TAX TREATY POLICY AND FOREIGN DIRECT INVESTMENT IN PAKISTAN

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I Ms. Iqra Bibi hereby state that my MPhil thesis titled "Tax treaty policy and Foreign direct investment in Pakistan" is my own work and has not been submitted previously by me for taking any degree from Pakistan Institute of Development Economics or anywhere else in the country/world. At any time if my statement is found to be incorrect even after my Graduation the university has the right to withdraw my MPhil degree.

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Dedicated To

Dedicated to my beloved parents and siblings, whose unwavering support, selfless sacrifices, and boundless love have been the cornerstone of my journey. Their guidance and encouragement have illuminated my path, inspiring resilience and perseverance through every challenge. This work stands as a heartfelt tribute to their enduring strength, unwavering faith, and belief in my potential.

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ABBREVIATIONS

BIT	Bilateral Investment Treaties
DTT	Double Tax Treaty
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IMF	International Monetary Fund
MNCs	Multinational Cooperation
OECD	Organization of Economics Corporation and Development
PCI	Per Capita Income
PE	Permanent Establish
PTA	Preferential Trade Agreement
TIEA	Tax Information Exchange Agreement
UN	United Nation
UNCTAD	United National Conference on Trade and Development
WTO	World Trade Organizations
BEPS	Base Erosion and Profit Shifting
MLI	Multilateral Instrument
CEN	Capital Export Neutrality

ABSTRACT

The study investigates the impact of tax treaties on foreign direct investment in Pakistan by controlling the institutional variables control of corruption, government stability, rules and laws, and investment profile. Tax treaties are designed to alleviate the burden of double taxation and create a favorable environment for cross-border investment. By analyzing the study, the historical development of tax treaties between OECD and the UN and their implementation in Pakistan provides a comprehensive overview of how tax treaties influence FDI. To examine the relationship, this research employed a gravity model to analyze the impact of tax treaties on Foreign Direct Investment (FDI) at both the aggregate and sectoral levels, including the primary, secondary, and tertiary sectors. The result of study depict that treaties are significantly decreasing the flow of FDI. This decline is attributed to the introduction of various provisions in treaties aimed at preventing tax evasion, which in turn has led to a reduction in Foreign Direct Investment (FDI). The result indicates that policymakers should enhance the effectiveness of tax treaties to attract FDI ensure that the benefits of tax treaties fully utilized without deterring investment.

Keywords: Tax treaty policy, Foreign direct investment, Double taxation, OECD model, UN model, Treaty shopping, Gravity model.

CHAPTER 1

INTRODUCTION

1.1   Background of the Study

Investment plays a crucial role in any economy, whether it originates from the domestic country or involves foreign direct investment. It leads to an increase in the growth of the economy. Tax policy serves as a strategic tool to attract or prevent foreign direct investment (FDI). This has been the subject of many studies on how taxes affect economic activity. Nevertheless, there is still ambiguity in theoretical and empirical literature regarding this subject. Such as, in the classical model, the Solow model introduced in 1956, economic growth was not affected by endogenous factors. There were some exogenous factors like technology progress which accelerated economic growth. But in contrast, endogenous growth theory suggests that certain endogenous factors like government spending, and taxes have an impact on the economic growth rate. King and Rebelo (1990).

In recent eras, there has been a wave of globalization that has increased trade across borders and interconnected economies all over the world. The constant change in the tax system worldwide demands a fair and equitable tax imposed on individuals and businesses. This ongoing process needs to understand how tax rules apply to businesses and individuals choosing to move from one country to another country. The problem of double taxation occurs in such a movement because some countries tax the individual or enterprise income according to residency base, and others impose tax where income is generated. This dilemma makes individuals try to navigate the complex tax system and it becomes more complicated when different countries have different source income definitions. If both countries impose more than a 50% tax rate on the same income, it will be worse for the taxpayer to pay taxes in both countries and reach a situation to sell his asset to pay tax. This will happen due to complex definitions of technical terms and multiple layers of oversight on tax subjects. To overcome the issue of double taxation between jurisdiction and certainty for individuals to invest, countries enter into many agreements such as PTA, BIT, and tax treaties to adhere to the investor of global norms of trade.

A well-designed tax system is a fundamental pillar of every country's sovereignty. According to Lang (2021), the same income from the cross border can be taxed twice, which is called double taxation. This double tax convention is also essential in international tax law; it captures the issue of two countries taxing the same income. To tackle the problem, countries are

involved in bilateral tax treaties which also provide relief for investment and consist on lower tax rate as compared to domestic tax rate. In tax treaties of Pakistan with multiple countries comprise on lower tax rate as compared to domestic tax rate

Domestic corporate tax rate of Pakistan is 30%			
	Dividend %	Royalties %	Interest rate %
Tax treaties rate without MLI	15	10	15
Tax treaties rate renegotiate by MLI	15	10	15

But over the time these treaties misuses by many multinational companies. MNCs may use these treaties to shift profit to low-tax jurisdictions eroding the tax base of higher-tax rate jurisdictions. The complexity of tax treaties can create an administrative burden, especially for low-income countries. Moreover, through treaty shopping MNCs manipulate their operation to benefit from favorable treaty provisions which can lead a revenue loss.

Similarly, tax treaty rates are often less than the domestic rates of many developing countries. As a result of lower tax rate, many developing countries experience significant losses in withholding tax revenue. Janský and Šedivý (2019) studied the revenue cost of 14 developing countries and estimated the annual dividends and interest withholding due to tax treaties reaching hundreds of millions dollars of Philippines ($540) and Pakistan ($214). In addition, these tax treaties also constrain the ability of jurisdictions to implement the domestic tax policy. To navigate this problem, it may be necessary for tax practitioners to know the details of tax treaties between countries as these tax treaties regulate the taxation system for foreign direct investment by specifying the applicable tax base withholding taxes and other measures.

Since treaties specify cooperative taxation by partner countries, many economists are concerned that treaties increase investment, however, it is not certain. Treaties can do so because treaties reduce tax avoidance and other measures adopted by MNCs to tax-saving strategy that will reduce the FDI. Furthermore, researchers raise the question of whether treaty formation increases the FDI or not. The idea behind tax treaties increasing foreign direct investment comes from the tax effect on the investment. To explain this idea, if investors invest all their capital in their home countries, their rate of return decreases and if they increase FDI in the host country, their rate of return also decreases. For allocation of FDI, investors should

allocate capital in both countries until their rate of return is equal. However, investors are always interested in the share of return after tax, not the gross rate of return. In other words, investors base their decision on their share of return after taxes not the gross return from the investment. When the marginal effective tax rates are not equal, inefficient capital distribution occurs because efficiency requires that real non-tax factors influence capital flow.

The formulation of diverse tax policies by governments across different countries leads to variations in tax rates, resulting inefficiencies in Foreign Direct Investment (FDI). An effective tax rate is not required for a differential tax rate since the effective tax depends on many factors such as tax credits and relief from double taxation. It is generally considered that if the effective tax rate in host countries exceeds the parent countries, it will lead to low FDI. Tax treaties can help to alleviate the problem through coordination on tax policies with tax treaty partner countries. The idea of the tax treaties model is to remove the obstacle of double taxation. If treaties reduce the barrier to FDI then it would raise the FDI. Overall, tax treaties reduce the obstacle to FDI in two ways:

Firstly, treaties alleging tax rules and tax bases between treaty partner countries reduce double taxation. Secondly, it changes the actual tax rate for MNCs. They set new rules for taxes to avoid double taxation and reduce income tax to be sent back to the home countries from foreign investment. Originally, treaties were based on the OECD[1] model and it favors developed countries aftermath of the development of the UN model which favors developing countries and gives taxation rights to source income countries. Furthermore, to avoid double taxation treaties usually consist of lower withholding taxes on income like dividends, royalties, and interest rates. Combining these, we can understand that treaties can increase foreign direct investment.

However, several other arguments suggest that treaties do not affect the FDI. According to the Tsilly (2000), treaties affecting foreign direct investment are a myth but actually they reduce tax evasion and reduce strategy by MNCs to avoid taxes. He claimed that parent countries have abilities to change their tax policy and fix the issues caused by the parents and host countries and suggested that treaties improve efficiency reducing administration costs and tax evasion.

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[1] The Organization for Economic Co-operation and Development (OECD) is an intergovernmental organization established in 1961 with 38 member countries goal at promoting policies to enhance economic and social well-being. The OECD Model Tax Convention on Income and on Capital provide as a framework for drafting tax treaties, guiding nations on issues like double taxation and tax evasion.

In addition, there are unclear goals of government objectives while making treaties and it is also uncertain that foreign companies expand their business just because of low withholding tax rates.

Another study of Sinn (1990) claimed that withholding tax does not affect expansion business of MNCs business. This is because it is cheaper for MNCs to send profit abroad for investment rather than send it back home and reinvest. In this way, keeping profit abroad avoids withholding taxes that apply when income is sent back to the home countries.

Finally, tax treaties might increase the tax barrier for different types of investment. Through the exchange of information, treaties reduce the transfer pricing because transfer pricing gives an incentive to MNCs to shift their profit to low-income tax countries to shield profit from taxes.

Treaties make it easier for the government to exchange information and reduce the abilities of MNCs to avoid taxes for reasons to invest in other countries leading to less FDI. Moreover, recent tax treaties are based on MLI for anti-treaty shopping. It has been a crucial concern in many countries and this concern has given incentive to countries to renegotiate the older tax treaties and reduce the investment from treaty partner countries because investors from third countries do not use the benefit of tax treaty shifting their investment to low-tax countries.

Recently, the OECD introduced a fair and transparent taxation system globally by setting the two-pillar solution. Pillar one deals with digital taxation because MNCs do not pay fair taxation to the country where the profit is generated such as Google, and Amazon digital companies avoid market taxes because their tax liabilities are based on PE (permanent establishment). To tackle this, pillar one framework says all digital companies should pay taxes on profit-generating either the existence of PE or not. This framework was adopted by 140 countries to solve this issue. Another step taken by OECD to tackle fair distribution of profit is pillar two, which deals with the global minimum corporate tax rate. However, their implementation is doubtful due to higher domestic corporate tax rate in developing countries.

Multiple studies related to tax treaties come up with mixed results. In case of Pakistan, the effect of tax treaty on FDI is conclusive. Our aim of this study is to investigate the effect of tax treaties on the aggregate level of FDI and sector levels such as primary, secondary, and territory.

The study explores the effect of tax treaties on FDI with a specific emphasize on how this influence varies among sector primary, secondary, and territory. By analyzing both the effect of tax treaties and the lifespan of treaties over time, this study provides insight into the aggregate FDI level and sector-specific trends. The result reveals a notable decrease in the flow of FDI and within specific sectors correlation with the increasing number of treaty formations. This indicates a significant decline in the FDI with the proliferation of bilateral tax treaties highlighting the complex dynamics implication for policy and practice in international tax system and investment strategies.

1.2   Problem Statement

The primary objective of tax treaties is to alleviate the tax burden on foreign income, including both individual and business earnings generated in the source country. The core objective of tax treaties is to avoid double taxation on the same income earned from the source country. This double taxation leads to excessive costs which hinder foreign investment and people shift to misreporting or even capital flight. Tax treaties can reduce the cost of double taxation often when combined with specific regulatory measures. Alternatively, there are specific costs associated with the design and formulation of tax treaties. Governments of two jurisdictions invest time and resources to negotiate and sign these bilateral tax treaties. There is also the potential cost of tax treaties in terms of revenue because developing countries engage in treaties to receive more investment by offering low tax rates.

 Janský and Šedivý (2019) argue that developing countries primarily attract Foreign Direct Investment (FDI) by signing tax treaties. However, these treaties can restrict the ability of the source country to tax companies that invest there. It has been determined that these tax treaties lead to significant loss of tax revenue in certain developing countries in the form of withholding tax on dividends and interest. According to the analysis Pakistan and the Philippines were estimated to face a substantial amount of annual tax revenue loss- $509 million and $214 million, respectively as shown in the figure 1.1.
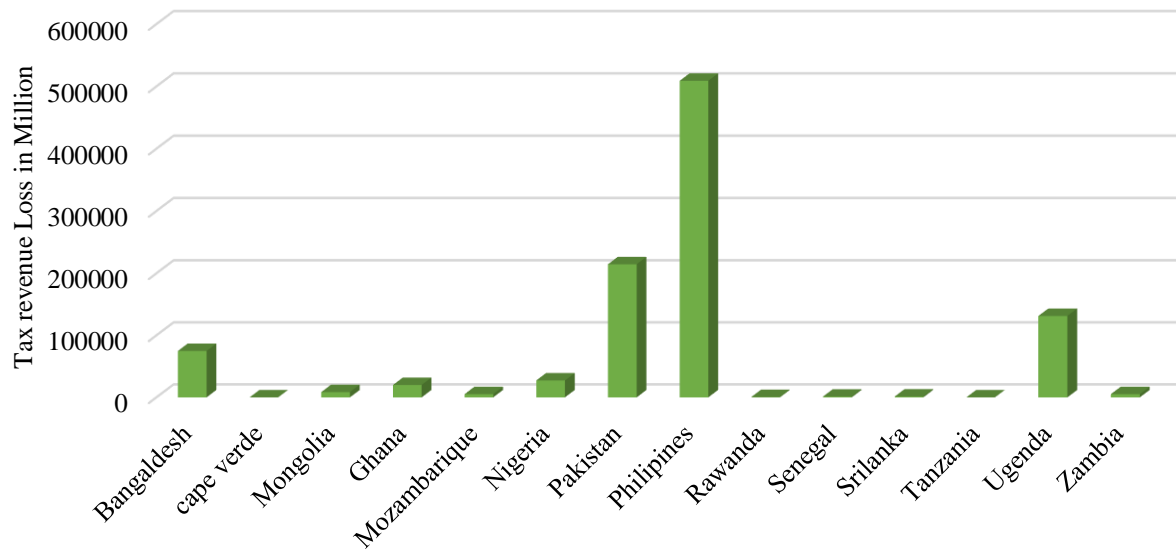
Figure 1.1*:*   Revenue Loss of Tax Treaties

Source: Janský and Šedivý (2019)

Alternatively, the emergence of globalization and digitalization contribute different methods to introduce tax avoidance because the OECD and UN models are based on Permanent establishment many companies in Pakistan are specifically doing business without Permanent establishment and are not paying taxes, and countries involved in tax treaties suffer loss of tax revenue.

1.3   Research Objectives

To understand the benefit of tax treaties on foreign direct investment across different sectors is important for informed policy-making and address this. To understand the aspect, the study involve around following objectives are

- ➢ Review of the History of Tax treaties and related policies in Pakistan
- ➢ To examine the impact of tax treaties on FDI inflow in Pakistan
- ➢ To examine the role of tax treaties in deriving FDI inflow across different sectors in Pakistan.

1.4   Research Questions

Evaluating the effectiveness of tax treaties to attract   FDI is critical for formulating sound tax policies. The study aims to investigate this issue in the context of Pakistan by addressing the following research questions.

1) Does the role of tax treaty policy in Pakistan is effective in attracting foreign Investors?

2) Does the age of tax treaty policy in Pakistan effective to attract foreign Investors?

3) Does Pakistan need to involve more bilateral Double tax treaties and other complexities in future?

1.5   Significance of the Study

This research will examine the impact of Pakistan's tax treaties on foreign direct investment (FDI), comparing the changes before and after tax treaties were implemented. This research aims to contribute to the government policy formulation by highlighting the benefits of tax treaties at an aggregate FDI level and within specific sectors. Moreover, addressing tax challenges from the digital economy is a priority of the BEPS project and its inclusive framework, with ongoing work requested by the G20, delivering an interim report 2018[2]. In 2019, members of the inclusive framework agreed to proposals on two pillars: Pillar One focuses on nexus and profit allocation, while Pillar Two introduces a global minimum tax rate of 15%. Through this research, we also seek to determine whether Pakistan should adopt the Pillar 1 and Pillar 2 framework.

1.6   Organization of the Thesis

The thesis structure following Chapter 1 provides the introduction consisting of the importance of tax treaties and relevance to the FDI-specific challenge related to the tax treaties policy in Pakistan, and the objective, research question, and significance of the study. Chapter 2 provides insight into the historical development of tax treaties, including their international evaluation, different models such as the OECD and UN model, and methods to violate tax treaties and their measurement. Chapter 3 dedicated to the literature provides the effect of tax treaties on FDI in previous studies, covering the theoretical framework and identification of the research gap in the literature review that this study aims to address. Chapter 4 consists on data and methodology describing research design, data collection, variable measurement, model specification, and econometrics method we used in the study.   Chapter 5 presents the econometrics result, descriptive statistics of the variable, interpretation, and discussion of the

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[2] Tax Challenges Arising from Digitalization – Interim Report 2018

result. Chapter 6 consists on the conclusion and summary of the research effect of tax treaties and FDI in Pakistan. It also highlights the practical recommendations for policymakers, and future research and concludes the findings with the international taxation system.

CHAPTER 2

HISTORY OF TAX TREATY AND FDI TREND

The history of tax treaties and the trend of foreign direct investment in Pakistan are interconnected and essential for understanding the country's economic integration into the global market. Tax treaties and bilateral agreements that regulate international taxation between countries have evolved significantly over time reflecting shifts in international economic relations and increasing the complexity of global trade. In Pakistan, these tax treaties have a pivot role in shaping the taxation framework and controlling cross-border economic activities attracting international investors seeking certainty and clarity in tax. Concurrently Pakistan has faced fluctuation in FDI trends affected by factors such as infrastructure development and economics policies. Examining the historical development of tax treaties and the trend of FDI inflow provides valuable insight into Pakistan's effort to enhance international competitiveness and economic growth.

2.1   Background of the Study

The history of tax treaties spans several centuries and evolving economic relationships between countries. The current international tax treaty system still follows the rules and structure established by league nation 1920 despite globalization. These rules were developed when international trade primarily involved physical goods and communication between countries was slow. Back then proposals for steps to avoid double taxation on money earned from cross-border activities arose as a result of overlapping tax claims from both countries where the income is generated and where the taxpayer residence. In response to these challenges International Chamber of Commerce advocates for a solution to prevent the problem of double taxation. To overcome this issue league nation drafted its first model in 1928 and established the framework 2010 OECD model, UN model, and modern tax treaties. The league nation did not predict the 1928 model of a tax treaty to expand into a large tax system network. League nation's effort on international taxation focuses on its goals of preventing double taxation and tax evasion. Despite significant evolution in global trade since 1920 international taxation system is unresolved on how to manage tax claims from the countries where income is generated and where the taxpayer resides to prevent the problem of double taxation and tax evasion, Kobetsky (2011). Tax treaties are designed to resolve this issue by allocating taxing rights in the source income country and residence country.

2.2   Model of Tax Treaty

After World War I, the League Nation began developing a model that addressed the tax and income issue between 1943 and 1946. However, these models were not unanimously recognized. Subsequently, the OECD took a task to make a conventional model which solve the tax and income issue. OECD created an agreeable conventional model and after a few years developed a UN model which favors developing countries. The convention has two main models depict in figure2.1. The United States and the OECD. Moreover, many countries have their tax treaty model, frequently not published but providing other nations with tax treaty negotiations.
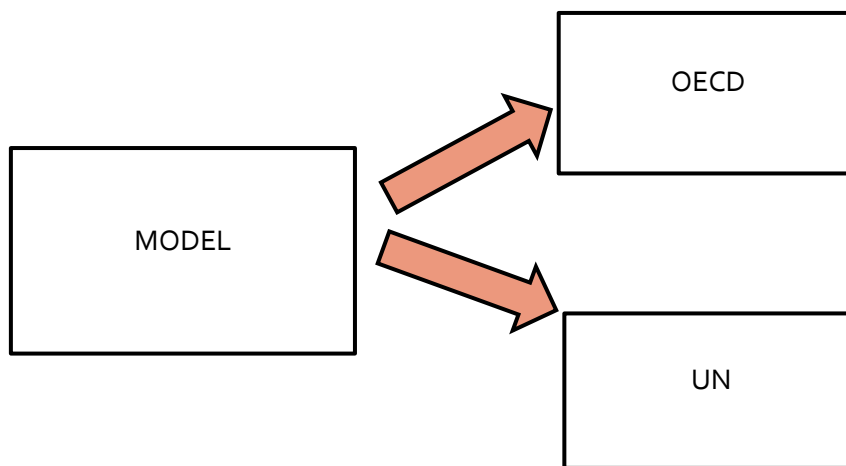
Figure 2. 1: Models of Tax Treaty

Source: OECD website

2.2.1   OECD Model

The Organization for Economic Cooperation and Development (OECD) developed the first model, widely used by its member and non-member countries and updated regularly. According to this model, income from business and rental of tangible property should be taxable in the enterprise's residence country unless the foreign enterprise establishes a business in a source country through a permanent establishment.

2.2.2   UN Model

United Nations model of the double convention also covers a similar aspect of international taxation as the OECD model developed by the United Nations Commission trade law between advanced and the still process advanced developed economies. This Model was drafted to provide a fair and mutual agreement between developed and developing countries concerning

the taxation issue and to prevent double taxation. This UN model also helps by providing guidelines to negotiate tax treaties through the framework to address tax-related issues and promote economic cooperation between developed and developing countries.

2.3   Content Structure of Tax Treaty.

Tax treaties are mainly structured under the OECD and UN Models and typically follow similar template design distribution in the following sections.

Articles 1 to 2 focus on the treaty's scope and cover tax taxes, which refers to who is involved in the tax treaty and which types of taxes are addressed in the treaty.

Articles 3 to 5 describe the terms permanent establishment and residence.

Articles 6 to 21 describe the taxation of particular income items.

Article 22 describes how to tax capital

Article 23 A and B describe methods to avoid double taxation

Articles 24 to 29 particular rules for tax sharing information, MAP, and equality

Article 30 and 31 final guidelines

2.4   The Benefit of Tax Treaty

There are three goals for countries to enter into tax treaty agreements. Firstly, to eradicate the problem of double taxation, this problem occurs when two countries' legislation imposes tax on the same event. Tax treaties eradicate the problem of double taxation because they limit the issue by a specific tax rate in agreement. Secondly, the information exchange is a bilateral agreement in which countries agree to cooperate on tax information through the exchange of information. These agreements ensure countries' domestic tax laws are followed by tax-sharing information when requested. In this way, they will solve the problem of tax evasion. These agreements are often draft guidelines set by the OECD exchange of information related to tax matters. There has been a worldwide trend of offshore jurisdiction led by Switzerland to become a part of the exchange of information regarding tax matters, with almost all countries adopting standards related to the agreed exchange of information on tax matters. Thirdly, tax treaties facilitate cross-border investment by defining specific tax rules related to dividends, interest rates, profit, and royalties. Today, 3000 tax treaty agreements worldwide aim to eliminate double taxation in two different jurisdictions and define what type of taxpayer should be included in an agreement between jurisdictions. These tax treaties provide the legal

framework for cross-border investment and, therefore, are anticipated to promote foreign direct investment. Like many developing countries, Pakistan has signed 66 bilateral tax treaties depicts in figure 2.2 with developed and developing countries to avoid double taxation and allocation of taxing rights. Pakistan reforms began in 1957 to sign treaties with the US. In 2017, there is tremendous increase of Pakistan tax treaties with different jurisdictions to enhance cooperation through the exchange of information according to the BEPS project.
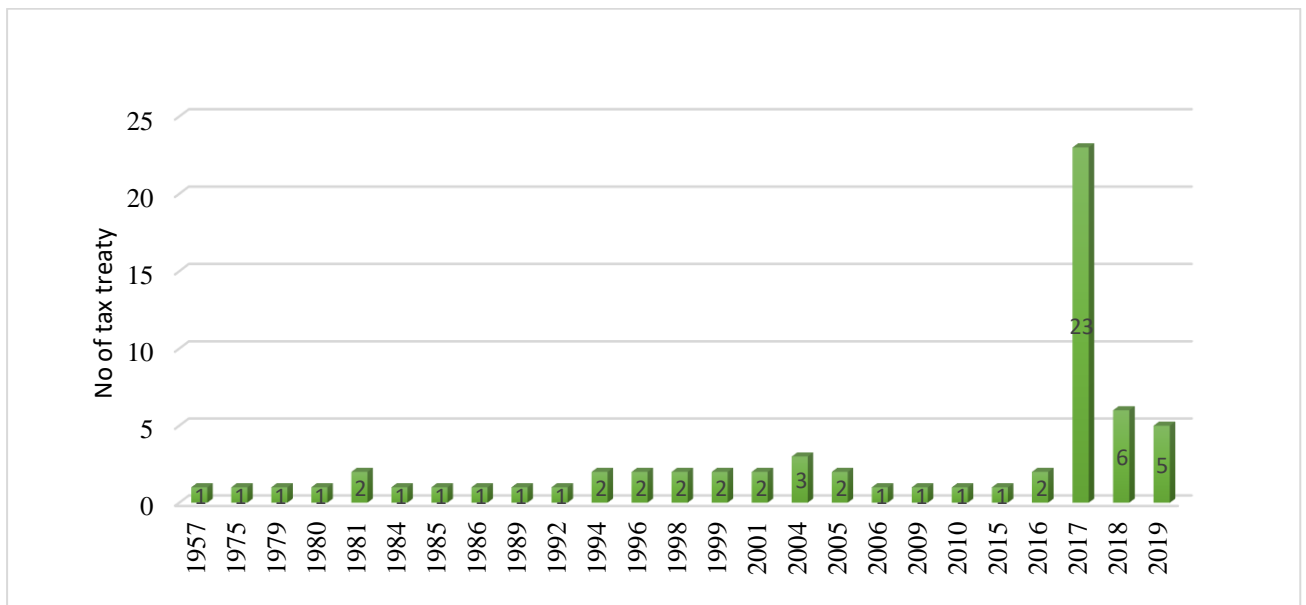
Figure 2. 2*:   Trend of Tax Treaties*

Source: ICTD(https://www.ictd.ac/dataset/tax-treaties-explorer)

2.5   Tax Treaty and Treaty Shopping

One area in international taxation that has received more attention is the violation of tax treaties, where MNEs use different techniques to avoid paying taxes. In the digitalization era, it is highly debatable whether tax treaties encourage MNE's base erosion and profit shifting. It is accepted treaty shopping is a tool in international tax planning either as a part of business arrangement or wholly artificial arrangement that are consider abusive. Treaty shopping is practice where individuals and companies take advantage of tax treaty between two countries by routing their investment or income through third countries which have more favorable tax treaty. Attractive

tax treaties include zero or minimum withholding tax on dividends, interest, and royalties. To avoid taxes and tax evasion MNEs use many direct and indirect routes to reduce the taxes on repatriation income through shell entities in another country. Sometimes, these routes involve more than one conduit country. This is depicted in the below figure 2.3.
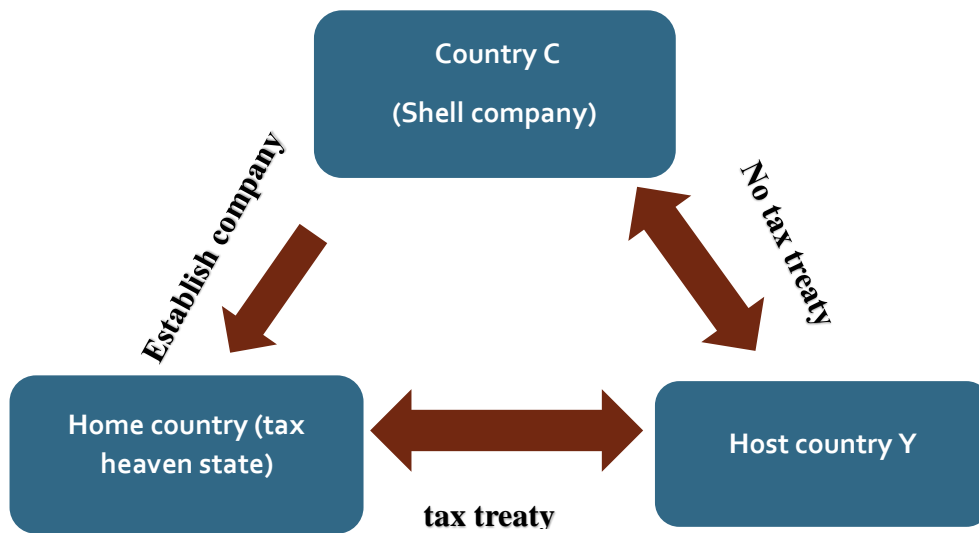
Figure 2.3*:*   Tax Treaty Shopping

