

THE ECONOMIC CONSEQUENCES OF SOVEREIGN INTERNATIONAL ECONOMIC AGREEMENTS FOR PAKISTAN



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Dedications

This thesis is dedicated to my lovely parents and my dear brothers, whose constant love, prayers and unweaving support have been my greatest source of strength and inspiration throughout this journey. I am especially grateful to my brothers for always standing by my side.

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Abstract

The purpose of this study is to investigate how international economic agreements specifically trade treaties and double tax treaties impact real GDP in Pakistan spanning from 1975 to 2023, through fiscal and macroeconomic channels such as tax revenue, FDI Inflow and trade openness. The purpose of such treaties is to ensure fiscal stability, promote global economic integration and ultimately leads to economic stability. First, we examine the direct impact of trade treaties and double tax treaties on macroeconomic indicators as tax revenue, FDI inflow and trade openness by using autoregressive distributed lag (ARDL) model. After that, mediation analysis was utilized using ARDL estimated coefficients and the Sobel test was applied to examine the indirect effects. The direct effect results shows that the trade agreements have a negative and statistically significant effect on trade openness and positive but insignificant effect on tax revenue, indicating that trade agreements do not contribute significantly to TR. In contrast, DTTs have a negative and statistically significant impact on tax revenue but positive and insignificant impact on trade openness, so DTTs leads to revenue loss rather than gain. FDI Inflows, however, are positively and significantly affected by both TTs and DTTs, indicating their effectiveness in boosting investment within the country. The direct impact of economic agreements on Real gdp is negligible in long run and not influence in short term as well. The Sobel test results reveal that TTs have an insignificant indirect effect on Real gdp via trade openness and tax revenue and statistically significant impact on Real gdp through FDI inflows. Similarly, the indirect impact of DTTs on Real gdp is weakly significant through tax revenue, significantly positive through FDI inflows and insignificant through trade openness. Overall, International economic agreements do not contribute sufficiently the Real gdp directly as well indirectly. Based on these findings, the study suggests that Pakistan's treaty framework be restructured to ensure transparency. Investments incentives should be based on post establishment performances rather than granted in advance. Treaties should be aligning with national interests, openly discussed and data should be publically accessible.

Keywords: International Economic Agreements, Trade Treaties, Double Tax Treaties, ARDL Model, Mediation, Real GDP, Tax Revenue, Trade openness, FDI Inflow

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LIST OF ABBREVIATIONS

BEPS	Base Erosion and Profit Shift
BITs	Bilateral Investment Treaties
DTTs	Double Tax Treaties
FDII	Foreign Direct Investment Inflow
FCN	Friendship, Commerce, Navigation agreements
FCE	Final Consumptions Expenditure
FMCGs	Fast Moving Consumption Goods
FTAs	Free Trade Agreements
GTER	Global Expenditure Report
GATT	General Agreements on Trade and Tariff
IEAs	International Economic Agreements
IAs	International Investment Agreements
IMF	International Monetary Fund
ISDS	Investor-State Dispute Settlement
LDCs	Low Developed Countries
MNEs	Multinational Enterprises
MFN	Most Favored Nation principle
NTP	National Tariff Policy
OECD	Organization for Economic Corporation and Development
PE	Permanent Establishment
PTA	Preferential Trade Agreement
RGDP	Real Gross Domestic Product
TAs	Trade Agreements
TTs	Trade Treaties
ITTs	International Trade Treaties
TO	Trade Openness
TR	Tax Revenue
UN	United Nation
WTO	World Trade Organization

Chapter 1

Introduction

1.1 Background

“Trade and investment treaties are the architects of global economic integration, fostering cross-border flow of goods, capital and innovation, while reshaping national policies to align with international commitments”. Jagdish Bhagwati

Sovereign economic agreements are formal treaties or accords between countries and designed to facilitate mutual economic benefits. These agreements encompass a range of objectives include fostering international trade, encouraging foreign investment, enhancing economic corporation and addressing global economic challenges. In a global economy, economic agreements serve as a critical tool for nations to integrate into global markets, secure favorable trade terms and attract investment to gain sovereignty and these agreements restrict the source countries taxing right by lowering withholding tax rates on dividend, interest and royalties. However the policies provide a path for countries come to share their mutual benefits. According to Bandelj & Tester, (2020), developing countries often adopt global policies as a part of their efforts to connect with international economy, access resources and enhance growth opportunities, although its required policies which truly benefit their economy.

World shifted to a global governance system in which there were many such provisions which would facilitate economic transactions. As noted by Ahmed et al., (2024) that after world war-II the world created an international economic agreement to promote economic activities across borders and is design by developed countries in Global North, these are International Investment Agreements(IAs), Double Taxation Treaties (DTTs) and International Trade Treaties (ITTs), aimed is to boost sovereignty and make easier for countries to invest their extra money in other country where investment needed, encourage trade and set tax rules for the business working class. So far there are over 2,500 International Investment Agreements (IAs) which has been made worldwide, including more than 300 bilateral and plurilateral investment treaties and world engage to adopt different policies to erode the illegal activities from gross root level and promote the legal flows into a country so, however Gasparèniènè et al., (2022) argue

that by using tax treaties to encourage Foreign Direct Investment (FDI) but at the same time tax evasion should be taken into account. However, there may be difficulties in striking a balance between the necessity of pulling in foreign investment and the possibility of revenue loss as a consequence of weakened tax sovereignty and 2021 IMF report highlight that Sub-Saharan African countries incurred losses between \$470 million to \$730 million per year in corporate income tax revenue due to profit shifting by MNEs (Kinda & Tagem, 2024).

1.2 Tax Treaties and Developing Countries

Tax treaties play a significant role in shaping the fiscal landscape of developing countries particularly in context of foreign investment and international trade. For many developing countries tax treaties come with both benefit and trade off. On the one hand, they help integrate to economies into global financial system, providing a structured framework for taxation that reassures foreign investors. On the other side, such agreements often result in revenue losses due to reduced withholding tax rate in dividend, interest and royalties which are a key source of income for developing countries. Zolt, (2018a) argue that developing countries have option to determine tax rates for foreign investors, one approach is the uniform tax structure for both domestic and foreign business and the alternative approach is government can offer tax incentives, such as tax holidays which offer foreign business to operate tax free for certain periods and key strategy is signing tax treaties with other countries and set rules as mention in draft for foreign investors. As far these agreements impact economic stability such as GDP growth and at the same time these incentives also influence fiscal outcomes like reduced government tax revenue, government expenditure reduction and increasing external debt of a country. In global economy fiscal policy handle is tax exemption which play a critical role in trade and investment treaties, especially the developing countries sign treaties to manage their fiscal outcomes, offering tax incentives that help to improve fiscal results, Rolland (2020) argue that all things taken into account, trade and investment agreements benefit developed nations' finances, have no effect on middle-income nations, and hurt deprived governments' finances of developing countries. There are essentially two main ways that international investment agreements affect nations' ability to generate fiscal resources: (1) immediate tax policy restrictions resulting primarily from the treaties' non-discriminatory provisions, and (2) restrictions on upcoming tax policy changes as a result of general treaty protections meant to give foreign investors a stable and predictable regulatory environment. The purpose of developed

countries show their interest to enter in DDTs with low developing countries (LDCs) is to eliminate double taxation and benefit developed countries Multinational Enterprises (MNEs) preventing from excessive tax cost, repatriation of profit from LDCs to their home country. Second developed countries concern over transfer pricing scheme, enterprises shift their subsidiaries to lower income tax to avoid tax (Baker, 2014).

As stated these incentives come with a cost. For example according to Janský & Šedivý (2019) developing countries loss a significant amount of tax revenue in the form of withholding tax on dividend and royalties. Based on Janský & Šedivý (2019) paper analysis Philippine and Pakistan faces a large amount of fiscal losses approximately \$509 million and \$241 million respectively due to such treaties. That is shown as:

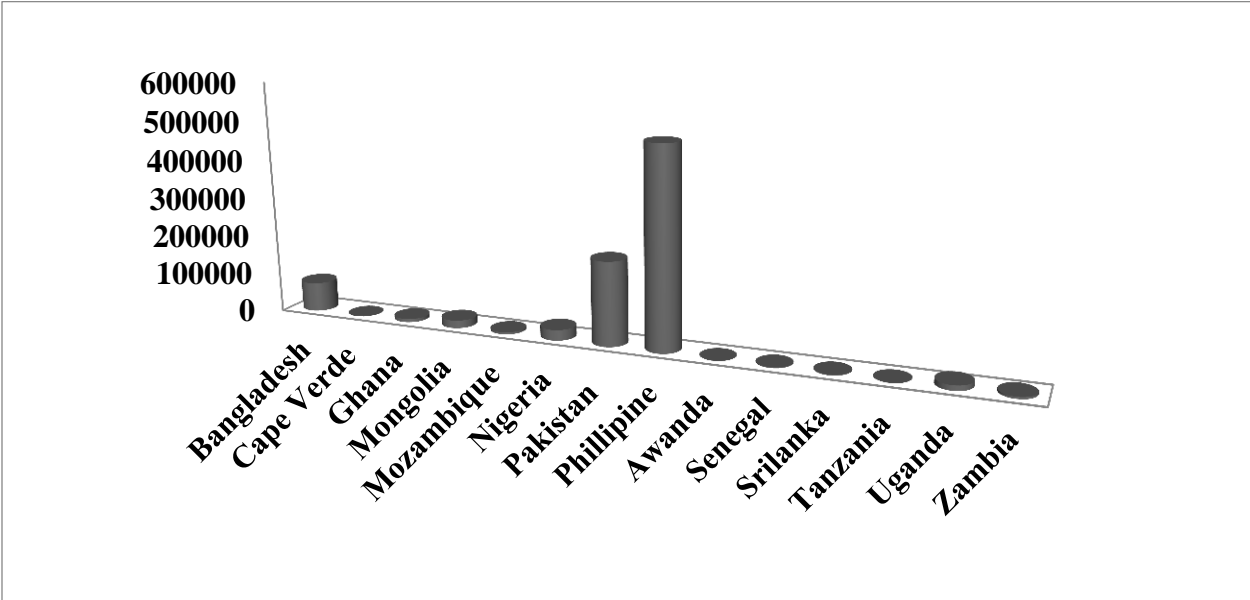


Figure 1. 1: Tax Revenue Loss due to Tax Treaties (In Millions)

Source: (Janský & Šedivý, 2019)

At the same time, international tax treaties play a crucial role in balancing these fiscal costs. By preventing double taxation they encourage cross border trade and investment, fostering economic integration. These treaties reassure investors by providing tax certainty and reduced transaction cost, which enhance FDI Inflow and export competitiveness. The aim behind the agreements are to promote favorable business environment, which can lead to increased economic activity, broader tax base and enhance economic corporation between countries leading to diplomatic and strategic benefits in the long term. This is about by Dagan, (2016) that a more uniform system is

needed for countries to manage and enforce tax rules that would established clear guidance on who paying the tax, on what limit of income, where it should be taxed, when it should be paid and how much should be charged as well as reduced the negative externalities and free riding. However, the fiscal cost of tax exemption under such treaties leads to revenue loss by reducing government tax collection and such liberalization policies may favor developed economies with stronger industries while weakening domestic industries in developing countries and multinational companies shift their profit to low tax jurisdiction to reducing their tax burden initiative of Base Erosion and Profit Shift (BEPS) and Mooij et al., (2021) suggest two reasons why the developing countries suffer from the international tax regime first they have weak institutional set up where developing countries do not have a dedicated team so tax authorities handle every things which make harder for them to focused on specific issues and second limited experience in negotiation usually have fewer treaties and without training and base on past knowledge they may struggle when entering new treaty talks.

However since the government has to generate tax revenue for financing its operations. Therefore a tradeoff in such incentives and collection has to be made. For example; Kudzai Mataba, et al (2023) analyzed when tax incentives are design two things consider effective means achieve policy objectives and efficient means tax incentive reaches policy objective without losing government total revenue. If tax incentives provided by government are efficient then used a financial mode to analyses the cost and benefit either it will actually be help the economy¹. According to Global Tax Expenditure Database (GTED) 2022, the fiscal burden of tax incentives in Pakistan has been a consistent challenge, as highlight by the ratio of revenue forgone as percentage of tax revenue. Unlike India, has successfully reduced its resilience on tax expenditure through reforms, Pakistan policies remain costly rising concern about their efficiency and long term economic impact² which are shown in below figure 1.2.

¹ <https://www.iisd.org/system/files/2023-10/revisiting-tax-incentives-investment-promotion-tool-policy-makers.pdf>

² <https://gted.taxexpenditures.org/country-profile/pakistan/>

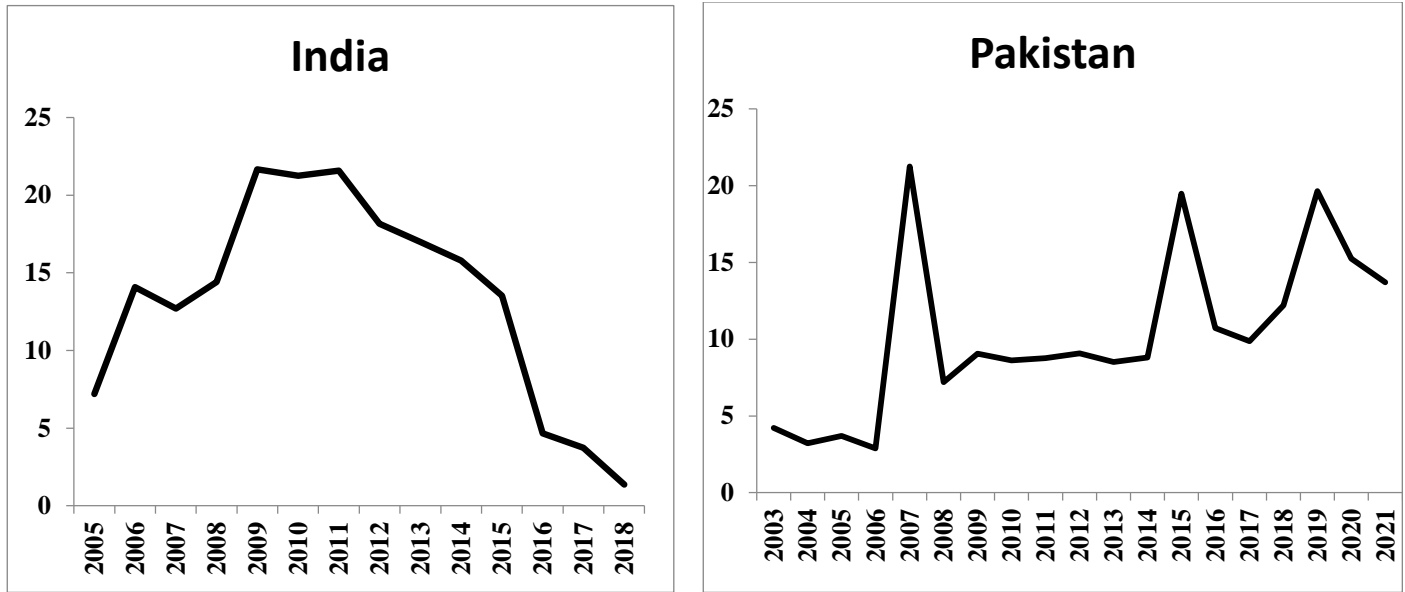


Figure 1. 2: Revenue Foregone (% of TR)

Source: GTED, 2022 (<https://gted.taxexpenditures.org/>)

1.3 Trade Agreements and Economic Indicators

Countries trying to reduce the barriers during transaction and trade flow adopt different strategies like free trade agreements and preferential trade agreements which increase the volume of trade but they don't concern about the upcoming effects. (Dutt & Gallagher, 2022) argue that tariffs can be as the largest source of revenue collection in a country but trade liberalization can have reduced tariffs which lower the trade barriers with the expectation of liberalization leads to high level of efficiency and productivity benefits that will increase the domestic tax base but on the other side reduced tax rate which are made during the agreement may influence the fiscal outcomes like revenue loss and increase external debt.

This creates a critical dilemma for governments, particularly in developing economies, where tariff revenues constitute a significant portion of total tax collections. While trade agreements aim to stimulate economic growth by promoting investments, enhancing competitiveness and integrating economies into global value chains, they also pose challenges for fiscal sustainability. In Pakistan, as in many other countries liberalization policies have evolved by reducing tariff rates and custom duties to promote international trade. About thirty years ago, custom duties made up 43% in Pakistan total revenue, clearly illustrated that half of the government income came from taxes on imported and exported goods. However, as global trade policies and Free

Trade Agreements (FTAs) were adopted, Pakistan had to lower these tariff and the share of custom duties to total revenue dropped to just 7% (A. Ali & Naeem, 2017). This decline means government lost a significant source of income.

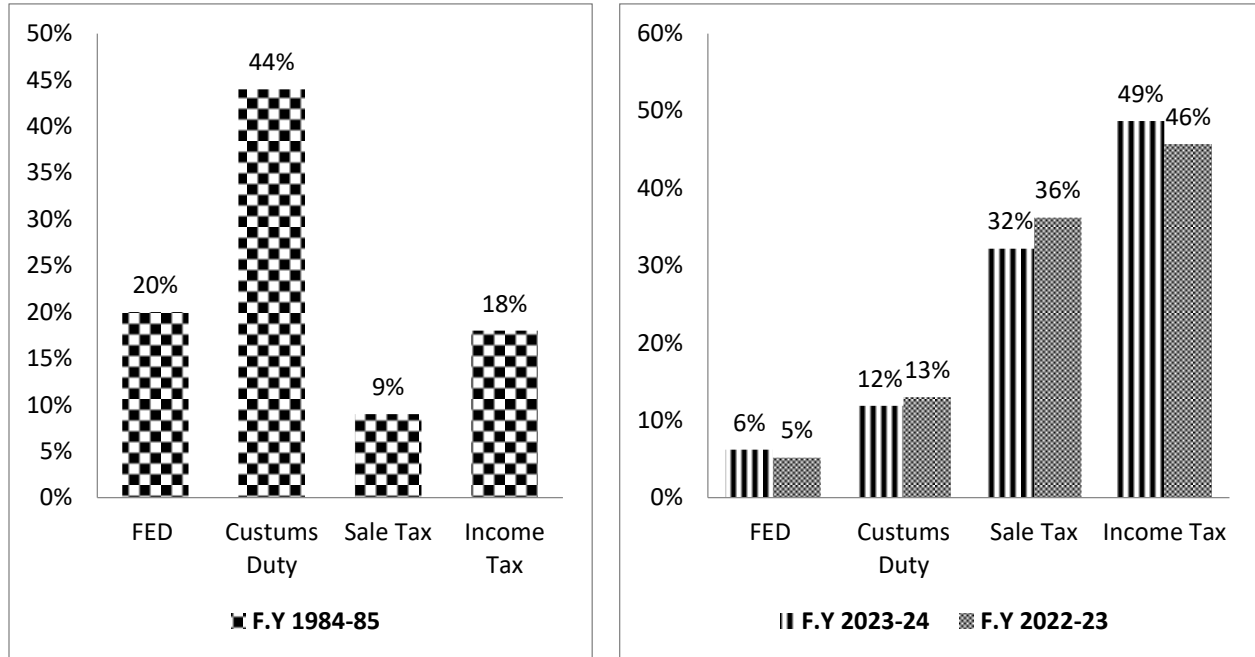


Figure 1.3: Share of Federal Taxes

Source: Revenue Division Yearbook 2023-24

To compensate these losses, Pakistan had to expand other form of taxation like General Sale Tax (GST) and Income Tax (IT) to improve domestic tax collection. Despite these efforts, the tax system remains complicated and the country still faces fiscal imbalances.

In 1995 Pakistan became a member of intergovernmental organization known as World Trade Organization (WTO) to reduce trade barrier and facilitate its integration into the global trading system. This membership aim is to promote trade by encouraging market liberalization and aligning Pakistan policies with international trade standards. At the end these agreements came into cost and impacting fiscal health like fiscal deficit of the economy and further widen the fiscal gap if not offset by increased economic activity. Additionally, a high fiscal deficit often leads to government excessive borrowing, increasing debt burden and remaining macroeconomic indicators which in turn effect GDP growth.

