion in (FY) 2019-20 to USD 7.4 billion in (FY) 2022-23.  Notwithstanding the government's steps to extend FDI, the State Bank of Pakistan recently revealed that FDI in Pakistan Follows a downward trend within the initial eight months of 2020-21, from USD 1.85 billion to USD 1.3 billion.  Because of the China-Pakistan Economic Pact (CPEC) launch in 2013, the Share of Pakistan's (FDI) expanded impressively, surpassing the US and the UK.  Meanwhile, in the primary portion of FY 2021, the FDI inflow from China declined to USD 358.9 million, down from USD 395.8 million the earlier year.  Because of its presence on the FATF Grey list and its severe duty and loan cost regulation, Pakistan's international investment policy has weakened.  Without adjusting the Country's monetary arrangements, it is difficult to stop further decreases in FDI inflows, and Pakistan would face longer-lasting economic challenges.  Investors are unhappy with Pakistan because of the poor taxation system and heavy debt burden.  That's why investors with the motive of inflows are not easily convinced of the country.

Political violence has also impacted foreign investor confidence.  Pakistan's foreign direct investment (FDI) has remained static despite security improvements.  The country's anti-terrorist funding and anti-money laundering regulations have started declining low international standards.

### 2.1.1. Impact of Efficiency Measures:

(2011) Wadhwa and Reddy evaluate the effects of market and resource-seeking, as well as efficiency-seeking, factors on FDI inflows to host nations. The study is conducted on emerging nations Bangladesh, China, India, Indonesia, Iran, Malaysia, Pakistan, Thailand, Turkey, and Vietnam. Different variables under these three categories are examined. The GDP and exports demonstrate a substantial and favorable link with FDI among market-seeking factors. Imports, internet users, and cell subscribers are demonstrating a significant association with resource-seeking characteristics. Imports and FDI have a positive association, which means developing nations import inputs for production carried out in those nations by investing nations. Internet users and FDI are found to have a negative association, in contrast to the expected positive relationship between mobile subscribers and FDI. Because developing nations only began utilizing the internet significantly around 2000, there may be a negative correlation between internet users and FDI. Even though the relationship is bad, it should be viewed as a chance for the future since domestic investments must be made in areas with superior technology. The findings show that there are no country-specific distinctions in the factors associated with resource seeking, and we can thus conclude that FDI inflows in all developing nations are primarily driven by this factor.

Buckley and Casson (1976) established the idea of internalization, they made a significant contribution to the theory of FDI. They contend that the market for intermediate commodities is incredibly flawed due to knowledge asymmetry, expenses associated with contract enforcement, and bargaining power. The choice of a company to internalize is influenced by factors unique to the industry, such as the type of product, the market structure, economies of scale, factors unique to a region, such as differences

resulting from distance and culture, factors unique to countries, such as political and financial factors, and factors unique to the company, such as management skills. They claimed that MNEs with high levels of R&D activity also had high levels of internalization. Caves (1971) placed a strong emphasis on product differentiation as a monopolistic advantage. He asserts that MNEs engaged in product diversification and were prodded to engage in horizontal FDI in an imperfect market. This is because when knowledge was used to differentiate items, FDI was favored over export or licensing.

### 2.1.3. The framework of Direct foreign investment:

Several Think-tank that looks at the Consequences of FDI inflow on the home economy agree that FDI brings new and more sophisticated technology into the host economy, expands the production capacities of firms, and has some effects on employment, wages, and labor productivity. Furthermore, a significant section of the literature has focused on classifying employees according to skill levels and examining the impact of FDI information on the pay of those various groups of workers. Studies examining the effects of FDI on low- and high-skilled local wages include Girma et al. (2002), Owen and Yu (2008), Pandya (2010), Hanousek et al. (2011), Onaran (2012), Lee and Wie (2015), and Bogliaccini and Egan (2017). Another volume of knowledge focuses solely on the impact of FDI on low- and high-skilled employment in host economies. This may be seen in studies like Bailey and Drifeld (2007), Blanton and Blanton (2012), Raouf and Hafd (2014), and Yunus et al. (2015). Finally, some other literature is solely concerned with determining if FDI data has a generally good or negative impact on local employment. Radosevic et al. (2003), Waldkirch et al. (2009), Villa (2010), Inekwe (2013), and Bandick and Karpaty (2011) are only a few instances of studies that found that FDI has a beneficial effect on employment. On the other hand, Girma (2005) and Jenkins (2006) found that FDI information has a detrimental impact on local work.

## 2.1.4. Role of the labor market:

(Ismail and Yusuf 2003) The study looks at whether labor market competitiveness influences FDI inflows into the economies of Malaysia, Thailand, and the Philippines. The research is based on a regression model that uses time series analysis on FDI, wages, the labor force, skills, R&D spending, the interest rate, and other key economic variables. In terms of their significance in inflows of FDI, the study shows that labor market determinants varied between countries. Because of the findings, different nations may demand additional policy suggestions to encourage FDI inflows into their country regarding labor market competitiveness.

(Jalil1 & Amin 2020) Analyzes how Efficiency measures can explain FDI inflows to Pakistan like as salaries in the manufacturing sector, output per worker, supply of the working population, and human capital. The analysis results, which used data from the manufacturing industry from 1981 to 2017, reveal that labor market characteristics play no role in explaining FDI inflows to Pakistan. In this context, all variables were statistically insignificant, including the output-to-labor cost (OLC) ratio, the degree of human capital, and labor supply and efficiency.

The low level of human capital and the labor force's limited supply and inefficiency substantially influence FDI inflow. However, when political economy considerations are included, labor market forces are ineffectual in explaining FDI inflows. When all other conditions are equal, dictatorial regimes attract 52 percent to 63 percent more FDI than democratic governments. As a result, we find that Pakistan has primarily collected non-efficiency-seeking FDI and has been unable to attract efficiency-seeking FDI. Future research on the topic should look at the breadth of efficiency-seeking

FDI inflows into other sectors of the economy, ii) identify policy drivers and factors that can help attract efficiency-seeking FDI, and iii) suggest policies that can help explore this potential.

## 2.1.5. Other factors responsible for foreign investment:

(Shah 2017) Attempts were embraced to experimentally survey the potential impact of political establishments on approaching direct interests in five rising countries in South Asia, specifically Pakistan, Nepal, India, Bangladesh, and Sri Lanka (FDIs). Starting investing involves carrying out long-term investment inflows to the host economy. As a result, the presence of existing democratic frameworks is one of the most crucial foreign location requirements for businesses. Essential institutional indicators for foreign direct investors in SAARC countries were discovered using a random effect panel estimation technique to analyze annual aggregate data from 1970 to 2009. Local democracy, the shortfall of military and severe impacts on governmental issues, the original government position bearers, and effective governance were discovered using a random effect panel estimation technique to analyze annual aggregate data from 1970 to 2009.

When collective political and institutional efficiency measures are applied, the results reveal that institutional reforms have no significant positive impact on incoming FDIs. When all these variables are arranged into a highly focused collection of determinants, their adequacy improves fundamentally, resulting in a considerable increase in FDI inflows. According to these findings, the results are relevant to moderate institutional power, yet they are delicate to utilizing pass composite estimations of establishments.

According to Dunning's eclectic paradigm, FDI is classified into four perspectives: Inflows come up

with the consideration of market, Inflows come up with the care of resources, Inflows come up with the regard of efficiency, Inflows come up with the reference of strategic assets (Kavita 2011). Inflows follow the market, such as the size of the market, market expansion, global market structure, and so on, and are aimed at entering host countries' domestic markets. New competitive sources, economies of scope and concentration, and low manufacturing costs are some of the efficiency-pursuing aspects of FDI. Researchers looked at the effects of host nation efficiency and resource-seeking factors on FDI inflows using a sample of 10 Asian countries from 1991 to 2008. According to panel regression data, these four perspectives of FDI driving components have a meaningful positive effect on inflows in a country.

For Bangladesh, India, and Sri Lanka, economic growth (EG) is strongly linked to trade openness, and trade openness expansion is critical for development in these nations (Humera 2020). The findings reveal that all countries (except Bangladesh) discovered long-run co-integration between FDI, GDP, and trade openness, even though FDI is a dependent variable. These findings suggested that FDI and trade liberalization contribute to economic growth in the nations studied. Theoretical literature

The (IMF) 1993 elaborated (on FDI) as "a foreign investment made by a person (or group of one economy in the business operations of a person (or group of another economy to generate a long-term association." As per the World Trade Organization, (FDI) happens when a person or enterprise from one country (the nation of origin) buys a resource in another (the host country) fully intent on dealing with that resource. The administrative aspect recognizes FDI from portfolio interest in shares, securities, and other investment vehicles.

### 2.1.2. The Eclectic Paradigm:

Yet the most well-known FDI argument is this one. On his way to winning the Nobel Prize, Dunning (1980) combined the theories outlined above – international trade, imperfect markets (monopoly), and internalization theories – and added the location theory, briefly discussed earlier. To participate in foreign direct investment, a corporation must meet three conditions (Dunning, 2001).

The corporation should have a net ownership advantage compared to other companies in the same market. These ownership advantages are firm-specific and exclusive to that firm and include both tangible and intangible assets such as trademarks, patents, information, and technology, all of which would result in lower production costs for the firm, allowing it to participate with businesses in other countries in their market imperfections theories on firm-specific and monopolistic advantages, Hymer (1976) and Kindleberger (1969) both emphasized these benefits. Second, rather than selling or leasing these ownership advantages to multinational businesses through licensing or management agreements, it must be more profitable for the company with these ownership advantages to use them for its purposes (internalization) (externalization). Bodden speaks to this as the internalization condition (1985).

Finally, assuming both of the conditions mentioned above are fulfilled, it must be financially beneficial for the firm to exploit these benefits through manufacturing outside its home nation, following extra input factors such as natural environment and human capital; otherwise, exports would serve international markets, while domestic production would serve domestic industries investing enterprises must evaluate location-specific attributes, according to the economic geography and institutional FDI suitability theories discussed under the macroeconomic FDI theories. The greater the motivation for a country's firms to internalize ownership advantages and the more profitable it is to use them outside their home country, the greater the chance of FDI and international production, according to Boddewyn (1985). Because the three variables are so

linked, they must all coincide; otherwise, FDI will not occur.  Because each firm's environment and application of the Ownership, Location, and Internalization (OLI) paradigm differs, the theory cannot be considered in the vacuum from other theories that stress the importance of host country attributes, even though Dunning personally put the Eclectic Theory to the test, it has some flaws that have been pointed out by criticism throughout time.  Boddewyn (1985) praised Dunning's theory for justifying MNCs' first FDI decisions but regretted the lack of explanation for later FDI expansions, which may only entail changes to some OLI components but not all.  Shin (1998) further questions the theory's usefulness to LDCs, which lack dominant firm-specific benefits such as people with higher education content.

 Another criticism of the eclectic theory is that it incorporates so many variables that it is difficult to apply because it does not account for FDI at the firm, industry, or country level.  This would be because Dunning attempts to combine several alternative theories of market failures, each of which is complex enough (Nayak & Choudhury, 2014).

 Dunning (1981) proposed the Investment Development Cycle or Path (IDP) hypothesis to address these shortcomings, which proposes a link between a country's economic development and investment holdings.  The four stages of the IDP were introduction, growth, maturity, and decline, which followed a pattern similar to the product life cycle theory (introduction, growth, maturity, and decline): There is no FDI; government engagement creates location-specific benefits, attracting FDI inflows; domestic companies profit from ownership advantages as wages rise, attracting FDI outflows; countries eventually become net outward investors in the fourth stage.

The basic idea is that the complex interaction between a country's GDP and economic policies can alter the ownership advantages of both domestic and international businesses (Nayak & Choudhury, 2014). Despite these challenges, Dunning's eclectic theory of foreign direct investment remains the most frequently accepted FDI theory. As another criticism of Dunning's OLI paradigm, Forssbaeck, and Oxelheim (2008) questioned the small importance of financial components in the FDI decision.

Dunning (1993) acknowledged the existence of a "financial asset advantage," or a firm's knowledge of and access to foreign sources of finance, but argued that it is a by-product of MNCs' size, efficiency, and knowledge rather than a stand-alone gain. As per Forssbaeck and Oxelheim (2008), a sound financial approach allows a company to save expenses while boosting capital available; as a result, by lowering the discount factor of any investment, the likelihood of that company engaging in FDI increases.

They proposed that a company will engage in FDI if, among other things, it has access to competitively priced equity, cross-lists its shares on a larger, more liquid stock market, has excellent investment credit ratings, and can negotiate reduced taxation and get subsidies To test their assumptions, Forssbaeck and Oxelheim (2008) employed a sample of 1379 European non-financial firms' global alliances. They ran a series of tests to see how incorporating finance-specific factors affects Dunning's OLI model. They found that the financial variables had significant explanatory power, meaning that financial considerations are just as important in explaining FDI using the OLI framework.

## 2.2. Empirical Literature

After the 1990s, most South Asian countries began liberalization and opened their economies to global financial flows. As a result, FDI has expanded considerably in this region in recent years, while the impact of FDI on economic growth is unknown. As a result, academics and policymakers have begun to focus on research on the effects of foreign direct investment on these economies. Given the ambiguity surrounding the role of FDI, the current study contributes to a growing body of research on the impact of FDI and other factors on South Asian economies. There is no consensus on the influence of foreign direct investment on economic growth.

There are two competing opinions on the effect of FDI on growth. The first is the modernization theory, which asserts that FDI has a positive impact by providing funding for investment and transferring knowledge. The second point of view is the dependency theory, which argues that FDI harms economic growth. It is based on the premise that FDI creates monopolies, which prevents the full implementation of locally available resources and hence reduces the multiplier effect. FDI inflows, according to several studies (e.g., Blomstrom et al., 1994; Borensztein et al., 1998), can improve a country's economic performance by transferring technology and enhancing efficiency. Spillover efficiency develops when indigenous enterprises can absorb multinational corporations' tangible and intangible assets in FDI.

In contrast, some studies (such as Bloomstorm & Kokko, 2003) indicate that FDI input does not necessarily result in transferring foreign technology and skills to local businesses. Benefits can only be realized if local industries can absorb such downstream effects.

Nonetheless, some studies have concluded that FDI harms economic growth in developing countries (e.g., Griffin, 1970; Singer, 1950). According to a recent survey by Saqib et al. (2013), foreign investment negatively influences Pakistan's economy, whereas domestic investment has a

beneficial impact. Herzer (2012) discovered that FDI harmed developing countries' development rates over 35 years. He concluded that eliminating distortionary market policies, lowering natural resource dependency, and strengthening economic and political stability can protect countries from the negative consequences of FDI while supporting long-term FDI-led growth. Nonetheless, some studies have concluded that FDI harms economic development (e.g., Griffin, 1970; Singer, 1950). According to a recent survey by Saqib et al. (2013), overseas investment negatively influences Pakistan's economy, while domestic investment has a beneficial impact. Herzer (2012) found that FDI had a detrimental effect on the development rates of emerging countries over 35 years. He concluded that eliminating distortionary market policies, lowering natural resource dependency, and strengthening economic and political stability can protect lands from the negative consequences of FDI while supporting long-term FDI-led growth.