Source: OECD

2.5.1   Tax Treaty Shopping and Developing Countries

The impact of treaty shopping worse on both developed and developing countries however its hurts more developing countries where fiscal constrained are more pronounced. The loss of tax revenue due to treaty shopping is biggest problem for developing countries. As articulate to the ICTD Report[3] developing countries face challenge of withholding tax revenue loss caused by tax treaty shopping. Some countries like Bangladesh, Kenya, Egypt, Indonesia, Uganda, Zambia loss all withholding tax revenue due to treaty shopping. The Tax Justice

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[3] https://www.ictd.ac/publication/tax-treaty-shopping-2/

Network (TJN) [4] Report, elucidate this issue further by providing comprehensive global statistics of annual revenue loss through tax treaty shopping is $483 billion each year . This extensive financial impact underscores a critical nature issue. In most countries studies revealed that one treaty is the main route for tax avoidance making it the biggest source of risk. Research of Bhoi (2016) revealed that foreign investor used Mauritius tax treaty as a conduit investment due to absence of capital gain tax and Mauritius status as low jurisdiction. Furthermore, countries have implemented various methods to reduce treaty shopping. Multilateral Instrument (MLI), a legal framework developed as part of the Base Erosion and Profit Shifting (BEPS) initiative, Pakistan has also updated several tax treaties to incorporate measures aimed at preventing tax treaty abuse and tax avoidance. But there are certain treaties agreement still facilitate treaty shopping. For instance, treaty signed between Pakistan and US consist on the minimum withholding tax and without anti-tax abuse measure facilitates treaty shopping when entities use treaty to get advantage. This practice can lead to loss of tax revenue effecting public funding causing economics inefficiencies.

2.6 The Standard Method of Tax Treaty Shopping

The violence of tax treaties in international taxation is highly debatable because they affect countries' revenue loss. Many multinational companies use various methods to pay non-double taxation. Some standard methods are.

2.6.1 Shell Companies

The most known method of treaty shopping is intermediary companies. By locating their company, multinational companies benefit from tax treaties in countries with favorable tax rules and legislation. In this context, they act as conduits redirecting profit between entities in

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[4] https://taxjustice.net/wp-content/uploads/2021/11/State_of_Tax_Justice_Report_2021_ENGLISH.pdf

different countries. Tax treaties benefit both parent and subsidiary companies. Intermediary/shell companies shift profit to different jurisdictions from where the actual business activity happens and revenue loss of affected countries.

2.6.2   Transfer Pricing

Multinational companies use a transfer price strategy to shift the profit among subsidiaries in various countries. This method may help shift profits to low-tax countries. Multinational corporations often use deceptive pricing to gain an unfair advantage over competitors. This method incentivizes the corporate group to take advantage of tax savings under the treaty, aside from the typical impact of revenue losses. Transfer price also challenges tax authorities to identify and combat this issue.

2.7   Response to Tax Treaty Shopping

In the last few years, there has been a development in the measurement of anti-treaty shopping. Under the OECD model convention, several rules help to prevent treaty shopping. These rules are important and influential for anti-treaty shopping.

2.7.1   Principle Purpose Test

The guideline is incorporated in Article 17 in BEPS. The PPT aims to challenge the transaction by exploiting tax treaties and reducing taxes between countries. The test checks the main reason for the transaction. If the main reason is to exploit the transaction, then tax authorities can ignore the transaction.

2.7.2   BEPS Approach

Under BEPS action plans worldwide, 130 countries including Pakistan agree to work together on global tax rules to fight tax avoidance and illicit financial activities. BEPS action plans to focus on different areas of international taxation, including tax treaty shopping. Action 14 of

BEPS addresses how to improve the tax dispute. These action plans require completing the mutual agreement process to address the issue arising from the tax treaty. This will help the taxpayer when profit is being taxed twice.

Furthermore, the BEPS project addresses revising the definition of PE to include the place of effective management. This change prevents the problem of tax treaty shopping and attains transparency in the tax system. The new tax treaty definition means the company can be taxed in a country without a PE but with a significant presence of economic activities.

Some countries also curtail tax treaty shopping through a hybrid mismatching approach, which occurs when different countries treat the same entity transaction differently for tax purposes.

Pakistan also adopt the BEPS actions according to hybrid mismatching approach to renegotiate some tax treaties with treaties partner countries to avoid the problem of transfer pricing, treaty shopping.

2.8   Biletrial Tax Treaty of Pakistan

Pakistan has executed 66 tax treaties with different countries as shown in Table 2.1. These tax treaties cover aspects of tax relief and avoidance of double taxation. These treaties follow the UN convention model and give taxing rights to the source income countries. Pakistan tax treaties first signed tax treaties with the US and over time Pakistan tax treaties signed treaties with multiple countries shown in table.

Table 2.1: Bilateral tax treaties with partner countries

Countries	Sign in	Countries	Sign
Azerbaijan	1996	Syria	2001
Bangladesh	1981	Turkey	1985
Brunei	2009	Turkmenistan	1994
Germany	1994	Yemen	2004
Indonesia	1990	US	1957
Iran	1999	Hong Kong	2017
Italy	1984	Switzerland	2017

Kuwait	1998	Bulgaria	2017
Kyrgyzstan	2005	Uzbekistan	2015
Lebanon	2005	Belarus	2016
Libya	1975	Tunisia	2018
Morocco	2006	Austria	2017
Nepal	2001	Belgium	2017
Nigeria	1989	Bosina	2019
Norway	1986	Bahrain	2020
Philipines	1979	Canada	2017
Romania	1999	China	2017
Spain	2010	Czechia	2017
Srilanka	1981	Denmark	2017
Sweden	1985	Egypt	2017
Finland	2017	Malta	2017
France	2017	Mauritius	2017
Hungry	2017	Netherland	2017
Ireland	2017	Oman	2019
Japan	2017	Poland	2017
Jordon	2019	United kingdom	2017
Kazakhstan	2018	Singapore	2017
South Korea	2017	UAE	2018
Malaysia	2018	South Africa	2017
Qatar	2018	Portugal	2017
Saudi Arabia	2018	Ukraine	2018
Serbia	2017		

Source   ICTD data set (https://www.ictd.ac/dataset/tax-treaties-explorer)

2.9   Foreign Direct Investment

When foreign investors buy securities and do not have control over the management and decisions of a firm, it is referred to as a portfolio investment. Still, when they have control over the local firm in decision-making, it's called foreign direct investment (FDI).

The challenge arises in foreign direct investment when control is measured in various ways. The International Monetary Fund (IMF) and the United Nations Conference on Trade and Development (UNCTAD) classify foreign investment as direct investment if investors hold at least a 10% share in local firms. This 10% threshold is somewhat arbitrary, but it is based on the idea that the investor owns a specific portion considered as foreign direct investment. Despite the challenges in measuring this, investors typically want to have full or partial control over how the company operates, which is different from just owning stocks in a company (known as portfolio investment). Additionally, multinational corporations (MNCs) are often referred to as transnational corporations (TNCs) when they have production operations in at least two different countries.

FDI extracts two emotions in the source and residence country. In residence or home countries, fear stems from concern that companies investing abroad might reduce wages, eliminate local jobs, and undermine the technology leadership. To other concerns, investing abroad makes firm competitors in an increasingly globalized environment. In contrary source countries, some argue that FDI accelerates economic growth, improves infrastructure, brings new technology, and other concerns FDI control over local resources and expect multinational corporations (MNCs) to exploit domestic firms. In the last two decades, advocates of FDI appear to have gained the upper hand. The flow of foreign direct investment trends increases over time. Governments of both developing and developed countries not only have assistance in reducing the barriers related to trade and cross-border investment but also provide incentives to attract foreign investors. Enormous studies have been conducted on eradicating obstacles to foreign investment to induce the government to attract foreign investment, and another common strategy to attract foreign investors is a lower tax rate.

Hansson and Olofsdotter (2013) study the impact of economic accumulation and tax rate on attracting foreign direct investment using the Hackman sample framework rather than the gravity model. This approach is more appropriate when the bilateral data of FDI are not reported. The result of the studies is that interlinkage between industries and a higher share of

R&D significantly affect attracting FDI, and other tax differences between countries also influence FDI; even small changes in tax rates also affect investment. Developed countries are the generators of FDI (86%) outflow, and developing countries are vast generators of FDI inflow (65%). Developing countries' FDI inflow stock tremendously rose from 28% to 33% from 1990 to 2000. According to the UNCTAD report, in recent years, from 2021, there has been a tremendous rise in the FDI flow to $1.58 trillion, a 64% rise in FDI from the Covid-19 pandemic first year it was $1 trillion. The thriving mergers and acquisitions and the rise in international fiancé projects due to flexible financial requirements and massive infrastructure stimulus packages are critical drivers of the increase in the flow of FDI. However, in 2022, there was a step in the flow of FDI due to the Russia-Ukraine conflict. This war extended beyond the location, triggering triple crises involving food, fuel, and finance. The surge in fuel and energy prices internationally decreases the flow of FDI. In developing countries Pakistan, the UNCTAD report[5] depicts that the flow of foreign direct investment reached $2.1 billion 2021indicating stability in the previous year. Total FDI stock stood at USD 32.8 billion in the same period. Pakistan is still not as appealing to investors as its neighbor India, but it is still on track with Bangladesh and Sri Lanka. Pakistan's appeal increases, but very slowly, in the face of difficult security conditions, blackouts of energy, and an unfavorable economic climate that further discourages foreign investment.

Over time, the flow of FDI will decline, as shown in the figure 2.4, but from 2000 to 2010, there is a jump in FDI. Since 2000, the government has been focused on the privatization and deregulation of the economy. They opened up all sectors for foreign investment, including the service sector. They assure foreign investors of full ownership of the Organization without fear of nationalization. The government also allows foreign investors to start projects anywhere in the country without obtaining local authorities' no-objection certificate.

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[5] World Investment Report 2021
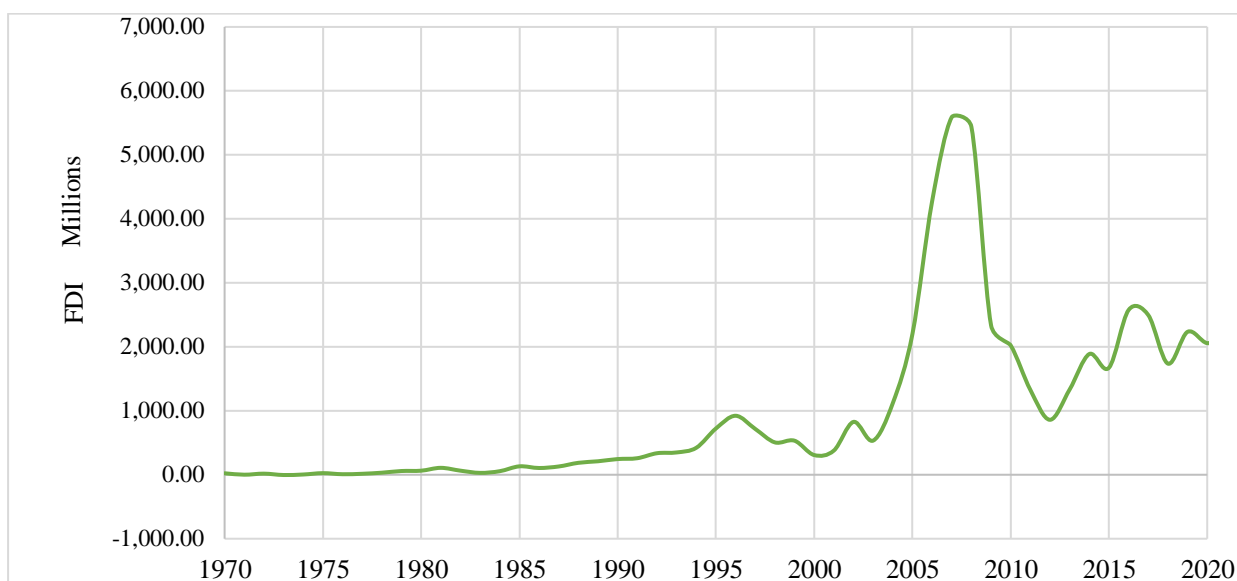
Figure2.4: Trend of FDI

2.9.1   Sector-wise Flow of FDI

The flow of FDI continuously varies across different countries as shown in figure 2.5. The variation in the flow of FDI, particularly in the sector, is significant. Since 1974, Pakistan has had a history of FDI. Siemens was the first German company to invest in the telecom industry, ICI's second British industry, which operates in the manufacturing and chemical industry. Pakistan has taken steps in each sector in the last three decades intended to attract foreign investment.

  In Pakistan, most FDI is received in the construction chemical industry after the financial sector. China is still the most compelling investor in Pakistan, although recently, Japan, Korea, and the UK have escalated investment. According to updated state bank data, Pakistan received $1.86 billion in FY21-22 to attract foreign direct investment, including USD 2.622 billion coming in and USD 754.7 million going out. The flow of FDI in the three main sectors depicted in the figure below shows that the attractiveness in the territory sector is more appealing than in the primary and secondary sectors.
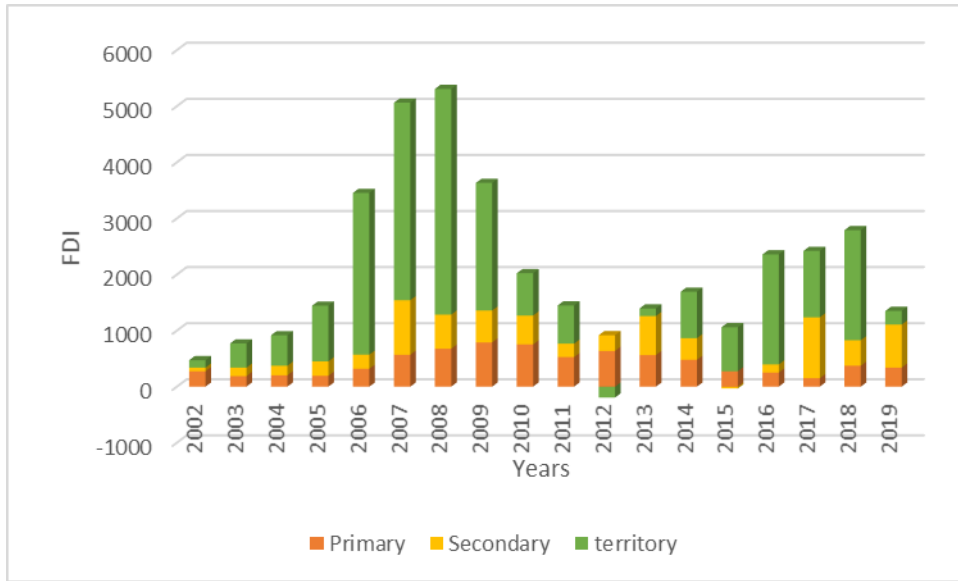
Figure 2.5: Sector- wise Flow of FDI in Pakistan

Source: Board of Investment (https://invest.gov.pk/statistics)

CHAPTER 3

LITERATURE REVIEW

This chapter begins with the literature review examining the factors that affect the FDI and also the role of tax treaties in shaping the flow of FDI. Tax treaties play a crucial role in international economics offering a structured framework to eradicate the problem of double taxation to enhance cross-border transactions, and establish a stable and predictable environment. The literature review examines the effect of tax treaties on foreign direct investment, explores key findings from empirical research, and theoretical framework.

3.1   Theoretical Framework

The nexus between tax treaties and foreign direct investment is fundamentally based on the principle of reducing tax-related barriers that impede foreign direct investment. Double taxation where the same income tax is twice in source and resident countries can cause to deterrent foreign direct investment. Tax treaties are typically designed to address this issue by allocating taxing between partner countries or reducing withholding tax on dividends, interest, and royalties. While in literature there may not be a direct, established theory demonstrate linking treaties to Foreign Direct Investment (FDI), several indirect channels highlight their influence. Treaties, such as Bilateral Investment Treaties (BITs) help to mitigate risks by providing legal stability and protection against expropriation, thus fostering investor confidence. These agreements signal a country's commitment to a stable investment environment and often open access to larger markets, making FDI more attractive. Several economic theories support that tax treaties increase the FDI.

3.1.1   Capital Export Neutrality

The idea of neutrality to evaluate international taxation policies comes from Richman (1963) She looked at two main types; capital export neutrality and capital import neutrality, which help how tax policies should be designed without unfairly influencing the investor. Capital export neutrality requires that residents of the country should face the same rate no matter where they invest. That way investors can choose the location of investment where they get high pre-tax rate return. CEN suggests that investor decisions are based on the investment

opportunity, not on the tax difference and it also supports a tax system where investors' taxes are based on the resident-based or income source base can credit off any foreign tax paid. This theory asserts that tax policies should treat domestic and foreign income equally to ensure fair competition in international taxation which give incentive to investor invest abroad without double taxation problem which lead to promote FDI. By promoting equal taxation on income from foreign operations, export neutrality encourages outward FDI, as companies are less burdened by additional taxes on profits generated abroad. It also reduces concerns about double taxation by implementing measures like tax credits or exemptions, making foreign investments more attractive. Furthermore, also enhances competitiveness by allowing firms to operate on an equal footing with local companies in host countries, thereby facilitating increased FDI. Ultimately, as export neutrality leads to increased FDI, which stimulates economic growth in both home and host countries by bringing in capital, technology, and expertise, contributing to job creation and productivity enhancements.
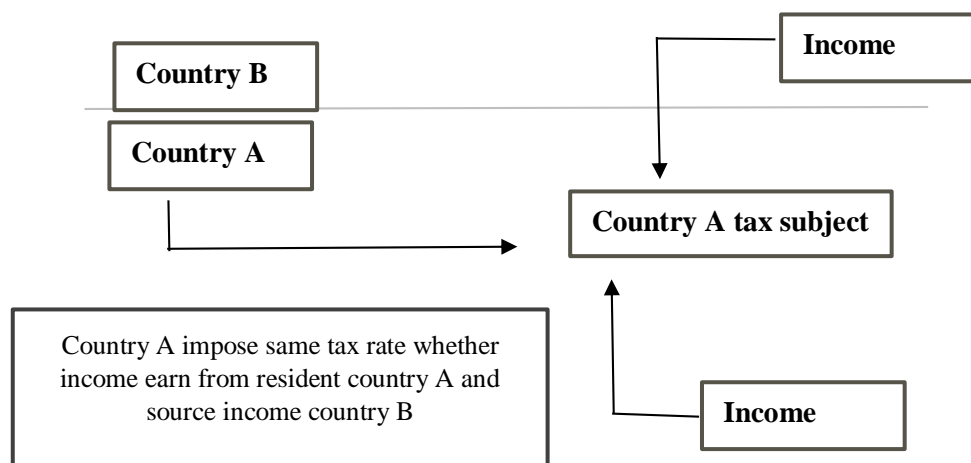
Figure 3.1: Capital Export Neutrality

Source: Darussalam and Septriadi (2010)

The study evaluates that source income country and residence base income country a fundamental pillar of international taxation survived till to this day, however, it stimulates a controversy known as a dilemma of taxation. To solve this dilemma, league nation introduced a bilateral and multilateral agreement for each country to solve the problem. Darussalam and Septriadi (2010) explained Capital Export Neutrality showed in fig (3.1); meaning tax on the income from both home and resident country should be same regardless of investment location.

3.2   Empirical Evidence

Empirical studies on the effect of tax treaties vary across all contexts reflecting the complexity and variety of contexts in which tax treaties operate. To operationalize the empirical literature review, we first go to the determinants of FDI which highlight important determinants used as control variables in the study, afterwards move on to the effectiveness of tax treaties across different contexts.

3.2.1   Determinants of FDI

Undoubtedly, globalization profoundly affects social and economic policies. The literature has recognized that FDI is an outcome of globalization. FDI is seen as an essential parameter to enhance the growth process; hence, it is an important priority for the governments of developing countries. Theoretically, it is believed that FDI is essential in supporting and accelerating economies' economic growth over time.

Har et al. (2008) used ordinary least square regression on the FDI and Malaysia's economic growth data and found strong evidence between economic growth and FDI. Numerous economists discussed the importance of FDI inflow in the early 17th century; as presented in the theory of David Ricardo; the comparative cost of advantage and disadvantage believed that FDI is most attractive to countries with low production costs and cheap labor.

Olofsdotter (1998) provides a similar result using cross-sectional data and finds that FDI is positively related to the economic growth of host countries with higher institutional efficiency measured by the degree of property rights protection and bureaucratic efficiency.

In their research, Kok and Acikgoz Ersoy (2009) explore that foreign investors are more likely to shift capital to other countries influenced by institutional quality rather than special incentives. The paper uses panel data based on the FMOLS and SUR regression to find that the interaction of FDI with determinants such as market size, domestic fixed capital formation, and GDP deflator has positive significant effects. In contrast, the interaction between debt services and inflation hurts FDI.

Vijayakumar et al. (2010) uses panel data to employ a fixed method based on Housman's results to explore investing in significant infrastructure projects, increasing domestic investment, and investing in environment-friendly as drivers of FDI even in highly indebted countries.

However, Tradeopness, economic stability, and growth prospects are insignificant determinants.

In their study, Khachoo and Khan (2012) use panel data and employ the FMOLS to consider endogeneity and autocorrelation and explore that market size, total reserve, infrastructure, and labor cost are significant determinants of attracting FDI and suggest that to attract more FDI, countries must raise the total exchange reserve, improve infrastructure and GDP growth, and include a critical foreign policy agenda for developing countries. Though South Asian countries face significant increases in FDI, the rise in FDI is not as substantial as other Asian countries. At this juncture, the question focuses on the factors influencing FDI inflow and the motivation behind the home country's investors to move capital to host countries. The countries with significant growth levels with magnificent shares in service large domestic markets give signals to the foreign MNCs to establish large-scale production based on market and institutional policy reforms in favor of attracting FDI.

Determinants of FDI depend on country-specific factors; hence, the study by Azam and Lukman (2010) investigates that the determinants of FDI in India, Indonesia, and Pakistan during the period 1971-2005 used log-linear model for each country which revealed the empirical result that the market size, external debt, domestic investment Tradeopness are robust determinants of FDI. Moreover; study revealed that the determinant of each country are different. India and Pakistan determinants to attract FDI are same except Tradeopness and government consumption of Pakistan while Indonesia does not match.

Sahoo, Nataraj, Dash, et al. (2014) analyze the determinants of FDI using time series and panel methodology from 1980-2010. It also includes macroeconomic and institutional variables in South Asian countries: Bangladesh, Iran, Nepal, Pakistan, and India. Their empirical findings showed that Tradeopeness GDP and direct investment positively impact FDI, and labor cost has a negative influence. This is because developed countries are worried about outsourcing. South Asian countries are attracted to outsourcing because of cheap labor. Many Western countries outsource their companies to countries where labor is affordable, which has led to higher unemployment in Western countries. Due to this reason, they avoid FDI.

Blonigen and Piger (2014) study FDI by adopting the gravity model using the Bayesian statistical technique, suggesting that many variables used in previous FDI studies are unimportant when considering a more comprehensive range of factors. Instead, a simpler FDI model that includes mainly gravity variables (like distance and economic size), cultural

distance, parent-country per capita GDP, differences in labor resources, and trade agreements is more reliable. They found less support for government policies to encourage FDI and little robust evidence that host country policies, like trade costs, business costs, and infrastructure. To benefit from technological diffusion, a country must be advanced enough to absorb innovative technology or political institutions that significantly impact FDI. The exceptions are policies from bilateral agreements, such as trade agreements, bilateral investment treaties, customs unions, and service agreements in mergers and acquisitions. Developing countries gain a significant inflow of FDI from developed countries due to institutional quality, infrastructure, and skilled labor. More inflows of FDI and the maximization of gains from it, infrastructure improvement, adequacy of foreign exchange reserves, and growth of GDP should be the critical agenda of the foreign policy of developing countries.

Khachoo and Khan (2012) estimate through FMOLS regression on determinants of FDI from developing countries suggests that market size, total infrastructure, and labor cost are the primary determinants of FDI inflow. Saini and Singhania (2018) studies employ fixed effect random effect and GMM on panel data and found that FDI in developed countries seeks policy-related determinant GDP growth and Tradeopness while in developing countries, FDI seeks through fixed capital formation and Tradeopness. Campos and Kinoshita (2003) emphasize the complexity of the determinant of FDI. His research revealed that market size and labor costs are insignificant in attracting FDI. Other variables, such as trade openness and institutional factors, are more critical to attracting FDI.

FDI inflow raises the total factor of productivity. It increases the income level because FDI brings new technology to the country, which in turn leads to improvement in the standard of living. Apergis et al. (2008)studied the connection between labor productivity innovation and technology spillover for 21 European and US manufacturing industries. A panel-based unit root test revealed empirical findings with a run relationship between labor productivity, innovation, and technology transfer. Moreover, human capital, research, and development are significant determinants of labor productivity. These effects are both directly through innovation and indirectly enhance the spread of technology. A country must be technologically advanced enough to accept new technology and gain from technological diffusion. Ng (2007) suggests that developed countries adopt technological advancement faster than less technology-savvy nations. Recent research has emphasized the institutional environment and role of government in attracting FDI.

Staats and Biglaiser (2012) employed a fixed effect on panel data and used a US CEO survey to reveal that judicial strength was linked to higher FDI. Countries with more vital adherence to rules attract more FDI than more incentives for attracting FDI. Mengistu and Adhikary (2011) study reveals that institutional quality and government stability could be instruments for foreign investors' long-term FDI investment. Empirical results based on FEM, FGLS, and Paris Weinstein panel estimation method with corrected heteroscedasticity standard error analyze the six governance indicators, among them infrastructure, political stability and absence of violence, the rule of law, the control of corruption, and government effectiveness, found to be robust determinants of FDI. The remaining two violence and accountability regulatory qualities do not significantly attract FDI. Moreover, another study conducted by Daude and Stein (2007) found that control of corruption, rules and law, democracy, and government effectiveness are insignificant in attracting FDI.

Some studies postulate that a rise in corruption does not always deter investment. It could facilitate economic expansion by removing regulatory hurdles. Helmy (2013) suggests that corruption is often seen as a substitution for bad governance, and empirical evidence shows that the effect of corruption in small, wealthy countries is insignificant.

Bengoa and Sanchez-Robles (2003) explore the correlation between economic freedom and FDI using panel data from 17 Latin American countries. His research showed that the economic freedom of host countries is a positive link to FDI. It also suggests that host countries' trade liberalization and human capital are positively linked to the long-term flow of FDI.

Rafique et al. (2023) investigate the effect of economic freedom on FDI through the ARDL approach and show that developed and developing countries make transparent and conducive policies to attract foreign investor to invest capital in their home countries. The study revealed that economic freedom indicators affect that FDI inflow in Pakistan differently. Rules, law, and regulatory quality are significant determinants of FDI. A vital market size is also positively associated with attracting FDI.

Several studies have shown that institutional quality's effect on attracting FDI varies in different sectors.Walsh and Yu (2010)analyzed the effect of institutions on different sectors. Through the GMM dynamic estimator based on the Arellano-Bond methodology, FDI in the primary sector is not affected by macroeconomic stability or institutional quality; instead, the factor existing more stock attracts more FDI; this makes sense FDI in resource-intensive industries is based on location and equipment, and labor quickly moves.

At the same time, the secondary sector FDI attracts a low real exchange rate through macroeconomic conditions, which attracts more FDI.

Territory FDI is influenced by rapid growth and the expansion of the open economy. Many studies talk about the determinants of FDI, but no one has identified the exact determinant of FDI.

3.2.2 Review of Determinants of FDI

Table3.1: Determinants of FDI

Variables	Positive effect	Negative effect	Not effect
Market size	Kok and Acikgoz Ersoy (2009),(Khachoo & Khan, 2012),Azam and Lukman (2010),Rafique et al. (2023),		Campos and Kinoshita (2003)
Domestic Fixed capital formation	Vijayakumar et al. (2010), Kok and Acikgoz Ersoy (2009),Azam and Lukman (2010),		
Infrastructure	(Khachoo & Khan, 2012),		
Tradeopness	Azam and Lukman (2010), Blonigen and Piger (2014),Sahoo, Nataraj and Dash (2014),Bengoa and Sanchez-Robles (2003)		Vijayakumar et al. (2010)
Total Reserve	Khachoo and Khan (2012)		
Labor cost		Sahoo, Nataraj and Dash (2014),Khachoo and Khan (2012)	Campos and Kinoshita (2003)
Economics Freedom	Bengoa and Sanchez-Robles (2003)		
Human capital	Apergis et al. (2008), Bengoa and Sanchez-Robles (2003)		

Research and development	Apergis et al. (2008)		
Violence and accountability		Staats and Biglaiser (2012)	
Rules and Law	Staats and Biglaiser (2012),Rafique et al. (2023)		Daude and Stein (2007)
Control of corruption	Staats and Biglaiser (2012)		Daude and Stein (2007), Helmy (2013)
Government effectiveness	Staats and Biglaiser (2012)		Daude and Stein (2007)

Source: Author's contribution

3.2.3 Tax Treaty and Foreign Direct Investment

There are several studies Neumayer (2007),Hong (2018),Blonigen and Davies (2004) on the effect of tax treaties on foreign direct investment, and results from different studies varied suggest that the impact of treaties might not have the same effect across different countries and context. Potential reasons for mixed findings of tax treaties are: Firstly, they can positively influence the FDI by preventing double taxation. Secondly, it reduces the new foreign direct investment due to the anti-avoidance tax strategy. The literature of several studies is split into roughly equal parts, showing results as positive, negative, and no effects.

Firstly (Blonigen & Davies, 2004) analyzed the impact of tax treaties on FDI and restricted their analysis as the US is a source of FDI using the fixed effect method with the CMM model for other control variables over data from 1980-1999. In this way, they found that treaties had no evidence to impact FDI. Another similar paper by Blonigen and Davies (2005) used dyadic analysis to employ fixed effect and OLS over the sample period 1983-1992, and they also used the CMM model for the control variable. They found an adverse impact of new tax treaties on FDI. However, in the case of older tax treaties, there is a positive correlation between tax treaties and FDI, suggesting that tax treaties reduce tax evasion rather than encourage foreign direct investment. The adverse effect of aging of DTTs may be attributed to the changing fiscal and regulatory environments in developing countries, particularly in the ASEAN region. Dong (2019) research show that new DTTs in ASEAN countries have a positive but small impact

on FDI inflows, meaning they don't significantly attract more investment. However, older DTTs have a stronger negative impact on FDI, suggesting that as these treaties age, they might reduce investment. One possible reason for this is that most ASEAN countries are developing nations that have made many changes to their tax and financial systems over time. These changes may have made some older treaties outdated.

Similar research conducted by Egger et al. (2009) with the same purpose used the fixed effect based on Housman's results from 2007-2018 on the gravity model. The result suggests that the importance of country-specific and other country-specific unobserved characteristics revealed that the impact of tax treaties among non-OECD countries is positive with no statistical significance, and it also indicates that recently signed tax treaties increase FDI with a more negligible effect. Multinational investors use different strategies to cut dividend taxes. Siegmann (2007) also use gravity model and CMM model to examine the impact of tax treaties on FDI and suggest that bilateral and Multilateral treaties agreement enhance the investment. Furthermore, it also suggests that with institutional stability environment contribute to increase the effectiveness of the agreement.

At the micro level firm data Davies et al. (2009) used micro-level data or network approaches to examine which tax treaties affect FDI. The studies used firm-level data to investigate the effect of tax treaties on sales and investment behavior. The empirical analysis shows that tax treaties do not influence firm sales, but tax treaties have little impact on FDI activity. However, it suggests that these treaties change the behavior of trade decisions to report lower profit amounts in host countries.

In contrast, Egger et al. (2006) used propensity score matching to analyze the effect of tax treaties on OECD countries from 1982 to 1992. They also showed that tax treaties harm FDI.

The effects of tax treaties on developing and lower-income countries are different according to Neumayer (2007), developing countries spend time and resources renegotiating DTT and accepting the revenue loss. As such, DTT comprises residents all over the country where investments are made. The loss in the form of tax revenue would be balanced if they received more FDI from developed countries. It also suggests that DTT encourages FDI through treaties with the US and the capital-exporting economy, and there is a positive correlation between DTT and FDI. Once the sample is broken down into developing and lower-income countries, DTT benefits developing countries, not low-income countries.

Further research by Braun and Fuentes (2016) study the effect of the Austrian tax treaty policy. Through econometric analysis, their result shows that developing countries that sign tax treaties with Austria may see increased foreign direct investment from Austrian companies. On the other hand, the institutional background reveals that Austria lost tax revenue due to the lower tax rate. Hong (2018) created and proposed a tax rate matrix of 70 countries' tax treaty networks and developed a computational algorithm to investigate the tax-minimizing investment pathway framework in the treaty network. The study results found that the tax-minimizing route significantly positively affects FDI. Through direct tax routes, encourage FDI and reduce treaty shopping.

Shah and Qayyum (2015) examine the effect of other macroeconomic variables that are more significant in cross-border FDI flow. The study examined DTT's Impact on FDI in 15 Latin American and developing countries from 1983-2013. The study uses other variables, such as market size, tradeopness, and human capital, to examine the effect of DTT on FDI and concludes that DTT does not affect FDI instead, these countries rely on more factors such as human capital and improvement in infrastructure, to attract FDI.

Murthy and Bhasin (2015) used a fixed effect model to capture the effect of tax treaties on FDI inflow into India. The empirical result revealed that the presence of tax treaties and the duration of tax treaties attract FDI into India. Moreover, other macroeconomic variables, such as GDO and GDP per capita, positively and significantly affect FDI.

Lejour (2014) examines the combined effects of unilateral and multilateral treaties on FDI. Using data from OECD countries from 1985 to 2011 shows that new treaties can increase FDI by 21%, considering the geographical variables. The study also uses the matching propensity score method, showing that signing tax treaties increases FDI. In addition, the author identified that treaty shopping exists but does not try to determine how the contribution exists to improve the FDI.

Shehaj and Zagler (2024) investigate how tax treaty relief methods affect the FDI. It focuses on 37 OECD countries' tax treaties with developing countries from 2005- 2016. We found that tax relief and tax sparing in tax treaties positively influence the FDI inflow in developing countries; however, its impact is also harmful when OECD countries derive methods to provide relief and exemption compared to tax credits. It affects the domestic tax policy of host countries and sets higher corporate tax rates, decreasing FDI inflow.

Barthel et al. (2010) state that double taxation treaties (DTTs) significantly and favorably affect the inflow of foreign direct investment (FDI), especially into developing nations. Additionally, they found that nations with lower economic development and higher political risk see a more significant impact from DTTs on FDI.

However, in Pakistan, a developing country, Atif and Siddiqui (2019) used specific data from individual firms and calculated tax relief from DTT. Correlation, descriptive test, and regression results of dividend and capital gain in double tax treaties are significant factors affecting FDI.

The overall conclusion from the review of the studies is that the effect of tax treaties on foreign direct investment is context-dependent. Mixed findings indicate that countries do not design their tax treaties according to the economic conditions, development goals, and tax administration capacity. The effect not only different between developed and developing countries but also within regions or industries.

3.3   Research Gap

In recent times, the emergence of digital transactions in cross-border treaties are designed to avoid double taxation on the same income in cross-border transactions enhance international cooperation to prevent tax avoidance and tax evasion. Currently, 3000 bilateral tax treaties exist worldwide to handle the problem of double taxation. Since mid-1990 there has been increasing pace at which tax treaties have been established to shift taxing rights from source income country to the country where business is based. This shift could be a loss of tax revenue where income was generated. However, it is believed to attract investment, create job opportunities, and positively impact economic growth as many develop and developing countries signed bilateral tax treaties agreement according to OECD and UN model. Pakistan also signed 66 tax treaties with developed and developing countries to deprived the double taxation based on the principle of UN model. Several researchers from different countries analyze the nexus between tax treaties and FDI in Pakistan. Atif and Siddiqui's (2019) study used data from 50 foreign companies from 2013-2017. They focused on the difference between tax treaty rates and domestic tax rates showing a positive difference in rates, illustrate that tax relief provided by DTT plays a significant role in attracting FDI. However, they did not focus on bilateral FDI with multiple countries. Another study by Shabir et al. in 2023 evaluates tax

treaties qualitatively. It compares the index value proposed by OECD for different countries and illustrates that the treaty does not affect FDI without analyzing FDI bilateral data. There is no evidence of bilateral FDI data to examine the effect of tax treaty on aggregate level of FDI and sector-wise. Our study aims to fill this gaps by utilizing a bilateral FDI dataset to examine the impact of tax treaties on FDI inflow in Pakistan. We will specifically analyze the effects on the primary, secondary, and tertiary sectors before and after the enforcement of tax treaties.

CHAPTER 4

DATA AND METHODOLOGY

This chapter provides a brief introduction to the research framework giving us a snapshot of how the research is structured to achieve the study objective. Subsequently this chapter move on to discuss the model specifications, and econometrics technique employed in the study.

4.1   Introduction

In this study, we employed a quantitative research methodology to investigate the impact of tax treaties on total bilateral Foreign Direct Investment (FDI) as well as sector-specific bilateral FDI. The choice of a quantitative approach is instrumental in achieving the study's objective of understanding how tax treaties effect FDI flows. A research framework developed to explore the effect of tax treaties on FDI. This framework outlines the structured sequence of activities necessary to test the proposed hypotheses. The flow of research is illustrated in Figure 4.1 below, which provides a clear depiction of the research process.

The research begins by applying an appropriate gravity model, which is well-suited for analyzing the effect of tax treaties on FDI. This model forms the foundation of our quantitative analysis. In this study we use a causal research design, focusing specifically on the relationship between tax treaties and FDI. Consequently, the quantitative methodology is important to rigorously assessing this relationship and drawing meaningful conclusions.
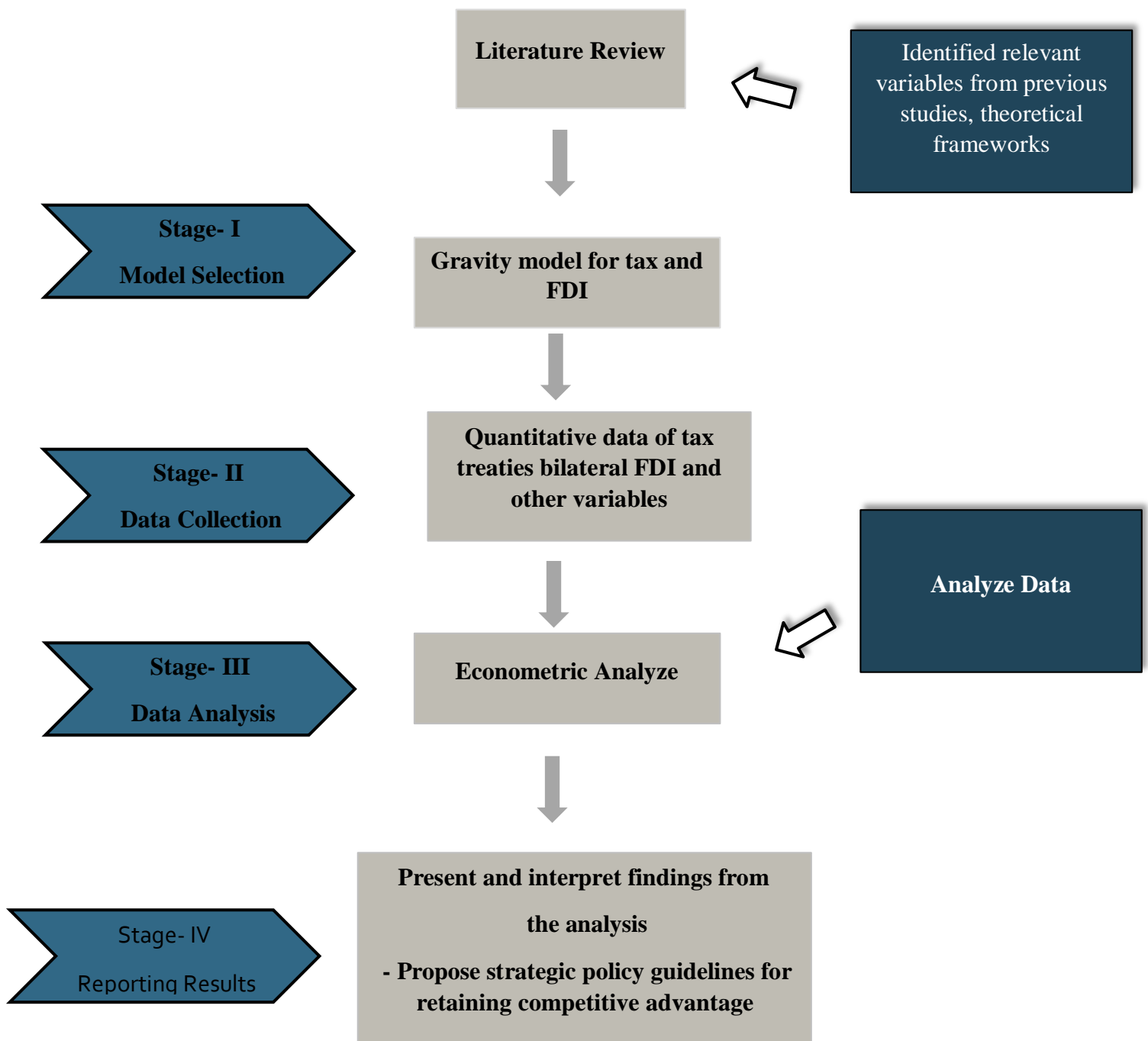
Figure 4.1: Research Framework of the study