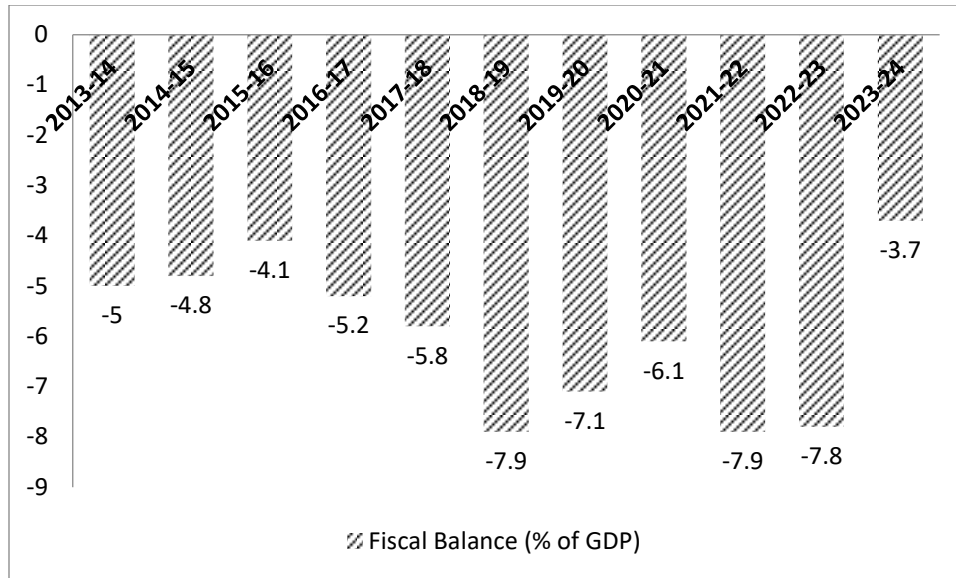


Figure 1. 4: Fiscal Deficit (% of GDP)

Source: SBP Revenue Division

However, while trade liberalization helped increase trade volume, it also widened Pakistan’s trade deficit, as import grew faster than exports. The removal or reduction of trade barriers made foreign goods more accessible and often cheaper than domestically produced alternatives, leading to a surge in imports. Meanwhile, Pakistan export base is narrow, heavily reliant on a few sectors, such as textile and agriculture, with limited value addition and global competitiveness. Structural changes including low productivity, inadequate infrastructure, energy shortage and unfavorable business environment further constrained export growth. As a result countries trade deficit continue to expand, exerting pressure on the current account.

The growing fiscal and trade deficit posing challenges to Pakistan’s long term economic growth. The trade deficits remain sustainable since its inception, which has escalated to an unsustainable level of approximately US\$37.58 Billion by 2018 and persistent deficits primarily arises from sluggish export growth coupled with rapidly increasing imports (Abbas & Waheed, 2021). Historically, both fiscal and trade deficits have persisted due to low revenue collection, increased openness to international trade under WTO agreements, and the avoidance of double taxation through bilateral double tax treaties. These factors have reduced tariff revenues and limit the government’s ability to generate sufficient income, leading to twin deficits in the economy.

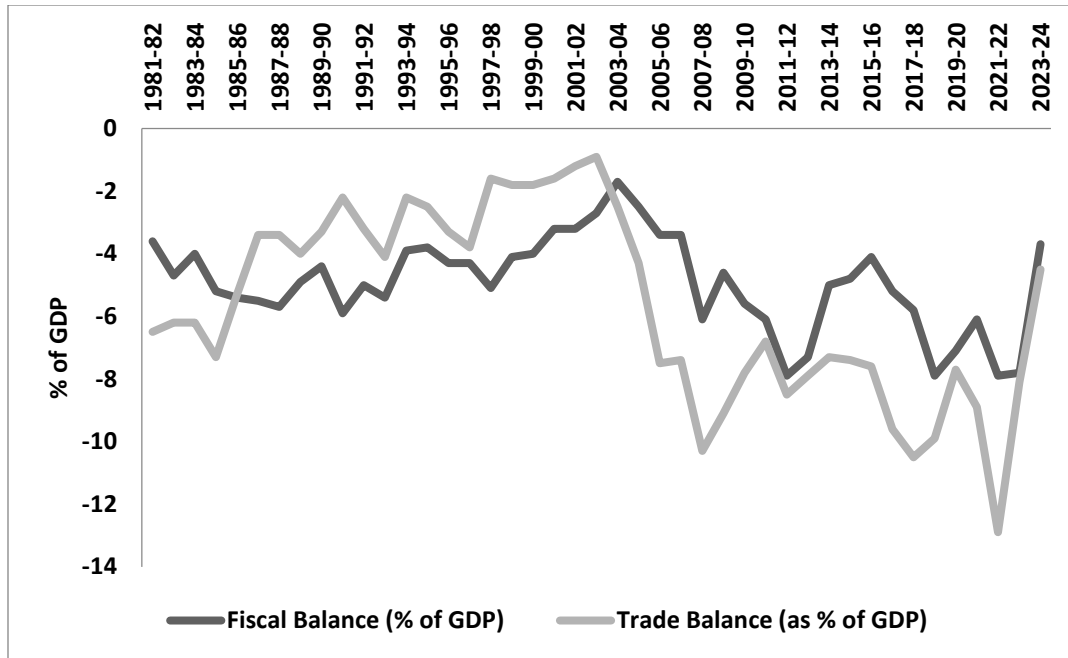


Figure 1. 5: Pakistan Fiscal Balance and Trade Balance (% of GDP)

Source: SBP – Finance Division

International trade and investment agreements play a crucial role in shaping capital flows, influencing both legitimate investment and illicit financial movement. While these agreements aims to promote economic growth by facilitating cross border trade and capital mobility, they also create loopholes that enable capital flight. As (Mahmood, 2013) states, net reverse capital flight in Pakistan increased during periods of trade and exchange liberalization, amounting to \$30 Billion between the years of 1972 to 2013. This capital flight primarily occurred through workers remittances. The absences of strong regulatory bodies have allowed funds acquired through corruption to be transferred to across boarders using trade misinvoicing, facilitating illicit capital laundering. This capital later reinvested domestically, further exacerbating the country’s foreign debt burden and concluded that liberalization only happen when the economy is stable, as long as trade distortion exist, achieving this stability may remain difficult (Blejer, 1990).

1.4 Problem Statement

The primary goals of the international economic agreements such as trade treaties, investment treaties and double taxation treaties for the country are to become self-reliant, integrate across

borders, trade related barriers and also play a critical role in fiscal land scape to avoid double taxation and tax evasion. While these agreements aim is to foster economic growth, foreign direct investment (FDI) and enhance trade, they also carry fiscal implication that effect government revenue, public expenditure and external debt. Literature consistently showing that developing countries suffer significant decline in trade tax and total tax revenue as a result of trade liberalization and investment treaties but developed countries may not have influenced by such agreements. Internationally, there are more than 2,500 bilateral treaties and trade treaties put in place and Pakistan has bilateral treaties with 66 countries and in 1990s these agreement moving in a positive direction but FDI to GDP ratio indicating that the expected benefits in terms of inflows not fully materialized which may hinder the growth of economy. The FDI to GDP ratio dropped sharply from 3% in 2007 to below 1% in 2010, indicating a significant decline related to the size of Pakistan’s economy.

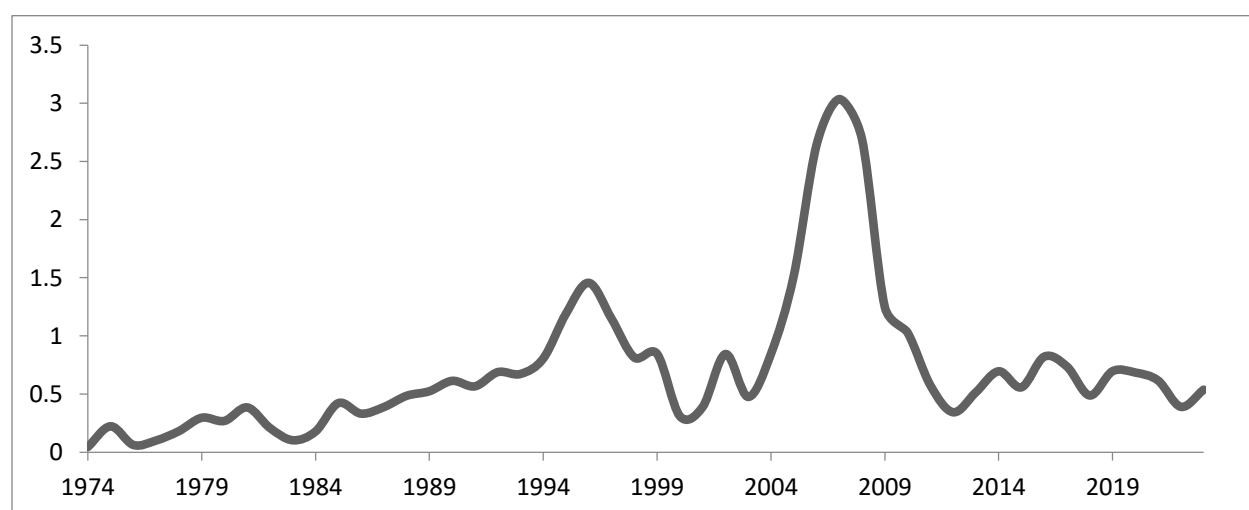


Figure 1. 6: FDI Trend (% of GDP)

Source: WDI

So the developing countries including Pakistan sign with treaty partners which is aiming to mobilize the fiscal resource effectively but they face a deficit through such activities and need to focus on such challenges. Further there is no relevant literature existing regarding in the case of Pakistan, which is important and it help us if not then what are the reasons and solutions need to adopt and effectively used to get benefits from such agreements. So we focus on the estimating

the revenue forgone from tax treaties and their economic consequences on growth, trade and investment flows.

1.5 Research Objectives

To understand the effect of different trade and investment treaties (BITs) on macroeconomic indicators of the country and it's important for policy makers to address the issues. The study objectives are as follow:

- To analyze the fiscal impact of International Economic Agreements by Pakistan government with a focus on tax incentive and tariff reduction.
- To assess the economic consequences of these treaties and also when mediated by tax revenue, trade performances and investment flows impact on Pakistan macroeconomic stability, including economic growth of the country.

1.6 Research Questions

- What is the fiscal impact of IEAs which include trade treaties and tax treaties on government tax revenue, trade performances and investment flows?
- How does these fiscal (TR) and macroeconomic channels (trade performances and investment flows) impacts as mediating and direct impacts of these treaties on the growth in a developing country like Pakistan?

1.7 Significances of the Study

Pakistan is trapped into a chronic circle of low tax revenue which is seriously effecting the governments capacity to finance properly and ineffective to achieve sustainable economic growth and generate revenue. According to Pakistan Development Update 2024 the fiscal deficit increased to 2.4 trillion due to increase in debt servicing cost³. This study will examine the effect of International Economic Agreements (IEAs) which include trade liberalization and tax treaties on Pakistan total revenue. This research aims to contribute to the government policy formation by highlighting the benefits and drawbacks of economic agreements providing a comprehensive analysis of how these treaties influence the fiscal landscape and critical insight for policy makers to navigate the complexities while manage the potential revenue loss and their consequences on

³ <https://thedocs.worldbank.org/en/doc/140b30353b40dbb294cca42bcb86529a-0310062024/original/Pakistan-Development-Update-April-2024.pdf>

economic growth. Furthermore, the study addresses the substantial fiscal challenges faced by developing countries, highlight need for strategic negotiation to safeguard national interest. Ultimately, this research contributes to the existing literature by filling a gap in understanding the specific impacts of IEAs on Pakistan's economy, promoting sustainable development, and guiding future research in this vital area of economic policy.

1.8 Organization of the Thesis

The thesis comprises of six chapters. Chapter 1 provide a detail introduction on international economic agreements, how such agreements create fiscal loss in developing countries by adding graph and compare the fiscal space and trade balance also discussed the research objectives, research questions and problem of eh study. Second chapter provides the overview policy frameworks in Pakistan relevant to such agreements and also give detail of trade and tax treaties signed by Pakistan with treaty partners. Chapter three includes literature review, highlighting theoretical, empirical findings and literature gap. Fourth chapter describes research methodology including research design, model specification, variables and their sources and econometric techniques are employed. Chapter 5 presents the empirical findings and detail discussion in the light of research objectives and existing literature. Finally, chapter 6 concludes the study by summarized key findings and provides a policy recommendation.

Chapter 2

Pakistan Policy Framework for Trade and Tax Treaties

2.1 Introduction

Pakistan's approach to trade and tax treaties has evolved as a key component of its economic strategy, aimed at fostering international trade, attracting foreign investment and enhanced fiscal stability. As a developing nations striving for economic progress, Pakistan has signed Bilateral Investment Treaties (BITs) and Trade Agreements (TA) to promote cross boarder investment and strengthen its participate in global trade. However, there is an ongoing discussion on the effectiveness of these treaties because in addition to providing advantages like market access, investor confidence and lower trade barriers, they also possess challenges like possible revenue loss, treaty shopping and policy constraints.

In the era of increasing globalization, countries continuously adapting their trade and tax policies to keep pace with evolving international standards. Recognizing this shift, Pakistan has structured its policies and agreements to align with global best practices, ensuring competitiveness in international trade and investment. By doing so Pakistan aim to facilitate cross boarder economic activities, attract Foreign Direct Investment (FDI) and enhance economic corporation while also safeguarding its tax revenue and fiscal sovereignty. This chapter contains the background, investment policies made by Pakistan and global initiatives for such agreements are as follow.

2.2 Background of the Treaties

In the year before World War, international agreements did not placed a high priority on protecting foreign investment. Although some established provisions that protected the property of individuals from one country when they were in another, the vast majority of agreements were trade. The concept of treaties were start in early 1700s, United States made treaties called Friendship, Commerce, and Navigation (FCN) agreements to build a trade relationship. The purpose of FCN was to established trade partnership with its treaty partner (Vandeveld, 2005).

FCN treaty promised special protection for foreign, required compensation if a government took private property (expropriation), and gave foreign nationals equal business right as locals. Treaties of FCN are bilateral treaties concluded to facilitate commerce, navigation and

investment between the parties and reciprocally to protect individual and business. On February 1778, U.S first agreement of this kind with France called Treaty of Amity and Commerce. This treaty allow the two countries to trade with each other and promised that each country get the same best trade benefit on the basis of Most- Favored- Nation (MFN) principle and also include most fair treatment for neutral countries means countries not involved in conflict⁴. MFN principle became pillar in international trade system in order to ensure that there is no discrimination between the treaty partners and this rule is cornerstone of WTO and main principle of the GATT⁵.

During the Colonial Era, foreign investment was mainly protected by customary international law, which required countries to follow a basic international standard for treating foreign investors. However, this system was weak. Some countries disagreed on whether such a standard even existed. Latin American countries followed the Calvo Doctrine, which meant foreign investors not only got same treatment as local, with no extra protection. Even when an international standard was accepted, it was an unclear. Additionally, if a dispute arose, there was no proper system for enforcement unless the host country agreed to arbitration. The only option was for the investor's home country to take up the case espousal. Espousal is process where a foreign investor's home countries take up their claim and demand compensation from the host that caused the harm, which was not always effective because of few reasons. Firstly, home country not required to support its citizen claim and may avoid to ,maintain good relation with host country, secondly , source country required to fill all the legal documents which may time consuming and expensive and thirdly the investor loss control over outcome while the investor home country take control over the claim.

The Post- Colonial Era of International Investment Agreements started after the end of WW-II and lasted until the collapse of Soviet Union. After the WW-II, countries start to liberalize trade policies because they belief that economic depression before the war had worsen due to protectionism policies (trade restrictions in 1920). In 1947, the General Agreements on Tariff and trade (GATT) was created to reduce trade barrier and encouraged global trade agreements

⁴ <https://opil.ouplaw.com/display/10.1093/law:epil/9780199231690/law-9780199231690-e1482#law-9780199231690-e1482-div1-2>

⁵ [https://unctad.org/system/files/official-document/diaeia20101_en.pdf#:~:text=MFN%20treatment%20became%20the%20central%20pillar%20of,on%20T ariffs%20and%20Trade%20\(GATT\)%20\(WTO%202004\).](https://unctad.org/system/files/official-document/diaeia20101_en.pdf#:~:text=MFN%20treatment%20became%20the%20central%20pillar%20of,on%20T ariffs%20and%20Trade%20(GATT)%20(WTO%202004).)

rather than one on one deal with countries. At the end, GATT became the main global trade organization but it only cover trade not investment and clearly means that investment had to handle separately from trade agreements. GATT became the main platform for global trade negotiation and bilateral trade agreements became less important. From 1947 to 1966, U.S signed 21 new FCN agreements and these agreements just ensure property protection and promising fair treatment and based on MFN principle and seen as less effective for foreign investment that's why U.S stopped signing FCN agreements and led to search for better ways to protect foreign investment through separate agreements (Vandeveldel, 2005).

Further, international investment policies were shaped by three key events. First, decolonization led newly independent countries to view foreign investment as a form of neocolonialism, fearing that it would give foreign nations control over their economies. As a result many restricted foreign investment took over existing foreign owned business (expropriation) and implemented import substitution policies to produced goods locally instead relying on imports. Second, the rise of socialist block, led by Soviet Union further influenced developing countries to reject capitalist investment. Socialist states nationalized private business, including foreign assets and promoted state control economies as the best part to development and these encouraged developing countries in the view that economic relation with developed countries of Western Europe and America. Finally 1974, developing and socialist countries show their majority in the United Nations to pass the New International Economic Order (NIEO) declaration. This declaration affirmed a nation's full control over their natural resources, businesses including the right to nationalize foreign investment without guaranteeing fair compensation to foreign investors. These events contributed to a global socialist and protectionist economic policies.

To protect foreign investment from being taken without compensation, developed countries introduced Bilateral Investment Treaties (BITs). Treaties became the best way to secure investors right. Germany was the first country to sign such agreements, as it had lost its foreign investment after the war and was aware of the risks. In 1959, Germany first signed two BITs, one with Pakistan and the other with the Dominican Republic. Other Western European countries quickly followed Germanys lead like France conclude its first BIT in 1960, Switzerland in 1961 so on. Such agreements were usually made between developed and developing country. The goal was to protect the investment of developed country in developing country. The agreement was

drafted by developed countries and offer developing countries to signature and finally the developing countries are more motivated to sign the agreements to attract foreign investment.

The Global Era in history the international investment agreement reflect profound changes were made and one of the major change was that trade and investment rules included in the same international agreements. When the Uruguay Round of trade talks ended, it leads to the creation of the World Trade Organization (WTO) in 1995. The WTO was set up to oversee trade agreements, and for the first time investment related issues became part of its rule.

2.3 Pakistan Investment Policies

With the broader objective of economic growth, countries compete for Foreign Direct Investment (FDI) to attract through multiple strategies (Echandi et al., 2015). FDI can offer several advantages to receipt countries, such as boosting productivity, creating better jobs, facilitating better knowledge transfers and enhancing integration into a global value chain. For developing countries, FDI can be a crucial factor in joining and expanding their role in global value chain, as it provide access to international production network and market (Trade & Development, 2013). However, these benefits are not automatic. Government policies and investment agreements are necessary to maximize the potential gain of foreign investment into a country. Clear investment policies are essential, as FDI must be carefully managed, if not handled properly, it may yield significant benefits for the host country. The primary goal of host country is to generate revenue from FDI inflows. The ongoing process has led to significant change in host countries attitude toward inward FDI.

In Pakistan, attracting FDI has been a major concern for policymakers. During the 1980s, various policies were implemented to promote private sector participation in the market. While these policies aim is to balance the role of both private and public sector and encourage private business growth, the government did not initiate the privatization of state-owned industries. As a result, the public sectors continue to dominate key industries, discouraging foreign companies from investing, which hinder FDI inflows. In 1996, Pakistan accounted for only 0.2 percent of global FDI, less than one percent of FDI in developing and Asian countries, and 20 percent of FDI in South Asian Countries (A. H. Khan & Khilji, 1997). However, study by Tilat, (2002) argue that such enormous polices adopted by Pakistan and provide incentives to stimulate the

growth through high investment but that had been poor and the relationship between liberalization and growth being controversial.

2.3.1 Foreign Private Investment (Promotion & Protection) Act 1976

Pakistan provides legal protection and promotion to foreign investors and investments through the foreign private investment (Promotion and Protection) Act 1976, and the Promotion of economic Reforms Act, 1992. This law was passed in 1976 and applied to all business in Pakistan that is foreign investment, as long as they were approved by the government after September 1954, while also ensuring any special agreement or benefit they already have. The Acts define key terms, outline the field where foreign investment is allowed and granted the federal government authority to approve investment based on national interest. It safeguards foreign investment from unjust acquisition, ensures due process for compensation, and allows investors to repatriate profit, capital and loans. Foreign employees can remit funds for their dependents under government regulations. The Act provides tax concessions and ensures foreign investment receives equal treatment with domestic ventures regarding trade and taxation.

Additionally, it allows the government to resolve implementation difficulties and formulate rules for smooth execution. The Protection of Economic Reform Act 1992, further strengthens investment security by ensuring economic reforms, financial freedom and protecting foreign currency accounts and private sector ownership from government takeover.

2.3.2 Pakistan Investment Policy 1997

In the light of these challenges, the Pakistan Board of Investment (BOI) introduced a new investment policy in 1997. One of the key measures taken by government to attract FDI was the liberalization of foreign exchange regime. This policy allows 100 percent repatriation of profit and dividend and the inter-bank rate was applied to all foreign exchange receipts and payment in both public and private sector. Both resident and non-resident Pakistanis are allowed to hold foreign currency accounts, enabling them to bring in, possess and take out foreign currency. Additionally, investors can obtain rupee loans using their foreign currency account balances as collateral, effectively removing restrictions and allowing them to move freely within the country and operate business with ease.

Building on these legal protections, Pakistan investment policies also focus on creating a favorable tax environment. Under the existing framework, foreign investors are not subject to high taxes on investment income than domestic investors. The policy further provides tax incentives, tax holidays and relief from double taxation in cases where Pakistan signs treaties with partner countries. Studies like (Banga, 2003) discuss government policies made for investors are tax incentives and removal of trade restriction are handle of investment policy, which positively influence FDI inflows. Interestingly, while investors from developing countries may take these incentives as a decisive factor, those from developed countries may consider them alongside a broader set of conditions.

2.3.3 Pakistan Investment policy 2013

Recognize the need for continued reform to attract more investment inflow, Pakistan introduced its second investment policy in 2013 as an extension of the first. A key feature of this policy was the Ease of Doing Business (EoDB) initiative and BOI moving toward One-window operation, involved carefully planned steps to simplify business operations for investors and offer a clear policy parameters for eliminating the unnecessary regulations (deregulations) and reduced the cost of business by streamlining the essential regulations. This initiative required coordination between various governmental organizations both at the federal (nation) and provincial level to streamline business processes and improve efficiency and identify and adjust the economic priorities in the light of global economic scenario and to achieve the targets given in National Policy Document, Vision 2030. These investment reforms aim to make investment procedure simpler, more transparent and more accessible for foreign investors. By reducing, bureaucratic hurdles and improving the business environment. Pakistan sought to enhance its attractiveness as an investment destination, ultimately fostering economic development and increasing FDI inflows. The government introduces a law to official create Special Economic Zones (SEZs) which a major and final step putting in the investment policy 2013. These policies also work in liberal investment regime like free entry for investors. Foreign investors in any sector are allowed to send their profit, dividend or other money back to their home country in their own currency under Foreign Private Act 1976.

2.3.4 Pakistan Investment Policy 2023

Although Pakistan already had investment policies, the investment policy 2023 was introduced to update and improve the investment environment in line with new global and local economic challenges and it is the evolution of earlier investment policies from 1997 to 2013, design to make investing in Pakistan easier, more attractive and more competitive in today's world. The Foreign Investment (Protection and Promotion) Act 2022 introduced a formal mechanism for addressing investors' concerns through the Investment Grievance Redressal System. This system operates under the Investment Ombudsman, who is responsible for the investor's related issues in Pakistan. This initiative is aimed at boosting investors' confidence by protecting their interests and promoting a more stable and predictable investment environment. Under this policy Act 2022, the government is working on the tax system easier, including signing double taxation treaties and setting up a web based system to manage and track investment projects more efficiently.

The objective of PIP 2023 are to adjust economic priorities in response to global and regional challenges, support sustainable and inclusive growth in line with UN Sustainable Development Goals (SDGs) and encouraged responsible and gender-inclusive business practices. Additionally the policy promotes export oriented and import substituting FDI that creates quality jobs, reduces income gaps and ensures balanced regional development and enhancing Pakistan's economic complexities by attracting FDI that diversifies exports and support high value activities.

2.4 Special Investment Facilitation council

With the passage of time Pakistan improves the investment landscape to extend the previous policies according to the global situation and needs and recently organized Special Investment Facilitation Council (SIFC) in 2023. SIFC is a federal government body and investment promotion agency constituted under Pakistan Prime Minister. The council was established with a couple of stated goals act as a single window to encouraged investors can get help and support without dealing with different government departments separately. SIFC has set target to increase FDI in Pakistan to targeted is \$5 billion⁶. The civilian leaders and army involvement in this organization in making important economic decisions. This joint military setup is meant to

⁶ https://en.wikipedia.org/wiki/Special_Investment_Facilitation_Council

ensure faster decision making, better coordination and stronger implementation of investment planes to boost the country’s economic growth.

2.5 Pakistan Bilateral Investment Treaties

Now, it’s come to the investment agreements, Pakistan has extensively adopted the approach of entering into bilateral and multilateral investment agreements aimed at promoting FDI from the partner countries. To date, Pakistan has sign Bilateral Tax Treatise with 68 developed and developing countries overs various years. Study by Banga (2003), argue that Bilateral Investment Treatises (BITs) were initially agreements between developed and developing countries, as developed nations were the primary sources of foreign investment. However during the 1990s more developing countries began signing BITs with one another as they emerged as both sources and receipts of FDI, leading to a significant increase in the number of BITs after 1990. Despite this surge, some experts argued that many of these agreements were signed hastily and without proper consideration, especially following the release of the UN Model tax convention in 1980. As noted by Ahmed et al., (2024) that developing countries like Pakistan may have been forced to signing these deals without fully understanding their long term implications.

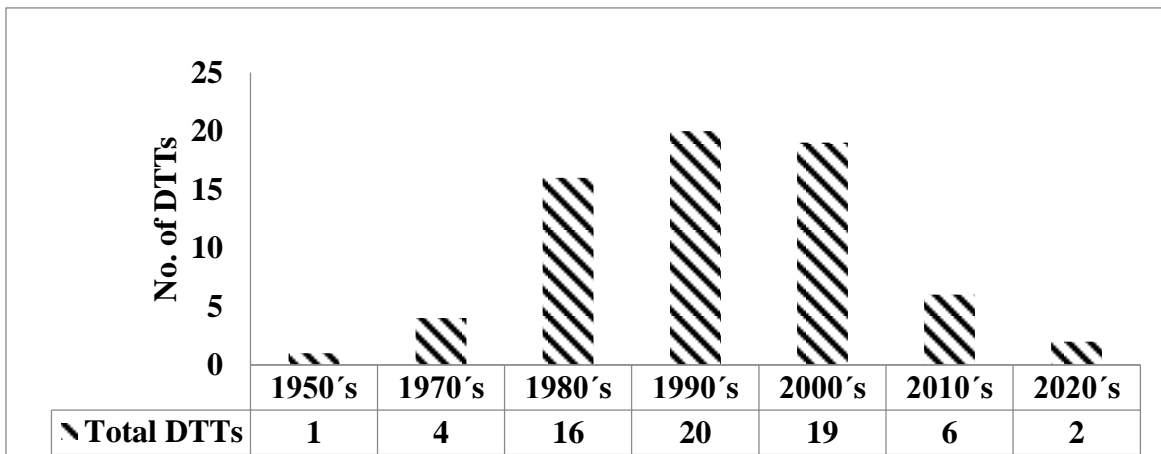


Figure 2. 1: Decade-Wise Data of Pakistan’s DTTs

Source: Federal Board of Revenue

To enhance its attractiveness as a destination for FDI, Pakistan has actively pursued bilateral ax treaties with a range of countries. These agreements are design to eliminate double taxation and reduced tax related barriers; hereby encouraging multinational companies and foreign investors enter in the market and increase the country’s level of progress. These agreements reflect

Pakistan strategic efforts to align it with global norms and attract investment from diverse regions. The timing and geographic distribution of these treaties indicate Pakistan evolving economic relationships and its efforts to tap into new source of FDI. Selected bilateral tax treaties signed by Pakistan, listing the partner countries and year of signs shown in the table.

Table 2. 1: Pakistan tax Treaties with Partner Countries

Countries	Year of Sign	Countries	Year of Sign
Azerbaijan	1996	Australia	2005
Bahrain	2005	Bangladesh	1981
Belgium	1980	Belarus	2004
Bosnia	2004	Brunei Darussalam	2008
Bulgaria	2019	Canada	1976
China	1989	Czech	2014
Denmark	1987	Estonia	2023
Egypt	1995	Finland	1994
France	1994	Germany	1994
Hong Kong	2017	Hungary	1992
Indonesia	1990	Iran	1999
Ireland	2015	Italy	1998
Japan	2008	Jordan	2006
Kazakhstan	1995	Korea	1987
Kuwait	2012	Kyrgyz	2023
Latvia	2023	Libya	1975
Lebanon	2005	Malaysia	1982
Malta	1975	Mauritius	1994
Morocco	2006	Nepal	2001
Netherland	1982	Nigeria	1989
Norway	1986	Oman	1999

Philippine	1980	Poland	1974
Portugal	2000	Qatar	1999
Romania	1999	Saudi Arabia	2006
Serbia	2010	Singapore	1993
South Africa	1998	Spain	2010
Sri Lanka	1981	Sweden	1985
Switzerland	2017	Syria	2001
Tajikistan	2004	Thailand	1980
Tunisia	1996	Turkey	1985
Turkmenistan	1996	Ukraine	2008
UAE	1993	UK	1986
USA	1957	Uzbekistan	1995
Vietnam	2005	Yemen	2004

Source: FBR

In recent decades, international trade agreements (ITAs) have emerged as a vital tools for promoting global economic integration, enhancing market access and strengthening bilateral and Regional Corporation. These agreements whether in the form of FTAs or PTAs, are design to reduced tariff rates, eliminate trade barriers and foster investment flows among participating countries. For developing economies such as Pakistan, ITAs are particularly important for expanding export market, attracting foreign investment and improving the competitiveness in the global arena. FTAs could have a good effect by providing incentives for business to engage in greater international commerce. For example, FTAs provide tax breaks to trading companies, which rises business productivity by fostering more competitive and affordable imported inputs, which improve product quality, expand the economy of scale and increase product variety and boost the nation investment climate (Baier & Bergstrand, 2001). Since early 2000, Pakistan participation in ITAs is steadily proceeding. In 2004, Pakistan has joined the South Asia Free Trade Area (SAFTA) along with Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka. This marked a significant step in economic integration efforts. Subsequently Pakistan has operationalized its FTA with Sri Lanka in 2005, followed by the Pakistan-Iran PTA, which became effective on September 2006. The trend continued with the signing of PTAs with

Mauritius on July 2007. During this period, Pakistan also engaged in negotiation with china.

Below the graph provides a decade wise ITAs Pakistan sign.

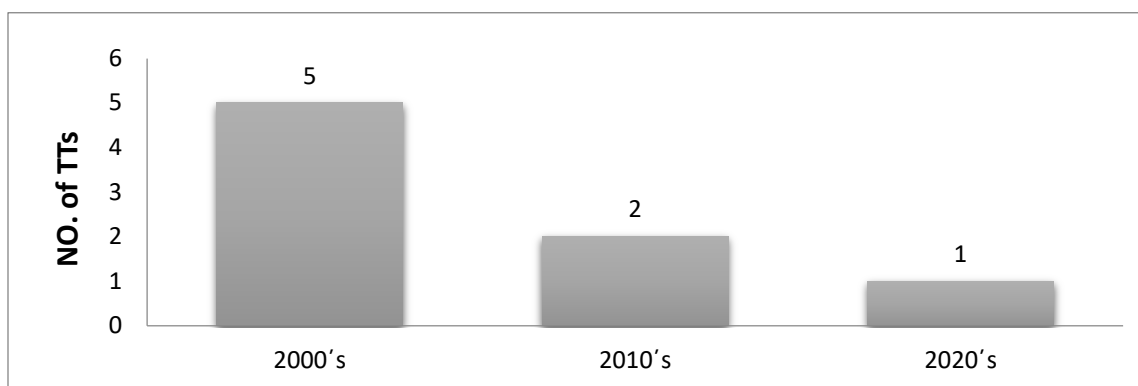


Figure 2. 2: Pakistan's Decade-Wise Trade Treaties

Source: Ministry of Commerce

2.6 National Tariff Policy

In 2003, Pakistan neighbor's countries China, India, Iran and Afghanistan (CIIA) have significantly increased their share in global market by 216% and Pakistan has decline by 19%. If Pakistan exports had grown as the same pace of its neighbors (CIIA), its export in 2019 could have been \$55 billion instead of \$23 billion. One of the key reasons for this lagging export performance is anti-export bias in economic policies. To boost exports Pakistan need a tariff policy that facilitate industrial growth, reduced unnecessary import duties on raw material and align with global trade trend. The Federal Cabinet held a meeting in and contacts with all the stake holders whose role as mile stone in the national economic policies by understanding how important taxes are to progress of economy and the expansion of exports after this meeting in November 2019, the first National Tariff Policy (NTP) is approved. The NTP aim is to fix the inconsistencies in the tariff system and align it with trade priorities. It helps business by allowing duty free imports of raw material, making industries more competitive, encouraged investment in efficient industries by ensuring a stable and predictable tariff structure decided through a proper institutional process⁷.

The NTP is based on few key principles. (i) Employing tariffs as a trade policy tool instead of a means of generating income, (ii) cascading tariff structure means the tariff rate is increasing in

⁷ https://pid.gov.pk/site/press_detail/12335?utm_source=chatgpt.com

every stage of products like raw material have low tariff or zero rated and finished products have high tariff which encourage local producers, (iii) new operating industries get short term support until they become competitive and (iv) local industries get temporary support from imports, but this is phase out over time to make them competitive for exports.

In Pakistan, import tariff are source of revenue generation instead of instrument for trade policy and gradually Pakistan liberalized its tariff policies and the number of tariff slabs decline from ten in 1993 to six in 2015. Maximum 25% of tariff line decline in FY 2015 and the same period 1% of duty imposed on 40% of tariff lines and necessary goods are exempted from duty like raw material and machinery⁸ and further the tariff slabs were reduced till FY 2018 and in this year 1% additional duty was levied under SRO 1178(1)/2015 which was increased to 2%.

To achieve its objectives, Pakistan NTP includes several key reforms implemented over five year from budget 2020-21. The policy aim is to simply tariff structured based on cascading, where raw material have lower tariff then the final products. Over the time tariff on raw materials, intermediate goods and capital goods will be reduced, along with additional customs and regulatory duties. The policy also seeks to eliminate tariff difference between commercial importers and industrial users to prevent misuse and ensure fair access to essential materials, particularly for small and medium enterprises (SMEs).

To support new industries, the policy offer temporary protection during the investment and financing payback period. However, this protection will be phased out gradually to ensure a predictable business environment and encouraged long term investment. So for the effective implementation of the policy, a Tariff Policy Board (TPB) establishes, chaired by the Commerce Division and will include key official. Any policy effecting tariff must follow this policy structure process and ensure transparency and alignment with national economic goals.

2.7 BEPS Approach

In 2015, the Organization for Economic Corporation and Development (OECD) created the Base Erosion and Profit Shift (BEPS) initiative to try and minimize tax avoidance in multination corporations. This BEPS initiative made a series of recommendations that were adopted by G20 countries implemented in many jurisdictions around the world to lessen the gap and mismatches

⁸ <https://www.commerce.gov.pk/wp-content/uploads/2019/11/National-Tariff-Policy-2019-24.pdf>

in the international tax system. However, the BEPS system is not ease the problem that the digitalization of the economies has created particularly around the allocation of taxing right between countries. The central question is where should a company mainly be taxed? Where to tax, where it does business and where it is based? As a result the OECD launched a new two pillar approach to address the issues. Pillar-I and Pillar-II are the part of the OECD discussion to reform the international tax system. In recent world economy has become more and more digitalize which has led to a shift profit to low tax jurisdiction or tax heavens. Due to this the two pillars are design to create a fair and more equitable global tax system.

Pillar-I is a framework for allocating a taxing right between countries based on the largest MNCs generate their profits, this means a big companies would pay a fair share of tax where they do business even if they do not have a physical presence there. The OECD estimates taxing rights \$200 billion per year to be reallocated resulting in revenue gains of 13 million until \$36 billion⁹, if the agreement is put in place. Pillar-II also known as the global anti-base erosion globe proposal is focused on establishing a global minimum tax rate that the MNCs must pay on their profits regardless of where they are located. This pillar tries to create a level playing field for all countries with a minimum corporate tax rate of 15% reducing the incentives for companies to shift profit to tax havens to avoid paying tax. The OECD or G20 inclusive framework on BEPS is a global platform established in 2016, for cooperation and collaboration on international tax matters to try and improve global tax problems and the framework was created as a way for countries to work collaboratively on solution. The platform brings together 140 countries and jurisdictions and operates on the consensus space approach. Under this initiative all the member have equal say in the decision making process. The ongoing discussion on Pillar- I and II of the OECD tax reforms have extensive consultation and engagement with stake holders from governments, civil society and private sector. The two pillar approach has been the subject of ongoing negotiations and consultations with a goal of reaching consensus based solution.

Some countries like Ireland and Hungary believe it will impact their ability to attract foreign investment and other countries like Brazil and India arise question about the fairness of the proposal and their impact. Since 2021, 136 nations agreed to the proposals subject to passing their own internal legal system Nigeria, Sri Lanka, Kenya and Pakistan have not still agreed

⁹ <https://www.youtube.com/watch?v=NjWHAcCNuk>

believing it does not go far enough. While there has been a significant progress in negotiations on Pillar-I, it is hard to know when the final agreement will be reached. Pillar-II of the OECD tax reforms is known likely to happen them Pillar-I as they agreed consensus among the participating countries on the need for equilibrium minimum tax rate to address the tax avoidance in the MNCs. However, the internal politics of the countries such as United States may be not importance than the inclusive framework. Overall the two pillars of the taxation aim to address the challenges of the digital economy and show that the multinational companies pay their fair share of taxes while also promoting tax and reducing tax disputes between countries and the pillars both together many countries through the inclusive framework much works need to be done both within and between countries before their part of international law.

Chapter 3

Literature Review

3.1 Introduction

International Economic Agreement has played a pivotal role in shaping economic integration, evolving a significant over time. While their root can be trace back in 1990 these treaties are in positive direction and their influence has grown markedly in recent decades with the removal of barrier between countries trade and capital flow. Couples with advancement in communication and technological, these agreements have enhanced the ability of nations to foster economic integration and uplift the sovereignty of nations, such treaties have become an instrumental determining fiscal outcome and influence economic growth. The study aim is to examine the effect of international economic agreements which are crucial to understand on total revenue and how this effect mediated by economic growth. Consistently, based upon the objective and to make the literature review more comprehensive, we have review of literature arranged in sections.

3.2 Impact of International Economic Agreements on Revenue

Limited theoretical and empirical literature has been found on International Economic Agreements and revenue. The foundation of any economy is taxation and an effective tax collection system is essential for development of nations but developing countries like Pakistan continue to struggle with a significant challenges related to tax compliances (Usman et al., 2024). Ahmed et al., (2024) conducted a preliminary level study on Pakistan's International Economic agreements (IEAs) on macroeconomic indicators during the previous seventy years and this study is expanding on previous studies. It investigates into whether undesirable economic outcomes like fiscal imbalances and a decline in export competitiveness are correlated with the speed and frequency of signing these agreements. The research presented here strives to improve knowledge of the fiscal and economic effects of IEAs in asymmetrical economic environments by placing Pakistan's experience within a larger theoretical and empirical framework. Dutt & Gallagher, (2022) studied the impact of trade treaties and investment treaties on fiscal stability of the world's nation using cross country regression analysis from the period of 1985-2018. The results reveals that trade liberalization reduced trade barrier like tariffs which

has generally leads to decrease in the amount of government revenue collected from tariffs and revenue loss is not automatically replaced by other taxes. In this case the trade and investment agreements increased government debt. For the Sub-Saharan African (SSA) countries the study of Beer & Loeprick, (2018) investigated the cost and benefits of tax treaties with investment hub empirically. The sample period, that include inter-country cross-sectional data from 41 SSA nations range from 1985 to 2015 using Difference In Difference (DID) econometric model reveals that Double Tax Treaties (DTT) with investment hub leads to a significant reduction in government revenue in source countries around 22% for treaties with investment hub and 3% for treaties with non-investment hub, so the result show a negative effect on tax revenue. Despite the expectation that DDTs attract more of FDI in source country but the results indicate that treaties do not significantly increase FDI Inflows.

(Zolt, 2018b) conducted a theoretical study tax treaties with developed countries may be not a good deal for developing countries significant revenue is lost because developed countries; transfer their multinational enterprises to those treaties sign countries which set the low tax rates and developing countries are different from one another according to their economics, politics and ability to manage taxes. Author critique here is that countries do not need tax treaties to improve business environment for foreign investors but need to improve domestic tax legislation and tax administration to provide a more effective tax system for all investors, not just from those treaty countries. Nketekete, (2021) conduct a preliminary study to check the tax treaties may benefit the tax payer or maximize the revenue the provision of DTAs on Value Added Tax (VAT) between Lesotho and South Africa and the research design was doctrinal research which focus on legislation analysis and the treaties are part of domestic law and agreements are the contracts between the counties and the study general conclusion is that the treatment of VAT on services is for tax revenue maximize not the interest of tax payers. Gnanngnon, (2019) conduct a study involve the panel dataset of 92 nations covering the years 1980–2014 is used for the empirical analysis by using a traditional econometric methods fixed effect model and random effect model to demonstrate how tax reforms increases the trade openness and lead to revenue influence and at the they come with the results that tax reforms positively affect the trade openness but there is a progressive erosion in trade tax revenue which in turn decrease the total tax revenue and the low income or poor countries significantly experience the effect. In the same year they conduct another study with other economist like (Gnanngnon & Brun, 2019) conduct

study on the same topic but the difference here is that they come with different results and used unbalanced panel data set of 95 developing countries within a fixed effect and random effect and two-step GMM employ in the paper and advocate that tax reforms positively influence the total tax revenue.

(Kinda et al., 2023) used a fixed effect model and GMM to capture the effect of international tax treaties on resource revenue using the data from 83 resource rich countries from period 2000 to 2019. The empirical results reveal that the presence of tax treaties lead to reduction in resource revenue mobilization. In addition that treaty shopping has been found to worsen revenue loss from signing of treaties and FDI inflows has positive and weak impact on revenue compared to the government ability to collect tax revenue while resource rents and GDP per-capita have positive and significant effect on resource revenue and inflation have strong negative effect on revenue in most models. Baunsgaard & Keen, (2005) analyzing panel data for 111 countries to cover 25 years to check either the trade liberalization increase or decrease the trade tax revenue focusing on fixed effect (FEM) and GMM estimation and found that for middle income countries recover their revenue loss due to trade liberalization through additional domestic taxing from 45-60 percent for each dollar of trade tax revenue while the low income countries are weaker than the those average recover not more than 30 percent of each lost dollar so the liberalization polices may reduce revenue expected to generate.

Gasparėnienė et al., (2019, 2022) investigate the effect of Inward and Outward FDI on tax revenue focusing on European Union (EU) countries for the period of 1999 to 2019. To fulfill the objective of the study employing a panel data analysis and multiple regression analysis (least square method) used to found that outward FDI has a positive and significant effect on tax revenue while the Inward FDI has been reduced the tax revenue and before they conduct a study in Lithuania. To examine the effect of FDI on different type of tax like value added tax (VAT), personal income tax (PIT) and corporate Income tax (CIT) using regression analysis to cover the period from 2008 to 2017 and concluded that FDI has a positive and p-value is greater than 0.05 show statistically significant impact on tax revenue.

3.3 Economic Integration Agreements and Trade

Over the past twenty years, the global economic landscape has undergone a profound transformation marked by the rapid and widespread growth of economic integration Agreements

(EIA) among nations. This trend reflects a strategic shift in how countries approach international trade, investment and economic corporation. Countries has increasingly entered into trade agreements which include free trade agreements (FTAs) and preferential trade agreements (PTAs), have become a dominant features of international economic relation. However, researchers remain uncertain about the trade agreements and the trade volume and strengthen. As a result they adopt different recent econometric method in empirical literature to improve their understanding and assess the true effects of such agreements, Kohl, (2014) examine the relationship between the agreements design and impact on trade through gravity equation which include 150 countries from 1950-2010 and the panel data set is arranged country pair and year under the study and the study brings that the somehow EIAs increase the trade up to 50% in favorable condition and most of them do not have a clear and noticeable effect and concluded that over half of the EIAs study had no real impact on trade.

Building on a large conversation about the EIAs, a number of studies touch all the aspects and treaties like regional trade agreements (RTAs), especially between poor nations, to assess how they foster international trade and economic corporation. For this instance, Larch & Yotov, (2024) provide a comprehensive and empirical assessment of RTAs over period from 1980-2016 using a gravity model of trade and the estimates highlight that RTAs are significantly boost the trade flows between member countries and play a role in economic corporation. In such case of the international EIAs, between nations not only reduced the policy barriers to the flow of goods and services but the majority of EIAs offers a regional or continental scope. Baier et al., (2008) study the trade flows and EIAs relation through gravity and difference in difference techniques and their results show that once the self-correction is accounted for, EIAs have large and statistically significant positive effect on trade among member's countries, particularly the European integration on trade between 1960-2000 is found to be much larger than previous estimated and author also argue that rather than being a disorganized or ineffective procedure, the growth of EIAs is best as logical reaction to demands from competition in the global economy.

Several studies explore the trade dynamics in East Asia, particularly focusing on the trade relations through FTAs. One such study investigates trade effect associated with different stages of FTA implementation using an augmented gravity model framework and a variety of

econometric techniques including pooled OLS, GLS and random effect and fixed effect models reveals the presence of anticipated effect which means significantly increase trade even before the formal implementation of bilateral FTAs and the market participants may respond to expected future liberalization. In contrast, the effect of multilateral agreements was found to be statistically weaker and less consistent, possibly due to the complexity of negotiation and slower implementation. The results underline the importance of agreement type and depth, (Mölders & Volz, 2011). Makun & Singh, (2025) analyzed the connection between deregulation of effective tariff rates and tax revenue for asset pacific island countries from 2010 to 2021. When countries direct tax revenue sources are deregulate over decades than domestic indirect taxes have increased. And the empirical finding reveals that the reduced tariff rates have a negative impact on government total tax revenue.

Regarding the connection between trade liberalization and fiscal performances, the previous research conducted by K. Ahmad et al., (2018) in Pakistan by using data from 1972 to 2014 and ARDL model employed in the analysis. The empirical results reveal that trade liberalization has a negative impact on the trade tax revenue and suggesting that we need to improve the volume of average tariff rate and increase the trade tax revenue in Pakistan short run as well in the long run.

3.4 Role of Investment treaties and their implications for Economic Growth

Investment treaties have become a pivotal tool in shaping the global economic landscape and influencing economic growth through a channel and countries sign investment treaties to gain self-interest and assessing their effectiveness in attracting FDI and their broader implications for their host economies, particularly in developing countries as study done by Egbuna et al., (2013) explore a research examined for globalization and capital account liberalization affected Nigeria's economic growth between 1975 and 2009 used the Phillips-Perron and Augmented Dickey-Fuller (ADF) tests to examine data aspects. An error correction model (ECM) was used after co-integration tests revealed a long-term link between the variables. The results demonstrated that although capital account liberalization (measured by current account balances) had a favorable influence on real GDP (a measure of economic development), these impacts were not statistically significant. Likewise, real GDP was not much impacted by trade openness or foreign exchange reserves. Further GNANGNON, (2020) examine the effect of tax reforms on economic growth uses a panel data set of 92 developing countries over the period of 1985-

2015 and generalized method of moment (GMM) estimator is used for conducting the empirical estimation and study results reveal that the tax reforms are enhance economic growth in developing countries with upper middle income countries significantly promoting their economic growth due to tax reforms and same as the growth is enhanced by lower middle income countries and low income countries.

Sly & Weber, (2017) are seek to access how the international fiscal policy agreements particularly bilateral investment treaties (BITs) influence the comovement of GDP series by utilizing a 30-year dataset of quarterly GDP variations from a wide range of nations and to adopt a Generalizing Estimating Equation (GEE) which is suitable for analyzing correlation response in longitudinal data and correlation between observation is considered and Difference in Difference approach to check the changes within countries pair in treaties status and before in treaty and the results found that GDP comovement increases significantly with the implementation of a new BIT, with an estimated half-standard deviation increase. This suggests an increased probability of timed economic cycles in nations having a BIT such relevant studies are no stop here further researcher take interest like Huchet-Bourdon et al., (2018) investigate the relationship between the trade openness as proxy of trade liberalization and economic growth and the empirical estimation is run unbalanced panel data set of 169 countries for the period of 1988-2014 by using ordinary least square (OLS) and GMM estimator developed for dynamic panel data model and the empirical findings support recent findings in international economics about the connection between growth and trade openness deferent accords to the quality of products, if quality products are used in trade then they positively influence and vice-verse.

Baier et al., (2008) analyzing the impact of Economic Integration Agreements (EIA) stride and growth with a gravity equation with panel data have used and fixed effect rather than random effect because gravity model is relative to fixed effect rather than random effect and estimate that frequently discover that EIAs have statistically and economically negligible effects on trade. Bilateral FTA exerts an insignificant effect on the overall growth over a one to ten year period post implementation. However, also detect that there is a significant increasing trend in GDP per capita rate is observed within a bilateral FTAs and the results are obtain by using panel data to run non parametric matching approach because it is free from functional form assumptions and suitable for diverse data structure (Hur & Park, 2012).

3.5 Macroeconomic determinants of Economic Stability (Real GDP)

Economic stability, often measured through real GDP, is influenced by a range of macroeconomic variables that reflect the fiscal, trade and investment health of a country. For developing economies like Pakistan, understanding these determinants is essential to design effective policy interventions that ensure sustained growth. In the context of IEAs factors such as tax revenue, FDI and rate openness serve as a critical transmission channels through treaties directly and indirectly affect real GDP. This section discusses how each of these macroeconomic indicators interacts with economic growth, based on existing theoretical and empirical literature.

3.5.1 Tax Revenue and Economic Growth

The entire health and performance of the economy are reflecting in real GDP, which is a crucial indication of a country's economic stability. A wide range of macroeconomic indicators including tax revenue, trade openness, FDI Inflows and corruption etc. are play an important role in influencing GDP dynamics. These factors interact in complex ways to either promote sustained growth or trigger instability. The study conduct by (Mehrara & Farahani, 2016) adopt OLS and fixed effect model to investigate the relationship between tax revenue and real GDP utilizing a panel data set from 1990-2023 and the results found that tax revenue is an important indicators in the real GDP because the study show that tax revenue positively impact and will be beneficial to the betterment of the economic conditions. In most of the developing countries the non-resource revenue (taxes not related to natural resources) is unstable it reduced its share in country's GDP. The negative impact is stronger in less developed countries compared to more developed ones and the reason is that unstable tax revenue leads to unstable government spending so this worsen economic growth, such study utilized panel data set of more the 100 countries overs more than 30 years are incorporated in the study as well as two step system GMM by (Gnangnon, 2021).

By comparing GDP growth with statutory tax rates on personal income and corporate income, Dackehag & Hansson, (2012) investigate the connection between taxes and economic growth. Using the panel data set from 24 high income OECD countries, their findings reveal that both personal and corporate income taxes have a negative impact on GDP.

Matthew A., (2014) in Nigeria developed a study to check the impact of tax revenue on economic growth under existing literature and distribute questionnaires among worker of the

federal board of inland revenue and the data analysis involve chi-square to test the hypothesis related to the objective of study (impact of tax revenue on Nigeria economy). In summary tax revenue positively influence economic growth by providing necessary funds for development but its effectiveness heavily depends on the administrative efficiency. Another study conduct in Indonesia and time series data spanning 33 years is used in the study. The OLS and ECM are employed to find that all the tax revenues which are collected from different sources like VAT, excise revenue and income tax has a positive and significant impact as well as long term and short term effect on the economic growth of Indonesia.

Developing countries faced many issues related to fiscal imbalances because the tax system is not developed on the basis of taxation cannon such as certainty, equity, adaptability, convenience, simplicity and coordination cannon. Ahmad et al., (2020) evaluate the impact of taxation on economic growth of Pakistan using time series data. The data set of the study has been evaluated using ARDL approach for empirical analysis. The study findings show that Pakistan's taxation policy as a negative impact on the nation's overall economic growth. Another study conducted by Shafiq et al., (2022) assessed the tax revenue on Pakistan economic growth using time series data from 1976 through 2011. GDP as dependent variable while taxes, exchange rate and trade liberalization were independent variables. After confirming the Stationarity of the data through the ADF test, the ARDL approach was applied to examine the relationships. The final results revealed that both taxation and exchange rate have a significant and negative effect on economic growth I both the short and long run.

3.5.2 FDI Inflow and Economic growth

The literature on FDI and economic growth generally suggest for the positive correlation between the two variables and a vast amount of time series as well as panel studies are conducted globally. There are many other studies available which show the negative, some of them show no or moderate relationship between them. Time series analysis is conducted to assess the relationship between the growth of FDI Inflows and other potential determinants on economic growth in India. Their econometric analysis is based on secondary data and has formulated a linear regression model and also confirms their Stationarity through ADF and PP. the study results reveal that the growth of capital formation has a positive and significant impact on the

economic growth while the other side, the rise of trade openness and FDI inflow have no significant impact on India economic expansion (Bagli & Adhikary, 2014).

Study by Behname, (2012) in South Asia, has report that FDI has a positive and significant impact on GDP but other factors like population and inflation have negative impact on the economic growth and the model is estimated through random effect model for the duration between 1977 to 2009. Using data from 28 Asian countries in a panel framework over the period of 1998 to 2007, (Kumar Tiwari, Pandey, 2012) has investigate the effectiveness of FDI on economic growth of the Asian countries are diagnosed through error correction model and estimated using fixed effects estimator and generalized least square cross-section weight. The finding indicates that investment freedom, inflow of foreign direct investment and population are significant factor which effects negatively the economic growth in 28 Asian countries.

The most important sources of external capital flows to developing nations including Pakistan in recent decades has been FDI, which has to grow a significant component of capital generation in emerging markets. As noted by Ali, Hussain, (2022) attempt to explore the relationship between the FDI and economic growth of Pakistan and the time period spanning 1991-2015. The study adopts correlation and multiple regression models for the estimation of data and found that there is a linear relationship between the economic growth and FDI in Pakistan. M. A. Khan & Khan, (2011) used panel cointegration and granger causality for Pakistan from the period 1981-2008. The outcome reveals that FDI has positive and significant impact on growth in sector level like primary and service sectors.

3.5.3 Trade Openness and Economic Growth

Countries expect that by opening their borders through economic agreements and resolving conflicts, they can more easily exchange goods and services which in turns lead to change in their economic systems. Empirically, (Kumari et al., 2023) found that in India, the VAR Granger causality results reveal that a bi-directional relationship between FDI and economic growth, indicating that each influences the other. However, the study finds no evidences of a bi-directional causality between trade openness and economic growth. Trade openness plays a substantial role in promoting economic growth rather than economic development in five emerging economies collectively known as the BRICS, based on panel estimation method from 1993 to 2016, through the empirical results conforming that their I cointegration exist between

trade openness, inflation and economic growth. Additionally the coefficients of the estimation clearly shown the positive relationship between trade openness and economic growth and the heterogeneous non-causality test report the uni-directional causality runs from economic growth to trade and bi-directional causality between inflation and economic growth (Raghutla, 2020).

Even so, one of the country-specific research by (Musila & Mpekansambo, 2024) use the ARDL-EC model approach and time series data from 1995-2020. The study investigates the impact of regional and multilateral trade openness on economic growth in Malawi. The findings of the study documented that the multilateral trade openness have positive and highly significant impact on long run growth rate as compare to regional trade openness while, Rigobon & Rodrik, (2005) discovered a negative relationship between trade and growth and came to the conclusion that trade openness lowers economic growth.

As we now that developing countries encourage and adopted quickly trade and investment related policies and expected to integrate globally and enhancing growth so Pakistan also participate in such activities. So such type of study is conduct in Pakistan to examine the relationship of real GDP with trade openness, inflation, exchange rate and FDI from 1980-2011. Econometric techniques adopt in the study are cointegration and Dynamic Ordinary Least Square (DOLS) and the cointegration findings reveal the long run relationship among the variables but trade openness and inflation are negatively related to real GDP and other side real exchange rate and FDI will positively enhanced the real GDP (Bibi et al., 2014). On the other side R. Ahmad et al., (2017) found that trade openness and FDI have a positive influence on the economic growth while the gross fixed capital formation has a negative impact on Pakistan economic growth and this estimation is carried out through the Johansson cointegration approach from the period of 1975-2014. Study by Rashid Amjad & A. R. Kemal, (2022) emphasized that tariff rationalization as part of Structural Adjustment Programme aim is to reduces anti export bias but was no sufficient to stimulate the economy growth and further identify that export oriented industries in Pakistan are scale neutral, meant that small firms can effectively compete with large ones if provided with adequate information regarding demand and design.

3.6 WTO and its stance on Trade Agreements for Developing Countries

Economic theories suggest that countries should pursue liberal trade policies and exchange good and services on the basis of their comparative advantage. Practically, most nations intervene

actively in international trade since 1947, where the General Agreement on Tariff and Trade (GATT) has been a major focal point for industrialized countries seeking to lower trade barriers. The GATT helped governments to liberalized trade and also helped foster ever greater integration of the global economy through trade. The extent to which world trade has grown and since 1995, WTO established on the basis of GATT and plays an important role in creating multilateral framework that has support the expansion of trade and reduce the barriers. According to Hoekman & Kostecki, (2009) specifically from the period of 1950-98 they found that the countries that liberalized their trade policies and member of such intergovernmental organization enjoyed on averaged 1.5 percent point in higher growth in GDP per year compared with their pre-reforms year.

Specifically developing economies increasing participation in trade reforms to promote growth through improved incentives set by WTO and need to ensure that the investment flow internationally competitive sector and the weak and corrupt institution do not interfere the positive incentives as noted by Freund & Bolaky, (2008) examine the relationship between trade openness and per-capita income using 126 cross- countries data and find that in flexible economies the trade policies improve the living standard but fail in rigid economies. Research by Oppong-Baah et al., (2022) explore panel study from the period of 1998- 2017 in Ghana and Nigeria by using random effect model and found that trade openness has positive and significant impact economic growth and recommend that government of the countries take measures and manage the trade policies to protect economic growth.

WTO set rules for resolving disputes involving antidumping measures. In past literature, developing countries should be encouraged to use this system as it provides more clear policies then old GATT regimes (Shoraka, 2006). The intergovernmental organization aim is to make easier for countries to exchange their goods and services without barriers and restrictions this help increase in production, improve efficiency and gain the benefit of free trade but the other side domestic market protectionism may reduce. Trade is essential economic development, employment creation and poverty creation in the country. Since 1990, Nepal adopt extensive liberalization policy and according to their analysis, the volume of world trade in term of good and services increased by 2.2 percent in 2017 and reaches around 3.8 percent in 2018 and expect to increase in future and reduce poverty and enhance economic development (Sah, 2019).

Pakistan is also a member of WTO and struggle for trade with member countries and reduce economic issues and enhance economic development and such study also conducted in Pakistan by T. M. Ali et al., (2018) trade play a key role in reducing poverty and boosting economic development. It influence macroeconomic policies and help countries to grow by exchanging good, services, skills and knowledge. The study use annual data of macroeconomic indicators including GDP per capita are used are used to investigate the impact of trade liberalization by employing Johnson cointegration and ECM to find that in short run trade openness negatively affect the per capita GDP while positive in long run.

3.7 Consequences of Treaties on Fiscal Stability

The liberation and avoidance of double taxation polices allow countries to invest and trade freely with their partner countries. By reducing trade barrier like tariffs and import restrictions and avoided double taxation to buy cheaper goods from other countries and sell their product to larger market. The can leads more investment, increase revenue and these improve the economic growth and better long run future. However, some developing countries have reversed trade reforms or faced challenges and these difficulties stem from inadequate planning, failure to anticipate all consequences and poor coordination with broader economic policies (Bevan, 1995). When fiscal cost of tax treaties and trade liberalization are realized, the post studies compared liberation era with historical period and to check either the liberalization policies come with a cost as Cagé & Gadenne, (2018) compared pre and post episode to investigate the potential fiscal cost of trade liberalization using a panel dataset of tax revenue covering 130 developed and developing countries from 1972-2006. The results found that since 1970 the developing countries often faced decline in revenue unlike wealthier nations, in contrast todays rich countries face similar decline in trade revenue when they were developing in 19th and 20th century and finally the results found that the liberalization policies come with a fiscal cost. Simple trade-weighted tariff averages or nontariff coverage ratios, which are thought to be the most direct measures of trade restrictions, are frequently argued in this literature to be misleading as measures of trade policy perspectives (Rodríguez & Rodrik, 2000).

One of the recent challenges floating in a country is debt burden where government expenses are more than it revenue and government trying to balance these gaps so they borrow because government has made certain policies that have led to these issues. Such issues are check

researchers through their studies like Zafar & Butt, (2008) aim is to investigate current debt problem in Pakistan and it is interlink to trade liberalization policies and measures. In This case three decades data is employed in the study by using ARDL bound testing approach to analyses the long run relationship and ECM for short run dynamics and after the analyses the study found that there is a significant long run positive association between external debt and trade liberalization policies.

3.8 Research Gap

Every nation strive for self-sovereignty, which can be achieved through cooperation with other countries like signing tax and trade treaties with partner counties to easily exchange good and services to enhance the growth. According to (Janský & Šedivý, 2019) \$240 million worth fiscal deficit is faced by Pakistan due to the international economic tax agreements and almost \$30 billion worth of capitals are flight has happened from a country due to trade liberalization policies as reported by (Mahmood, 2013) in his study. Based on the narrative of the issues, I am narrowing my research gap which is to examine the international economic agreements on macroeconomic indicators like tax revenue, trade openness and FDI inflows and also we check their economic consequences on economic stability in Pakistan.

Chapter 4

Methodology

4.1 Analytical Framework for Mediation Analysis

In this study, we explore the association between IEAs which include trade treaties (TTs) and bilateral tax treaties, tax revenue and economic growth as proxy of economic stability. Existing literatures argue that the economic agreements decrease the countries tax revenue, when collected amount of revenue is not sufficient than economic growth may reduce. (Kinda et al., 2023) capture the effect of International Tax Treaties (ITTs) on resource revenue and the results reveal that the presences of tax treaties lead to reduction in resource revenue mobilization. The investment treaties liberalized countries to shift their MNEs to low tax paying countries and repatriate their assets to the home country which benefit their home countries because their revenue is increased and host country bear revenue loss as form of tax exemption, which create economic instability in the source country.

However, in accordance with the finding of earlier studies, Dutt & Gallagher, (2022) stated that Investment Agreements like trade agreements reduced trade barriers like tariff but other side these reduced rates of tariffs contribute the reduction in governments revenue collection as well as economic growth. Furthermore, tax revenue acting as a mediator in this study, when countries more engage in signing economic agreements than they are oblige to full fill the requirements written in the treaties and provide more incentives which increase the source country tax expenditure vise-versa. The aim of tax treaties is to avoidance of double taxation treaties and also to trying to reduce the illegal avoidance named as tax evasion which in turn increase the tax base more of the investors get register and come to the tax baskets but the host country once enter into the treaty partner they are restricted to follow the rules and provide all those facilities which are written between partners. So all these impact the growth channel of the country and according to the existing literature the developing tend to sign more treaties with developed countries but they are the one that suffer more because most of the investment is from developed nations and get benefited the incentives which are written in treaties and alternatively the developing countries tax revenue is reduced and which leads to reduction in growth figure 4.1.

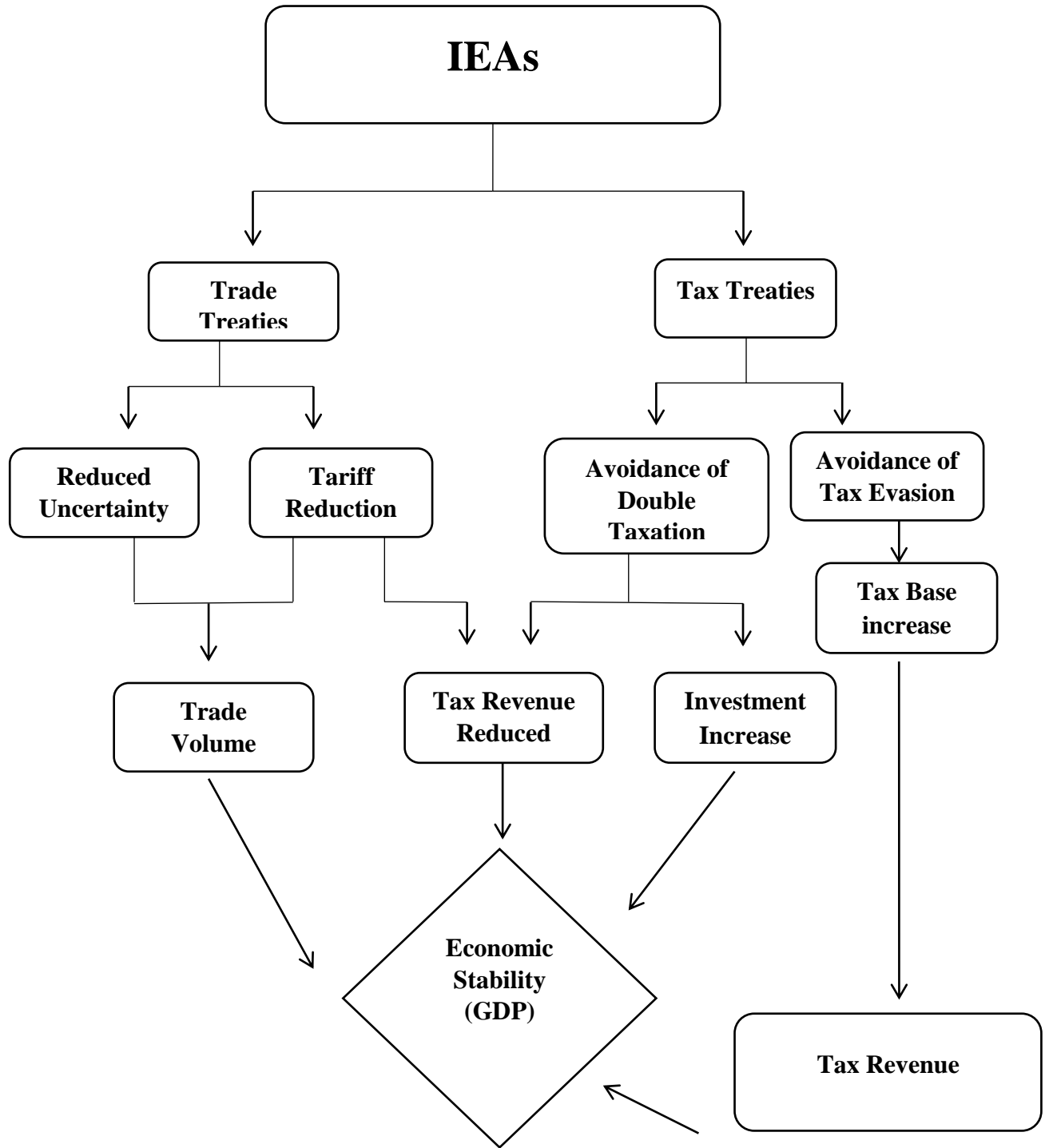


Figure 4. 1: Analytical Framework of the Study

Source: Contributed by the Author

4.2 Theoretical Framework

4.2.1 Endogenous Growth Theory

The economic agreements like trade liberalization and bilateral tax treaties are introduced to reduce the distortion between treaty partners. The liberalization policy developed in mid of 1970 aim is to removal of all major economic challenges in developing countries and the macroeconomic policies and long run supply side policies encourage growth (Fischer, n.d.). There is a number of theories work behind the growth but the recent developed growth theory named as endogenous growth theory launched by Romer 1986 and Lucus 1988. Endogenous growth theory is capable to optimize the economic decision to sustain the economic growth without relying on exogenous factors like technological progress and this approach endoginize the long term growth rate which offer a theoretical foundation for analyzing how government policies affect growth rate (Xu, 1994). So the economic agreements are one the major endogenous factors which government made policies for investors to used tax incentives as a handle attract more investment in economy to increase the government revenue and in turn long run growth achieved. And this theory focuses on how economic growth can be driven by internal factors especially through policies and investment. If government make rule that encouraged business to compete and innovate which lead to faster growth. (Sa'adah & Bardai, 2024) by using these models in government have several advantages. As a result, he country's macroeconomic distribution and financial structures, as well as its tax and regulatory policies have a significant impact on how much people save and invest, including whether to alter economic long-term growth. For this purpose, we adopt Barro's (1990) study, which used a Cobb-Douglas form to show growth in the economy as a function of capital and government spending. His growth model states that government expenditure has a major effect on economic growth and is regarded as one of the key fiscal policy tools. The model also clarifies why a better tax structure encourages investment and raises the rate of growth.

Tax policy can be added to endogenous growth model as an endogenous variable effecting growth and other macroeconomic variables like investment and trade. A simple model can be written as:

$$Y = AK^\alpha(\tau)^\beta \dots \dots \dots (4.1)$$

- Y = Output
- A = Productivity factor/ Technology
- K = Capital stock (investment/GFCF)
- τ = Tax policy
- α, β = Output elasticities of capital and tax policy ($\alpha + \beta = 1$ assuming constant returns to scale)

The growth rate of output can be derived as:

$$\frac{dY}{dt} = A\alpha K^{\alpha-1}(\tau)^\beta \frac{dK}{dt} + AK^\alpha \beta (\tau)^{\beta-1} \frac{d\tau}{dt} \dots \dots \dots (4.2)$$

This equation shows that changes in tax policy affect economic growth. If tax incentives (τ) are favorable, they boost investment (K), leading to higher GDP growth. Similarly, trade agreements reducing distortions in taxation can enhance capital inflows, reinforcing long-term economic growth.

4.2.2 Transaction Cost Theory (TCT)

The foundation of transaction cost theory credit goes to British economist Ronald Coase, first introduce the concept in 1930's and he explain how businesses internalize their specific operations in order to reduced market related cost referred as transaction cost. This theory is refining after 1970 by Oliver Williamson and recognition of its contribution they both are rewarded as a Nobel laureates in economics in 1991 and 2009. The theory main focused on efforts, resources and cost required for two parties to accomplish the exchange beyond the cost of the product or service. In a variety of businesses transactions, TCT aim is minimizing expenses while optimizing transaction cost¹⁰. Habermeier & Kirilenko, (2003) Taxing the financial transaction means introducing an additional friction for price discovery process and reduces trading volume. In 1986, Sweden increased its transaction tax from 1 percent to 2 percent which leads to 60 percent of volume of the 11 most active trading partners with Swedish migrated to London.

$$V = V_0 e^{-\lambda T} \dots \dots \dots (4.3)$$

Where,

¹⁰ <https://www.sciencedirect.com/topics/social-sciences/transaction-costs-theory>

V_0 = Initial trading volume before tax

T = Transaction tax cost

λ = Sensitivity parameter (elasticity of trading volume to tax)

This equation suggest that as increase in transaction tax T, leading to exponential decline in trade volume, as seen in the Swedish case 1886, increasing the tax lead to a significant migration of trade activities.

4.2.3 Economic Liberalization Theory

Economic liberalization in economic theory that advocate minimal intervention in market and when countries promote economic liberalization, this often result in policies to arise free trade and reduce taxes. This theory applied both in micro and macro level. In microeconomic, the impacts of decision made by individual or company level and in macro level decision made government with cross boarder countries typically revolve around the reduction or elimination of the barriers or government related restriction like trade, investment and taxation to encourage economic growth and enhance market access. It is often apply at macro level through international treaties, tax reforms and free trade agreements. The liberalization concept is first proposed by Adam Smith in 1700 and he wrote reduction of cost of trade agreements and promotes free trade, minimal tax and privatization¹¹. Levine, (2001) state that global financial integration can boost economic growth by fostering the advancement in policies in domestic financial sector, while have a favorable impact on long term growth. Utkulu & Özdemir, (2004) reveal the trade restrictions have an adverse influence on long term economic growth because they restricted the flow of transaction between nations.

4.3 Research Design

The objective of the study is to examine the effect of international economic agreements (IEAs) on fiscal space and their economic consequences on economic stability which includes growth, trade performance and investment flows. It will analyze on secondary data from Federal Board of Revenue, Ministry of Finance, World Bank and International Monetary Fund covering the period from 1975 to 2023. In our econometric model tax revenue, FDI Inflow and trade openness

¹¹ <https://study.com/academy/lesson/economic-liberalization-microeconomic-reform.html#:~:text=The%20theories%20around%20economic%20liberalization,government%20assets%20to%20private%20citizens.>

as mediators of economic agreements which include trade and tax treaties and real GDP as proxy of economic stability and as a dependent variable, while control variables also included in our estimation.

4.4 Empirical Model of Mediation Effect of Fiscal and Macroeconomic channels through International Economic Agreements (IEAs) on Economic Stability in Pakistan.

This study is based on secondary data obtain from different data providers include IMF, WDI and ministry of finance. To evaluate whether the fiscal outcome (tax Revenue) and other macroeconomic variables has a mediating effect on the relationship between International Economic Agreements which include trade treaties and tax treaties and Economic Stability (GDP).

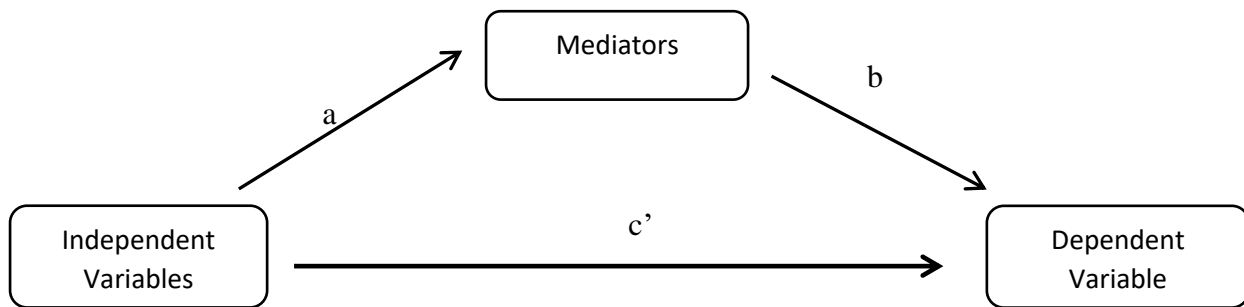
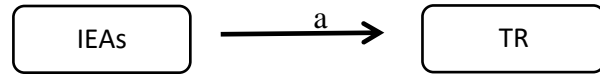


Figure 4. 2: Path Diagram Model

To test the mediation, one should test the following regression equation. First regressing the independent variable and control variables on mediators and second regress the independent variables (IEAs) and mediators and the control variables on dependent variables as RGDP in the model.

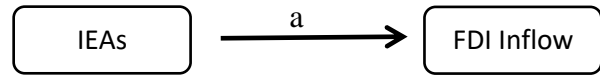
Step:1

$$\ln TR_t = \beta_0 + \beta_1 TTs_t + \beta_2 DTTS_t + \beta_4 Cv + \varepsilon_t$$



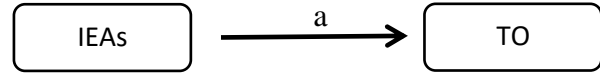
Step: 2

$$\ln FDI_t = \beta_0 + \beta_1 TTs_t + \beta_2 DTTS_t + \beta_4 Cv + \varepsilon_t$$



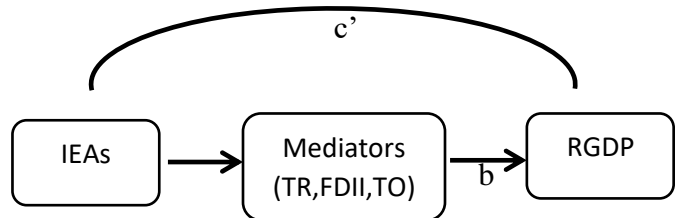
Step:3

$$\ln TO_t = \beta_0 + \beta_1 TTs_t + \beta_2 DTTS_t + \beta_4 Cv + \varepsilon_t$$



Step:4

$$\ln RGDP_t = \beta_0 + \beta_1 IEAs_t + \beta_2 Ms_t + \beta_4 Cv + \varepsilon_t$$



Baseline equation and modifying the variables used in the analysis for Tax Revenue becomes:

$$\ln TR_t = \beta_0 + \beta_1 TTs_t + \beta_2 DTTS_t + \beta_3 \ln COC_t + \beta_4 \ln CPI_t + \varepsilon_t \dots \dots \dots 4.4$$

Baseline equation for FDI Inflow becomes:

$$\ln FDI \text{ Inflow }_t = \beta_0 + \beta_1 TTs_t + \beta_2 DTTS_t + \beta_3 \ln REER_t + \beta_4 \ln COC_t + \beta_5 \ln GS_t + \beta_6 \ln CPI_t + \varepsilon_t \dots \dots \dots 4.5$$

Baseline equation for trade openness becomes:

$$\ln TO_t = \beta_0 + \beta_1 TTs_t + \beta_2 DTTS_t + \beta_3 \ln FCE_t + \beta_4 \ln GFCF_t + \beta_5 \ln GDPP_t + \beta_6 \ln COC_t + \beta_7 \ln GS_t + \beta_8 \ln CPI_t + \varepsilon_t \dots \dots \dots 4.6$$

As the main purpose is the intermediating role of the above indicators international economic agreements on economic stability (RGDP) via (TR, FDI Inflow and TO) relation in Pakistan, by applying the direct effect of the international economic agreements and mediating variables. Our model takes the following equation after the induction of mediators in the model as shown in equation:

$$\begin{aligned} \ln RGDP_t = & \beta_0 + \beta_1 TTS_t + \beta_2 DTTS_t + \beta_3 \ln TR_t + \beta_4 \ln FDI \text{ Inflow}_t + \beta_5 \ln TO_t + \beta_6 \ln FCE_t \\ & + \beta_7 \ln GFCE_t + \beta_8 \ln REER_t + \beta_9 \ln GDPP_t + \beta_{10} \ln COC_t + \beta_{11} \ln CPI_t \\ & + \varepsilon_t \dots \dots \dots 4.7 \end{aligned}$$

Where t represent the timeframe which is (1975- 2023) whereas TR represent tax revenue, FDI Inflow and TO identified trade openness and these are the mediating variables in the model and RGDP shows the real GDP as proxy of economic stability (ES), TTs and DTTs are the number of trade and double tax treaties which Pakistan sign with treaty partners and the control variables used in this study are corruption, political instability, inflation, population (GDP per- capita), final consumption expenditure (FCE), Exchange rate (EX) and gross fixed capital formation (GFCF) and ε_t denotes error term.

4.5 Time Series Estimation

Firstly, our objective is to define the methodology for time series data. The sub-sections define econometric technique for time series analysis that estimates the above equation.

4.5.1 Stationarity of the data

For deciding whether a time series data set reflects a trend and whether that trend is deterministic or stochastic, theoretical econometrician proposed a formal test referred as a unit root test in the econometric literature (Masood & Ansari, 2016). The Stationarity of the data must be verified before applying cointegration analysis over the intended equations listed above, if the data is Stationary or doesn't exist unit root, and then the Ordinary Least Square (OLS) is appropriate technique, otherwise this application give spurious or over fitted regression results. For this purpose we use one of the most basic unit root test, those of Augmented Dickey and Fuller (ADF) test.

4.5.2 Autoregressive Distributed Lag (ARDL) Cointegration Approach and Model Specification

To investigate the relationship between the selected indicators used in the study employs the Autoregressive Distributed Lag (ARDL) suggest by Pesaran et al. (2001). ARDL examine the short run as well as long run impact of economic policies and other important influencing determinants on economic stability and macroeconomic indicators, because limited relevant studies exist in literature regarding Pakistan. ARDL approach enables us to simultaneously

estimate long and short run relationships between time series variables and before we applying ARDL. An empirical version of ARDL model of above basic equations as follow:

ARDL model for Tax Revenue (Mediator)

$$\begin{aligned} \Delta \ln TR_t &= \beta_0 + \sum_{i=0}^n \beta_{1i} \Delta \ln TR_{t-i} + \sum_{i=0}^n \beta_{2i} \Delta TTS_{t-i} + \sum_{i=0}^n \beta_{3i} \Delta DTS_{t-i} \\ &+ \sum_{i=0}^n \beta_i \Delta \ln cv_{t-i} + \lambda_1 \ln TR_{t-1} + \lambda_2 TTS_{t-1} + \lambda_3 DTS_{t-1} + \lambda_i cv_{t-1} \\ &+ \varepsilon_t \dots \dots \dots 4.8 \end{aligned}$$

ARDL model for FDI Inflow (Mediator)

$$\begin{aligned} \Delta \ln FDI \text{ Inflow}_t &= \beta_0 + \sum_{i=0}^n \beta_{1i} \Delta \ln FDI \text{ Inflow}_{t-i} + \sum_{i=0}^n \beta_{2i} \Delta TTS_{t-i} + \sum_{i=0}^n \beta_{3i} \Delta DTS_{t-i} \\ &+ \sum_{i=0}^n \beta_i \Delta \ln CV_{t-i} + \theta_1 \ln FDI \text{ Inflow}_{t-1} + \theta_2 TTS_{t-1} + \theta_3 DTS_{t-1} \\ &+ \theta_i cv_{t-1} + \varepsilon_t \dots \dots \dots 4.9 \end{aligned}$$

ARDL model for Trade openness (Mediator)

$$\begin{aligned} \Delta \ln TO_t &= \beta_0 + \sum_{i=0}^n \beta_{1i} \Delta \ln TO_{t-i} + \sum_{i=0}^n \beta_{2i} \Delta TTS_{t-i} + \sum_{i=0}^n \beta_{3i} \Delta DTS_{t-i} \\ &+ \sum_{i=0}^n \beta_i \Delta \ln CV_{t-i} + \gamma_1 TO_{t-1} + \gamma_2 TTS_{t-1} + \gamma_3 DTS_{t-1} + \gamma_i cv_{t-1} \\ &+ \varepsilon_t \dots \dots \dots 4.10 \end{aligned}$$

ARDL model for Economic International Agreements and Mediators on Economic stability

$$\begin{aligned} \Delta \ln RGDP_t &= \beta_0 + \sum_{i=0}^n \beta_{1i} \Delta \ln RGDP_{t-i} + \sum_{i=0}^n \beta_{2i} \Delta TTS_{t-i} + \sum_{i=0}^n \beta_{3i} \Delta DTS_{t-i} \\ &+ \sum_{i=0}^n \beta_{4i} \Delta \ln TR_{t-i} + \sum_{i=0}^n \beta_{5i} \Delta \ln FDI \text{ Inflow}_{t-i} + \sum_{i=0}^n \beta_{6i} \Delta \ln TO_{t-i} \\ &+ \sum_{i=0}^n \beta_i \Delta \ln cv_{t-i} + \delta_1 \ln RGDP_{t-1} + \delta_2 TTS_{t-1} + \delta_3 DTS_{t-1} \\ &+ \delta_4 \ln TR_{t-1} + \delta_5 \ln FDI \text{ Inflow}_{t-1} + \delta_6 \ln TO_{t-1} + \delta_i cv_{t-1} \\ &+ \varepsilon_t \dots \dots \dots 4.11 \end{aligned}$$

Here β_0 is the intercept, ε_t represent the error term and β 's and δ 's are the long run coefficient and short run coefficients respectively.

This model is autogressive because the dependent variable ($RGDP_t$) is explained by its own lag variable and also called distribute because the dependent is explained by lag of other independent variables. Therefore, the models mentioned above are defined for the combination of the variables in question at I (0) and I (1), but not at I (2).

4.5.3 Bound Testing Approach

Time-series data for this study is steady at level I (0) and the first difference I (1), but not at the second difference I (2). Here, we employ the ARDL bound test, and this test is developed by (Pesaran et al. 2001). This estimator confirms the long run cointegration among variables. There is a long run cointegration relationship between independent variables (X_t) and dependent variable (Y_t) when the coefficient of variables jointly significant. In the limits test, the null hypothesis revealed that no long relationship between the variables. If the null hypothesis is true, then there isn't any proof that they are related in the long run.

4.5.4 Error Correction Model (ECM)

In order to analyze the short run information of the ARDL model, utilize the error correction model (ECM). The ECM allows to testing the speed of adjustment, which indicates how quickly the short term deviations are restore the long term equilibrium after change occur in the variables. The general short run ECM will be:

$$\Delta \ln Y_t = \beta_0 + \sum_{i=0}^n \beta_{1i} \Delta \ln Y_{t-i} + \sum_{i=0}^n \beta_{2i} \Delta X_{t-i} + \varphi ECM_{t-1} \dots \dots \dots 4.12$$

This equation determining the error correction coefficients correct sign and significances. Following an economic shocks or disruption referred as convergence to equilibrium and the larger value of convergence means the economy is fastly converge to the equilibrium.

4.5.5 Sobel test for Indirect Effect Significance

The Sobel test is used in statistics to determine whether the mediating variables TR, FDI and TO statistically transmit the effect of IEAs on real gdp obtain from the ARDL- based long-run models. It is applied because mediation analysis involved two regression paths are (a*b), and it is

necessary to verify either the indirect effect is statistically different from zero. The Sobel test based on the delta method proposed by Michael E. Sobel (1982)¹², which approximates the standard error of products coefficients allowing calculation of a z-statistics and associated p-value to define the mediation effect is statistically significant or insignificant. In this study, two tail p-values were reported as the indirect effects direction would be either positive or negative. In our study, we preferred Sobel test over alternative approaches, it directly test the statistical significance of indirect effects. Although, bootstrapping is widely used in small sample size and cross sectional designs whereas Sobel test is efficient and compatible for time series model such as ARDL. Thus, it offers a rigorous yet practical approach for assessing whether TR, FDI and TO significantly mediate the relation between IEAs and real gdp.

To assess the statistical significance of the indirect effect, the value of indirect effect is compared to its sampling distribution under null hypothesis. By dividing the indirect impacts size by its estimated standard error, the Sobel test generates a t-statistic that may be used to determine if the effect is statistically significant. Few of the steps required to calculate;

1. Indirect Effect: $a \times b$

2. Standard Error:

$$SE_{ab} = \sqrt{b^2 SE_a^2 + a^2 SE_b^2}$$

3. Z-statistic $Z = \frac{ab}{SE_{ab}}$

4. P-value (2-tailed) $p = 2 \times (1 - \Phi(|Z|))$

4.6 limitation of the study

One of the most important limitation encounters in the study is the unavailability of specific revenue data, which are directly contribute to the implementation of trade treaties and double tax treaties. Despite the efforts to obtain this information data through official platforms and relevant departments, such data was either restricted not publicly disclosed. The paper employees the number of agreements signs by Pakistan annually with treaty partners. Therefore, this approach provides indicator of the economic agreements but it may not be fully capture effectiveness of individual treaty.

¹² https://en.wikipedia.org/wiki/Sobel_test

Table 4. 1**Variables Description and Data Source**

S.no	Variables	DV/ IDV	Definition	Source
1.	Double tax treaties	IDV	The total number of contracts regarding avoidance of double taxation.	FBR
2.	Trade treaties	IDV	The total agreements sign for the reduction of Tariff.	MOC, Islamabad
3.	Tax Revenue	Mediator	The amount of tax collect by government from tax payers related to the size of economy.	EDB, Pakistan
4.	FDI Inflow	Mediator	The amount of investment that flow into an economy from foreign sources.	WDI
5.	Control of Corruption	Control	Corruption score 0 for high corrupt (worst) countries and 3 for low or no corruption (best).	ICRG
6.	Real gdp	Control	Proxy of economic stability as it reflects the true growth of an economy.	WDI
7.	Consumer Price Index	Control	Measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods.	EDB
8.	Gross Fixed Capital Formation	Control	GFCF Is gross fixed capita formation as percentage of GDP, to capture investment level in Pakistan.	WDI
9.	Trade openness	Mediator	Trade openness of country Pakistan at time t. $TO= X+M/GDP$	EDB
10.	Real Effective Exchange rate	Control	Official exchange rate determine by national authorities.	IMF
11.	Final consumption expenditure	Control	FCE is the final consumption expenditures a percentage of GDP	WDI
12.	Governance Stability	Control	Governance stability index score near to 10 reflect strong governance while score close to 0 serious risks to political instability.	ICRG
13.	GDP per capita	Control	GDP per capita shows the average income or output per person in an economy.	WDI

Chapter 5

Empirical Results and Discussion

5.1 Introduction

The study aim is to testing relationship between international economic agreements and macroeconomic indicators for the case of Pakistan. In this aspect, we utilized time-series data from the period of 1975-2023 and three basic equations are used to test the direct effect of economic agreements on macroeconomic indicator and then we move to mediating role of economic agreements on the relationship between tax revenue, FDI inflow and trade openness and economic stability which is real GDP of the country. For this purpose, the study employs the ARDL estimators to examine the long-run relationships among variables. A well-established approach to applying this technique has been widely adopted by researchers in the field of applied econometrics. Additionally, this technique follow a standard path and the steps involve in the analysis which is already discuss in chapter 3 has been utilized in order to get long run and short run parameter simultaneously. The estimation procedure consists of two stages. In the first stage, the presessnce of a long run relationship among variables is tested by computing the F-statistic with critical value upper bound. Once the long run relationship is confirmed, the next we check the short-run relationship through error correction model (ECM).

5.2 Statistical Properties

The statistical overview provides information on the mean, standard deviation, minimum, maximum and the number of observation for each variable. Each variable reported that the time series data for the variables fluctuates dramatically (Nyathi & Mutale, 2024). Most of the variables are measure percentage of GDP except few ones like the RGDP value in billion and economic agreements are presented according to the number signed each year.

Table 5. 1: Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum	Standard Deviation	Observation
LRGDP	30.37	30.40	31.34	29.14	0.64	49
LTR	2.17	2.18	2.36	2.06	0.07	49
LTO	3.00	3.00	3.33	2.26	0.22	49
LFDI Inflow	-0.61	-0.55	1.11	-2.77	0.79	49
NO. TTs	0.16	0.00	2.00	0.00	0.42	49
NO. DTTs	1.34	1.00	1.00	0.00	1.29	49
LREER	4.85	4.76	5.47	4.51	0.29	49
LGS	1.77	1.83	2.38	0.77	0.37	49
LGFCF	2.73	2.76	2.95	2.51	0.11	49
LFCE	4.49	4.50	4.56	4.41	0.04	49
LCOC	0.60	0.69	1.09	0.00	0.22	49
LCPI	4.77	4.82	5.43	3.81	0.34	49
LGDPCC	6.96	6.95	7.40	6.46	0.26	49

5.3 Stationarity Test

Macroeconomic variables utilized in the time series analysis is frequently non-stationary, which leads to produce the results are inaccurate or spurious results. The unit root testing is essential to ensure the reliability of the analysis. Variables statistical characteristics such as its mean and variance stay constant across time, reflecting the long term stability. The indicators used in the regression analysis are checking the unit root at level and at first difference. However, because the limits testing approach implies that all variables are either I(0) or I(1), they become inappropriate when any variable is integrated of order two (I(2)). Following, the study use the Augmented Dicky Fuller (ADF) estimator to examine the order of integration of the data series and with the null hypothesis of the unit root in the series and the alternative hypothesis of no unit root. When choosing whether to accept or reject the null hypothesis, the p-value provides an

indication. We do not accept the null hypothesis, when p-value is less than the critical values at the 1%, 5% or 10% significance level.

Table 5. 2: ADF Unit Root Test

Variables	ADF Test p-value	Order of Integration
LRGDP	0.01**	I(0)
D(LTR)	0.00***	I(1)
LTO	0.00***	I(0)
LFDI Inflow	0.04**	I(0)
NO. TTs	0.00***	I(0)
NO. DTTs	0.02**	I(0)
D(LCPI)	0.00***	I(1)
LCOC	0.01**	I(0)
D(LFCE)	0.00***	I(1)
D(LGS)	0.00***	I(1)
LGFCF	0.04**	I(0)
D(LREER)	0.00***	I(0)
D(LGDPPC)	0.00***	I(1)

*Significance level: ** indicates significance at 5% level and *** at 1% level.*

Step: 1

1. ARDL Bound Testing Approach

Our ARDL model first equation is to examine the relationship between tax revenue and international economic agreements, for his purpose we apply ARDL bound testing method to identify the relation exist among regressors and regressand. In the first step of the Autoregressive Distributed Lag (ARDL) analysis, we test the presence of long run relationship among variables being modeled in equation 4.5 using bound testing approach. Initially we run our analysis with different lag included in the model further general to specific modeling approach has been used, fixed the insignificant variables from the model, the F-bounds test statistics is falls below the upper bound at all conventional significance levels, indicated that there is no evidence of a long-run cointegration relationship among the variables in table 5.3. Additionally, the model is passing through the necessary diagnostic checks and the results reflect strong evidences of serial

correlation and Heteroskedasticity issues was detected when using first and second lags in the model which violets key assumption of classical regression model and the outcomes are mentioned below table 5.4.

Table 5. 3: Results of Cointegration Test for (TR) at 1st lag

F _y (y/TTs, DTTs, LCOC, LCPI)	F- Statistics	I(0)	I(1)	Outcome
Critical Values				
		3.29	4.37	No Co-integration
	1.651601	2.56	3.49	No Co-integration
		2.2	3.09	No Co-integration

Table 5. 4: Diagnostic Test

Serial Correlation LM Test	0.0007[0.0010]
Heteroskedasticity Test	0.3799[0.4071]
JB Normality Test	[0.129746]

Note: p-value is stated in [].

Table 5. 5: Cointegration Test for (TR)

Dependent Var.	F- Statistics	I(0)	I(1)	Outcome
F _y (y/TTs, DTTs, LCOC, LCPI)	5.17	3.29	4.37	Co-integration

In the above table 5.5, we compare the estimated F-statistic with the upper and lower bound critical values. The presences of long term cointegration relationship between the dependent variable which is tax revenue and the independent variables including trade and double tax treaties, corruption, and CPI are confirmed that F-statistics is greater than the upper bound which signifies that the variable coefficients are jointly significant. Therefore the estimated F-statistic value of our first model with the dependent variable and other explanatory variables is 5.17 which are greater than the upper bound values, so we reject the null hypothesis of the bound test states that there is no cointegration among the concern variables and precede it to the next step.

Tax Revenue as Mediator and International Economic Agreements

After confirming that there is long-run relationship in the tax-revenue model, now we come to both the short run and long run results from ARDL analysis reported below table 5.6.

Table 5. 6: Estimates of long-run and short-run Coefficients using ARDL Model
Dependent Variable: LTR (% OF GDP)

Regressors	Coefficients	T-value	(P-value)
Long-run Coefficient estimates			
NO.TTs	-0.007	-0.150	0.881
NO. DTTs	-0.135***	-4.386	0.000
LCPI	-0.079	-1.314	0.200
LCOC	0.166**	2.490	0.019
Short-run Coefficient estimates			
NO.TTs	0.056***	3.016855	0.005
NO. DTTs	0.035***	5.074131	0.000
LCPI	0.088**	3.064	0.005
LCOC	0.088***	3.556	0.001
R-square	0.734	F-statistics	11.697
Adjusted R-square	0.610	Prob (F-statistic)	0.000

Significance level: *, ** indicates significance at 10%, 5% level and *** at 1% level.

Table 5. 7: Diagnostic Test

Serial Correlation LM Test	0.721 [0.879]
Heteroskedasticity Test	0.199 [0.172]
JB Normality Test	[0.835]

Note: p-value is stated in [].

However, the final model is selected based on the condition that all the diagnostic checks became statistically significant and theoretically consistent mentioned in table 5.7. Moreover, the degree of freedom were better preserved at the third lag specification, allowing for a more robust and interpretable analysis. Therefore, proceeding with the third lag specification is justified both

econometrically and statistically, as it improves model fitness, resolve autocorrelation and support the overall validity of the long run relationship given below the table.

The findings of our baseline model which incorporates the indicators of tax revenue and uses the annual time series data from 1975-2023 and the long run as well as short run relationship are presented in the above table 5.6. With an R-square value of 0.73, the ARDL model explains 73 percent of variation in tax revenue, indicating a strong fitness but R-square not tell about the reliability so that why we move toward adjusted R-square which is drop to 0.61 and still the model good explain the variation in dependent variable and suggesting that the model maintains moderate explanatory power. The F-statistic of 5.17 is statistically significant with a p-value, confirming the overall significance of model at 1% level.

The results in table 5.6, explores the both long run and short run dynamics of economic agreements in shaping Pakistan tax revenue performances. Using the ARDL approach, we examine not only the double tax treaties and trade agreements but also the institutional context, particularly the role of corruption and inflation as well. However, the results reveal that the number of trade agreements coefficients shows a negative and statistically insignificant relationship in the long-run while positive relationship in the short run. It implying that increase in the number of trade treaties is associated with a very small decrease in tax revenue as percentage of GDP in the long run, holding all other factors remain constant. The finding conformity with that of (K. Ahmad et al., n.d.; Dutt & Gallagher, 2022) and Makun & Singh, (2025) conduct same study in Pacific Island countries, the results reveal that trade deregulation decline government tax revenue and this study strongly align with my study results findings but refute those Immurana et al., (2013) and Agbeyegbe et al.,(2006).

A possible explanation for the long run negative relationship between trade treaties and tax revenue in Pakistan. A 1 unit reduction in effective tariff rates associated with -0.007% decrease in government tax revenue. In trade agreements, the exemption and reduced tariff rates offered to the investors aim is to boost trade volumes, but they are often not sufficient to compensate for the resulting loss in tax revenue from these lower tariffs. Pakistan exhibits a poor economic structure, have a large population size depend on exports. As expected, trade treaties affect fiscal performances and developing countries have become more open to the global markets, their tax revenue as percentage of GDP decreased. In Pakistan case it has insignificant impact on tax

revenue for two reasons. First limited coverage and scope; since early 2000's Pakistan participation in ITAs has proceeded steadily but only a limited number of countries, restricted their overall impact on the economy. And secondly, weak implementation and domestic readiness; many of Pakistan's trade agreements suffer from poor implementation, weak institutional capacity and lack of domestic industrial competitiveness, which prevent the country from fully benefiting from these agreements leading to insignificant impact on tax revenue.

In long run, the coefficient of DTTs show a negative sign and statistically significant according to our analysis, implying that Pakistan tax revenue is negatively impacted by double tax treaties. A 1-unit increase in the number of DTTs will reduce 13 percent decrease in fiscal revenue. Our results are align with (Petkova et al., 2025; Quak & Timmis, 2018). Such agreements provide tax incentives in form of royalties, dividend and interest payments to foreign investors so that why most the investors invest in brown field investment rather than Greenfield and such treaties are not beneficial for developing countries because these countries are not financially stable. In Tax Gap Report (2022) mention that is tax expenditure refers to loss in government tax revenue due to special provisions like exemptions, deductions, or reduced tax rates that give relief to certain tax payers. According to tax gap estimates the tax deficit in FY 2020 will be almost 26% of the potential tax that FBR could collect or 2.9% of GDP¹³. Furthermore, it is clearly mentioned that the coefficient of double tax treaties show a positive sign and so it impact positively and significantly on tax revenue in the short run. Petkova et al., (2020) suggest that the positive results are due to double tax treaties helping to reduced tax evasion at least in the short term. Also short run benefits from DTTs often come from improved investor and increased cross border transactions, which can boost tax revenue temporarily.

CPI has a negative and insignificant relationship with tax revenue in long run, inflation is probably going to hurt actual tax collection by (Tanzi, 1989) and contract with Badin&Patoli, (2012) state any increase or decrease in inflation will cause an increase or decreased on average in the taxes as my results are consistent. The results indicate that 1% decrease in inflation may lead to -0.07% reduced in tax revenue means inflationary policy is not beneficial in revenue prospective. In short run interpretation there is a positive and significant relation between the CPI and tax revenue and my short run study results contract with (M. Khan, 2019). From the

¹³ <https://download1.fbr.gov.pk/Docs/2023118141362748Tax-Gap-Report-2022-Final.pdf>

above table 5.6 we see this in short and long dynamics, the control of corruption is positive and statistically significant and the results reveal that when corruption is increased the by one unit which lead to increase by 16-percent previous studies reveal that corruption may appears to boost revenue collection, and the result of the study is in confirming of the previous study by (Arif & Rawat, 2018; Simbachawene, 2018) their studies conclude that the corruption perception index has a positive impact on government tax revenue in EAGLE economies. Specifically we observed that the deterioration in control of corruption (i.e. increased in corruption) leads to a significant decline in tax revenue in the long run whereas an improvement in corruption control leads to a significant decline in tax revenue. This asymmetry suggests that the respond of tax revenue depends on the direction of change in corruption control, the results reported by (Abu et al., 2022).

Step: 2

2. Foreign Direct Investment (FDI) Inflow and International Economic Agreements

Our ARDL model second equation is to investigate the impact of international economic agreements on FDI inflow. So our first step is to confirm the cointegration exist among variables given below the table. We computed F-statistic, which is greater than the upper bound of the tabulated F-statistic at 10%. So, reject the null hypothesis of no long run relationship and accept the alternative hypothesis of existence of co-integration.

Table 5. 8: Cointegration Test Result (FDII)

Dependent Var.	F- Statistics	I(0)	I(1)	Outcome
F _y (y/TTs, DTTs, LREER, LGS, LCOC, LCPI)	3.14	1.99	2.94	Co-integration

After confirming the existence of long-run dynamics among the variables used in FDI inflow equation 3.6, we precede further steps to check the long-run and short-run dynamics.

**Table 5. 9: Estimates of long-run and short-run Coefficients via ARDL Approach
Dependent Variable: LFDI Inflow (% of GDP)**

Regressors	Coefficients	T-value	(P-value)
------------	--------------	---------	-----------

Long-run Coefficient estimates			
NO.TTs	1.183**	2.557	0.014
NO. DTTs	0.189*	1.791	0.081
LREER	-0.999*	-1.781	0.082
LGS	0.246	0.623	0.53
LCPI	-0.200	-0.573	0.56
LCOC	0.531	0.906	0.37
Short-run Coefficient estimates			
NO.TTs	0.364***	3.501	0.001
LREER	1.157	1.242	0.221
R-square	0.409	F-statistics	15.990
Adjusted R-square	0.382	Prob (F-statistic)	0.000

Table 5. 10: Diagnostic Test

Serial Correlation LM Test	0.132 [0.184]
Heteroskedasticity Test	0.860 [0.893]
JB Normality Test	[0.000]

Note: p-value is stated in [].

Before we interpret the results we confirm the model through diagnostic test that ensuring the reliability of the econometric model which is here FDI inflow model by verifying the key assumptions such as homoscedasticity, absences of autocorrelation and normality of residuals. So in the table 5.10 diagnostic test results, which clearly indicate that three out of two condition meet and the key assumptions are satisfied and normality show that the residual are non-normally distributed. As noted that our diagnostic test results are consistent with Lee et al., (2021), who also accept the non-normal residual and such violation is not critical in large sample. So the evidences suggest the experimental models¹⁴ are still statistically significant.

When we regress the economic treaties on FDI inflow, the coefficients are positive and significant in the long run and trade treaties are positive in short run as well. Similarly, governance and control of corruption have positive impact on the long run but the other side real

¹⁴ The term experimental model refers to the econometric specification developed to test the research framework, it denotes the ARDL based time series model that examine the such relationships

effective exchange rate and CPI negatively impact the FDI inflows. In the short run, exchange rate impact FDI inflows positive but insignificant.

Give the assumption other factors remain constant, when trade agreements are introduced in the FDI regression model, it has a significant positive coefficient in the long run as well same result exert in the short run. By signing trade treaties as a major factor in attracting FDI inflows and such regimes aim to reduce the trade related barriers and making ease of doing business in treaty partner countries with a reduced tariff rates, the results are align with (Azhar, 2004; Zahid et al., 2021). The rationale for trade treaties beneficial impact on FDI in the presence of tariff regime, reduced tariff rate are more attractive for the investors. Beyond tariffs include provision on regulatory standards, contract enforcement and investment protection¹⁵. Such agreements also reduced investor's uncertainty and giving foreign investors legal assurances for repatriation of profit and intellectual property protection. *Kox (2020)* argue that signing PTAs is linked to about 30% increases in bilateral FDI, the beneficial affect is ascribed to the decreased in trade cost and improved market accessibility to invest in international affiliate operation. In context of Pakistan, specifically China-Pakistan FTA, have played a vital role in attracting FDI and China is the largest investor to invest in the country, by eliminating tariffs on a vast range of goods and allowing deep service sector access.

Moving to the coefficient value and significance level of double tax treaties, the study evaluates the DTTs impact FDI inflow in Pakistan. In long run, the coefficient value of DTTs is positive and significant, concluding that all other things remain constant; a 1 unit increase in DTTs would increase FDI inflow by 18% while the significance of DTTs is $P < 0.10\%$. This investigation support the early findings of (Atif & Siddiqui, 2019; Barthel et al., 2010), but few previous literature shows that DTTs has no effect the flow of FDI in developing countries by (Baker, 2014). DTTs encourage investors' confidence to invest their capital in the host country by eliminating the possibility of paying twice tax on the same come and other incentives like tax holidays, repatriate of profit, give more security and confidence by simplifying tax laws and boosting certainty, which increase their propensity to invest in host country with stable and open tax structure. The developing countries include Pakistan, need foreign investment to grow it economy because our country is not stable financially, so need boarder investment to grow,

¹⁵ <https://cepr.org/voxeu/columns/trade-and-welfare-benefits-deep-trade-agreements>

DTTs are helpful and make easier for businesses to operate with certainty¹⁶. Pakistan has an extensive tax treaty network covering 68 countries from Austria to the United State. This strategic network provides clarity on taxation for business and individuals involved in cross border transactions and encouraging smoother flow of goods services and investment¹⁷.

In the above table 5.9, turning to the third variable of FDI Inflow model which is real effective exchange rate, the coefficient value is negative and significant in the long run and the short dynamic results contract with the long run results as the coefficient is positive and statistically insignificant. REER impact on FDI Inflow is negative at 10% level of significance while the coefficient of REER is -0.999, which shows that 1% increase in real effective exchange rate brings 0.99 % decrease in FDI inflows in the long run. Pakistan has experience frequently exchange rate volatility and currency depreciation so it create uncertainty for foreign investors about future return like profit may shrink when convert it to the home country and operating cost may rise if imports are expensive. The findings align with (Froot & Stein, 1991; Ibrahim & Raji, 2018). CPI shows a negative and insignificant impact on FDI Inflow and from ECM evidences show that there is no short run relation exists among inflation and FDI Inflow. So our overall findings reveal that inflation has no impact on FDI Inflow and the results are consistent with Henry et al., (2020) finds and this research is conducted in Nigeria and the findings reveal that under study period inflation has no impact on FDI. We also include the governance indicators in the analysis are governance stability and control of corruption. The both indicators positively and insignificantly impact FDI Inflow in Pakistan. The results are consistent with the study conduct in five selected cross section countries include Malaysia, Philippine, Singapore, Thailand and Indonesia by (Nugraha, 2013). The role of governance stability play pivotal role in boosting foreign investments and contributing a substantial role in investment policies in future (Rafidi et al., 2023) but in emerging economies including Pakistan have positive but not impact significantly because separate policies are made specifically for investors so that why it doesn't have that much of impact on FDI inflows.

Step: 3

¹⁶ [https://leappakistan.com/double-taxation-treaties-and-fdi-in-developing-jurisdictions/#:~:text=Double%20Taxation%20Treaties%20\(DTTs\)%20not,developing%20countries%20such%20as%20Pakistan.](https://leappakistan.com/double-taxation-treaties-and-fdi-in-developing-jurisdictions/#:~:text=Double%20Taxation%20Treaties%20(DTTs)%20not,developing%20countries%20such%20as%20Pakistan.)

¹⁷ <https://taxjuristpakistan.com/pakistan-tax-treaties-international-trade-investment/>

3. Trade Openness and International Economic Agreements

The third model examines the impact of international economic treaties on trade openness in Pakistan. For this purpose, we test all the steps which are necessary in ARDL model. First step we apply bound test to confirm the cointegration, if it exist then we run further steps to continue the analysis which we already do in the above models. The ARDL model bound testing approach is employed using case 5 (unrestricted both trend and constant) as suggest by (Pesaran et al., 2001). Initial estimation under case 4 (restricted trend and unrestricted constant), then the outcomes reveal that the trend variable was statistically significant in the long run equation. This indicates the presence of deterministic trend in trade openness over time. Therefore, the assumption of case 4 was violated. Consequently, case 5 was adopted for a more appropriate model specification and is consistent with empirical studies conduct in other economies for example, in Chinese context Hye et al., (2016) where similar trending behavior in macroeconomic variables. Based on the results F-statistic tell as either we accept or reject the null hypothesis. Our model confirms that there exists co-integration at 1% and reject the statement of no cointegration and accept the existence of cointegration and next step we will estimate the long run coefficients. Co-integration tests as given in table 5.11.

Table 5. 11: Cointegration Test Result for (TO)

Dependent Var.	F- Statistics	I(0)	I(1)	Outcome
F _y (y/TTs, DTTs, LGFCF, LGS, LCOC, LCPI, LGDPPC, LFCE)	5.97s	3.15	4.43	Co-integration

Table 5. 12: Estimates of long-run and short-run Coefficients using ARDL Model

Dependent Variable: Trade Openness (% of GDP)

Regressors	Coefficients	T-value	(P-value)
Long-run Coefficient estimates			
NO.TTs	-0.123*	-1.712	0.096
NO. DTTs	-0.022	-0.902	0.373
LGFCF	3.794**	2.877	0.007
LGS	-0.068	-0.525	0.602
LCPI	0.718***	3.318	0.002
LCOC	-0.208	-1.076	0.289

LGDPCC	-4.729**	-2.460	0.019
LFCE	-4.562**	-2.664	0.0120
Short-run Coefficient estimates			
LGFCF	0.123	1.018	0.316
LCPI	0.094**	2.546	0.015
LGS	0.135***	4.136	0.000
LGDPCC	-0.513	-1.428	0.162
LFCE	0.918**	2.701	0.010
R-square	0.716	F-statistics	14.451
Adjusted R-square	0.667	Prob (F-statistic)	0.000

Table 5. 13: Diagnostic Test

Serial Correlation LM Test	0.370 [0.264]
Heteroskedasticity Test	0.566 [0.502]
JB Normality Test	[0.714]

Note: p-value is stated in [].

The diagnostic stability test is carried out to determine the ARDL model quality. The given table 5.13 shows that the model generally is passes through the Breuch-Godfrey Serial Correlation LM test, Jacque-Bera normality test and Breuch-Pagan-Godfrey Heteroskedasticity test and to proof that there are no evidences of such issues like non-normality, autocorrelation and heteroscedesticity issues.

Thus it is now possible to interpret the estimated long run and short run coefficients with confidence. The outcomes presented in table 5.12, highlight long term relationships between the trade openness and the explanatory variables. After controlling for other variables, each coefficients shows the amount and direction of the independent variable on long term and short term impact on trade openness. The long run coefficients of trade treaties are negative and marginally significant at 10%. Specifically, a one unit increase in trade treaties is associated with -0.12% decrease in trade openness so the results are conform with Achterbosch et al., (2004) study conducted in Africa to estimate the economic consequences multilateral trade reforms and

their outcomes concluded that African and least developed economies are negatively impacted from trade reforms. The outcomes are opposite of general expectations increase in trade treaties leads to increase the trade openness the trade openness in the long run and the results are contrary to (Kohl, 2014b). A possible explanation lies in the limited scope and poor quality of Pakistan's trade treaties. Only nine trade treaties have been signed by Pakistan and the majority of these are with developing nations¹⁸ offering little trade value, which restrict their potential to significantly enhance trade flows. These agreements may not meaningfully reduced barriers or promote trade due to small market size, weak enforcement and lack of economic complementarity except China. That's why trade agreements in Pakistan are showing that the existing trade agreements negatively impact the trade flows.

Our economic agreements second variable is doubles tax treaties and the coefficient of DTTs coefficients are negative and statistically insignificant with p-value of 0.37. The outcome suggest that change in the number of double tax treaties signed by Pakistan do not a meaning full or statistically reliable impact on trade openness in the long-run. These results are consistent with (Pham et al., 2019) and similar patterns have been documented in IMF¹⁹. Despite the fact that DTTs are often intended to prevent double taxation and encourage cross boarder investment and transactions. The factors may explain the insignificant impacts in case of Pakistan are first DTTs have historically focused more on investment and tax relief rather than facilitating actual trade in goods and services²⁰. Second reason is that, DTTs may be more pronounced for capital flows and FDI rather than for direct increase in exports or imports, which limit their effect on trade openness (2024), and lastly Pakistan trade structure is relatively narrow²¹ and concentrated, and fiscal incentives provided through DDTs mat not translate into the broader trade liberalization unless accompanied by strategic trade reforms. The finding suggests that DTTs alone are insufficient to enhanced trade openness.

The coefficient of gross fixed capital formation (GFCF) is positive and significant. The outcome reveals that an increase in gross fixed investment increase trade flows in long run. According to the long run elasticity of coefficient GFCF's, 1% increase in GFCF results in 3.79% increase in

¹⁸ Nepal, Sri Lanka, Bangladesh, Afghanistan, Malaysia and Iran are developing trade treaty partners not beneficial in trade.

¹⁹ <https://www.imf.org/en/Blogs/Articles/2016/11/16/tax-treaties-boost-or-bane-for-development>

²⁰ https://muse.jhu.edu/pub/255/oa_monograph/book/83892/pdf

²¹ <https://www.dawn.com/news/135401/trade-policy-lacking-diversification-measures>

trade openness and the results are statistically significant at 1%. Similar study conduct in Pakistan by Qayyum & Zeeman, (2018) and the results are in line with my analysis outcomes and also consistent with global empirical result with Landowska et al., (2025), found that higher GFCF strengthens a country's role in global value chain and trade integration, showing that capital accumulation or more inward investments are the key drivers of trade openness. In short run GFCF has no impact on trade openness. The governance indicator has different impacts in short run as well in long on trade openness but the both effect are meaningless. In long run, coefficient of governance shows a negative impact on trade openness and the effect is not statistically insignificant alternatively short run coefficient indicates a positive on trade flows. This study is consistent with (Obasanmi & Imasuen, 2024) who found that governance effectiveness did not meet apriori expectation and had a negligible effect on trade flows in Nigeria. In countries like Pakistan, such indicators may have limited impact on trade openness due to trade policies are begin driven more by external condition such as trade agreements and the inconsistencies in governance leads to reduction on trade outcomes. Control of corruption has negatively and statistically insignificant impact on trade openness in long run and there is no effect of corruption on trade openness in short run. As one unit increase in the control of corruption will reduced -0.20 % in trade flows or restricted the trade openness but the impact is considered as meaningless according to the p-value which is greater than all the significant values. This study is in line with the study of (Abasimi et al., 2018) who reveal that freedom from corruption has no significant effects on Ghana's trade flows unlike the study also found that COC have significant impact on trade openness.

This study reveals that CPI has a positive and significant impact on trade flows in short run as well in the long run, which shows that 1% increase in inflation rate is associated with 0.71% increase in trade openness at 1% significance level. The study is in line with Munir & Kiani, (2011) concluded that in Pakistan the inflation and CPI are positive and significant which support my study and the study is disagreed with Lyoha, (1973) found that inflation and openness has a negative relationship. In developing countries like Pakistan, greater trade openness often leads to higher inflation, means country highly open to trade, it import a large scale of goods and services from international market, which allow the foreign prices shocks to enter the domestic market. Now we discuss the short run and long run coefficient of GDP per-capita, which shows a negative relationship with trade openness in short run and in long run. The

coefficients are negative and significant at 5% in long dynamics in Pakistan. The study is in line with (Osei et al., 2019) who found that in low income countries the economic growth on trade openness appear to be negative, indicating that high growth may reduce trade flows and the sign of non-linearity taking the form of inverted U shaped. This suggests that initially increase in real GDP per-capita promote openness, surprising a certain income threshold diminishing openness.

This model last variable is final consumption expenditure (FCE). In short run the FCE affect positively the trade openness and in long run the indicator affect trade openness negatively and statistically at 5% significance level. A 1% increase in FCE is associated with -0.51% decrease in trade flows; confirm the no linearity among the variables. Although study by Kurul, (2021) conduct a panel study includes final consumption expenditure and finds that higher consumption to GDP ratio significantly reduce trade openness in developing economies. This supports our results that FCE negatively affect openness in tradable sectors. In case of Pakistan, the dominance of domestic consumption especially in non-tradable sectors reduced the economy reliance on international trade²². After analyzing the coefficients of individual variables, it is important to evaluate the overall model ability to explain the variation in the dependent variable. This can be assessed through R-square and Adjusted R-square values. According to the given results R-square is 0.71, which means that 71% of variation independent variable is explained by the explanatory variables and we observed that variables can strongly explain the relationship between each other but the model reliability is explained by adjusted R-square and the value of adjusted R-square is 0.66, which show the model that the model has still good reliability.

Step: 4

4. International Economic Agreements and Mediators effect on RGDP

According to research objectives, in this step we estimate the independent variables as trade treaties and tax treaties and three mediators (TR, FDII, TO) effect the economic growth as proxy of economic stability. For this purpose, we confirm the cointegration among variables through bound testing approach.

Table 5. 14: Cointegration Test for RGDP

²² <https://www.elibrary.imf.org/view/journals/001/1991/102/article-A001-en.xml>

Dependent Var.	F- Statistics	I(0)	I(1)	Outcome
F _y (y/TTs, DTTs, LTR, LFDII, LTO, LGFCF, LREER, LCOC, LCPI, LGDPPC, LFCE)	254.89	2.41	3.61	Co-integration

When we apply the bound test for cointegration among variables the results confirm that there is exist a long run relationship among the variables. The outcomes show that the calculated F-statistics is greater than the upper bound critical value at 1%. Therefore, there is evidence that the economic agreements, mediators and all the included control variables are jointly co-integrated with economic growth in ling run.

Table 5. 15: Estimates of long-run and short-run Coefficients via ARDL Approach

Dependent Variable: Real GDP				
Regressors	Coefficients	S.E	T-value	(P-value)
Long-run Coefficient estimates				
NO.TTs	-0.037	0.030	-1.202	0.238
NO. DTTs	0.007	0.007	0.972	0.338
LTR	-0.318***	0.197	-1.610	0.117
LFDII	0.070*	0.024	2.840	0.008
LTO	0.161***	0.084	1.915	0.065
LGFCF	0.158	0.347	0.454	0.652
LCPI	0.056	0.050	1.121	0.270
LCOC	-0.132***	0.072	-1.839	0.075
REER	-0.244***	0.142	-1.708	0.097
LGDPP	1.429*	0.249	5.737	0.000
LFCE	0.285	0.498	0.572	0.571
Short-run Coefficient estimates				
LFDI Inflow	-0.001**	0.000	-2.187	0.036
LTO	-0.008**	0.003	-2.324	0.027
LGDPP	1.050*	0.014	70.816	0.000
LGFCF	-0.025*	0.005	-4.995	0.000
LCPI	-0.000	0.001	-0.636	0.529

R-square	0.993	F-statistics	234
Adjusted R-square	0.992	Prob (F-statistic)	0.000

Table 5. 16: Diagnostic Test

Serial Correlation LM Test	0.975 [0.968]
Heteroskedasticity Test	0.141 [0.166]
JB Normality Test	[0.076]

Note: p-value is stated in [].

Before we come to analyze our series coefficients, it's important to clear all the diagnostics. The diagnostic test results indicate that the model is well specified. The evidences proof that there is no autocorrelation and heteroscedesticity. Additionally, JB normality test suggest that the residuals are approximately normally distributed. Therefore the model satisfied the key assumptions of classical regression model.

In this model we investigate direct effect on RGDP. First we interpret the direct effect of independent variables coefficients that are trade and tax treaties affect the RGDP and second are the coefficients of the mediators that are tax revenue, FDI inflow and trade openness direct impact on RGDP. In the long run, the ARDL results reveal that trade treaties and double tax treaties do not exhibit statistically significant effect on RGDP. Specifically the coefficient of trade treaties is negative, while the DTTs are positive with p-value of 0.23 and 0.33 respectively. While international trade agreements are commonly assumed to boost national income but the empirical evidences is mixed. Comprehensive studies find that the trade agreements deals don't always benefit the big nations like U.S²³. the results are consistent with (Hur & Park, 2012; Liu, 2016) found that trade liberalization insignificantly impact the growth and fostering expansion is now limited. Several studies explore the BTTs indirectly impact growth as noted by (Baker, 2014) outcomes reveal that BTTs not have a significant impact on FDI inflow. Since FDI has a key transmission channel for growth, this concluded that economic benefits of BTTs may have limited or insignificant in term of GDP. This provides a contextual support for the finding that

²³ <https://prosperousamerica.org/comprehensive-itc-study-finds-little-or-no-benefit-for-u-s-from-trade-agreements/#:~:text=This%20wide%2Dranging%20comprehensive%20study,about%20half%20of%20one%20percent.>

DTTs have an insignificant relationship with GDP growth in our analysis. Overall the agreements either trade or tax treaties may not directly stimulate the growth in long run.

Among the three mediating variables such TR, FDI Inflow and TO, the long run regression results provide insight into how the mediators directly influence the economic growth of the country. Among these, tax revenue has negative and statistically significant effect on RGDP at 10% significance level. The results are confirmed with (S. Ahmad et al., 2020b; Dackehag & Hansson, 2012; Shafiq et al., 2022) studies suggest double tax agreements has a negative impact on the overall economic growth for Pakistan and different countries. FDI inflows positively and significantly influence the growth in long run but in short run it may leads to negative impact on the growth in Pakistan due to initial adjustment cost and import heavy investment projects, which strain the current account. This implies that the productivity capacity of the economy enhanced potentially through capital formation, technology transfer and employment generation, which in turn leads to raise the growth. Although, (Bagli & Adhikary, 2014; Behname, 2012; M. A. Khan & Khan, 2011) shows same results for different countries including Pakistan and strongly support my empirical evidences. The effect of tradeopeness on RGDP is positive and significant in the long run and opposite results finds in short run shows a negative relationship. The outcomes are aligning with expectations as reduced barriers and liberalized trade for the purpose is to improve the economic stability and integrate in international market. Trade openness boost growth by expanding market excess, encouraged export diversification and improve value added production (Musila & Mpekansambo, 2024), such studies support my finding and validate the results.

Among the control variables, GFCF and CPI coefficients are positive but statistically insignificant in the long run, indicating that capital formation does not have a significant impact in growth, possibly due to inefficiencies or misallocation in investment in poor countries and impact negative in short run. In case of Pakistan, CPI could reflects a relatively stable inflation environment where minor changes don't influence the growth and here the insignificant inflation might reflect such past periods of moderate and predictable inflation between 2015- 2018, during it which didn't significantly hinder growth. The analysis outcome are relevant with (Nasir & Saima, 2010) who found that inflation affect economic growth positively but insignificantly and in short run it affect negatively the growth because of restrict the investment in some extent.

Now we come to explain the COC and REER, the coefficients are negative and effect statistically on the RGDP in Pakistan. Empirical evidences by Abbasi et al., (2019) proof that in Pakistan the anticorruption efforts inversely impact the growth by reducing institutional leakages like reduced institutional practices too rapidly or impose compliances burden. (Siddique et al., 2020) REER appreciations significantly undermine Pakistan revealed comparative advantage and worsen the trade balance and an outcome aligns with our findings of a negative coefficient for REER in the growth model. GDP per-capita has strongly positive and highly significant impact on economic growth in long run as well in short run. This indicates that higher income level are strongly associated with greater economic growth and he results are consistent with expectations and confirm such results with (I. Ali, 2024) concluded that GDP per-capita significantly contribute the development trajectory of Pakistan and Hassan et al., (2011) identifies GDP per-capita as a significant predictor for subsequent growth, with higher per capita wealth link with living standard and faster long term growth. The final consumption expenditure (FCE) effect on RGDP is positive but statistically insignificant, suggesting that FCE in this model does not play a significant role in driving long term growth. Lastly, we discuss the model fitness, according to R-square value; the explanatory variables strongly explain variation in dependent variable by 99%. For model reliability our analysis relies on adjusted R-square which is also explain strongly, the overall model highly explain the RGDP.

5.4 Calculating the Indirect Effect of IEAs on RGDP

In this section we calculate the indirect effects of trade and tax treaties on economic growth. For this purpose we utilized the above estimated coefficients from step 1 to step 4 to compute the indirect effects and its significances.

5.4.1 Effect of trade treaties via three mediators on RGDP

$$RGDP_{IDE\ TT\ via\ TR} = -0.007700 * -0.318093 = 0.00245$$

$$RGDP_{IDE\ TT\ via\ FDI} = 1.183116 * 0.070443 = 0.0833$$

$$RGDP_{IDE\ TT\ via\ TO} = -0.123156 * 0.161971 = -0.01995$$

5.4.2 Effect of double tax treaties via three mediators on RGDP

$$RGDP_{IDE\ DTT\ via\ TR} = -0.135891 * -0.318093 = 0.04323$$

$$RGDP_{IDE\ DTT\ via\ FDI} = 0.189043 * 0.070443 = 0.01331$$

$$RGDP_{IDE DTT \text{ via } TO} = -0.022444 * 0.161971 = -0.00364$$

Table 5. 17: Estimated Indirect Effects and Associated Standard Error

IDV	Mediators	Indirect Effect	S.E_{IDV}→Mediation	S.E_{Mediation}→DV
TTs				
	TR	0.002	0.051	0.197
	FDII	0.083	0.462	0.024
	TO	-0.019	0.071	0.084
DTTs				
	TR	0.043	0.030	0.197
	FDII	0.013	0.105	0.024
	TO	0.004	0.024	0.084

Table 5. 18: Mediation Results via Sobel Test

Pathway	Indirect Effect	Sobel SE	Z-Statistic	P-Value
TTs → TR → RGDP	0.002	0.016	0.149	0.881
TTs → FDII → RGDP	0.833**	0.043	1.900	0.057
TTs → TO → RGDP	-0.019	0.015	-1.277	0.201
DTTs → TR → RGDP	0.043***	0.028	1.511	0.130
DTTs → FDII → RGDP	0.133**	0.006	2.04	0.041
DTTs → TO → RGDP	-0.003	0.011	-0.307	0.757

5.5 Mediating Effect between (IEAs) and (TR, FDI, TO) on Economic Growth

The direct influences have already been discussed in the previous section, where we obtain a mix of significant and insignificant results. In this final step of our analysis, we delve deeper into this relationship further by examining the potential mediating role of macroeconomic channels in the link between IEAs and economic growth in Pakistan. The Sobel test is applied specifically to determine the significance of mediation within the model. The indirect effect quantifies the extent to which the IEAs affect RGDP through the fiscal and economic channels.

Sobel test results reveals that the indirect coefficient of trade treaties via tax revenue is 0.0024, a small positive value suggest that trade treaties have a minor positive indirect effect on RGDP. However, this coefficient is highly insignificant, leading to the conclusion that mediation effect through tax revenue is not statistically significant. In Pakistan's case, while trade treaties are generally intended to reduce trade related barriers such as tariff rates, practically implementation often diverges from policy commitments. Despite having signed multiple trade agreements (e.g., FTAs and PTAs), actual reduction in trade barriers remain limited. In practice, four to five types of taxes are still imposed at the import stage, including excise and custom duties. One of the findings is decline in tax revenue after trade treaty. It may not be due to this effect. We know that Pakistan has undertaken 22 IMF programmes and reduction in tariff remained the most important condition of IMF in all programs. Hence decline in tax revenue may not be solely attributed to the trade treaty or agreement. Therefore, regardless of the presences of a treaty, the tax burden on trade remain largely unchanged, limiting the effectiveness of trade treaties in improving fiscal space or promoting economic growth through this channel.

In contrast, the indirect influence of trade treaties via FDI on economic growth reveals a positive and statistically significant impact. This finding indicates that trade agreements create an environment conducive to attracting FDI inflows, which in turn contribute positively to economic growth. For example under China-Pakistan FTA, the recent ten years data show increased Chinese investment in Pakistan, particularly through major initiatives like China-Pakistan Economic Corridor (CPEC), a multi-billion dollar investment project. The underlying mechanism is that trade treaties often reduce trade barriers, lower investor uncertainty and enhance market access and all of which makes the host country more attractive to foreign investors. As FDI increases, it brings not only capital but also technology, managerial skills, and employment opportunities, all of which collectively support economic growth. The finding is consistent with the work of Phoo, (2024), who assert that the two elements trade liberalization and FDI have a complementary impact on GDP by their positive and significant coefficients and more effective in promoting economic growth.

Trade openness is often regarded as a critical pathway through which trade treaties stimulate economic growth particularly in developing economies. By lower lowering tariff and non-tariff barriers, trade treaties are expected to expand market access, enhance export competitiveness and

integrate domestic firms in a global value chains. However, our empirical findings present a more nuanced picture. The indirect effect of trade treaties on RGDP through trade openness carries a negative sign and insignificant influence. This unexpected result suggests that, in case of Pakistan, broader structural constraints are at play. For instance, the country faces an average balance of payment deficit of -84.3 billion dollar from 1957 to 2025²⁴. To manage these persistent external imbalances, the government relies on indirect channels which include ECD and income taxes among others and such measures may restrict the growth via trade openness.

Furthermore, the challenges related to trade openness in Pakistan extent beyond mere tariff reduction. While trade treaties are designed to lower tariff rates, the overall cost of cross border trade remains high due to persistence of additional customs duties, regulatory charges and withholding tax incidences. These burdens continue to weigh heavily on business, offsetting any gains from formal liberalization measures. As a result, the expected fiscal and economic space that trade openness should create through enhanced competitiveness and business facilitation fail to materialize. This structural realities explain the negative and insignificant indirect effect of trade agreements on economic growth via TO in our analysis. Hence the complicated tax reforms hinder the positive transmission of trade liberalization into GDP growth and TO do not appear to be a beneficial or growth inducing strategy for Pakistan under its economic constraint.

Having explored how trade agreements are transmitted; now we turn to how DTTs indirectly influence real GDP through mediators. DTTs are design to eliminate twice taxation on income earned across borders and becoming more widely acknowledged as strategic tool to improve cross boarder investment, stabilize revenue flows and promote international trade cooperation. Developing countries like Pakistan actively participate in IEAs aim is to pursues FDI and fiscal sustainability, it is important to understand how DTTs affect economic growth through macroeconomic factors.

To capture these indirect effects, the Sobel test was applied to long run coefficients estimated through the ARDL model. The indirect effect of DTTs on real GDP via tax revenue is positive and suggests a marginal influence, indicating that tax revenue play a limited role in linking DTTs to economic growth. Mostly studies found that the trade and investment treaties are beneficial for developed countries and negative fiscal impact for poor countries (Rolland, 2020). Such treaties

²⁴ <https://tradingeconomics.com/pakistan/balance-of-trade>

are made to improve the country fiscal stability and leads to improve the economic condition of the country but in Pakistan's case, such agreement have a minor impact on growth through tax revenue due to structural and policy related constraints. The government incentivize foreign investors and avoid the domestic business so that's why the domestic tax base has decline as a results of treaty shopping and profit shifting to cross border and reinvested the illegal capita to mostly in brownfield investment rather than greenfield investments, this contribute minor in revenue generation and leads to contribute the economic growth little. As study by (Rolland, 2019) claim that such treaties limit country ability to change its tax policy. These investment treaties meant to create stable and predictable environment for foreign investors, but in do so, government loss their freedom to change tax rule and enforce on the treaty partner and government still had to spend time and money defending them called chilling effect. Second reason is that our country weak administrative capacity, outdated treaty provision benefit capital exporting countries and limit renegotiation efforts further restrict Pakistan ability to collect revenue and used for growth purposes. As a result, the mediating impact remains weak, reflecting deeper policy inefficiencies.

Economic development is mostly driven by investment, which fosters macroeconomic stability, ensures efficient resource allocation, create employment opportunities and improve living standards. DTTs help to achieve these outcomes by promoting international investment, boosting investor confidences and granting legal certainty²⁵.

The Sobel test results reveal that real GDP is influence positively and statistically significant by DDTs through FDI. While Pakistan experiences only a most increase in tax revenue, such agreements are significantly contribute to economic growth through FDI inflow channel. This highlights a tradeoff: on one hand, DTTs may constrain fiscal revenue due to reduced taxation on foreign investors and on the other hand, they offer substantial long term economic benefits by stimulating private investment. These results are constraint with (I. Bibi, 2024) and consistent with Neumayer (2007), who observe that developing countries enter into agreements with capital exporting countries like USA and with a large scale exporting economies, tend to see a significant rise in FDI inflows. This suggesting that DTTs effectively contribute country's level

²⁵ <https://leappakistan.com/double-taxation-treaties-and-fdi-in-developing-jurisdictions>

of development. Practically when such activities increase they participate in value chain products like machinery and technology, which may increase the growth of the country.

The two primary purposes of DTTs are to avoid twice taxation on same income in a host country and to reduce the tax evasion while expanding tax base. These agreements are largely design to facilitate cross border investment rather than trade. Therefore, they are conceptually as well as practically distinct from trade agreements, which aim to promote trade openness, reduced trade barriers and encourage exports and imports. In this context, the Sobel test results are in line with theoretical expectations. Specifically, the indirect effect of DTTs negatively and statistically insignificant (0.757) on real GDP through trade openness. This means that double tax agreements do not have a meaningful impact on RGDP via the trade channel in case of Pakistan. While the direct pathway of DTTs on TO is negative and the effect of TO on RGDP is positive, the overall mediated effect is not strong enough to draw any reliable policy interference. These results imply that the trade openness may not be the primary channel through DTTs influence economic growth in the case of Pakistan. Rather, other channels such as FDI.

Chapter 6

Conclusion and Policy Recommendation

6.1 Conclusion

Behind every treaty lies a tradeoff between attracting investment and preserving fiscal sovereignty. While much of the literature favors the economic agreements initiated by OECD and UN member states but on the other side several studies highlight that these agreements often come at a cost for developing countries. As noted by (Dutt & Gallagher, 2022; Janský & Šedivý, 2019) assert in their research that such treaties are costly for developing countries and tend to benefit developed nations. Building on this prospective, our study comprehensively evaluate the economic consequences of international economic agreements including trade agreements and double taxation agreements on Pakistan macroeconomic indicators such as tax revenue, FDI inflow and trade openness and ultimately on economic stability as real GDP. To achieve this, we also conduct a mediation analysis to examine how these economic agreements influence real GDP indirectly through the three indicators, each measured as a percentage of GDP. Furthermore, the trade treaties and double tax treaties are quantified by the number of agreements signed annually with foreign countries within Pakistan's investment treaty network. The results show that double tax treaties significantly influence tax revenue through often negatively, reflecting the fiscal cost of incentives provided to foreign investors. Both trade agreements and double tax treaties have a positive and significant effect on FDI inflow, conforming that such agreements improve investor confidence and attract capital. However, trade openness is constraint due to complex tariff structures and limited liberalization, resulting in a negative or weak impact from the treaties. Further, the mediation analysis address that the international economic agreements contribute to GDP growth through FDI inflows primarily, while the trade openness and tax revenue remain less effective. The overall findings justify that that the economic growth target is still low and tax to GDP ratio of target was 13% (IMF) and Pakistan projected to reach 10.6%, although it remains below the IMF target. Trade agreements and double tax treaties are established for different purposes such as trade agreements are made for trade related activities deals with tariff rates, it means that reduced tariff rates and increase trade openness and double taxation agreements have two major goals, (i) avoidance of double taxation and (ii) reduced tax evasion.

In conclusion, while tax agreements aim is to facilitate cross border investment, they often create loopholes like round tripping that are particularly harmful to countries which is link with treaty hubs. Pakistan reverse capital flight between 1972 to 2013 was estimated over \$30 billion primarily due to trade liberalized policies (Mahmood, 2013). Furthermore, illicit financial flows such as MNCs shift profit from higher tax countries to low or non-tax jurisdiction continue to eroding tax base of the developing countries. These practices are often enabled through poorly designed tax treaties. To address these challenges, the OECD initiated the BEPS framework, with the core aim of ensuring that profits are taxed where economic activities occur and where value is created²⁶. For developing countries like Pakistan, meaningful participation in international tax rule making and capacity building is essential to protect domestic revenues and foster sustainable economic growth.

6.2 Policy Recommendation

Based on the findings, Pakistan need significant tax and fiscal reforms to strengthen growth and tax revenue collection. The following recommendations are proposed;

6.2.1 Renegotiate bilateral investment treaty (BIT) model to limit MFN scope

Pakistan should update and renegotiate older BITs, especially those signed before the 2000's, which often include on most favor nation's (MFN) clauses. Modern treaty model adopt by countries such as Brazil, India and South Africa provide better protection of national interest by narrowing MFN provisions and replacing Investor-State Dispute Settlement (ISDS) with state to state mechanisms. Pakistan should adopt similar reforms to reduced treaty shopping risk and ensure that agreements serve public interest.

6.2.2 Promote Investment Driven Trade and Tax Agreement

Trade and tax agreements should be designed to channel FDI into productive and sustainable sector such as manufacturing and renewable energy. Beyond capital inflows, the focus must be on linking domestic firms to global value chains, fostering skills development and facilitating technological transfers. Creating a transparent and business friendly environment is essential to attract quality driven and long term investors.

²⁶ <https://www.oecd.org/en/topics/base-erosion-and-profit-shifting-beps>

6.2.3 Shift to Performance Base Incentives

Instead of granting pre-investment tax concession, incentives should be tied to actual performance. Fiscal benefits should be offered only after investors successfully establish operations, create value addition and contribute to local productivity. This approach minimizes fiscal risks, ensures commitment and protects the host country's economic interest.

6.2.4 Ensure Transparency and Public Accountability

Currently, treaty negotiations and related fiscal data are kept largely confidential. The government should increase transparency by publishing treaty related tax expenditure in official government report and by making relevant data accessible to researchers, academia and policy makers. Broader stakeholder engagement through parliament, business chamber, civil society and provincial government should be institutionalized to ensure agreements are debated openly and design in the national interest.

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Appendix

For indirect effect to use Sobel test

For Trade Treaties

$RGDP_{IDE\ TT\ via\ TR} = (\text{coefficient of TTs on TR} * \text{coefficient of TR on RGDP}) \dots\dots\dots (b)$

$RGDP_{IDE\ TT\ via\ FDI} = (\text{coefficient of TTs on FDI} * \text{coefficient of FDI on RGDP}) \dots\dots\dots (c)$

$RGDP_{IDE\ TT\ via\ TO} = (\text{coefficient of TTs on TO} * \text{coefficient of TO on RGDP}) \dots\dots\dots (d)$

For Double Tax Treaties

$RGDP_{IDE\ DTT\ via\ TR} = (\text{coefficient of TTs on TR} * \text{coefficient of TR on RGDP}) \dots\dots\dots (f)$

$RGDP_{IDE\ DTT\ via\ FDI} = (\text{coefficient of TTs on FDI} * \text{coefficient of FDI on RGDP}) \dots\dots\dots (e)$

$RGDP_{IDE\ DTT\ via\ TO} = (\text{coefficient of TTs on TO} * \text{coefficient of TO on RGDP}) \dots\dots\dots (g)$

Now, we put the value of coefficients in equations from (b) and (g) and calculate the indirect effects;

5.3 The Correlation Matrix

A correlation coefficient is used in the correlation matrix to show how variables related to one another. A strong positive correlation between the variables is indicated by a coefficient of 1, a neutral association is shown by a coefficient of 0, and a strong negative correlation is indicated by a coefficient of -1. The result of the correlation matrix is display below table.

Table 2: Pair wise Correlation

	LRGDP	LTR	LTO	LFDI	NO. TTs	NO. DTs	LCPI	LCOC	LFCE	LGOV	LGFCF	LREER	LGDP PC
LRGDP	1.000												
LTR	0.340	1.000											
LTO	0.837	0.445	1.000										
LFDI	0.613	0.095	0.549	1.000									
Inflow													
NO. TTs	0.340	-0.170	0.167	0.400	1.000								
NO. DTs	-0.093	-0.194	-0.101	0.294	0.008	1.000							
LCPI	0.290	0.123	0.286	-0.071	0.210	-0.190	1.000						
LCOC	0.290	0.297	0.373	0.377	0.032	0.033	-0.229	1.000					
LFCE	0.190	0.182	0.134	-0.229	0.130	-0.274	0.702	-0.312	1.000				
LGOV	0.533	-0.158	0.461	0.489	0.205	0.230	0.035	0.234	-0.211	1.000			
LGFCF	-0.682	-0.025	-0.527	-0.164	-0.214	0.184	-0.514	-0.000	-0.376	-0.455	1.000		

LREER	-0.885	-0.087	-0.687	-0.711	-0.316	-0.030	-0.039	-0.368	0.174	-0.605	0.565	1.000	
LGDPPC	0.995	0.386	0.823	0.605	0.345	-0.093	0.287	0.285	0.213	0.497	-0.643	-0.862	1.000

The correlation matrix demonstrates important relationships among the study variables. LRGDP shows a strong positive correlation with LGDPPC and LTO, suggest that higher economic output is greater trade openness and higher per-capita income. LFDI Inflow also correlates positively with LRGDP and LTO, indicating that trade openness and economic growth may attract foreign investment. In contract, LREER is negatively correlated with most variables, including LRGDP and LGDPPC, implying that a higher real exchange rate be linked to lower economic performances. LGFCF show a positive association with LGDPPC and LTO, reflecting the role of investment and trade in income. The economic treaties (trade ant double tax treaties) show relatively weak correlation with other variables, hinting at their potentially independent effects.

The majority of the variables in the model exhibits positive and significant correlation with the dependent variable, according to the overall estimated results. The correlation matrix found that there isn't issue with the explanatory variables multicollinearity.