**Research Gap:**

This Study is filling the gap of incorporating the labor market to check the inflows of FDI into South Asian nations. Because there is no such literature available that highlights the efficiency indicators for heading the FDI inflows into the South Asian region.

So there is a gap in the literature after the conclusion drawn by (Jalil and Amin) that Pakistan is failed to attract efficiency-seeking FDI, So an attempt is made to gauge whether the FDI coming to South Asian nations is efficiently seeking.

# CHAPTER 3

## Theoretical Framework and Estimation Methodology

### 3.1 Introduction:

The Theoretical Framework is based on the findings of Axarloglou (2004), which assesses how different economic conditions affect the attraction of FDI inflows to the manufacturing sectors in various U.S. states. These elements are, per the relevant and important literature, industry- and state-specific wages, labor productivity and unit labor cost, industrial agglomeration, the state of the local labor market, state spending on infrastructure for transportation and education, state taxation, and the crime rate in the state. The state of the local labor market affects FDI inflows, as found by Coughlin et al. [1991] and Friedman et al. [1992, 1996]. In particular, state unemployment, a sign of labor availability, seems to draw FDI whereas high state-specific real wages in manufacturing, a proxy for local labor costs, dissuade FDI inflows. Nevertheless, Bernard and Jensen's [1999] research demonstrates that labor markets do not integrate well between industries and geographies. Therefore, Goldberg and Tracy (1999) followed the development of a more accurate estimate for the intensity of the industry- and the state-specific labor market to eliminate any aggregate bias. The same is true of American manufacturing employment. OLC (output to labor cost ratio) is a real variable that is used to get a clear view of a country's manufacturing sector, according to Axarloglou. Additionally, OLC is produced by the output of the manufacturing sector divided by (Wage rate* Employment). To reflect the effectiveness in a host country, we, therefore, utilize OLC as a focused independent variable. Moreover, we use Tertiary education as a proxy to gauge skilled labor because of the unavailability of a database for skilled labor.

The current chapter comprises four segments. Segment 3.1 presented the introduction. Segment 3.2 builds a theoretical framework, whereas segment 3.3 develops empirical models of the recent study.

Lastly, segment 3.4 reports the econometric techniques used to check the impact of dependent and independent variables.

## 3.2 Theoretical Framework for Present Study:

Now, we propose the framework of our research. It is believed that Output to labor cost and skilled labor is an attraction for inflows. So, now we introduce a variety of determinants of FDI. The theoretical model of FDI is demonstrated below.

$$FDI = f \text{ (OLC, SLF ER, GDP growth, too)}$$

Where FDI indicates the foreign direct investment, our significant dependent variable of the current research, extensive literature focused on different elements of the FDI like remittances, exchange rate, external debt burden, domestic investment, etc. Still, our study mainly focused on output labor cost (OLC) and skilled labor force (SLF). We will examine the influence of OLC and SLF on FDI in 4 South- Asian economies involving Pakistan, India, Bangladesh, and Sri Lanka. Amongst all indices, the essential component of FDI is GDP growth. The GDP growth is our first control (independent) variable. The market size reflects current demand, whereas overall growth reflects future opportunities. A vital measure of market opportunities is a greater level of change in the economy. The hosted industry's development is essential for expansionary capital investment **(Clegg and Scott-Green 1998).** Growth is particularly crucial since higher interest rates of change in the economy are typically linked to increased corporate profitability **(Gold 1989).** When comparing the projected market variable, there seems to be comparatively limited consensus in the extant research on this driver of FDI **(Goldberg 1972; Scaperlanda and Balough 1983; Culem 1988; Clegg 1995, and Majeed and Ahmad 2009).**

However, the exchange rate (ER) is our second central control (independent) variable. The ER influences FDI in a variety of ways. Froot and Stein (1991) studied the increasing wealth implications of ER**.** A deterioration of the protagonist's currencies is implied by an increase in the ER in terms of

the host currency of the country over the native economy's currency. A depreciation of the host currency of the nation facilitates the acquisition of host state assets by the government of residence, resulting in a rise in inward FDI. Cushman (1985, 1987) and Culem (1988) highlight the influence of ER changes on relative labor costs.

Likewise, trade openness is also our control (independent) variable. However, most multinational firms are export-oriented, so a higher level of trade openness fosters a greater flow of FDI. They are more likely to reap the advantages of the export expansionary fiscal policy and import industrial equipment from their state. This variable is expected to have a favorable impact on the FDI. According to **Kravis and Lipsey (1982),** host nations' degree of trade openness greatly influences multinational placement decisions. **Majeed and Ahmed (2009)** also emphasize these conclusions.

Moreover, our study focused on the impact of output labor cost and skilled labor force on FDI. Both of these variables are our focused (independent) variables. To measure the output labor cost, we used manufacturing output, employment in the manufacturing sector, and wage rate at manufacturing output. According to **Lai and Sarkar (2011),** by controlling production, smaller wages attract the FDI in the economy, leading to productivity in the economy. And in the views of **Cung Huu (2011)**, the skilled labor force is a critical factor in any country's development. And Skilled labor force always attracts FDI in the economy for betterment.

Build on these specifications, the typical structure of our regression model is given below:

**Foreign Direct Investment = f (Exchange rate, GDP growth, Trade Openness, Output Labor Costs, Skilled Labor Force)**


### 3.3 Empirical Model Specification:

After the theoretical framework, our study now employs an empirical model in this part. FDI is our dependent variable. At the same time, OLC and SKL are our focused variables in the current study.

The relation between "FDI and output labor cost" and "FDI and skilled labor force" can be stated as a panel equation in the following form.

$$FDI_{it} = \alpha_1(ER)_{it} + \alpha_2(GDPG)_{it} + \alpha_3(TO)_{it} + \alpha_4(OLC)_{it} + \alpha_5(SLF)_{it} + \mu_{it} + \varepsilon_{it}$$

Where 'FDI' represents Foreign direct investments. 'GDPG' is the growth of the GDP, 'TO' is the trade openness, 'OLC' is the output labor cost, and 'SLF' is the skilled labor force.

In the above equations, $\alpha_1$ has been referred to as the influence of exchange rates on the FDI$\alpha_2$ has been referred to as the influence of GDP growth on the FDI. Whereas$\alpha_3$ has been referred to as the influence of trade openness on the FDI and$\alpha_4$ has been referred to as the influence of the output labor costs on the FDI. And lastly$\alpha_5$ has been referred to as the influence of the skilled labor force on the FDI. However, 'I' states the countries, and t refers to time.

## 3.4 Econometric Methodology:

Now we discuss the techniques which are going to be used in the empirical analysis. We used panel data estimation in our research, which is quite popular because it incorporates cross-sectional and time series analysis.

We used different econometrics techniques in our data set. First, we used the pooled ordinary least squares (OLS) method. Secondly, the fixed effect (FE) method will be used. And after it, we will also incorporate the random effect (RE) approach. Then the Hausman test will be applied to check which model is more suitable for fixed and random effect methods. Lastly, for the endogeneity problem, our study also used generalized methods of moments (GMM).
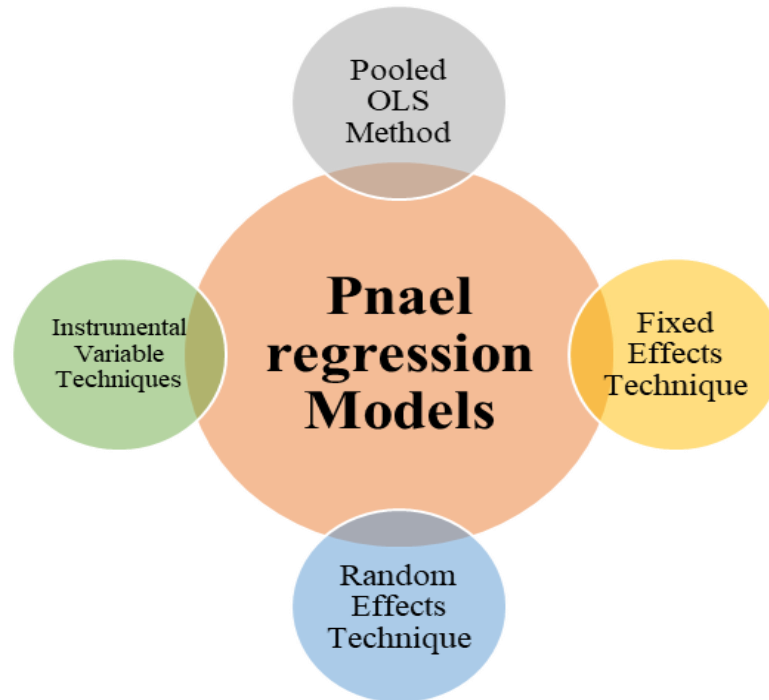
**3.4.1 Panel Data Regression Models:**