Source: Author's contribution

4.2   Gravity Model and FDI

In a recent year, the gravity model has gained prominence to explain the flow of FDI. The model predicts that the economic interaction between two countries is positively related to the economics size and negatively related to the distance between them.

In previous studies used the gravity model to explained the flow of FDI such as Portes and Rey (2005), Borrmann et al. (2005), Bevan and Estrin (2004), and Stone and Jeon (1999) were the first to use the gravity model to estimate the flow of bilateral FDI. The author derives the gravity model for the flow of FDI. They captured the market size of the two economies and the distance between them. The distance can be captured as transaction costs involved in doing business in another country, such as transportation costs, communication, cultural costs, and institutional costs, such as tax systems and property rights

$$FDI_{ijt} = f(GDP_{it}, GDP_{jt}, dist_{ij}, trade_{tj}, ULC_{tj}, r_{ijt}, risk_{tj}) \qquad (1.2)$$

In the above equation (1.2), subscripts i and j represents the home and host countries respectively, t represents the time period. GDP_{it} and GDP_{jt} represent gross domestic product of the home and host countries indicating the economic scale of both countries. $dist_{ij}$ symbolizes the geographical distance between home and host countries which can be impact on investment decision. $trade_{tj}$ indicating the trade openness of host country refer to the how much country liberal trade policy. ULC_{tj} signifies the cost of labor in host country a crucial factor affecting the cost of production and investment. r_{ijt} represents the differential in interest between home and host countries which can influence the capital flow $risk_{tj}$ reflect the investment risk associated with the host country such as political stability.

4.2.1   Gravity Model on FDI and Tax Treaty

The original equation of gravity model can be transformed into log form to estimate empirically the flow of FDI. According to Blonigen and Davies (2005), the desired literature on FDI demands to established a model that outlines the main long-term factors influencing the location of FDI.

Allen et al. (2020) create a more comprehensive model of trade and geography by generalizing the gravity model. Their work is titled A Universal Gravity Model, but it did not extend the

theories of FDI, suggesting potential complexities and limitations in the framework of the gravity model.

Kox and Rojas-Romagosa (2020) adapt the universal gravity model to analyze the effect of PTA on the bilateral FDI.

Numerous researchers use the gravity model to analyze the effect of tax treaties on FDI. In this framework, Blonigen and Davies (2005) used the CMM model derived from the gravity model specifications, which fits nicely in cross-country data of FDI to estimate the impact of tax treaties on FDI.

Lee and Kim (2022) used the gravity model specifications in empirical analysis to examine the effect of tax treaties on FDI using outbound tax treaties from 2007 to 2008. The empirical result revealed that the impact of tax treaties positively attracts FDI, including other tax agreements such as tax exchange information transfer price WTO member.

4.2.2   Proposed Theoretical Model

As the above literature, our analysis is based on the effect of tax treaties on FDI consisting of bilateral tax treaty countries with Pakistan over the period 1998-2000 and 2008- 2018. We analyzed the proposed gravity model based on the other control key variables. Our conceptual framework is as follows.

$$FDI = f(Tax\ treaty_{it}, Age\ of\ tax\ treaty, Grav, tardeopness\ institutional\ var) \quad (1.3)$$

In the above equation (1.3), the gravity model GDP is considered a strong indicator influencing FDI. This is because countries are always attracted to countries with a large market size and high purchasing power. On the other side, the physical distance is not a significant indicator of FDI because it is a suitable variable for the trade flow and measures the cost of a trade. The influence of FDI is unclear, but one perspective might indicate that costs related to FDI activities include transportation costs and communication market search. However, another viewpoint is that companies set their production facilities close to foreign markets to reduce the associated distance cost. It is reasonable that the higher the distance between jurisdictions, the higher the associated cost.

Countries with an efficient institutional framework are more likely to attract Foreign Direct Investment (FDI). it includes several factors the difference in cost of production, cost of

moving production, and demand from the local market. The response variable is bilateral foreign direct investment inflow in Pakistan from different countries in total and different sectors to examine the impact of the tax treaty and age on the total and sector. There are seven other predictors: variable GDP, distance, Tradeopness, and institution.

4.3 Empirical Model Specification

In this research, we will use a model that includes tax treaty and age of tax treaty as the primary variable and some institutional variables as the control variable

$$
\begin{aligned}
lnFDI_{ijt} = \beta o &+ \beta 1(Enforce\ tax\ treaty) + \beta 2(Age\ of\ tax\ treaty)it + \beta 3(lnGDPit) \\
&+ \beta 4(LnGDPjt) + \beta 5(lndist)ij + \beta 6(tradeopness)it + \beta 7(corruption) \\
&+ \beta 8(law\ and\ order) + \beta 9(Government\ stability) \\
&+ \beta 10(investment\ profile) + \varepsilon i \qquad\qquad 1.4
\end{aligned}
$$

4.4 Description of Variable

The gravity specification is a conventional empirical framework for explaining FDI as it incorporates key macroeconomic factors. (Grubert, 1998),Blonigen and Davies (2004) used gravity model specification to examine FDI empirically. We also used gravity model specification based on the GDP of home and host countries, distance between two countries, and control variables such as institutional variables (control corruption, Government stability, rule of law, investment profile), and trade openness. The dependent variable is FDI inflow into Pakistan. The construction of explained and explanatory variables are described below.

Table 4.1: Definition of Variables

Variables	Definition
LnFDI$_{ijt}$	Foreign direct investment from home countries to source country Pakistan
Tax treaty	Tax treaties are considered as dummy variable 0 for without treaty 1 for tax treaty of Pakistan with treaty partner countries
Age of tax treaty	The age of the treaty means the effect of treaty over the time, it is created by the interaction of dummy variables.

LnGDP$_o$	GDP of home countries
Ln GDP$_{pk}$	Real GDP of source /host country(Pakistan) at t time
Distance	Distance between i countries and j country (Pakistan)
Tradeopeness$_{pk}$	Tradeopness of country Pakistan at t time
Control of corruption	Control of corruption scores 0 for high corruption in a country and 10 for no corruption (use as a control variable)
Government stability	Government stability scores 0 for no stability in countries 10 for stable and no political instability (use as a control variable)
Rule of Law	Rule of law score 0 for weak rules and regulation 10 for strong rules and regulation (use as a control variable)
Investment profile	The score of the investment profile is 0 for poor investment profile and 10 for strong investment profile (use as a control variable)

For this research, we have used the real GDP of home and host countries. We hypothesize that the higher GDP in the home countries will lead to an increase the domestic demand resulting in enhanced production efficiency at a lower cost. This in turn encourages investors to pursue opportunities abroad. The host countries' GDP is also a crucial factor in attracting FDI as it reflects the market size and potential to attract foreign investors. We anticipated there is a positive correlation between host countries' GDP and FDI.   Another explanatory variable is the distance between home and host countries. We expect there is a negative correlation between distance and FDI suggesting an inverse relationship.

Furthermore, international trade is identified as a significant factor in attracting FDI. Tradeopness of the host country is measured by country imports plus exports divided by GDP. We expect the greater Tradeopness in the host country will positively influence the FDI. A liberal trade policy helps foreign investment, particularly in export-oriented FDI.   As a result, we expect a favorable relationship between trade openness and foreign direct investment.

Measuring tax treaties is challenging because these treaties are widely varied and hard to quantify. Furthermore, the effect of tax treaties can differ based on the pre-existing tax policies of the countries involved. We hypothesize that treaties are positively correlated with FDI

because they provide incentives for to investors avoid double taxation and the rate of taxes in treaties is lower than the domestic rate.

Age of tax treaties variable means when the treaty is constitutionally adequate and provides certainty to the investors regarding taxes on dividends, royalties, and interests in the home and host country. We expect that treaties effect will be positive over time to attract FDI. The age of tax treaties variable can be measured through the interaction dummy.

We included institutional variables control of corruption, law and order, Government stability, and the investment profile of host countries to examine the effect on FDI. By controlling these variables, we can isolate the effect of main independent variables tax treaty and age of treaty on the dependent variable (FDI), ensuring the result are not contradicted by other factor. It is expected that there is a positive link between institutional variable and FDI. If control of corruption is higher then there is less Burberry and transparency, and making foreign investors more confidence.

4.5   Sample Selection

In the sample, our study will use data from 15 countries with bilateral tax treaties from 2008-2020 in total FDI and sector wise. These countries consist of developed and developing countries. Selected countries for studies are in Table 4.2

Table 4.2*: Selected Tax Treaties with Partner Countries*

Sr .no	Tax treaty	Sign in	Effective
1	Canada	2017	2022
2	China	2017	2023
3	France	2017	2022
4	Germany	1994	1995
5	Hong Kong	2017	2018
6	Italy	1984	1992
7	Netherland	2017	2022
8	Singapore	2017	2022
9	Switzerland	2017	2018
10	U.A.E	2018	2022

11	U.K	2017	2022
12	Korea	2017	2022
13	U.S.A	1957	1959
14	Kuwait	1998	1999
15	Malaysia	2018	2022

Source   ICTD Data

4.6   Data Collection

One of the major challenges in analyzing the impact of bilateral tax treaties on foreign direct investment (FDI) is the constraint posed by data availability. A significant issue lies in the measurement of bilateral FDI data, which is inconsistencies. For instance, there is a variation across OECD countries on the inclusion of reinvested earnings in FDI calculations because some countries do not include the reinvesting earning as a part of their FDI figure. Additionally, there is confusion regarding the threshold of foreign ownership required to classify an investment as either FDI or portfolio investment.

Given these disparity, it is crucial that the definition of FDI remains consistent over time for each country. This consistency is important as it enables the application of statistical techniques that leverage variations in data across individual countries over time, thereby facilitating a more accurate examination of the relationship between variables.

In the context of bilateral FDI data between Pakistan and its treaty partner countries, the presence of zero and negative values poses a significant issue, particularly when logarithmic transformations are applied, as these transformations are not defined for non-positive values. To address this issue, we employed an econometric technique designed to handle negative and zero values in the dataset. Specifically, we adjusted the data by adding a constant (the maximum value of FDI) to convert all negative and zero values into positive figures, thereby allowing for the application of logarithmic transformations.

Further to examine the impact of tax treaties on FDI, our model also incorporates several gravity variables. These variables, which include variables such as economic size and geographical distance, are essential for a comprehensive analysis of the determinants of FDI.

The data used in our analysis are sourced from various recognized databases State bank of Pakistan, Board of investment and other as outlined in Table 4.3, to examine the effect of tax treaties on FDI.

Table 4.3: Data Source

Variable	source	year
Gravity model indicator		
GDP$_{ij}$	WDI	2006-2020
Distance	Geodatos(https://www.geodatos.net/en/distances)	
Biletrial tax treaty		
Tax treaty	Tax treaty database	2006-2020
Age of treaty	Tax treaty database	2006-2020
Control variables		
Trade openness	WDI	2006-2020
Control corruption	ICGR	2006-2020
Law and order	ICGR	2006-2020
Government stability	ICGR	2006-2020
Investment profile	ICGR	2006-2020
Bilateral Foreign Direct Investment		
Total bilateral FDI	SBP	2006-2020
Primary sector		

Bilateral FDI	BOI	2006- 2020
Secondary sector	BOI	2008-2020
Bilateral FDI		
Territory sector		
Bilateral FDI	BOI	2006-2020

4.7   Econometrics Methodology

Considering the above Model, we are interested in examining the hypothesis that there is no effect of tax treaties on FDI, and we also include the age of tax treaties to investigate the impact of tax treaties over time. In panel data, we will use different methods to examine the hypothesis.

4.7.1   Pooled OLS

The Pooled OLS method is one of the simplest and most basic methods to estimate panel data. In this method, we pool the data and apply the OLS method. In the pooled OLS model, we required that there is no link between explanatory variables and error terms. For testing the effect of tax treaties on FDI we assume that there is no other exogenous factor the FDI such as language, culture, religion.

4.7.2   Fixed Effect

In panel data, we also include country-specific characteristics. We use the fixed effect method to control unobserved factors. The fixed effect is a statistical method to analyze the data consisting of multiple countries, and firms. It is employed to control unobserved characteristics which constant in each entity but vary across entities. By including fixed effects in analysis researchers can for these stable differences and ensure that analysis more accurately focuses

on the main variable of interest. This method helps to mitigate the biases that could arise from the unobserved variable that affects independent and dependent variables. The fixed effect is more suitable in panel data analysis by concentrating on the main effect while remaining consistent across different entities over the period. It is beneficial in panel data when we evaluate policies, compare different groups, and understand the complex relationship between economic variables. In panel data we have assume there is no endogeneity problem in our model so the relationship between tax treaty and age of treaty with FDI is assumed to be exogenous and it is not influence by omitted other variables such as other institutional, macroeconomics variables. The choice of the fixed effects model is justified due to its ability to control for unobserved, time-invariant country-specific factors and avoid bias caused by omitted variables. we are concerned that some important factors, like a country's colonial history, culture, language, climate, or distance from developed countries, are not included in our model but still influence foreign investment. These factors don't change much over time and could be connected to the variables we are using to explain foreign investment. If these missing factors are related to your explanatory variables, then using a random-effects model to estimate the relationship would give inaccurate results. This is because the random-effects model assumes that these unobserved factors don't affect your explanatory variables, which in this case, they likely do.Neumayer (2007),Blonigen and Davies (2004),Lee and Kim (2022). To solve this, we should use a fixed-effects model instead, which accounts for these time-invariant factors. The fixed-effects approach controls for these missing factors, leading to more reliable and consistent results. Since there is little literature supporting random effects in the context of tax treaties and FDI. In panel data, fixed effects are widely used to eliminate the unobserved effect: most minor square dummy variables, first difference model, and time demeaning model. These models are generally called fixed effects.

CHAPTER 5

RESULT AND DISCUSSION

This chapter presents the estimation results of the research, examining the impact of tax treaties on both aggregate and sectoral levels of Foreign Direct Investment (FDI). First, the section provides a description of the variables used in the analysis. Then discusses the effect of tax treaties on the aggregate level of FDI, followed by an analysis of the sectoral-level FDI results.

5.1 Descriptive Statistics

The descriptive statistics provide the main summary and characteristics of the variable offering a simple overview of the dataset. Descriptive statistics is important for identifying the pattern, and trend in the dataset which can inform further statistical analysis and interpretation. They also facilitate comparison between different datasets and variables providing a foundation for most complex inferential statistics and hypothesis testing. Table 5.1 depicts the descriptive statistics of tax treaties and FDI.

Table 5.1: Descriptive Statistics

Variables	Obs	Mean	Std. dev	Min	Max
Total lnFDI	225	7.331	.119	7.099	7.955
Primary lnFDI	225	5.976	.126	5.86	6.62
Secondary lnFDI	225	6.219	.111	5.525	6.87
Territory lnFDI	225	7.197	.108	7.055	7.835
LnGDP home countries	225	27.746	1.38	25.286	30.623
LnGDP host country	225	30.518	11.036	25.81	65.132

Ln Distance	225	30.518	11.036	25.81	8.948
Tax treaty	225	0.453	.499	0	1
Age of tax treaty	225	7.96	15.702	0	63
Tradeopness host country	225	32.827	4.127	26.688	40.147
Corruption	225	1.964	.125	1.5	2
Law and order	225	3.147	.208	3	3.5
Government stability	225	6.366	.921	5	9
Investment profile	225	7.533	.422	6.708	8

Our data set constitutes balanced panel data on bilateral FDI in Pakistan for 15 home countries, 14 years, resulting in 225 observations. LnFDI is the lograthimaic value of FDI inflow in terms of millions of dollars in the host country Pakistan by the 15 source countries. LnGDP0 is the home country's GDP, —LnDIS between home and host countries. LnGDPpak is the host country. A tax treaty is the dummy value 1 for the present tax treaty; otherwise, 0. Influential dummy variable the implementation of tax treaties legally. 1 for effectiveness; otherwise, 0. The age of tax treaties postulates the effect of tax treaties over time. Corruption government stability investment profile are the institutional variable of the host country(Pakistan).

5.2   Total FDI and Tax Treaty

We used the 2.1 equation to investigate the impact of tax treaties on FDI. By using panel data analysis, we aimed to capture both cross-sectional and time series dimensions of the data set providing a comprehensive result impact of tax treaties on FDI.

In the statistical result column (1) of table *5.2* when we used pooled regression home countries' GDP, age of tax treaties, Tradeopness, and control corruption, have a strong positive link to FDI with statistically significant. Investment profile, and Government stability are statistically insignificant.

Statistical results depict that when tax treaties signed between countries decrease the flow of FDI by 4.5% mean that because it is not legally effective but the age of tax treaties result indicate that when it is legally effective and over time its effect is positive. It indicates that when tax treaties are effective they increase FDI by 0.2% over time. Host countries' GDP has a negative link to FDI. Distance between home and host countries has a negative link to FDI with statistical significance. The correlation between variables indicates that an unobserved factor also considers tax treaties in place to increase the flow of FDI. This is because our observed control variable explains half the variation in the dependent variable.

  To control unobserved factors, we used the fixed effect model. Column (2) results of fixed effect indicate that tradeopness and control of corruption have a positive link to FDI with statistical significance. Tax treaties and the age of tax treaties have a negative link to FDI with statistical significance. The tax treaty variable indicates that the presence of tax treaties between countries decreases the flow of FDI meaning that more tax treaties between Pakistan and other OECD and developing countries lead to a 5.3% decrease in the FDI inflow. Blonigen and Davies (2005) suggest that when tax treaties are signed, it may increase the perceived risk of investment until the legal interpretation of tax treaties is solved.

 Another main variable postulates age of treaty is constitutionally effective and that over time treaties' effect negatively correlated with FDI showing that if we increase effective tax treaties there is a 0.6% decrease in the flow of FDI at a 1% level of significance and reject the null hypothesis. The introduction of anti-treaty shopping rules aims to prevent the violence of the tax treaty by third countries that are not treaty partners. These provisions facilitate the business activities or the right owner of the business to benefit from the treaty. Investor following these rules makes it complicated, and managing paperwork and legal requirement makes treaties less appealing for foreign direct investment.

OECD introduced a project consisting of 15 actions to reduce the treaty shopping transfer pricing aimed at preventing tax avoidance. Many countries have adopted few actions and renegotiated tax treaties with partner countries leading to a decrease in the FDI. Blonigen and Davies (2005) and Egger et al. (2006) suggest that the reason behind the non-promotional activity of FDI is that treaties restrict the firm ability to evade taxes through transfer pricing and treaty shopping.

Furthermore, the complexities and uncertainties in tax treaties deter foreign direct investment. Different OECD countries and jurisdictions apply different rules to prevent the problem of tax avoidance. Uncertainty over tax provisions increases the risk and transaction costs lead to FDI decrease. Home and host countries' GDP positive correlation with FDI are not statistically significant. All other institutional variables are statistically insignificant except control of corruption. Peres et al. (2018), and Daude and Stein (2007) in their research illustrated that the impact of institutional quality is positive but statistically not significant due to the weak structure of the institution. The variable corruption indicates that if we have a 1% increase in the improvement in control of corruption, then there will be an 19% increase in FDI inflow. The coefficient value is positive postulating that a higher CPI score decreases the corruption activity and increases the flow of FDI. Habib and Zurawicki (2002) also analyze the level of corruption in the host country and find there is a negative relation between corruption and FDI inflow. They suggest foreign investors generally avoid corruption because it's considered to raise inefficiencies in operational activities. They also suggest that the positive coefficient indicates the host countries' improvement in controlling corruption increases the flow of FDI. A host country's (Pakistan) trade openness is positively correlated with Foreign Direct Investment (FDI), indicating that a country with more liberal policies and lower tariff rates can expect a 0.9% increase in FDI inflows. The main variables, tax treaty and age of tax treaty have negative effects on FDI. Trade openness leads to a decrease in the tariff rate within the region enabling investors to move the global market with a single investment location and also host countries to attract more investment.

Saini and Singhania (2018) used trade openness in their study while analyzing the determinants of FDI. They suggested that developed countries' FDI inflow is attracted by their GDP and GDP per capita but in developing countries, FDI is attracted through trade openness and other control variables.

Table 5.1: Regression Result for Tax Treaty Policy and FDI

Variables	Pooled	Fixed effect
LnGDP0	0.033) ***	0.050
	(0.005)	(0.477)
LnGDPpak	-0.030**	0.001
	(0.003)	(0.730)
LnDis	-0.055*	-0.186
	(0.075)	(0.1370)
Tax treaty	-0.020**	-0.052**
	(0.020)	(0.025)
Age of treaty	0.002*	-0.006*
	(0.060)	(0.078)
tradeopenesspk	0.009***	0.009***
	(0.000)	(0.000)
Law and order	-0.051	-0.045
	(0.353)	(0.333)
Control corruption	0.170*	0.189**
	(0.076)	(0.050)
Government Stability	0.013	0.014
	(0.313)	(0.225)
Investment profile	-0.025	-0.017
	(0.333)	(0.555)

Constant	6.510***	6.950***
	(0.000)	(0.000)
Observation	225	225
Time invariant	NO	YES
R-square	0.2993	0.446

*** p<.01, ** p<.05, * p<.1

5.2.1 Primary Sector FDI and Tax treaty

The statistical result of pooled OLS in column (1) table *5.3* shows that the GDP of host and home countries' tradeopness, corruption, and government stability have positive links to FDI but they are not statistically significant. Tax treaties are positively correlated to FDI with statistical significance in the primary sector, and institutional variables negatively correlate to FDI. However, when we control unobserved factors using fixed effects the result changes and suggests that the age of tax treaties negatively correlates to FDI with a statistically significant suggestion that treaties reduce the MNCs' abilities to evade taxes through transfer pricing and treaty shopping and decrease the flow of FDI. Institutional variables do not have a significant relationship with FDI in the primary sector. Results from the primary sector FDI suggest the flow of FDI in the primary sector is not influenced by institutional quality. It depends on the location of FDI rather than institutional quality and macroeconomic variables. In the Mining sector, FDI investors are attracted to the location of FDI where transport is available to reach the destination to acquire the resources.

Shah et al. (2016) also suggest in their analysis primary sector FDI is more attracted by the region where natural resources are based rather than the host country's institutional environment. GDP of home and host countries are not statistically significant with the inflow of FDI. Walsh and Yu (2010) revealed that primary sector FDI is more attract by regions where natural resources are available rather than macroeconomic conditions.

Table 5.3: Tax Treaty policy and Primary Sector FDI

Variables	Pooled	Fixed effect
LnGDP0	0.005	-0.049
	(0.754)	(0.526)
LnGDPpak	0.002	0.005
	(0.206)	(0.288)
LnDis	0.043	-0.175
	(0.345)	(0.200)
Tax treaty	0.034*	0.024
	(0.097)	(0.350)
Age of treaty	0.000	-0.012***
	(0.705)	(0.000)
tradeopenesspk	0.003	0.000
	(0.264)	(0.872)
Law and order	-0.012	0.000
	(0.845)	(0.997)
Control corruption	0.017	0.060
	(0.872)	(0.568)
Government Stability	0.003	0.005
	(0.833)	(0.684)
Investment profile	-0.052*	-0.026
	(0.088)	(0.409)

Constant	5.817***	8.490***
	(0.000)	(0.000)
Observation	225	225
Time invariant	NO	YES
R-square	0.160	0.412

*** p<.01, ** p<.05, * p<.1

5.2.2   Secondary Sector FDI and Tax treaty

Table 5.4 shows the effect of tax treaties is positively linked with secondary sector FDI in column (1). At the initial level, it gives investors signals regarding the legal certainty of tax and avoids double taxation which leads to an increase in the flow of FDI by 3.7% in the secondary sector. Home countries' GDP also positively attracts the FDI inflow into Pakistan. This makes sense because if the home country's GDP is higher it increases the FDI by 3.6% from treaty partner countries. Tradeopness and institutional variable Government stability have positive and significant correlations with FDI. When we applied fixed effect government stability and Tradeopness are positively correlated with FDI. Tax treaties and the age of treaties have no significant impact on secondary sector FDI. Government stability increases the FDI inflow by 2.1% and trade openness by 0.5%. In the secondary sector, the bilateral flow of FDI is influenced by the government's stability which includes the manufacturing and industry sectors by providing a secure and predictable environment. A stable government ensures policy consistency and decreases the risk factor arising from political instability attracting the FDI in the manufacturing and industry sectors. Campos and Kinoshita (2003) suggest that countries with stable governments and better institutions attract more FDI, particularly in the manufacturing and industry sectors.

Table 5.4: Regression Result for Tax Treaty Policy and Secondary Sector FDI

Variables	Pooled	Fixed effect
LnGDP0	0.036***	0.095
	(0.008)	(0.173)
LnGDPpak	-0.003**	-0.003
	(0.013)	(0.420)
LnDis	-0.025	-0.137
	(0.494)	(0.270)
Tax treaty	0.037*	0.028
	(0.044)	(0.227)
Age of treaty	0.001	-0.003
	(0.571)	(0.330)
tradeopenesspk	0.005**	0.005**
	(0.013)	(0.022)
Law and order	0.054	0.055
	(0.315)	(0.303)
Control corruption	0.141	0.141
	(0.136)	(0.139)
Government Stability	0.02**	0.021*
	(0.083)	(0.079)
Investment profile	-0.003	-0.002
	(0.926)	(0.941)

65

Constant	4.791***	4.100***
	(0.000)	(0.000)
Observation	225	225
Time invariant	NO	YES
R-square	0.184	0.381

*** *p<.01, ** p<.05, * p<.1*

5.2.3   Tax treaty and Territory Sector

Table 5.5 shows the result of the territory sector most similar to the Total FDI result. Column (1) postulates that tax treaties have no significant relation with FDI. Home countries have positive and significant rules in the FDI. Trade openness is always a positive and significant indicator to attract FDI but when we controlled unobserved factor by applying fixed effect column 2 results revealed that tax treaty and age of tax treaties have a significant negative relation with FDI, home countries' GDP increases the flow of FDI by 22% with 1% statistical significance. Distance between countries shows a negative relation between FDI means the higher distance between countries decreases by 34% which aligns with the gravity model statement. Trade openness has always had a positive correlation with FDI means a 0.7% increase in FDI with a more liberal trade policy. The institutional variable weak law and order decreased the 9.6% flow of FDI remaining variable showed an insignificant relation with FDI. Kaufmann et al. (2010) suggest that weaker rules and uncertain contracts, violence, and crime deter the investor

Table 5.5: Regression Result for Tax Treaty Policy and Territory Sector FDI

Variables	Pooled	Fixed effect
LnGDP0	0.035***	0.222***
	(0.000)	(0.001)
LnGDPpak	-0.002**	0.005
	(0.026)	(0.224)
LnDis	-0.055	-0.346***
	(0.026)	(0.005)
Tax treaty	-0.018	-0.053***
	(0.317)	(0.004)
Age of treaty	0.000	-0.007**
	(0.816)	(0.019)

tradeopenesspk	0.004**	0.007***
	(0.033)	(0.003)
Law and order	-0.101*	-0.096*
	(0.065)	(0.069)
Control corruption	-0.047	-0.047
	(0.629)	(0.623)
Government Stability	-0.004	-0.003
	(0.761)	(0.820)
Investment profile	-0.004	-0.020
	(0.606)	(0.488)
Constant	7.120***	4.340***
	(0.000)	(0.000)
No of observation	225	225
Time Invariant	NO	YES
R- Square	0.195	0.358

*** p<.01, ** p<.05, * p<.1

The analysis discloses significant findings across different sectors. In the total FDI model (pooled and fixed), tax treaties and control of corruption have a significant impact. Tax treaties shown a negative impact in both models, suggesting that an increase in the number of formation of tax treaties is associated with a decrease in FDI. Control of corruption has a positive impact on pooled and fixed estimation suggesting that better corruption control intends to increase the FDI flow.

In the primary sector, FDI model indicates s slight positive impact of tax treaties on foreign direct investment. Age of tax treaties exhibits a negative impact implying that over time treaties impact negatively associated with FDI. The effect of the gravity variable and the institutional variable does not significantly impact the primary sector FDI suggesting that investment is influenced by FDI location.

The secondary sector of the FDI model shows the significant positive impact of trade openness and government stability on FDI. Tax treaties highlight the positive impact in pooled OLS regression but when we applied fixed effect to control unobserved factors, tax treaty and age of treaty have a negative impact but statistically insignificant. Law and order, corruption, and investment profile do not show a significant impact

In the territory sector, FDI models home countries' GDP, tradeopness, distance and tax treaty, and law and order have shown significant effects. The effect of the tax treaty and the age of the treaty negatively correlated to the FDI. The institutional variable of weak law and order has negative impact on the FDI inflow.

Overall, the impact of tax treaties varies across different sectors of FDI with the age of tax treaties exhibiting a negative correlation associated with FDI. In our analysis, distinguishing between when treaties are signed (indicating intent to avoid double taxation) and when they become legally effective (age of treaties). While treaty signing initially signals investors, legal uncertainty can reduce FDI. Over time, as OECD introduces measures to combat treaty shopping and transfer pricing, this restricts firms' ability to evade taxes, further decreasing FDI. Additionally, the complexities of tax treaties deter investment, with results showing a positive but insignificant effect in the primary and secondary sectors, and a negative impact overall. Factors like Trade openness and control of corruption, are critical factors to attracting FDI. Jurčić et al. (2020) suggests that policymakers should focus more on enhancing economic conditions rather than solely improving institutional quality to attract foreign investment. This could lead to a more tailored approach to attracting FDI based on the unique characteristics of the country's economy.

CHAPTER 6

Conclusion and Policy Recommendation.

6.1   Conclusion.

Majority of the economic researchers believe that tax treaties boost the FDI. Despite the widespread discussion in economics literature, several reasons mentioned in the introduction of this theory may not be true. Tax treaties aim to avoid double taxation across countries on the income of dividends, royalties, and interest rates. Many developing countries engage in bilateral tax treaties to reduce the administration cost of tax to attract FDI but face significant revenue loss on the lower tax rate in treaties. Janský and Šedivý (2019) revealed in their research that developing countries face significant tax revenue loss. It also indicates that Pakistan is the second largest country which bears 0.08% of GDP tax loss due to tax treaties. To examine the benefit of tax treaties, this study based on the bilateral data of FDI from 2006-2020, indicates that the effect of tax treaty and the Age of tax treaty negatively correlated with total FDI and sector-wise. The purpose of tax treaties is to promote cross-border investment by providing tax certainty and reducing the tax barrier but the introduction of exchange of information of treaties between host and home countries prevent the violence of the tax treaty by third countries which are not treaty partners. This provisions facilitate the business activities or the right owner of the business to benefit from the treaty. Investor following these rules makes it complicated and managing paperwork and legal requirement leads to treaties less appealing for foreign direct investment. These findings align with earlier researchers Lejour (2014), Blonigen and Davies (2004) who analyze the question tax treaties consistently promote foreign direct investment. One possible reason against the behavior of non-promotion activity of FDI is that increases uncertainty because when a tax treaty is introduced it might not legally constitute and raise uncertainty in investors which leads to a reduction in investment but on the other side when a treaty legally constitutes and effective between partner countries it's also negatively correlated with FDI over the time. Blonigen and Davies (2004) suggest that over time the introduction of prevention measures of tax treaty abuse and tax evasion will cause a decrease in FDI. OECD introduced a project consisting of 15 actions to reduce the treaty abuse, transfer pricing aimed to preventing tax avoidance. Many countries have adopted few actions and renegotiated tax treaties with partner countries leading to a decrease the FDI. Furthermore, the complexities and uncertainty in tax treaties increase the risk and transaction costs which

lead to decrease the FDI but there is also certain other institutional factor which deterrent FDI. Policy recommendations emerging from this study emphasize the importance of formulation of tax treaties that are clear, straightforward, and capable of achieving the desired balance between providing tax relief and attracting foreign investment. Future research is suggested to explore the evolving landscape of international taxation and its implications for FDI, particularly in the context of developing economies like Pakistan.

Overall, this thesis contributes to broader discourse on international tax policy and investment, offering pragmatic insights for policymakers. By comprehensively examining the effects of tax treaties on FDI in Pakistan, the research provides a foundation for developing strategies that enhance the country's attractiveness to foreign investors while ensuring an equitable and efficient tax system.

In recent times, the OECD proposed a transparent and fair tax system globally named Pillars 1 and 2 which also reduces treaty shopping and tax evasion and encourages investors to invest abroad without any fear of double taxation and tax administration costs. Through the proposed Pillar 1 and Pillar 2, host countries can expect to receive a fair share of taxes while also revising the definition of permanent establishment to better address the challenges posed by the digital economy.

6.2   Policy Recommendations

After exploring the complexities and effectiveness of tax treaties on foreign direct investment, it is clear that more consideration is required to enhance their effectiveness in promoting foreign direct investment. With these insights, following recommendations are proposed.

6.2.1   Ensure the Effective Implementation of Tax Treaties

Treaties have been limited to formal documentation without practical implication in the field which lead to gap between policy and practice. For treaties to be genuinely effective between Pakistan and 60 others countries need to actively incorporate the treaty principle and requirements into the field rather than just be acknowledged on paper. The active incorporation of treaty principles into practical action is essential to recognize the potential of international agreement.

6.2.2 Treaties should be flexible and incentivize

Treaties should be flexible and provide incentives to handle different situations changing over time. There incentives can also assist such as financial aid, and other advantages to countries to follow the agreement.

6.2.3 Tax treaties designed focus on taxation, not foreign direct investment

Tax treaties primarily focus on preventing double taxation, clarifying tax jurisdiction, and lowering withholding taxes. However, it indirectly promotes cross-border activity making investment more attractive but directly not promote FDI.

6.2.4 Adopt an international standard for determining FDI

Pakistan should adopt the OECD's Pillars 1 and 2 to align with global tax standards, reducing tax evasion and treaty shopping. This adoption would make the country more attractive to foreign investors by ensuring a fair and transparent tax environment. Moreover, revising the definition of permanent establishment according to pillar 1 will better handle the digital economy's complexities.

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APPENDIX

Correlation Matrix Tax treaty and total FDI

Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) lnFDI	1.000										
(2) lnGDPo	0.235	1.000									
(3) LnDIS	0.036	0.576	1.000								
(4) lnGDPpak	-0.241	0.262	0.102	1.000							
(5) tax treaty	-0.050	0.200	0.058	0.165	1.000						
(6) AGE	0.209	0.502	0.371	0.157	0.558	1.000					
(7) tradeopenesspk	0.228	-0.042	0.000	-0.039	0.046	-0.040	1.000				
(8) Corruption	-0.074	0.035	0.000	0.027	0.073	0.035	-0.509	1.000			
(9) Lawandorder	-0.074	-0.012	-0.000	-0.016	-0.227	-0.013	-0.320	0.206	1.000		
(10) Governmentsta~y	0.059	-0.017	-0.000	-0.012	-0.013	-0.016	0.261	-0.776	-0.317	1.000	
(11) Investmentpro~e	0.033	0.022	-0.000	0.025	0.338	0.024	0.340	-0.057	-0.795	0.111	1.000

Correlation Matrix Tax treaty and primary sector FDI.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) lnFDI	1.000										
(2) lnGDPo	0.176	1.000									
(3) lnDIST	0.215	0.576	1.000								
(4) lnGDPpak	-0.144	0.262	0.102	1.000							
(5) tax treaty	0.178	0.200	0.058	0.165	1.000						
(6) AGE	0.327	0.502	0.371	0.157	0.558	1.000					
(7) tradeopenesspk	0.034	-0.042	0.000	-0.039	0.046	-0.040	1.000				
(8) Corruption	-0.025	0.035	0.000	0.027	0.073	0.035	-0.509	1.000			
(9) Lawandorder	0.061	-0.012	-0.000	-0.016	-0.227	-0.013	-0.320	0.206	1.000		
(10) Governmentsta~y	0.014	-0.017	-0.000	-0.012	-0.013	-0.016	0.261	-0.776	-0.317	1.000	
(11) Investmentpro~e	-0.086	0.022	-0.000	0.025	0.338	0.024	0.340	-0.057	-0.795	0.111	1.000

Correlation Matrix Tax treaty and Secondary sector FDI

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) lnFDI	1.000										
(2) lnGDPo	0.267	1.000									
(3) lnDIST	0.094	0.576	1.000								
(4) lnGDPpak	-0.195	0.262	0.102	1.000							
(5) tax treaty	0.112	0.200	0.058	0.165	1.000						
(6) AGE	0.164	0.502	0.371	0.157	0.558	1.000					
(7) tradeopenesspk	0.116	-0.042	0.000	-0.039	0.046	-0.040	1.000				
(8) Corruption	-0.029	0.035	0.000	0.027	0.073	0.035	-0.509	1.000			
(9) Lawandorder	-0.008	-0.012	-0.000	-0.016	-0.227	-0.013	-0.320	0.206	1.000		
(10) Governmentsta~y	0.056	-0.017	-0.000	-0.012	-0.013	-0.016	0.261	-0.776	-0.317	1.000	
(11) Investmentpro~e	0.038	0.022	-0.000	0.025	0.338	0.024	0.340	-0.057	-0.795	0.111	1.000

Correlation Matrix Tax treaty and Territory sector

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) lnFDI	1.000										
(2) lnGDPo	0.205	1.000									
(3) lnDIST	-0.021	0.576	1.000								
(4) lnGDPpak	-0.144	0.262	0.102	1.000							
(5) taxtreaty	-0.049	0.200	0.058	0.165	1.000						
(6) AGE	0.044	0.502	0.371	0.157	0.558	1.000					
(7) tradeopenesspk	0.214	-0.042	0.000	-0.039	0.046	-0.040	1.000				
(8) Corruption	-0.147	0.035	0.000	0.027	0.073	0.035	-0.509	1.000			
(9) Lawandorder	-0.186	-0.012	-0.000	-0.016	-0.227	-0.013	-0.320	0.206	1.000		
(10) Governmentsta~y	0.105	-0.017	-0.000	-0.012	-0.013	-0.016	0.261	-0.776	-0.317	1.000	
(11) Investmentpro~e	0.130	0.022	-0.000	0.025	0.338	0.024	0.340	-0.057	-0.795	0.111	1.000

Variance inflationary vector (VIF)

VIF in regression equation shows how variance in regression coefficient inflated due to Multicollinearity with other explained variables in the model. It tells us if the value of VIF is greater than 10 then there is a high multi-issue but in our regression variable all values below the 5 indicate that there is no issue of multicollinearity.

	VIF	1/VIF
tradeopenesspk	4.043	.247
lnGDPprcappk	4.038	.248
Investmentprofile	3.675	.272
Corruption	3.662	.273
Lawandorder	3.265	.306
Government stability	3.105	.322
tax treaty	2.462	.406
lnGDPo	2.323	.431
AGE	2.316	.432
lnDIST	1.946	.514
lnGDPprcap0	1.432	.698
lnGDPpak	1.131	.884
Mean VIF	2.783	.