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Factors Determining the Economic Growth of Pakistan: A Descriptive Analysis

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Abstract

The present research endeavor is to find the factors determining the economic growth of Pakistan. The research is purely quantitative and used secondary data from Pakistan's economy covering the span from 1970 to 2018. About 49 years of data sampling has been taken to conduct the research. The dependent variable that is taken in this study is gross domestic product (GDP), and independent variables are foreign direct investment (FDI), consumer price index (CPI), external debt (ED), and population growth (PG) to conduct the research. The annual data of these variables are taken from the World Bank site. The study reveals that the consumer price index is highly correlated with economic growth as compared to foreign direct investment and population growth. Meanwhile, only the external debt shows a negative correlation with economic growth measured in the gross domestic product (GDP). From data knowledge, the study indicates that the external debt null hypothesis is not proved, the alternative hypothesis leads, and FDI, CPI, and PG proved the null hypothesis.

Keywords: *Foreign Direct Investment, Consumer Price Index, External debt, Population Growth.*

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INTRODUCTION

Various factors can influence a country's economic performance and its steady growth. Economical models are currently being created to examine how interdependent things are. Borrowing, hyperinflation, exports, and direct investment are only a few of the many variables that affect performance of the economy and its purposes (Agyapong & Bedjabeng, 2019).Foreign direct investment has to turn into the potential characteristic of establishinginvestment within world's largest emerging nations. FDI is thought to be the most important factor heavily influencing the economic progress of poor nations in the twenty-first century (Patricia & Ugwuanyi, 2019). Most developing countries welcome foreign direct investment due to its benefits for both countries. Foreign firms and investors invest in other countrie s due to cheaper raw materials and cheap labor costs to maximize their profit. From the host country's point of view, the foreign direct investment provides capital, managerial skills, and entrepreneurial ability and increases the opportunities for employees, improves the standard of living, exchange of technological advancement, as well as the outflow of exports (Dinh et al., 2019). Many past studies indicate that there exists an optimistic impact between FDI and the economic growth of the host country both in the short and long-run effects if the financial system of the home country has accomplished a certain level of maturationCicea & Marinescu, 2021; Osei & Kim, 2020; Baiashvili & Gattini, 2020). However, the impact varies from country to country based on infrastructure, domestic investment, human capital, investment policies, and overall macroeconomic policies (Udmeba et al., 2020).

Pakistan is a third world nation with slow growth, a shortage of funding and reserves, a low degree of modernization, population increase, a high enough level of budget deficit, a lack of managerial and technological skills, and a shortfall in its current account balance.FDI is the most crucial factor for controlling these weaknesses for ameliorating the economic growth of Pakistan (Tabash et al., 2022). The Government of Pakistan has opened the doors for FDI to attract foreign investors and multinational businesses. However, Pakistan has failed to attract more FDI to augment its economic growth as compared to India and China as both countries have successfully attracted more foreign direct investment (Degong et al., 2020). Being the most imperative macroeconomic factor, Inflation has also been one of the most serious connotations for economic growth and income distribution. It depends on the state of an economy, that how the two variables economic growth, GDP, and CPI are correlated to each other. Escalated growth without an increase in inflation, if the significant productivity of the economy is developingsufficiently to be equated to demand (Ledhem & Mekidiche, 2020). If demand keeps increasing and productive ability is not booming, there are possible chances of an increase in general price levels in the end without any further progress in the turnout. Inflation is always significantly correlated with an increase in price changeability, which can affect the future profitability of an investment project (Moradi et al, 2021). Inflation may also affect the economy's balance of payment by endeavoring exports extra costly (Pantelopoulos, 2022). However, inflation can interact with the tax system to disturb borrowing and lending decisions.(Swamy, 2020) addresses the conflict amid economic expansion and inflation expansion. In particular, a ten percentage point rise in average annual increases annually reduces output by 0.2 to 0.3% every year.

Many researchers have been endeavoring to inquire about the consequence of external debt on the economic growth of Pakistan. The investigators employed different data, ways, and techniques to check the relationship between economic growth and the external debt of Pakistan (Mohsin et al., 2021; Ud-Din et al., 2020). The researchers were of the view that there exists a positive impact of external debt on economic growth; equally, external debt boosts the economy and current account deficit. While the other point of view outlines that external, debt harms the economic growth of Pakistan, and when it fails to repay the debt to its lenders. Pakistan is one of the most densely populated countries in the world (Khan et al., 2019). Whereas the population scenario is different in developed and developing countries. In developed countries, the population is well controlled because they had better utilize their labor force. China is exemplary for transition economies, trying to manage basic needs and not focusing any notice on population growth. In developing countries, population growth and economic growth have always a close relationship with each other because lofty population growth impacts negatively the economic growth of the transiting economies (Naqvi et al., 2022).

According to (Schröder & Storm, 2020) economic growth is the processing, that paves to an augment in the real per capita income of a nation over a long period. The investigators contended that economic growth is measured by growing the number of goods and services in each successive period thus growth happens when there is an increase in an economy's productive capacity, which is used to produce more goods and services. (Hysa et al., 2020) describe economic growth concerning two meanings growth or augment in output within a specified time and secondly the sustainable growth in the economy. FDI is described as investment made by firms, individuals, and investors belonging to another country's investment in host countries. FDIhappens when firms invest directly in new facilities to produce in foreign countries to earn an optimal profit. When firms undertake FDI it becomes multinational enterprise (Contractor et al., 2020).

The measure of the value of all finished goods and services produced by a country at current market pricing is called GDP. All the changes in the prices of finished goods and services that took place in one year due to inflation are comprised of GDP.

According to (Lipson, 2019) when countries borrow from foreign lenders including commercial banks, governments, or international financial institutions is known as external debt.These loans with interest must be paid in the currency in which the loan was made. Money in the form of goods and services is transferred from the debtors' country to the creditors' country and is named external debt (Mehar, 2021).

Research Objectives:

• To ascertain the connection between Pakistan's economic expansion and foreign direct participation.
• To ascertain the connection between Pakistan's economic expansion and the cpi.
• To ascertain how Pakistan's economic expansion is related to its external borrowing.
• To ascertain the connection between Pakistan's economic and population

expansion.

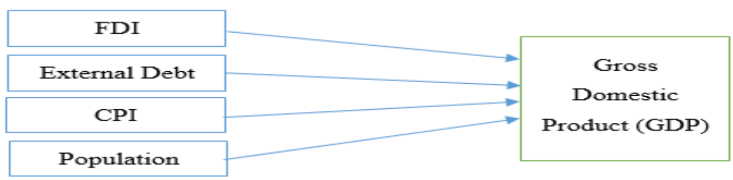
LITERATURE REVIEW

Ali & Shaheen, 2019 their study reveals the positive and significant contacting of FDI on Pakistan's economic growth in both small and turnover of long by applying a period of data from the time of 1971-2018. The Autoregressive Distributed Lag-Error Correction Model (ARDL-ECM) technique is applied to examine the short-run and long-run effects and shows FDI has positive effect on GDP.

The overall consequence of the study is that FDI has a positive and significant impact on the short-run and long-run analysis of the economic growth of world economy (Abbasi et al., 2022).The study evaluates the level to which FDI has provided the GDP by Nigeria data taken from 2000 to 2017. The purpose of the study was to outline the effect of FDI in the financial sector, oil sector, and non-oil sector on the growth of the Nigerian economy (Okegbe et al., 2019). (Rehman et al., 2021) found that there is a significant relationship between GDP, FDI, interest rate, and exchange rate on Profitability in the sugar industries of Pakistan. For the rationale of analyzing the data of this research Ex-post fact research design and time series data which is the feature of statistics that involve the various techniques of depicting data collections has been espoused. In addition, the results of the findings show that the financial sector on FDI, the oil sector, and the non-oil sector have a positive effect, and are statistically significant on GDP. (Weber & Sciubba, 2019) study depicts that there exists still a large controversy at national and domestic levels regarding the impact of population growth on economic growth. The present study examines the influence of population growth on the economy of African countries, the data taken from 1980-2015. The annual secondary data of 53 African countries are taken from the World Development Indicators. Descriptive statistics and dynamic panel models were used to examine the data.Population growth is a positive impact on the economic growth of countries like Africa. The study highlights population growth has a positive impact on economic growth. After all, the research purpose urges that African countries should espouse and enforce pragmatic policy measures.(Tran & Hoang, 2019) hisstudy concluded that there is a positive and significant relationship between FDI and GDP. Research-based upon taking the data from the span of 1991-2015. The research exhibits a significant and positive correlation between FDI and GDP.

Conceptual Framework:

Independent Variable Dependent Variable



(Figure 1 Conceptual Framework)

Gross Domestic Product (GDP):

The data is measured in \$. In the purposed model, GDP is materialized as a dependent variable. The horizontal axis (y-axis) is GDP and the vertical axis (x-axis) is the year. The trend is purely fluctuation in the following graph, the source is the World Bank (Akpanke et al., 2022).

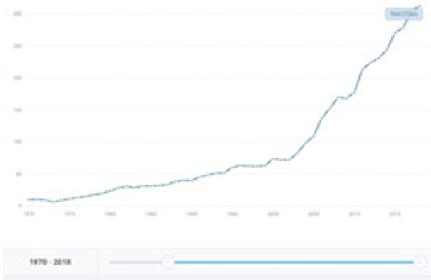


Figure 2: Trend analysis of GDP

Foreign Direct Investment:

FDI is the flow of capital from overseas countries and multinational firms that createssources for revenue generation, technology advancement, and labor skill development facilities for transitionary economies. It becomes a golden sparrow for developing countries to create poverty reduction and high labor skills. We have used FDI as the independent variable and taken 48 years of data from the World Bank in the net. In Flows (BOP), current US \$, and unfolded highly useful and significant, the graph depicts (Wang, 2022).

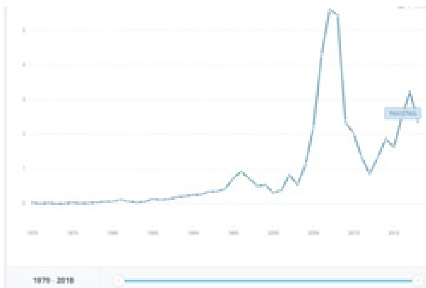


Figure 3: Trend analysis of FDI

Population growth:

We have materialized population as an independent variable to establish its impact Pakistani economy; the data is taken from 1970 to 2018 (Ceesay & Ndiaye, 2022). The secondary data source is taken from World Bank. Population growth is taken in annual % shown in the graph.

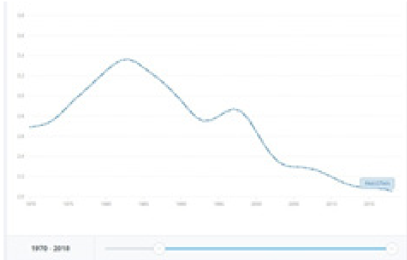


Figure 4: Trend analysis of Population Growth

External Debt:

In this study, we have taken external debt in the current US $, a Data series taken from (1970- 2018) and World Bank as the data source. The variable used as an independent variable in this study is to interpret the determinants influencingthe economic growth of Pakistan. The graph depicts the trends in external debt in Pakistan (Alimov, 2022).

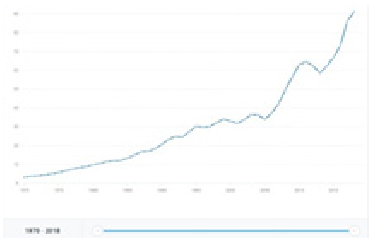


Figure 5: Trend analysis of External Debt

Consumer Price Index

We have used CPI as the independent variable and taken 49-year data from 1970-2018 to evaluate the impact on Pakistan's economy, the data of the variable is obtained from World Bank in &. The graph shows the trend in CPI in Pakistan (Agyeman et al., 2022).

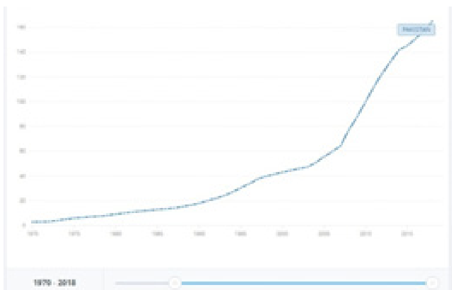


Figure 6: Trend analysis of CPI

Research Hypothesis

H1: Foreign Direct Investment, (FDI) and GDP have significantly made the relationship.
H2: Inflation (CPI) and GDPhave significantly made the relationship.
H3: External debt (ED) and GDP have significantly made the relationship.
H4: population growth (PG) and GDP have significantly made the relationship.

RESEARCH METHODOLOGY

The population of the study includes these key indicators of macroeconomic factors (FDI, CPI, External debt, and population growth). And the sample size was of 49 years data 1970-2018 to answer the research question and test the hypothesis (Abbasi et al., 2022). The study work is purely based on secondary data from 49 years (1970-2018). The annual data of these indicators are collected from the World Bank website,

Data analysis is processed via SPSS in which we have used multiple regression and correlation to describe the relationship of the variables and to conclude the result. Based on the study, the regression model equation is:

$$GDP = ß0 + ß1FDI + ß2CPI + ß3ED + ß4PG + \mu$$

GDP= gross domestic product
CPI= consumer price index (a measure of inflation).
ED = external debt
PG = population growth
μ= error term

DATA ANALYSIS AND DISCUSSION

In this part, tables are mentioned and their interpretation is done to better picture the results. This part is mainly divided into two parts:

DESCRIPTIVE ANALYSIS

Analysis of Data and Hypothesis

Descriptive Analysis

The following table shows the mean and std. deviation and sampling size of the research variables.

Table 1: Mean and Standard Deviation of Variables

	Mean	Standard Deviation	
GDP (Current US$)	89462406778.17	88556803631.871	9
Foreign Direct Investment	946524031.80	135183608 6.693	9
Consumer price index (2010 = 100)	46.39	48.224	9
External debt stocks, total (DOD, current US$)	30450343189.08	23046216703.840	9
Population growth (annual %)	2.70	. 418	9

The mean shows the average value and the standard deviation reflects what extent the deviation is from the mean. And N is several sampling i.e. 49. Hence the GDP has 89462406778.17 as this mean and 88556803631.871is as the Standard Deviation from the mean. FDI has 946524031.80 and 1351836086.693 significantly deviates from its mean. CPI has 46.39 means and it deviates 48.224 from its mean. External debt means is 30450343189.08 and 23046216703.840 at this point deviation starts from its mean. The population growth means is 2.70 and 418 deviations from its mean (Alimov, 2022).

Correlation Coefficient

Table 2: Correlation Analysis

	GDP	FDI	CPI	ED	PG
GDP	1.00				
FDI	0.678	1.00			
CPI	0.994	0.619	1.00		
External Debt	0.972	0.653	0.973	1.00	
Population Growth	-0.842	-0.674	-0.847	-0.841	1.00

It can be seen that correlation between GDP and population growth is -.842 which suggests that population growth has a negative impact on GDP, when it rises the value of GDP declines and vice versa. The correlation between GDP and external debt is .972% which means they have a strong positive relationship. When external debt rises the value of GDP also rises. And the null hypothesis is approved for external debt so there is no significant relationship so, it does not matter whether they are positively or negatively correlated. The correlation between GDP and CPI is .994% which means they have a strong positive relationship. When the CPI value increases the GDP value also rises. The correlation between GDP and FDI is .678% which means they have a strong positive relationship. When the FDI value rises the GDP value also rises (Akpanke et al., 2022; Cicea& Marinescu, 2021; Ledhem& Mekidiche, 2020).

Multiple Regressions

The result of multiple regression lets us know whether our hypothesis is proven or not. To start the test first, we have to follow the two assumptions in the multiple regressions. Step I test of assumption, and step II includes the output analysis and testing hypothesis.

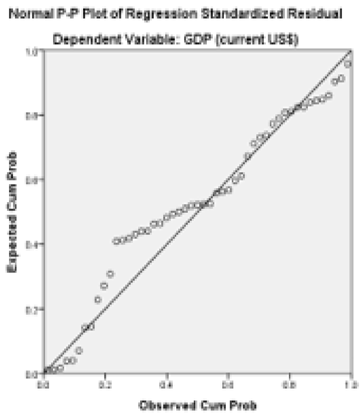


Figure 7: Normal P-P Plot of the Model

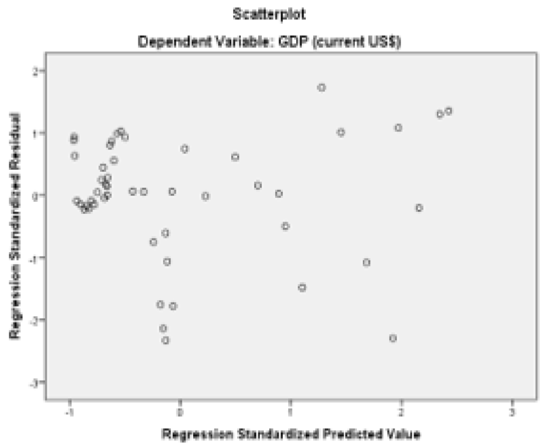


Figure 8: Screen Plot of the model

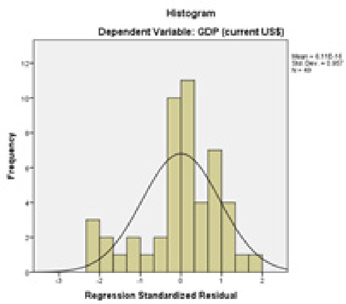


Figure 9: Histogram of the model

Table 3: Co-linearity among variables

	Tolerance	VIF
Constant		
Foreign Direct Investment	0.504	1.9 84
Consumer price index (2010 = 100)	0.049	2.0 369
External debt stocks, total (DOD, current US$)	0.049	2.0 369
Population growth (annual %)	0.245	4.0 78

Step 1:

Testing the assumption:

Sample size: in multiple regression assumption sample size should not be too low or too high. We have used 49 years' sample for using four independent variables which indicates to meet the first assumption.

Multicollinearity:

The accurate method to check the multicollinearity among the independent variable is tolerance (must not be less than .1) and VIF (must not be above 10). So FDI and population growth are no multi-co linearity but CPI and external debt have multi-co linearity.

Outliers: very high and very low scores in data are considered outliers by the regression model.

Linearity: the relationship between residuals and predicted values must be linear and this is checked by a normal p-p plot graph. The graph shows the almost linear relationship between residuals and predicted.

Normality: refers to the normal distribution of the variables. The histogram shows the bell curve means the normal distribution of the variables.

Homoscedasticity: it refers to the state of condition in which Throughout all relevant variable values, there is an identical unpredictable disruption in the correlation between the independent and selected variables and the size of variance varies across the values of independent variables is the violation of the assumption. The assumption is tested with a scatter plot which shows the diffused spots and not forms any kind of linear or curvilinear pattern, which means this assumption is also approved (Mehar, 2021; Lipson, 2019; Naqvi et al., 2022).

Step no 2 **Table 4: Regression OLS Analysis**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-3.7763	13.9290	-2.711	0.010
FDI	7.676	0.970	7.914	0.000
CPI	17.944	87.1044	20.60	0.000
External Debt	-0.005	0.182	-0.026	0.979
Population Growth	13.665	45.0114	3.036	0.004
R-Squared	0.995	**Adjusted R Square**	0.995	

This table shows the R model summary, which tells the R, R Square, and Adjusted R Square, which shows the correlation and variance among the variables. The result interprets that 0.995 variance in GDP due to changes in these four variables; FDI, CPI,

external debt, and population growth. R is 0.998 showing the relationship between GDP and the other four variables is very much strong which means the shared variance is highly fit in the model (Okegbe et al., 2019; Pantelopoulos, 2022; