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Impact of Taxation, Inflation and Interest on Foreign Direct Investment (An Empirical Study of Pakistan)

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Abstract

Foreign Direct investment plays a vital role in economy's growth, especially in developing countries. It helps in growing industrial sector, healthcare, education and creates employment. The goal of any country is to attract FDIs; to do so, law and policymakers reframe their tax policies, grants tax incentives and exemptions in taxable components. Also, authorities try to ensure economic growth and maintain monetary policy stable to attract FDIs. This study analyzed the determinants of Foreign Direct Investment (FDI) net inflows by examining key economic factors, including corporate tax rate, direct tax rate, inflation rate, and interest rate. The analysis was conducted using descriptive statistics, covariance and correlation tests & regression analysis providing comprehensive insights into the relationships between these variables. Time series data is used spanning over 2005 to 2024. The data was obtained from the following sources i.e. World Development Indicator (WDI), Economic Survey of Pakistan and Academic Journals. The study concludes that variables have less dependency upon each other. That shows that there are other strong factors that affect FDI inflows in Pakistan. In this regard, further studies are suggested by using other variables such political stability, trade openness, infrastructure development, exchange rate fluctuations and economic growth.

Keywords: FDI, Foreign Direct Investment, Taxation, Tax Rate, Tax Revenue, FDI Inflow, Net FDI, Inflation Rate, Interest Rate.

INTRODUCTION

Foreign Direct Investment (FDI) is specified or determined as an investment that comes with a long-term relationship. It showcases a deep-rooted and abiding interest, dominance and control by a resident entity in a particular economy (it can be any foreign direct investor or a parent enterprise) in an enterprise resident in another economy that is not situation in the first economy of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate)"(OECD, 1996). Upcoming and new globalization trends are incentivizing the developing countries to propel towards drawing more or higher levels of foreign levels of direct investment. This may be done in order to gain more control on the economy of that country. FDI proliferate national savings of a particular economy, which leads to ignition of capital stock and eventually escalates efficiency of the economy that receives the FDI (Gorg and Greenaway, 2004; De Mello, 1999; Botric and Skuflic, 2006). Foreign Direct Investment (FDI) plays a crucial role in the economic development of Pakistan, especially in key industries such as petroleum and automobiles. These sectors are vital to the country's GDP, employment generation, and overall industrial growth. These particular sectors are very appealing to FDI based on macroeconomic incentives such as taxation, interest rate and inflation. The policymakers should always take onto account these factors in order to encapsulate the dynamics of it. Along with other developing

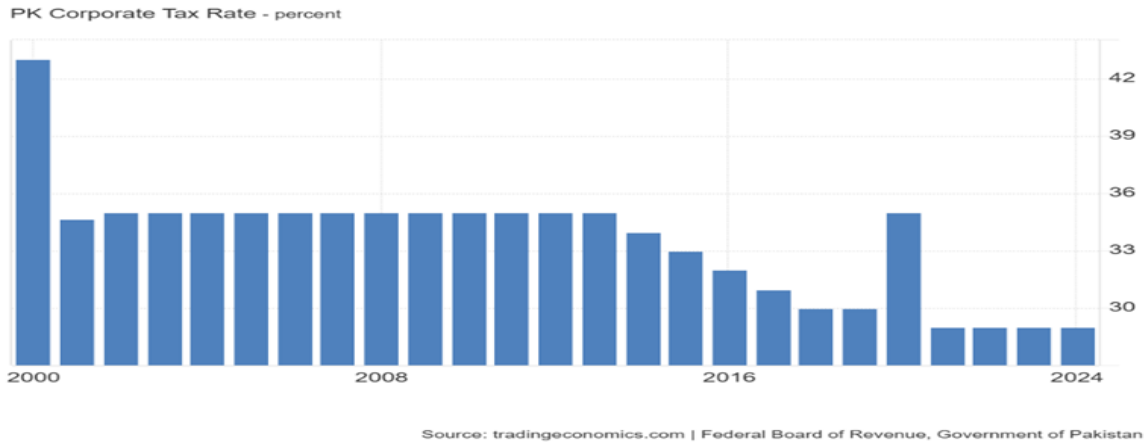
nations, Pakistani economy is in great need of foreign investment. This is needed in order to improve their economic growth as well as economy, from evaluation of net FDI inflows in Pakistan from the year 2007 to 2011. Pakistan has had an influx position of 51 from 82 countries and participating with 0.19% share of total FDI inflow (economist intelligence unit, 1999). FDI is a key aspect and paradigm of developing economies like Pakistan. Pakistan's emerging economy has increased by more than 5% on average over the last 30 years. (World bank, 2018). There is still financial capital that is needed for pro-longed expansion. Ranging from $1.74 billion in 2018 to $2.22 billion in 2019, Pakistan's FDI pattern is increasing. Despite that, the inflows were reduced to $1.395 billion in 2021 because of a global medical emergency. Nonetheless China is still one of the biggest sources of FDI in Pakistan.

Along with other important factors that are influencing the FDI are the policies of taxation, the rate of inflation and the rate of interest. The economic sustainability of a country can be incentivized by factors like FDI, inflation, trade, import, tax revenue of a particular country, exports, and others. Most of the government is eager to invite the FDI for its own country. Taxation policy of any nation's economy is the causal factor of FDI inflow. Most countries that are eager to attract foreign investment incentivize low tax rates as a main incentive (Brodzka, 2013).This may also affect the competition on the global tax market. Competitive tax system may help render investments, whereas poor tax countries may lead to hurdles for investors. Pakistani taxation system has brought about changes and reforms, but all reforms feel they have gone in vain because these tax policies are not good enough to be effective to work.

As per Hassan & Iqbal (2021), the application of high tax rate on petroleum industry obstructs the attention of foreign investment exploration and the attention of production companies, this is because they align themselves with tax regimes that align with their goals. In parallel the automobile industry also imposes high tax which encumbers the production as well as the importation of vehicles and this leads to eventual increase in its cost. This leads to fading competitiveness in the local and global market by the investor. The Pakistan Economic Survey (2023) puts light on the persisting tax collection issues, and records tax collection reforms that are attentive towards simplifying the tax structure for improved FDI.

The FDI is enhanced by improved tax strategies, as an external investment that allows for more powerful penetration into the global market and adequately makes the venture able to attain the economies scale, which consequently leads to proliferation of net domestic income. FDI is one of the main incentives of outward finance of developing economies as they are able to get finance from the developed countries. Furthermore, FDI gives a lot of advantages to the economies such as giving them prolonged capital needed for economic growth of the host country like job creation, penetration of new technologies and enhancement of better access to foreign markets. This may also allow introduction of new managerial capabilities and stimulate firms from technologically advanced sectors. Governments of developing nations are working and attempting to balance the need to present a competitive tax domain for FDI to make sure that a large amount of domestic sales tax is brought in from foreign businesses. At the same time taxes are recognized as primary factors of determining the place of investment. Due to which, FDI is drawn to those economies which provide access to global markets and the chance at profit, a predictable legal environment, economic stability, productive and effective labor markets and advanced infrastructure. The diminishing of corporate tax rate and simplification of its applicability may bring about the induction of FDI which could also

be indirectly helping the host nation in long-term development. Present evidence and research is substantiated for the period of 3 decades from 1985-205, they are adding data timeline from 2005 to 2024 to corroborate and monitor the dynamic among FDI and Taxation in present circumstances.



In addition, the rate of interest has a key role in determining FDI through their impact on the cost of borrowing, potential yields, and the overall stability of a nation's economy. Lower interest rates allow the borrowing to be cheaper, in turn attracting foreign investors to finance projects, acquire assets, or venture into expanding business in the country. On the contrary, high interest rates increase the cost of borrowing, thus deterring foreign investors as the cost of investment proliferates. The Pakistan Economic Survey (2023) highlights the situation that changes in interest rates in Pakistan have historically swayed investment patterns, especially in petroleum and automobile industries. As per a bunch of economists the rate of interest and the social savings and investment go together closely. The rate of interest doesn't merely impact the activity of investment and the prevailing investment but also the future influx of

investment. Actual interest rate (Anna, 2012; Singhania, 2011) is yielded on the investment made; investor will channel their investments from low interest rates to higher interest rate, because it influences foreign investors looking for higher yields on investments so higher interest rate is directly proportional to more FDI inflow. Interest rates also show the economic health of the country; lower rates are usually linked with stable economic growth, and thus becomes more attractive for FDI. High interest rates, on the contrary suggest problems such as inflation or economic instability which may lead to investor becoming more prudent about whether or not, he should invest. Inflation is an important and major macroeconomic indicator that impacts the purchasing power of the consumers and the general economic stability of a nation.

Increased inflation rates may allow room for uncertainty from investors, which make it hard to predict the yield made on the investments. Low inflation stimulates economic growth through the promotion of local investment and efficient usage of productive resources, as well as increasing FDI inflows (Ahortor et al., 2012). Inflation which is very high affects the economy negatively due to its negative re-distributive and welfare implications (Eggoh & Muhammad, 2014), on the contrary interest rates affect the price of borrowing and the general economic domain. The dynamic interaction between these macroeconomic tools and FDI is particularly pertinent when it comes to an economy like Pakistan, where economic fluctuation has been a constant problem. Historical volatility in inflation and interest rates, with changing taxation policies, have rendered labile investment climate. Increase in inflation also affects the impact on the investment decisions, as it influences the cost of production and purchasing power of the consumer. In timelines of high inflation companies pay more for raw materials, along with human labor, and costs for carrying out operations. Which ultimately lead to dwindling profits. Foreign investors are at unease by such an unpredictable scenario, making them pull back from long-term investment in the economy.

As per the International Monetary Fund (IMF) (2022), economies with increased and volatile inflation tend to get decreased FDI inflows, as inflation disintegrates the yields made on investment. In the context of Pakistan, increased inflation can fade consumer demand. Along with that, accelerating production costs in times of inflation can reduce profit margins, hence making the market unappealing to foreign investors. The contribution of inflation in decreasing FDI in developing nations sum up that inflation is the origins of an inadequate investment environment, precisely in those sectors which are dependent on stable input costs, like secondary sectors (Bende-Nabende & Ford 2017). When it comes to Pakistan, the International Monetary Fund (IMF, 2022) highlights that the inflationary pressures greatly reduce the purchasing power of the consumer and proliferate the price of raw materials.

This research focuses on examining the detailed dynamics between taxation, inflation, interest rates, and FDI in Pakistani economy. By evaluating these components, the study tries to recognize patterns, challenges, and options within the investment environment. eventually, the results of the findings will add to a better view of how to stimulate a more appealing climate for foreign investors, thereby aiding in Pakistan's economic expansion and development goals. This research will render valuable suggestions for policymakers to formulate a stable, transparent, and investor-friendly climate. The Study is "Quantitative Research" and data (Secondary Data) is

collected from World Development Indicator (WDI) and the Economic Survey of Pakistan. Research is carried out for increasing of information and to recommend policymakers to make decisions, focused to attracting FDIs in Pakistan. Hence, Research should be categorized as "Fundamental or Basic Research". By method, to the best of our understanding, it should be categorized as "Descriptive Quantitative Research".

LITERATURE REVIEW

(Shahriyar Mukhtarov, 2020) analyzed the influence of monetary policy and tax revenues on FDI of the country of Jordan based on data time frame of 1991 to 2017. The vector correction model, the canonical co integrating regression and the fully modified ordinary least squares method are employed to analyze and test the causality between the three variables. The research demonstrates the adverse effects of FDI associated tax revenues and authorities need to do something in order to cut reliance of tax collection on FDI, that also makes it easier to presume tax diversification and tax incentives exert a good influence on FDI.

(Pratomo, 2020)examined the impact of FDI on tax revenues specifically developing nations. FDI taken as independent variable and tax revenues are taken as dependent variable. Research utilizes data up to 80 countries ranging from 2000 to 2016 with help of open World Bank and UNCTAD sources. Research utilizes Fixed Effect Model of Panel Data Analysis along with 2SLS regression for investigating relationship between FDI and Tax revenue. The research indicates that FDI is positively and statistically significant on total tax revenue, corporate tax revenue, individual tax revenue, and VAT revenue but has no impact on property tax revenue. We can verify the tax revenue rose with rising FDI but on the other hand, complicated tax laws can cause falling FDI inflows.

(Ngwaba, 2023)This research estimates the effect of corporate tax on direct foreign investments in developing nations based on the data of corporate tax for the period between 1990 and 2015. Data tested to verify the variables using Robustness analysis. Granting tax allowances to induce FDI is a vital policy for both the developed world and developing nations since empirical studies have established that FDI flow largely has positive effects, which can result in growth and development. (Fadilla Hummaira, 2021)examines the impact of government expenditure, foreign direct investment (FDI), and taxation on economic growth in Indonesia, Malaysia, Singapore, and Thailand between 1999 and 2018. Literature reviewed or draws on theories that connect government expenditure, FDI, and tax to economic growth. Methodology used Panel data regression with the Common Effect Model/Pooled Least Square was employed to evaluate the connections between government expenditure, FDI, tax, and economic growth. The research that followed revealed that government spending, FDI, and taxation had positive impacts on economic growth separately and together in Indonesia, Malaysia, Singapore, and Thailand during 1999-2018.

(Haider Mahmood, 2013)evaluates the influence of foreign direct investment (FDI) on tax revenue in Pakistan, as FDI tries to affect economic growth and tax collection in variable ways. In literature review the study shows that FDI has a high positive effect on economic growth of the country, tax revenue, and overall well-being inrecipient nations. Excessive tax incentives to lure FDI may lower tax revenue, and thus there should be a balance between luring FDI and tax revenue. The research employs methodology to establish result, time-series data for the period 1972 to 2010. Auto-Regressive Distributive Lag (ARDL) model and its error correction term are employed

to test long-run and short-run relationships between FDI and tax collection in Pakistan. Through this, concluded the both long-run and short-run relationships are found in the model. FDI and GDP per person employed have positive and significant effects on tax collection. The positive relationship indicates that FDI generates greater tax income, hence contributing to economic well-being. (Ligita Gaspareniene, 2022)This research in particular studies the effects of foreign direct investment (FDI) on tax receipts within the European Union (EU) along with competition between countries, more importantly the different impacts of incoming and outward FDI on tax receipts from a whole decade, dated from 1999 to 2019. While conducting this research the literature review unveiled that FDI is the main focus of the economic growth of a country, with literature emphasizing the point that it has the ability to influence tax receipts through uncertainty and spillover of the country and impacts of competition. But tax incentives for FDI can result in revenue losses in the form of corporate tax relief. And methodology used, Data from UNCTAD and World Bank's World Development Indicators were utilized. An econometric model that utilizes multiple regression analysis and panel data was used to analyze the association between FDI and tax revenue in EU nations between 1999 and 2019.

The outcome reveals Outward FDI contributed a significant positive effect on tax revenue, while inward FDI had a negative effect. This may be caused by tax incentives to attract FDI or tax revenue loss from profit shifting of multinational companies. The research recommends cautious treatment of tax incentives to reconcile FDI promotion with long-term tax revenue.(Feld, 2011)expands the previous meta-analyses of Foreign Direct Investments and taxation in three respects. First, 16 new publications were included. Second, codes the extra meta regressor variables for significant issues on said variables and for third advanced meta-analytical methodology was employed and 704 primary estimates were examined. the Classical Meta-Analysis and Meta-Regression Analysis of data reveal that there is a publication bias in the primary literature. And that aggregate data-based studies find consistently larger semi-elasticities than firm-level ones that the inclusion of bilateral tax rules into effective tax rates improves more efficient measurement of harmful tax incentives on foreign investment, and that tax influences are not offset by government spending.

(Qing Hong, 2009)tests the impact of tax planning internationally on foreign direct investment. Theoretical model utilized for conducting this research was based on ideas that confirm the authentications of conclusions made in this study. By and large, high-tax countries' residents are likely to benefit from some amount of tax planning. Conversely, increased tax planning activity increases the optimal corporation tax rate and reduces foreign investment in the event tax rates are not too high. (Matilde Jardim dos Santos Silva, 2021)analysed and describe the empirical literature developed in the scope of the relation between foreign direct investment and taxation, for the period of 15 years (2005-2019). The research design applied was the systematic literature review. The outcome was that the number of papers related to the relation between foreign direct investment and taxation has been rising. With regard to the most researched topic areas, it seems that most researchers prefer researching the connection between foreign direct investment and economic growth, and measuring the effects of offering tax incentives. The findings conclude that offering tax incentives certainly induces the investment. (Tomas Kliestik, 2022)explores whether tax revenues and economic competitiveness of the European Union (EU) between 1999 and 2019 were influenced by foreign direct investment (FDI). The analysis relies on panel data and multivariate regression techniques as well as on econometric estimations with the United Nations Conference for Trade and

Development (UNCTAD) and World Bank data sources. The results show that inward FDI negatively affects tax revenues, but outbound FDI significantly raises total tax revenues. The effects of outward foreign direct investment on tax collection also have a two-year lag, suggesting an incentive effect. (Omankhanlen, 2011)investigated the effect of inflation and the exchange rate on foreign direct investment and how these interact with economic growth. Foreign direct investment and inflation are independent, that is, while the exchange rate is positively correlated with FDI, inflation does not affect FDI. Based on trade openness, an approach that is adopted by multinational corporations, including telecommunication companies, FDI has influenced economic growth.

(Igwemeka Ebele Okafor, 2016) utilized statistical methods such as the Ordinary Least Squares method, the Augmented Dickey Fuller Test, and the Granger Causality Test to analyze the interaction between home country domestic inflation and the impact of foreign investment in the home country in the case of Nigeria between the time series 1987-2012. Foreign direct investment and inflation are positively correlated in Nigeria, but the impact of foreign direct investment on inflation is not significant. (Mohammed Valli and Mansur Masih, 2014) For South Africa, time series data covering the period 1970-2012 were employed to attempt to establish if there exists a long-run theoretical relationship between inflation and foreign direct investment. It was discovered that the rate of inflation and foreign direct investment in the country were negatively related in the long run.

(Tariq & Amin, 2021) studies and researched the FDI influx into Pakistan's petroleum sector. It listed: taxation, the incentive of inflation, and the fluctuating interest rates as the incentives having a series and noticeable impact on investment. They assert that the petroleum sector, being a resource-based industry, is most stimulated to the movement in the cost of capital and operating costs, which are directly affected by increasing rate of inflation and interest rates. Moreover,the Pakistan Economic Survey (2023)highlights and eagerly signals the significance of FDI in the automotive industry, observing that foreign investment is very crucial in developing technological abilities and capacity, increasing production of that capacity, and raising the overall competitiveness of the industry.

(Jamil & Shah, 2020) says that the new policy changes for supporting and promoting local production of vehicles, and automobiles and giving incentives for manufacture of electric cars can make the FDI environment effective in the future. This research is aligned with research of Sahoo & Shankar (2018), who state that incentives as well as reform on taxes can be potential tools to bring about FDI into the automotive industry, if the rate of inflation and interest rates are controlled in a limited manner. (Ali & Ghulam, 2020) contend that long-term inflation in Pakistan has a negative impact on consumer demand, which subsequently influences the profitability of car manufacturers. When the rate of inflation consequently leads to proliferation of the cost of raw materials, vis-à-vis steel and rubber, production costs increase, resulting in increased prices for completed and furnished vehicles. Eventually, this may discourage the foreign investors leading to foreign investors not investing in the automobile sector due to foreseeable decrease in the demand for consumer products during terms of inflation. (Klein, 2021) studies the involvement of interest rates in FDI in developing markets and it unveiled that foreign investors are very stimulated to changes in interest rates. soaring interest rates push the cost of capital up, creatingpro-longed investment projects less profitable. Therefore, foreign investors might look for more appealing financing terms in other parts. (Shah & Khan, 2020)

focus on the important role of interest rates in directing the foreign investors' investment decisions in the secondary sector. If interest rates have increased, financing can cost a lot at home, allowing the demand to dwindle. This lowering of demand deters foreign investors even more, as foreign investors may perceive this as a domestically weak market which consequently mean that it may be unprofitable. On the other hand, lower interest rates may assist in igniting the spark in demand for vehicles, which tempts the foreign investors to invest more in the industry. The researchers also extended the idea that when interest rates are not that expensive, foreign investors and producers will be able to give more funding for expansion plans with much ease, thus allowing the propelling development in the vehicle sector. (Sultan & Akram, 2017)are focused on the idea that increasing interest rates soar the cost of financing that is done for projects. The capital-intensive features of the Secondary sector renders it very responsive to the borrowing cost, and the higher interest rate will head towards lower investment in starting of new projects and technologies.

Data & Methodology

Development of right methodology and technique is significant in any research study. Hence, this section outlines research methodology and technique utilized for present analysis. Research Technique utilized for this analysis is Secondary data Analysis which is based on following;

- **Descriptive Statistics:** Descriptive statistics give a summary of the key characteristics of a dataset, enabling researchers and analysts to find patterns, trends, and salient features of the data. They are particularly helpful during data exploration and are most commonly the first step in data analysis prior to undertaking more advanced statistical methods, including inferential statistics. By calculating, evaluating and interpreting these descriptive statistics, we'll get the idea of the patterns, trends, and distributions of FDI, taxation, inflation, and interest rates in conditions of Pakistan.
- **Correlation & Covariance Analysis:** Correlation analysis is a statistical technique for assessing and quantifying the strength and direction of an association between two or more variables. The main purpose of correlation analysis is to establish whether and to what extent pairs of variables are associated. The correlation coefficient (usually symbolized as r) is the most important statistic in this analysis. It assists you in comprehending how alterations in variables like taxation, inflation, and interest rates correlate with Foreign Direct Investment (FDI).
- **Regression Analysis:** Multiple regression analysis is a statistical method employed to comprehend the association between several independent variables (taxation, inflation, interest rates) on Foreign Direct Investment (FDI). It will account for other variables, measure relationships, and determine which factors are most significant in determining FDI inflows. Using multiple regressions, we are able to make more precise inferences regarding the dynamics of the economic variables and its impact on FDI, which will aid us in a better understanding of the subject.
- **The Augmented Dickey-Fuller (ADF) test:** introduced by statisticians David Dickey and Wayne Fuller in 1979, is an improvement on the original Dickey-Fuller test used to test for the existence of a unit root in time series data. The test extends the limitations of the original Dickey-Fuller test by adding lagged differences of the dependent variable and hence is stronger when used for analysis of more complicated time series data. In the case of our study on the effects of taxation, inflation, and interest rates on Foreign Direct Investment (FDI), the ADF test is most

applicable. It guarantees that time series variables applied in analysis are stationary to avoid spurious regression outcomes and the validity of the results.

- **Engle-Ganger Co-integration Test**: To determine if multiple time series are correlated over the long run, a co-integration test is utilized. After British economists Paul Newbold and Clive Granger presented the spurious regression hypothesis in 1987, Nobel laureates Robert Engle and Granger initially proposed the idea. When non-stationary time series are integrated together in a way that prevents them from long-term deviations from equilibrium, co-integration tests can be used to discover these situations. The experiments determine how sensitive different variables are to the same average price over a given time period**.**

To determine the connection between variable, data was collected from time series of 2005-2024. Secondary data gathered from research of (Muhammad Nouman Shafiq, 2021) and primary data (extended data with direct taxes, cooperate taxes, inflation & interest) are gathered from World Development Indicator (WDI), Trading Economics, Economic Survey of Pakistan & State Bank of Pakistan. FDI in this context is dependent variable and direct tax, corporate tax, Inflation & interest as independent variable. Hence, Equation model can be represented as:

Where: $$\mathrm{FDI}_t = \beta_0 + \beta_1 \mathrm{Taxation}_t + \beta_2 \mathrm{Inflation}_t + \beta_3 \mathrm{Interest\ Rate}_t + \epsilon_t$$

- **FDI_t**: Foreign Direct Investment inflows in Pakistan at time frame selected t.
- **Taxation_t**: The level of taxation in Pakistan at time frame selected t.
- **Inflation_t**: The rate of inflation in Pakistan at time frame selected t.
- **Interest Rate_t**: The interest rate in Pakistan at time frame selected t.
- **β0**: The intercept term, representing the expected value of FDI when all independent variables are zero.
- **β1, β2, β3**: These coefficients represent the effects of taxation, inflation, and interest rates on FDI, respectively.
- **ε_t**: The error term, capturing the effect of other variables not included in the model and random noise.
- **Subscript t** represents the time period from 2005 to 2024.

Table1.
Data Source: World Development Indicators (WDI)

S.No.	Year	FDI net inflows (% of GDP)	FDI net inflows (BoP, current US$)
1	**2005**	1.5158	2,201,000,000
2	**2006**	2.6398	4,273,000,000
3	**2007**	3.0357	5,590,000,000
4	**2008**	2.6894	5,438,000,000
5	**2009**	1.2480	2,338,000,000
6	**2010**	1.0279	2,022,000,000
7	**2011**	0.5751	1,326,000,000
8	**2012**	0.3435	859,000,000
9	**2013**	0.5154	1,333,000,000
10	**2014**	0.6953	1,887,000,000
11	**2015**	0.5577	1,673,000,000
12	**2016**	0.8213	2,576,000,000

13	**2017**	0.7358	2,496,000,000
14	**2018**	0.4877	1,737,000,000
15	**2019**	0.6961	2,234,000,000
16	**2020**	0.6847	2,057,000,000
17	**2021**	0.6160	2,147,000,000
18	**2022**	0.3900	1,462,000,000
19	**2023**	0.6061	2,048,000,000
20	**2024**	..	..

Table 2

Data Source: Economic Survey of Pakistan & Trading Economics.com

S.No	**Year**	Direct Tax Rate %	Cooperate Tax Rate%
1	**2005**	31.5	35
2	**2006**	39.4	35
3	**2007**	38.5	35
4	**2008**	38.2	35
5	**2009**	39.6	35
6	**2010**	38.7	35
7	**2011**	39.2	35
8	**2012**	38.2	35
9	**2013**	39	35
10	**2014**	39.9	34
11	**2015**	43.4	33
12	**2016**	39.1	32
13	**2017**	39.9	31
14	**2018**	39.7	30
15	**2019**	37.8	30
16	**2020**	38.1	35
17	**2021**	36.5	29
18	**2022**	37.2	29
19	**2023**	40.7	29
20	**2024**	..	29

Table 3.

Data Source: State Bank of Pakistan & Trading Economics.com

S.No.	**Year**	**Interest Rate% (Yearly average)**	**Inflation Rate% (Yearly average)**
1	**2005**	7.75	9.0633
2	**2006**	8.75	7.9211
3	**2007**	9.25	7.5987
4	**2008**	12	20.2861
5	**2009**	12.66	13.6478
6	**2010**	12.75	12.9389
7	**2011**	12.66	11.9161
8	**2012**	10	9.6824
9	**2013**	9	7.6922
10	**2014**	9.25	7.1894
11	**2015**	7	2.5293
12	**2016**	5.875	3.7651
13	**2017**	5.75	4.0854
14	**2018**	7.7	5.0781

15	**2019**	11.625	10.5784
16	**2020**	10.083	9.74
17	**2021**	8.1875	9.4962
18	**2022**	13.35	19.8739
19	**2023**	20	30.7681
20	**2024**	17.91	..

Test & Findings

The Descriptive Statistical Analysis

Table 4.

	COPERATE_TAX	DIRECT_TAX	FDI net inflows (% of GDP)	FDI net inflows (BoP, current US$)	INFLATION	INTEREST
Mean	33.00000	38.66316	1.046383	2.41E+09	10.72897	10.19161
Median	35.00000	39.00000	0.695308	2.06E+09	9.496200	9.250000
Maximum	35.00000	43.40000	3.035719	5.59E+09	30.76810	20.00000
Minimum	29.00000	31.50000	0.343453	8.59E+08	2.529300	5.750000
Std. Dev.	2.494438	2.265492	0.827977	1.30E+09	6.786305	3.335745
Skewness	-0.639881	-1.279715	1.503236	1.537819	1.502233	1.208373
Kurtosis	1.678253	7.096410	3.779272	4.349355	5.168743	4.937622
Jarque-Bera	2.679638	18.47057	7.636526	8.930239	10.86979	7.596076
Probability	0.261893	0.000098	0.021966	0.011503	0.004362	0.022415
Sum	627.0000	734.6000	19.88128	4.57E+10	203.8505	193.6405
Sum Sq. Dev.	112.0000	92.38421	12.33983	3.03E+19	828.9707	200.2895
Observations	19	19	19	19	19	19

The figures show that the overall amount of foreign investment in the economy is moderate, which implies a consistent flow of funds from outside sources. Nevertheless, the large standard deviation suggests that FDI inflows are very volatile, implying that the levels of foreign investment change a lot. This volatility may result from a host of macroeconomic reasons like changes in policy, investors' perception, openness in trade, or shocks in the global economy. Further, the broad spread of the minimum to maximum value is an indication that FDI over time is not steady, possibly meaning that an unpredictable investment environment prevails. Fluctuation at large values for FDI will have an impact on economic matters, given that it affects employment, infrastructural growth, and general economic development.

Looking at the corporate tax, the study finds that the mean value is pretty much constant in the long term, which suggests that tax policy has not really changed much. The low standard deviation implies that corporate tax rates are stable and offer a predictable tax regime to business and investors. A consistent tax policy can be seen as a favorable aspect for foreign investors as it may reduce the uncertainty and clears the way for long-term planning. even, stability is not the only thing that has a significance. The real tax rate itself is just as significant. If they are very high, they would deter investment even if they were predictable. On the other hand, a competitive tax

rate coupled with stability could increase FDI inflows because the nation would become more appealing to multinational companies. Shifting focus to direct tax collection, the descriptive statistics show high volatility, as evidenced by a larger standard deviation. This shows that collection made from direct taxes changes over time, maybe it depends on changes made in economic activity, income levels, changes in tax policy, or compliance rate. As direct tax collection relies on economic growth and taxable income, any bigger changes or fluctuations in the collection can be a sign of underlying economic instability. A volatile tax regime can produce an unstable investment environment, which can deter foreign investors who prefer a stable financial environment. If the revenue from taxes is unstable due to constant policy shifts or economic recessions, foreign investors may view the nation as less stable, and this can negatively affect FDI inflows. The inflation rate is also a key determinant of investment, and the descriptive statistics reflect extreme fluctuations over time. The moderate mean value indicates that inflation rates are neither very high nor too low on average. The high standard deviation, however, reflects great variations, and thus inflation has not been constant and has gone through extreme highs and lows. High inflation may weaken the value of money, increase the cost of doing business, and may incentivize economic uncertainty, all of these incentives may discourage foreign investors.

Conversely, low and stable inflation offers a good investment environment for investment. The wide spread between the higher and lower inflation rates further showcases this volatility, implying that measures to control inflation may not have been efficient all the time. As inflationary pressures may result in cost push and narrower profit margins, stable inflation is important for the attraction of sustainable FDI inflows. Likewise, the interest rate also varies over time, as reflected in its standard deviation. The average interest rate indicates the overall price of borrowing in the economy. Interest rates have an effect on investment, with high rates increasing the price of capital, eventually making it costly for enterprises to fund projects. On the contrary, weak and decreasing interest rates support lending and investment, which may render in higher FDI inflows. The wide range of variation in interest rates, as indicated by the large range between maximum and minimum values, indicates that monetary policies have not remained stable over the years. Such instability may bring uncertainty among investors, especially those who use borrowed funds to fund their projects. If interest rates are too volatile, foreign investors would be afraid to invest substantial amounts of capital since they may expect increasing borrowing costs to impair their profitability.

FDI inflows are extremely fluctuating based on economic instability. To draw and maintain foreign investment, policymakers must focus for macroeconomic stability, price control, and interest rate consistency. A stable and competitive tax regime and sound monetary policies will build investor confidence. A secure and predictable economic environment will appeal to the nation for long-term foreign investment, leading to sustainable growth.

Correlation & Covariance Analysis

The correlation and covariance analysis from the EViews output gives interesting results on the inter-relationship of major economic variables, such as corporate tax, direct tax revenue, foreign direct investment (FDI) net inflow, inflation rate, and interest rate. The most striking finding is the high positive correlation (0.8922) between corporate tax and FDI net inflows. It indicates that with an increase in corporate tax, FDI inflows also increase. It may seem counterintuitive, but it could also mean that

even with increased corporate tax rates, other attractions like investment incentives, market potential, or economic stability could still draw foreign investors. It is essential to examine the broader economic context behind why this connection occurs. There is a weak negative relationship (moderate=-0.4368) between corporate tax and direct tax revenue.

Table 4.

Covariance Correlation Probability	COPERAT...	DIRECT_T...	FDI_NET_I...	FDI_NET_I...	INFLATION...	INTEREST...
COPERATE_TAX...	5.894737					
DIRECT_TAX_R...	-0.436842	4.862327				
	-0.081596	1.000000				
	0.7398	-----				
FDI_NET_INFLO...	0.892230	-0.289567	0.649465			
	0.456002	-0.162948	1.000000			
	0.0497	0.5051	-----			
FDI_NET_INFLO...	7.71E+08	-1.29E+08	9.62E+08	1.59E+18		
	0.251722	-0.046288	0.945980	1.000000		
	0.2985	0.8507	0.0000	-----		
INFLATION_RATE_	-3.752400	-1.088695	0.247734	5.99E+08	43.63004	
	-0.233983	-0.074747	0.046539	0.071910	1.000000	
	0.3350	0.7610	0.8499	0.7699	-----	
INTEREST_RATE_	-1.181263	0.601754	-0.139473	-2.51E+08	19.94220	10.54155
	-0.149852	0.084051	-0.053304	-0.061257	0.929882	1.000000
	0.5403	0.7323	0.8284	0.8033	0.0000	-----

This can be interpreted to mean that, if corporate taxes are raised, there could be a decrease in direct tax revenues. One of the reasons for this trend is that increased corporate tax rates may deter business growth or trigger tax avoidance measures, thus lowering the total tax revenue generated from corporations. In the case of FDI net inflows and direct tax revenue, there is a negative weak correlation (-0.2895), which means that increased FDI inflows are weakly related to a decrease in direct tax revenue. This could imply that while foreign investment rises, it may not be reflected in direct tax revenue but rather in increased profit repatriation by multinationals or tax incentives given to foreign investors. The relationship between FDI net inflows and inflation rate is weakly negative (-0.1592), implying that greater FDI inflows may be linked to lower inflation rates. This would mean that foreign investments stabilize prices by raising output capacity and overall economic output.

However, weak correlation means that other variables might contribute more to the influence on inflation. Likewise, the correlation between interest rate and FDI net inflows is extremely weakly negative (-0.1394). This shows that the fluctuation in interest rates does not affect foreign investment influx. Although higher interest rates might make borrowing cost a lot, they might not be the major factor of determining of foreign investors' choice in investing. Overall, the analysis picks up key economic relationships. A high correlation between FDI inflows and corporate tax calls for in-depth evaluation to create the underlying forces. The forecasted positive correlation between interest rates and inflation is authenticated, resonating typical monetary policy forces. Moreover, the weak or even negative correlations of FDI inflows with tax collection, inflation, and interest rates signal that foreign investment flows are more incentivized by other macroeconomic variables than by direct policy actions in terms of fiscal or monetary policy.

Regression Analysis

Dependent Variable: FDI_NET_INFLOWS_OF_GDP_
Method: Least Squares
Date: 03/08/25 Time: 13:11
Sample (adjusted): 1 19
Included observations: 19 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI_NET_INFLOWS BOP CURREN...	5.82E-10	4.18E-11	13.93476	0.0000
INTEREST_RATE_	0.048644	0.048189	1.009453	0.3312
COPERATE_TAX RATE_	0.068731	0.021543	3.190377	0.0071
DIRECT_TAX_RATE__	-0.048424	0.023380	-2.071162	0.0588
INFLATION_RATE_	-0.019850	0.024361	-0.814804	0.4299
C	-1.032362	1.164864	-0.886252	0.3916

R-squared	0.960187	Mean dependent var	1.046383
Adjusted R-squared	0.944874	S.D. dependent var	0.827977
S.E. of regression	0.194401	Akaike info criterion	-0.185701
Sum squared resid	0.491291	Schwarz criterion	0.112543
Log likelihood	7.764160	Hannan-Quinn criter.	-0.135226
F-statistic	62.70454	Durbin-Watson stat	1.601858
Prob(F-statistic)	0.000000		

The regression analysis throws significant light into the determinants of foreign direct investment (FDI) net inflows expressed as a ratio of GDP. The research uses the least squares estimation with 19 observations, to investigate whether corporate tax rate, direct tax rate, inflation rate, or interest rate is affecting FDI. The findings confirm that the rate of corporate taxation has a positive and statistically significant effect on FDI inflows, with the coefficient being 0.0687 and p-value being 0.00709. This implies that an increase in the corporate tax rate is surprisingly related to increased FDI inflows, perhaps implying that foreign investors value economic stability more than they value tax expenses. Conversely, the coefficient of the direct tax rate is negative (-0.0482), indicating that increased direct taxation reduces FDI.

Nevertheless, its statistical significance is poor because its p-value is 0.0588. Inflation is also negatively correlated with FDI, and its coefficient is -0.0198, indicating that increased inflation decreases foreign investment. Yet, the effect cannot be termed statistically significant due to the high p-value (0.42985). In the same manner, the coefficient of interest rate is positive (0.0486), which suggests that high interest rates bring FDI in, but since the p-value (0.3313) is not statistically significant, it suggests otherwise. The constant shows a negative (-1.0326), but with a high p-value (0.39158) shows that there is no significant contribution. The performance of the model is sound, as its R-squared is 0.9601, implying that 96% of FDI inflows variation is verified by independent variables. The adjusted R-squared (0.9449) moreover makes sure of the model's soundness. The F-statistic is (62.70) and its virtually zero p-value imply that the overall model is statistically significant. Moreover, the Durbin-Watson value (1.58) indicates no significant autocorrelation issues in the crumbs, making sure of the reliability of the model. From a policy point of view, the evidence suggests that tax policies of corporations are an important determinant of FDI, with direct taxation, inflation, and interest rates showing little statistical influence. Governments should focus on maintaining balance in taxation, making sure that there is macroeconomic stability, and maintain investor's confidence in order to extend FDI inflows. Even though the model is characterized by good explanatory power, other studies mixing factors such as trade policies, political stability, and market size might give better insight into foreign investment determinants.

Augmented Ducky Fuller & Co-integration test

Group unit root test: Summary
Series: FDI_NET_INFLOWS_ _OF_GDP_, FDI_NET_INFLOWS__BOP
CURRENT_US$_, INTEREST_RATE_, COPERATE_TAX RAT E_,
DIRECT_TAX_RATE , INFLATION_RATE_, YEAR
Date: 03/08/25 Time: 13:24
Sample: 1 22
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 3
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross- sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.83820	0.0000	6	104
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.07401	0.0000	6	104
ADF - Fisher Chi-square	44.5131	0.0000	6	104
PP - Fisher Chi-square	20.8073	0.0533	6	110

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

The results of the panel unit root test reflect whether the series, such as FDI_NET_INFLOWS and other macroeconomic variables, are stationary or have a unit root. The Levin, Lin & Chu (LLC) test under assumption of the common unit root process for the panel has a test statistic of -4.83820 with a p-value of 0.0000, yielding in the rejection of the null hypothesis. This shows that the series is stationary. Also, the (IPS) test, where there is an individual unit root process, renders a statistically significant outcome (p-value = 0.0000), also proving that the series does not have a unit root. The Augmented Dickey-Fuller (ADF) Fisher Chi-square test, which collects ADF test statistics for all cross-sections, also shows a strongly significant p-value (0.0000), confirming the finding that the series is stationary. Again, however, the Phillips-Perron (PP) Fisher Chi-square test has a p-value of 0.0533, just above the 5% significance level, and so cannot reject the unit root hypothesis at this level. Still, overall findings point firmly to stationarity.

Date: 03/08/25 Time: 13:34
COPERATE_TAX RATE_ DIRECT_TAX_RATE INFLATION_RATE_ YEAR
Sample (adjusted): 1 19
Included observations: 19 after adjustments
Null hypothesis: Series are not cointegrated
Cointegrating equation deterministics: C
Automatic lags specification based on Schwarz criterion (maxlag=3)

Dependent	tau-statistic	Prob.*	z-statistic	Prob.*
FDI_NET_INFLO...	-3.707517	0.6205	-16.10908	0.6089
FDI_NET_INFLO...	-3.969407	0.5171	-17.21692	0.4970
INTEREST_RATE_	-4.380870	0.3677	-18.91224	0.3457
COPERATE_TAX...	-4.693121	0.2734	-20.31222	0.2398
DIRECT_TAX_R...	-4.929221	0.2144	-20.10022	0.2549
INFLATION_RATE_	-4.364659	0.3733	-19.12305	0.3308
YEAR	-3.547098	0.6831	-15.23680	0.6865

*MacKinnon (1996) p-values.
Warning: p-values may not be accurate for fewer than 25 observations.

Intermediate Results:					
Rho - 1	-0.894949	-0.956495	-1.050680	-1.128457	-1.111679
Rho S.E.	0.241388	0.240967	0.239834	0.240449	0.226543
Residual variance	0.012783	4.54E+16	0.841160	1.677815	2.533330
Long-run residual variance	0.012783	4.54E+16	0.841160	1.677815	2.533330
Number of lags	0	0	0	0	0
Number of observations	18	18	18	18	18
Number of stochastic trends**	7	7	7	7	7

**Number of stochastic trends in asymptotic distribution

The results of co-integration test unveil if there is long-run relationship between FDI (dependent variable) and independent variables such as interest rate, corporate tax rate, direct tax rate and inflation rate. The null hypothesis is that the series are not co-integrated, which may mean that they do not have a stable long-term relationship. Here, the p-values of tau-statistic and z-statistic for all variables are higher than 0.05, with the FDI_NET_INFLOWS tau-statistic p-value being 0.6208, and comparable non-significant values for other variables. As none of the p-values are lower than 0.05, we cannot reject the null hypothesis, indicating that there is no co-integration among the variables. This suggests that FDI and the independent variables don't move together in the long run and have short-run relationships instead.

According to the Augmented Dickey-Fuller (ADF) test yields from the previous unit root test, a whole lot of variables were non-stationary at level since their p-values were all higher than 0.05. This indicates that these series have a unit root and are stochastic trending. But for a co-integration dynamic to hold, at least some of the non-stationary variables must have a common long-run equilibrium, which means, they must be co-integrated even though they are on their own non-stationary. The co-integration test results indicate that the p-values of the tau-statistic and z-statistic are all larger than 0.05, so we cannot reject the null hypothesis of no co-integration. This shows that FDI and the independent variables do not maintain a stable long-run relationship. In other words, these variables do not move simultaneously in the long run. In light of these results, the better course of action would be to analyze the short-run dynamics and not long-run relationships. Conclusively, failure of co-integration reflects that FDI and its determinants lack a long-run equilibrium dynamics and render the policy prescriptions incentivized by long-term causality can be unreliable and not predictable. Rather, efforts should be targeted at short-run interactions.

CONCLUSION

The evaluation of foreign direct investment (FDI) as the dependent variable, and corporate tax, direct tax revenue, inflation rate, and interest rate as independent variables, indicates important information about the direct incentives of investment choices. The yields of correlation show that corporate tax has a solid correlation (0.8922) with FDI, which is contrary to expectation because higher taxation usually deters investment. But this implies that even with higher corporate taxation, investors might be drawn by other positive conditions like infrastructure, economic stability, or incentives from the government. Direct tax revenue has a negative weak correlation (-0.2895) with FDI, meaning that though greater taxation may slightly discourage foreign investment, it is not the deciding incentive. This could show that investors consider broader macroeconomic factors beyond taxation policies. Inflation rate

shows a negative correlation (-0.1592) with FDI, meaning that as inflation increases, FDI inflows tend to decline. This aligns with economic theory, as high inflation creates economic uncertainty and reduces investor confidence. However, the weak correlation suggests that while inflation does have an impact, it is not the dominant factor influencing investment flows. Similarly, interest rate exhibits a very weak negative correlation (-0.1394) with FDI, indicating that changes in borrowing costs have only a minor effect on foreign investment. Although higher interest rates typically make capital more expensive and reduce investments, foreign investors may still be attracted to other economic advantages, such as market potential and trade policies. Covariance analysis upholds the findings made above with direct tax income, inflation, and interest rates having a negative dynamic with FDI, and rising as these increase. The positive covariance between corporate tax and FDI indicates that increased tax rates have not deterred investment in this instance. This may be attributed to the existence of other incentives or stable economic conditions that take over the tax burden.

Comprehensively, these results show that FDI is determined by a combination of economic variables, but that taxes on their own and solely are not the deciding factor. Inflation and tax burdens do have some effect, but not a particularly impactful one in comparison to other considerations like conditions of the market and investor sentiment. Policymakers' intent on supporting and encouraging greater FDI should prioritize macroeconomic stability, inflation management, and investment-friendly policies. Providing particular tax incentives, enhancing infrastructure, and providing political stability can make the economy more desirable to foreign investors. In addition, although interest rates and inflation have had weak negative impacts on FDI, having a stable and predictable economic climate will raise investor confidence and maintain FDI inflows.

IMPLICATIONS AND POLICY SUGGESTIONS

The results showcase that corporate tax policy has a higher impact in the movement and direction of FDI inflows, and direct taxation shows a moderate negative influence. Neither inflation nor interest rates indicate strong direct effects on FDI in this context, but they could influence investment indirectly by influencing the general economic framework. Policy makers need to give importance to maintaining corporate tax rates in order to keep investors supportive and confident, ensuring a stable tax reign that will not discourage investment. moving forward, although inflation and interest rates did not play an important role in this research, stability of macroeconomic incentives is still important in getting foreign capital. Overall, this evaluation verifies sound evidence that policies on taxation precisely corporate taxation rates are incentives of FDI influx. Future research could, however, add more variables like political stability, willingness to trade, and expansion of infrastructure in order to better understand driving factors of foreign investment choices.

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