**Figure: Panel Data Regression Techniques**

**3.4.1.1 Pooled OLS Method:**

Numerous degrees of freedom are present in the panel data collection, allowing it to represent human interaction's complexities. Similarly, panel data provides exact results by pooling the data. The regression analysis, which stipulates the consistent coefficients and intercepts supposition, is used to estimate the pooled OLS. If the model is accurately estimated, but the independent variables would not correlate with the residuals, then the ordinary least square method would be used to overcome the issue. Our research explored the impact of the FDI of 4 South- Asian economies on the OLC and SLF. Equations of the pooled OLS method of estimation could be written as follows:

$$\text{FDI}_{it} = \alpha_1(\text{ER})_{it} + \alpha_2(\text{GDPG})_{it} + \alpha_3(\text{TO})_{it} + \alpha_4(OLC)_{it} + \alpha_5(\text{SLF})_{it} + \mu_{it} + \varepsilon_{it}$$

### 3.4.1.2 Fixed Effect Model:

In OLS estimation, intercept won't change the countries. And similarly, in cross-sections, coefficients remain the same. So, given this limitation or the restriction, we move forward to the other estimation method like fixed or the random effect method techniques for the empirical analysis. In the following way, we can express the equation of the fixed effect method of FDI:

$$\text{FDI}_{it} = \alpha_1 (\text{ER})_{it} + \alpha_2 (\text{GDPG})_{it} + \alpha_3 (\text{TO})_{it} + \alpha_4 (OLC)_{it} + \alpha_5 (\text{SLF})_{it} + \mu_{it} + \varepsilon_{it}$$

### 3.4.1.3 Random Effect Model:

Due to the vast no. of observations, the fixed effect method is affected by the unknown parameters. So, to tackle this problem, we have been using another method called the random effect method. The equation of the random effect method of FDI could be written in the following form.

$$\text{FDI}_{it} = \alpha_1 (\text{ER})_{it} + \alpha_2 (\text{GDPG})_{it} + \alpha_3 (\text{TO})_{it} + \alpha_4 (OLC)_{it} + \alpha_5 (\text{SLF})_{it} + \mu_{it} + \varepsilon_{it}$$

### 3.4.1.4 Instrumental Variable Approach:

The variable instrumental technique has been widely used whenever we face the endogeneity problem in our analysis. Researchers widely used 2SLS, but that is not a suitable approach, so to tackle the endogeneity problem, we used GMM in our current research. It is a practical approach to handling the heteroscedasticity issue, measurement errors, and endogeneity.

# CHAPTER 4

## Data Analysis, Variable Description, and Descriptive Statistics

We want to explore the impact of output labor cost and skilled labor force on foreign direct investment. The data used in our empirical research is taken from WDI and CEIC and 2000-2020. Foreign direct investment is our primary and dependent variable in ongoing research. Similarly, we take output labor cost and skilled labor force as our focused, independent variables. The output labor cost is derived through three significant variables: [manufacturing sector output/ (Wage rate* Employment)]. Moreover, the current research also employs control (independent) variables: exchange rate, GDP growth, and trade openness. A recent study has used South Asian countries, including Pakistan, India, Bangladesh, and Sri Lanka, as a sample in our empirical analysis.

The present chapter of our study comprises five sections. Section 4.1 has reviewed a sample of data and their selection of time, whereas section 4.2 demonstrates the variables theory and the construction of variables. Section 4.3 illustrate the statistical analysis. Lastly, section 4.4 includes the pre-estimation tests of the current research.

### 4.1 Sample and the Period Selection:

We want to look at the linkages between foreign direct investment, output labor, and the skilled labor force. For this objective, we used the sample of the panel data set of four South-Asian nations. These countries include Pakistan, India, Bangladesh, and Sri Lanka from the South- Asian Region. We take data for our empirical research from two sources, including the world development indicator (WDI) and CEIC from 2000 to 2020. The following table indicates all the variables contained in the current research.

<div align="center">**Table 4.1: Dependent, Focused, and Control Variables**</div>

| Dependent Variables |
| :---: |
| Foreign Direct Investment |
| **Focused Variables** |
| Output Labor Cost |
| Skilled Labor Force |
| **Control Variables** |
| Exchange Rate |
| GDP Growth |
| Trade Openness |

## 4.2 Theory, Description, and Construction of Variables:

This part of our research succinctly describes the description, theory, and construction of all the variables we use in our current study. Foreign direct investment is our primary and dependent variable.

## 4.2.1 Dependent Variable:

## 4.2.1.1 Foreign Direct Investment:

Foreign direct investment (FDI) is the procurement of preferred equity by a corporation or entrepreneur outside the country. The data on FDI is drawn from the world development indicator (WDI) over time from 2000- 2020.

**4.2.2 Focused (Independent) Variable:**

**4.2.2.1 Output Labor Cost:**

Output labor cost is the aggregate supply of employment per product unit. We derived the output labor cost by manufacturing sector output divided by the wage rate in the manufacturing sector multiplied by jobs in the manufacturing industry. Data of manufacturing sector output and employment rate data are drawn from WDI, whereas the wage rate data is removed from CEIC. Moreover, the period which is used is from 2000 to 2020.

**4.2.2.2 Skilled Labor Force:**

The skilled labor force refers to members of the workforce who are highly educated, trained, experienced, and can do more sophisticated physical and mental duties on the job. Data on the skilled labor force is drawn from WDI from 2000 to 2020.

**4.2.3 Control Variables:**

We have also used the control variables in our empirical work. These control variables include the exchange rate, GDP growth, and trade openness.

**4.2.3.1 Exchange Rate:**

The cost of a currency is expressed in terms of another country's currency, known as the exchange rate. Data on the exchange rate is drawn from WDI from 2000 to 2020.

**4.2.3.2 GDP Growth:**

The GDP growth rate examines the improvement in a nation's economic production yearly or quarterly to determine how fast it is increasing. The data on the exchange rate is drawn from WDI

from 2000 to 2020.

**4.2.3.3 Trade Openness:**

Trade openness is characterized by the proportion of exports plus imports during the GDP. The data

on the exchange rate is drawn from WDI from 2000 to 2020.

**Summary of the Variables:**

Following is the summary of all the variables included in our empirical research.

**Table 4.2: Summary of Data Sources of Variables**

| Variables | Denoted by | Measured in | Sources |
|---|---|---|---|
| **Dependent Variable** | | | |
| Foreign Direct Investment, Inflows | FDI | | WDI(2021) |
| **Focused Variables** | | | |
| Output Labor Cost | OLC | OLC is generated through manufacturing sector output/ (Wage rate* Employment) | WDI (2021), CEIC |
| Skilled Labor Force | SL | % Of the working-age population with advanced education | WDI (2021) |
| **Control Variables** | | | |
| Exchange Rate | ER | | WDI (2021) |
| GDP Growth | GDPG | | WDI (2021) |
| Trade Openness | TO | | WDI (2021) |

**4.3 Descriptive and Statistical Analysis:**

**4.3.1   Summary Statistics:**

This segment of our current research has proposed descriptive statistics, including the central tendency

measures, which are mean and median. It also offers information on the standard deviation and minimum and maximum values of the dependent and independent variables. Similarly, overall observations are also reflected. So, descriptive analysis of all the dependent focused and control variables, including foreign direct investment, output labor cost, skilled labor force, exchange rate, GDP growth, and trade openness, are mentioned in the following table.

**Table 4.3.1: Summary Statistics of Dependent and Independent Variables**

| Variables | Obs. | Mean | Median | Std. Dev. | Minimum | Maximum |
|---|---|---|---|---|---|---|
| **Dependent Variable** | | | | | | |
| **Foreign Direct Investment Inflows** | 84 | 1.238940 | 1.078787 | 0.698434 | 0.095579 | 3.668323 |
| **Focused Variables** | | | | | | |
| **Output Labor Cost** | 84 | 1690740 | 906937.0 | 2099001.0 | 45656.11 | 8780850.0 |
| **Skilled Labor Force** | 84 | 71.95262 | 68.99500 | 9.527579 | 59.83000 | 89.97000 |
| **Control Variables** | | | | | | |
| **Exchange Rate** | 84 | 83.71916 | 75.57876 | 33.61562 | 41.34853 | 185.5926 |
| **GDP Growth** | 84 | 5.142844 | 5.540507 | 2.678475 | -7.251755 | 9.144572 |
| **Trade Openness** | 84 | 42.68093 | 39.73288 | 14.42459 | 25.30623 | 88.63644 |

Table 4.3.1 expresses a descriptive analysis of our research where foreign direct investment is our primary and dependent variable. We use the two focused (independent) variables: output labor cost and skilled labor force. Moreover, we have used many control (independent) variables in our current research. Control variables used in our study are the exchange rate, GDP growth, and trade openness. The mean and median values of foreign direct investment are 1.238940 and 1.078787, respectively. The standard deviation of the foreign direct investment is 0.698434. Moreover, the minimum and the maximum values of foreign direct investment are 0.095579 and 3.668323, respectively. The total no. of observations of foreign direct investment is 84.

Correspondingly, the mean value of output labor cost, skilled labor force, exchange rate, GDP growth,

and trade openness are 1690740, 71.95262, 83.71916, 5.142844, and 42.68093, respectively. Similarly, median values of output labor cost, skilled labor force, exchange rate, GDP growth, and trade openness are 906937.0, 68.99500, 75.57876, 5.540507, and 39.73288, respectively. The standard deviation of output labor cost, skilled labor force, exchange rate, GDP growth, and trade openness are 2099001.0, 9.527579, 33.61562, 2.678475, and 14.42459, respectively. Moreover, minimum values of output labor cost, skilled labor force, exchange rate, GDP growth, and trade openness are 45656.11, 59.83000, 41.34853, -7.251755, and 25.30623, respectively. While the maximum values of output labor cost, skilled labor force, exchange rate, GDP growth, and trade openness are 8780850.0, 89.97000, 185.5926, 9.144572, and 88.63644, respectively. Lastly, the total no. of observations for all variables, including output labor cost, skilled labor force, exchange rate, GDP growth, and trade openness, are identical and are 84.

### 4.3.2. Correlation Matrix

A correlation matrix is a quantitative method for determining the degree and the direction of the relationship among the variables. The correlation matrix is critical to comprehend the phenomenon of multi-collinearity. The correlation matrix for all dependent, independent as well as control variables is presented in the following table.

**Table 4.3.2: Correlation Matrix**

|    | Variables | 1 | 2 | 3 | 4 | 5 | 6 |
|----|-----------|---|---|---|---|---|---|
| 1. | Foreign Direct Investment Inflows | 1.0000 | | | | | |
| 2. | Output Labor Cost | 0.3242 | 1.0000 | | | | |
| 3. | Skilled Labor Force | -0.099 | -0.4760 | 1.0000 | | | |
| 4. | Exchange Rate | -0.168 | -0.3118 | 0.5058 | 1.0000 | | |
| 5. | GDP Growth | 0.0618 | -0.0057 | 0.0205 | -0.3561 | 1.0000 | |
| 6. | Trade Openness | 0.2715 | -0.0479 | 0.6168 | 0.2271 | 0.1035 | 1.0000 |

Table 4.3.2 states that foreign direct investment is positively associated or correlated with focused (independent) variables, including output labor costs, and control (independent) variables like GDP growth and trade openness. When the coefficients of variables are positively correlated, it indicates that foreign direct investment increases. By contrast, foreign direct investment is negatively associated with focused (independent) variables, including the skilled labor force, and control (independent) variables, including the exchange rate. When the coefficients of variables are negatively correlated, it indicates that foreign direct investment decreases.

## 4.4 Diagnostics/ Tests:

In this segment, we analyzed pre-estimation testing to explore the functional form, multicollinearity issue, and heteroscedasticity issues in the estimated model.

### 4.4.1   Functional Form/ Model Specification Test:

The link test analyzes the model's specification and functional form. We used the link test to specify the linear regression. The P-value of the square term received a lot of attention in this test. Because our results are highly dependent on the calculated P-value, if the probability value is less than 5%, we can conclude that the model is either incorrectly formed or incorrectly estimated. By contrast, if the probability value is more excellent than 5%, then we can say that model is correctly calculated. We have precisely required this condition in our research to be accurately estimated. We summed up the discoveries of the link test in the following table after authenticating the functional form of the estimated model of our current study.

**Table 4.4.1: Link Test Results of Foreign Direct Investment Inflows as a dependent variable**

| Link Test | | | |
|---|---|---|---|
| **Model** | **Coefficient** | **T- Stats** | **P- Value** |
| **Foreign Direct Investment Inflows (Dependent variable)** | | | |
| **Hat** | 4.786954 | 2.56 | 0.012 |
| **Hat- Square** | -1.375335 | -2.04 | 0.055 |
| **Constant** | -2.431119 | -1.99 | 0.050 |

Table 4.4.1 states the outcomes of the foreign direct investment link test as it is evident that the probability value of the hat-square term is higher than 0.05, implying that we can reject our null hypothesis. This will lead to an undeniable result that the functional form is correctly estimated in our estimated model.

### 4.4.2   Heteroscedasticity:

We could indeed say that there must be an issue of heteroscedasticity in our estimated model when premised discrepancies with explanatory variables are $Var(U_i X_i)$ = two or homogeneity of variance refers to situations where the uncertainty of the variable is inappropriate in the entire spectrum of the variable that anticipates. We utilized the Brush-Pegan heteroscedasticity test to see if our models were heteroscedastic or not. The following are the outcomes:

**Table 4.4.3: Heteroscedasticity Test Results of Foreign Direct Investment Inflows as Dependent Variable**

| Null: constant variance | |
|---|---|
| **Chi2 (1)** | 2.29 |
| **Probability > chi2** | 0.1301 |

Table 4.4.3 reported the heteroscedasticity findings for the estimated foreign direct investment model.

The outcomes show that our model has no issue with heteroscedasticity as the probability value is 0.1301, which is greater than 5%. So, we can conclude that our estimated model has no heteroscedasticity issue.

# CHAPTER 5

# Results and Discussions

## Introduction:

Generalized Method of Moments (GMM) is an estimation procedure that allows econometric models, especially in panel data to be specified while avoiding often unwanted or unnecessary assumptions, such as specifying a particular distribution for the errors. Panel data is a combination of time series and cross-section data that contain observations on thousands of individuals or families, each observed at several points in time. Furthermore, the Generalized Method of Moments estimator is obtained by minimizing the criterion function by making the sample moment match the population moment

The Generalized Method of Moments technique is an extension of the Method of Moments by minimizing the criterion function as the criterion is a weighted sum of squares. In fact, a large proportion of the recent empirical work in econometrics, particularly in macroeconomics and finance, has employed GMM estimators. Utami (2004) concluded that the Generalized Method of Moments estimator on panel data linear model has characteristics such as unbiasedness, variance minimum, consistency, and normally asymptotic distributed property.

Cragg (1983) was the first to discover that one can improve over ordinary least squares in the presence of heteroskedasticity of unknown form by applying a generalized method of moments.

In this section of the thesis, we have reported the results and the discussion on which output labor cost and skilled labor force may affect foreign direct investment. We have used the foreign direct investment inflows to measure how labor or efficient labor attracts more FDI. Similarly, we used

three proxies, including menu output, wage rate in the manufacturing sector, and employment in the manufacturing industry, to determine the output labor cost. Likewise, the skilled labor force is our second significant focused variable, which we used to measure the labor force. Moreover, we used three control variables, including exchange rate, GDP growth, and trade openness. The current research used the generalized methods of moments(GMM) technique to evaluate the FDI efficiency in South Asian economies. The present study utilized panel data from four South-Asian nations for the regression analysis.

Moreover, for endogeneity, the generalized methods of moments (GMM) have been employed. The overall estimation has been applied to 4 South-Asian countries: Pakistan, India, Bangladesh, and Sri Lanka. Additionally, current research utilized the package of the Stata 15 over the period from 2000 to 2020, a 21 years time interval. The data used in the study is derived from WDI and CEIC.

The present chapter is composed of three sections. Section 5.1 illustrates the pooled ordinary least square (OLS) method results. Section 5.2 demonstrates the fixed effect as well as the random effect methods. And lastly, section 5.3 explicates the findings of the generalized methods of moments (GMM).

In the face of endogeneity issues, which are fairly possible in the domain of panel data analysis, the traditional OLS, RE, and FE estimators may be inconsistent. On the other hand, estimation methods for panel data based on GMM that employ assumptions of sequential homogeneity of the regressors present alternatives that are capable of successfully resolving all the issues. (provided that these assumptions are true), even if the researcher lacks good instrumental variables that are external to the model.

The simulations demonstrate that endogeneity issues can seriously undermine inferences based on estimators that are unable to adequately address them, and the theoretical discussion suggests that

endogeneity issues must frequently affect empirical studies with observational data in panel data analysis. This study specifically cautions against the potential inconsistency of the conventional Ordinary Least Squares (OLS), Random Effects (RE), and Fixed Effects (FE) estimators in many relevant circumstances. However, some panel data estimators based on the Generalized Method of Moments (GMM), such as the System (or Blundell-Bond) GMM, can address the main endogeneity concerns in carefully specified models and thereby produce more appropriate inferences even in the absence of natural experiments or of 440 Rev. However, the reliability of the underlying assumptions determines whether an estimator is consistent. The preceding GMM estimators' assumptions are less rigid and more believable than those of more conventional estimators, but the econometric literature demonstrates that if they are violated, the inferences can be significantly distorted (Bun & Sarafidis, 2015; Dang et al., 2015). Additionally, when utilizing very small samples, data constraints and specification issues in the regressions may significantly increase finite sample bias. So for this purpose, this study is trying to employ the results extracted from GMM to get the best results or implications from the study.

## 5.3 Generalized Methods of Moments (GMM) Results:

The variable instrumental technique has been widely used whenever we face the endogeneity problem in our analysis. Researchers widely used 2SLS, but that is not a suitable approach, so to tackle the endogeneity problem, we used GMM in our current research. It is a practical approach to handling the heteroscedasticity issue, measurement errors, and endogeneity. Results of GMM of FDI and all focused (independent) as well as the control (independent) variables are in the following table.

### Table 5.3: Generalized Methods of Moments (GMM) Results

| Variables | Foreign Direct Investment Inflows |
|---|---|
| Constant | 1.901* |

| | |
|---|---|
| | (2.19) |
| **LnOutput Labor Cost** | 5.6062** |
| | (2.12) |
| **Skilled Labor Force** | -0.0502* |
| | (-2.03) |
| **Exchange Rate** | -0.00405 |
| | (-1.38) |
| **GDP Growth** | -0.00987 |
| | (-0.37) |
| **Trade Openness** | 0.0265*** |
| | (3.97) |
| **R-Square** | 0.4791 |
| **Wald Chi2(5)** | 46.92 |
| **Prob> Chi2** | 0.0000 |
| **No of observations** | 80 |

*Note: t-values are given in parenthesis. *, **, *** corresponds to significance at 10%, 5% and 1% respectively.*

The above table presented the outcomes of GMM from 2000 through 2020, 21 years. And we apply the natural log on output to labor cost ratio for stability and more accurate results **Gerdes (2011)**. Data from four South Asian countries were used, including Pakistan, India, Bangladesh, and Sri Lanka. We used the lag of output labor cost in our current analysis. Here FDI is our primary and dependent variable used in the overall study. The findings imply highly consistent and significant results. As with an increase in the focused (independent) variables, the output labor cost, and FDI is also increased. However, in contrast, the other focused variable gives opposite results. An increase in the skilled labor force will decrease the FDI. Moreover, the results are continuously consistent with previous literature. As previously mentioned, we employ tertiary education to gauge the skilled labor force, which produces negative outcomes since as education levels rise, so do expectations for wages. In addition, high wages deter FDI inflows, as examined by Ozuna and Zamora (2020).

Economic growth generates large profit margins, attracting more domestic and international direct investment. But most importantly, FDI decreases the growth of panel countries. And our results clear this picture. Outcomes indicate that there is a negative impact on GDP growth and FDI. The findings are correctly estimated and consistent with the theory. **Tiwari and Mutascu (2011)** also confirm these findings.

The exchange rate is a vital part of international investors' financial decisions. The exchange rate should have been included to encapsulate the impact of relative income and labor costs. A depreciation of the host currency of the country favors the home country's purchases. At the same time, it implies that an underestimation of the host nation's currency allows the native economy investors to hire more and more labor for quite a specified amount of the domestic nation's money. From our findings, it is clear that the exchange rate significantly and considerably impacts the FDI. As with the increase in the exchange rate coefficient, there is a decrease in the FDI. The results are expected and according to the theory. **Froot and Stein (1991), Ahmad and Malik (2009), and Majeed and Ahmad (2009)** also come up with the same results.


Likewise, trade openness demonstrates the amount of trade liberalization. And it is significant since emerging nations are being used as a frontier. With the more minor obstacles to trade, importing raw material assets such as plant machinery is much easier. The findings show trade openness's consistent and significant influence on the FDI. The same conclusion is drawn by **Majeed and Ahmad (2009).**

**Future Research:**

The future study must take into account the type of FDI flowing to Pakistan because there is relatively little literature on modeling the determinants of FDI inflows. The subject requires more study that goes beyond the basics of economics. It must also evaluate the impact of other factors, such as

macroeconomic and political risks, taxation, the composition and results of R&D expenditure, and legal restrictions on FDI (Bellak, Leibrecht, and Riedl 2008). More specifically, it must examine the proportion of low-skilled labor hours in total labor hours, unit labor costs, and industry-level compliance with international production standards. One of the offshoots of this research is the individual analysis of South Asian countries to gauge the amount of FDI inflows.

**Qualitative Aspect of Study:**

To fulfill the need for qualitative work of thesis or make it policy-oriented research, a presentation is given to the Board of Investment Pakistan upon the above findings of our research where we portray the significance of OLC which means our neighboring countries are attracting efficiency-seeking FDI and Pakistan is lacking behind in some policies of the industrial sector to get efficiency seeking inflows from the world.

The Board of Investment Pakistan encourages the effort of PIDE and approves the initiative extracted from the thesis which is a Mobile app constructed to fulfill the need of the manufacturing sector to get benefitted from inflows into the nation.

# CHAPTER 6

# CONCLUSION AND POLICY RECOMMENDATIONS

(FDI) which comes into a country by seeking the benefit from the labor market is subject to a few dynamics of the Labor market in the beneficiary country. Pakistan has generally come up short on angles, subsequently, has not had the option to draw in productivity looking for FDI. This aggregation has been higher in tyrannical systems than under vote-based state-run administrations. Changes in FDI inflows to Pakistan after some time are harsh to work market attributes. (Jalil1 & Amin 2020)

So (Jalil1 & Amin 2020) Analyze how Efficiency measures can explain FDI inflows to Pakistan as salaries in the manufacturing sector, output per worker, supply of the working population, and human capital. The analysis results, which used data from the manufacturing industry from 1981 to 2017, reveal that labor market characteristics play no role in explaining FDI inflows to Pakistan.

This study examines the connection between labor market variables and the inflow of FDI by taking the information from 2000 to 2020 in South Asia and results showing a positive combined effect. The significance of the output-to-labor cost ratio (OLC) depicts the efficiency-seeking factor in foreign inflows for above added South Asian nations.

This study examines whether the output labor cost (OLC) impacts the inflow of foreign investment to the beneficiary nation. Economic factors like GDP growth rate, exchange rate, and Trade openness directly affect a host country's inflows. Our discoveries show unequivocally that output labor cost impacts the heading for the foreign investment inflows in South Asia.

Additionally, the previously mentioned investigation of (Jalil1 and Amin 2020) reveals that

the Labor market variables or centered factors of our review are irrelevant in the event of Pakistan. So we draw an inference about the other South Asian countries as a host for efficiency-seeking FDI and Pakistan is short on some reforms that are needed to get the efficiency-seeking inflows into Pakistan.

**Policy Recommendations:**

Aggregate Foreign Direct Investment (FDI) in India's Manufacturing Sector arrived at USD 89.15 billion between April 2000-December 2019. To lift FDI, before September 2019, the legislature of India cut the base corporate tax rate from 25% to 15 percent for new manufacturing firms consolidated after October 1, 2019, and beginning tasks before March 31, 2023. The legitimization of Tax rates makes India a severe speculation objective when contrasted and other Asian nations. So relaxing the taxation nexus for new firms should be the policy implication of this study.

As per UNCTAD's 2021 World Investment Report, FDI inflows arrived at a new high of USD 64 billion in 2020, enlisting a 27% increment contrasted with 2019 (where FDI reached USD 51 billion). The Stock of FDI arrived at USD 480 billion in 2020. India positions fifth among the best 20 FDI economies and the most prominent host in the sub-area; the nation generally represents 70-80% of inflows into the region. The general development of FDI in India is thanks to its numerous resources, particularly its profound level of specialization in services. It has a skilled, English-speaking, cheap workforce and an expected market of one billion occupants. So from this, we draw skill empowerment as our policy implication due to the explorative nature of the study.

In the 77th spot in the Doing Business rankings, India is the most elevated-positioned economy in South Asia, followed by Bhutan (81) and Sri Lanka (100). The region's

positioned economies are Afghanistan (167) and Bangladesh (176). Different economies in the district and their rankings are Nepal (110), the Maldives (139), and Pakistan (136). So from this study, Ease of doing business is a policy implication for Pakistan to attract more investors.

The manufacturing or cost-effective manufacturing sector of India has arisen as one of the significant development areas in India. State leader of India, Mr. Narendra Modi, sent off the 'Make in India' program to put India on the world guide as a Manufacturing hub and give worldwide acknowledgment to the Indian economy. Government plans to create 100 million new positions in the area by 2022. So from this existing literature on a top South Asian country in terms of attracting FDI through the cost-effective manufacturing sector, we imply for the policy view to the Board of Investment to portray an accurate picture of the manufacturing industry of Pakistan to attract more FDI inflows into a country. For this purpose, My research work proposed an initiative, **Kamyabi Apna Hunar sa**, a Program is a proposed initiative extracted from my research. The program's purpose is to develop a database of our skilled labor force and information on an Industry. From 'brain drain' to brain gain. **Kamyabi Apna hunar sa** Is an app that serves the primary purpose of a database of the manufacturing sector, like a database of skilled labor and industry information. My Study proposed an app for a community of skilled workers and employers to meet and interact. And provide the government of Pakistan to work on the lacking skills of our labor force to get the best out of it. Built exclusively for tradespeople and their employers, **kamyabi Apna hunar sa** will modernize and optimize the trades workforce through community, content, and communications, leading to more jobs and hires. With real-time job opportunities and a searchable database of verified skilled workers, the app connects skilled workers with the best jobs and employers in their community. It is also able to attract foreign inflows. **Kayambi**

**Apna hunar sa** Along with opportunities for FDI inflows, the app provides a social feed for skilled workers to show off their trade internationally.

The above-extracted initiative **(Kayambi Apna Hunar Sa)** will bring along:

- The first industry-specific database will enhance industry analysis and assess industries' strengths and shortcomings.

- To strengthen our workers and enhance inflows, the Pakistani government will draw attention to the absence of skills.

- Pakistani tradesmen have a platform to share their skills with the world and draw international investors to a particular sector.

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# Appendix

**Annexure contains the results of the random and fixed effect models employed for panel data analysis.**

## 5.1. Pooled Ordinary Least Square (OLS) Nexus:

Numerous degrees of freedom are present in the panel data collection, allowing it to represent human interaction's complexities. Similarly, panel data provides exact results by pooling the data. The regression analysis, which stipulates the consistent coefficients and intercepts supposition, is used to estimate the pooled OLS. If the model is accurately estimated, the independent variables will not correlate with the residuals. The ordinary least square method would be used to overcome the issue—the pooled joint least square estimation reported in the table below.

**Table 5.1: Pooled ordinary least square results of foreign direct investment as the dependent variable**

| Variables | Foreign Direct Investment Inflows |
|---|---|
| Constant | 1.580* |
| | (2.20) |
| Output Labor Cost | 6.93e-08* |
| | (1.71) |
| Skilled Labor Force | -0.0166** |
| | (-1.35) |
| Exchange Rate | -0.00194 |
| | (-0.73) |
| GDP Growth | -0.00304 |
| | (-0.11) |
| Trade Openness | 0.0215** |
| | (3.25) |
| R-Square | 0.9257 |
| F-Statistics | 4.55 |
| F-Probability | 0.0011 |
| No of observations | 84 |

*Note: t-values are given in parenthesis. *, **, *** corresponds to significance at 10%, 5% and 1% respectively.*

Table 5.1 above has reported findings of pooled OLS from the regression equations, which are assessed in Chapter 03 of the current research. Higher wages attract FDI inflows. Similarly, labor productivity also attracts FDI inflows. So, due to the output labor cost and skilled labor force, the market is efficient and leads to increased productivity. As to the findings, there is a significant impact of output labor cost and the skilled labor force on foreign direct investment. Coefficients of output labor cost imply that with a 1% increase in output labor cost, there is a 1.71 units increase in foreign direct investment. The results are highly consistent and expected as well. Likewise, the coefficient of the skilled labor force implies that due to a 1% increase in the skilled labor force, there is a decrease in the foreign direct investment by 1.35 units. The results are negatively

estimated, but it is consistent and expected. **Axarloglou (2004)** confirms these findings as well.

FDI and the growth of the economy are mutually beneficial. Economic growth generates large profit margins, attracting more domestic and international direct investment. But most importantly, FDI decreases the growth of panel countries. And our results clear this picture. Outcomes indicate that there is a significant impact on GDP growth and FDI. The results show that due to a 1% rise in GDP growth, there is a 0.11 unit decrease in the FDI. The findings are correctly estimated and consistent with the theory. **Tiwari and Mutascu (2011)** also confirm these findings.

The exchange rate is a vital part of international investors' financial decisions. The exchange rate should have been included to encapsulate the impact of relative income and labor costs. A depreciation of the host currency of the country favors the home country's purchases. At the same time, it implies that an underestimation of the host nation's currency allows the native economy investors to hire more and more labor for quite a specified amount of the domestic nation's money. From our findings, it is clear that the exchange rate significantly and considerably impacts the FDI. As with the 1% increase in the exchange rate coefficient, there is a 0.73 unit decrease in the FDI. The results are expected and according to the theory. **Froot and Stein (1991), Ahmad and Malik (2009), and Majeed and Ahmad (2009)** also come up with the same results.

Likewise, trade openness demonstrates the amount of trade liberalization. And it is significant since emerging nations are being used as a frontier. With the more minor obstacles to trade, importing raw material assets such as plant machinery is much easier. The findings show trade openness's consistent and significant influence on the FDI. As with the 1% increase in trade openness, there is a 3.25 units increase in FDI inflows. The same conclusion is drawn by **Majeed and Ahmad (2009).**

Finally, findings also reveal that the value of the R-squared is 0.9257, which emphasizes that there

is a 92% variation in the FDI owing to the independent variables. The f-stat value is 4.55, whereas its probability value is 0.0011. Finally, no. of observations used in our empirical analysis is 84.

### 5.2. Fixed Effects and Random Effects Results:

In OLS estimation, intercept won't change the countries. And similarly, in icross-sectionsns, coefficients remain the same. So, given this limitation or the restriction, we move forward to the other estimation method like fixed or the random effect method techniques for the empirical analysis. The fixed and random effect estimation is reported in the table below. Firstly, we consider the results of the limited effect method in column (1).

The main findings indicate a significant and consistent impact of foreign direct investment. Higher wages encourage FDI inflows, and labor productivity draws FDI inflows too. As a result of the lower labor cost and skilled workforce, there is increased market efficiency, which leads to increased productivity. From the table, we can see that output labor and skilled labor force significantly impact the FDI. With a 1% increase in the output labor cost and skilled labor force, there is a 1.02 and 0.23 units increase in the FDI, respectively. The results are consistent and according to the theory. The same conclusion is also drawn by **Axarloglou (2004).**

Foreign direct investment and economic growth are mutually beneficial. Considerable economic growth results in high-profit margins, attracting additional domestic and foreign direct investment. Our findings support this, indicating that GDP growth and FDI have a significant and considerable impact. The data demonstrate that for every one percent increase in GDP growth, there is a 0.14 unit increase in the FDI. The results are accurate and compatible with the previous literature. **Tiwari and Mutascu (2011)** clarify these findings too.

The exchange rate is an essential and significant factor in the financial decisions of international investors. The exchange rate should have accounted for the relative income and labor cost impact.

A depreciation of the host country's currency benefits home country purchases. Still, the latter means that a devaluation of the host nation's currency allows native economy investors to hire more and more labor for a fixed amount of domestic money. According to our findings, the exchange rate substantially and significantly impacts FDI. As with the 1% increase in the exchange rate coefficient, there is a 0.55 unit fall in FDI. The outcomes are as expected and predicted by the theory. **Froot and Stein (1991), Ahmad and Malik (2009), and Majeed and Ahmad (2009)** all produce similar results.

Similarly, trade openness indicates the extent of trade liberalization. It is also crucial because emerging economies are being used as a frontier. With fewer trade barriers, importing raw materials such as plant machinery is significantly easier. According to the data, trade openness has a continuous and considerable influence on FDI. In addition to the 1% rise in trade openness, there is a 2.34 unit increase in FDI inflows. **Majeed and Ahmad (2009)** reach the same conclusion.

Finally, the findings show that the value of R-squared is 0.1537, indicating that the independent variables account for 15 percent of the variation in FDI. The F-stat value is 2.39, and its probability value is 0.0460. Finally, the number of observations employed in our empirical study is 84.

**Table: 5.2 Fixed Effect and Random Effect Results of Foreign Direct Investment Inflows**

| Variables | (1) | (2) |
|---|---|---|
| | **Fixed Effect Model** | **Random Effect Model** |
| **Foreign Direct Investment Inflows** | | |
| **Constant** | 0.0983 | 1.580* |
| | (0.09) | (2.20) |
| **Output Labor Cost** | 6.18e-08 | 6.93e-08* |

|  | (1.02) | (1.71) |
|---|---|---|
| **Skilled Labor Force** | 0.00367* | 0.0166** |
|  | (0.23) | (-1.35) |
| **Exchange Rate** | -0.00219 | -0.00194 |
|  | (-0.55) | (-0.73) |
| **GDP Growth** | 0.00417 | -0.00304 |
|  | (0.14) | (-0.11) |
| **Trade Openness** | 0.0219* | 0.0215** |
|  | (2.34) | (3.25) |
| **R-Square** | 0.1537 | 0.2257 |
| **Chi2(12)** | ------ | 22.73 |
| **Prob > Chi2** | ------ | 0.0004 |
| **F-Statistics** | 2.39 | ------ |
| **F-Probability** | 0.0460 | ------ |
| **No of Observations** | 84 | 84 |

*Note: Standard errors are given in parentheses. *, **, *** corresponds to significance at 10%, 5% and 1% respectively.*

After discussing the fixed effect results, column (2) depicts the random effect method estimation results. Due to the vast no. of observations, the fixed effect method is affected by the unknown parameters. So, to tackle this problem, we have been using another method called the random effect method.

From our empirical findings, due to a 1% increase in the output labor cost, FDI will be increased by 1.71 units. The results are consistent and significant. On the contrary, with a 1% increase in the skilled labor force, FDI will be decreased by 1.35 units. However, the results are expected and consistent. The same conclusion is also drawn by **Axarloglou (2004).**

Likewise, all the control variables provide a consistent impact on FDI. The random effect method shows a 1% increase in the growth of GDP; there will be a 0.11 unit decrease in the FDI. However, the results are according to the theory. The change will lead to a colossal profit ratio, which will increase the increase in FDI. Similarly, the exchange rate has had a palatable impact on the FDI. A

1% increase in the exchange rate will decrease the FDI by 0.73 units. These results are consistent and significant according to the previous literature also. The same conclusion is drawn by **Froot and Stein (1991), Ahmad and Malik (2009), and Majeed and Ahmad (2009).**

Moreover, trade openness also attracts foreign investmenWithwith fewer trade barriers, there will be more and more benefits to the traders, resulting in more foreign investment in the home country. Our empirical findings show that with a 1% increase in trade openness, there is a 3.25 units increase in FDI. The results depict the considerable impact on FDI. Majeed and Ahmad (2009) drew the same results as well.

Lastly, the R-squared value is 0.2257, indicating a 22 percent variation in FDI. The Chi-square value is 22.73 in the estimated model, and its probability is 0.0004. And no.of observations that are used in the analysis is 84.

Whether we choose the fixed effect or the random effect model in our empirical analysis arises. So, to answer this question, we used the Hausman test. The results of the Hausman test are proposed in the following table:

<u>**Results of the Hausman Test**</u>

| Hausman Test | | |
|---|---|---|
| **Variable** | **Chi (5)** | **P-Value > Chi 2** |
| **Output Volatility** | 4.02 | 0.4029 |

The above table highlights the results of the Hausman test of FDI. We observe that the probability value is less than 0.10, so we strongly go with the fixed effect model. And as compared to the random effect model, the fixed effect model is more applicable.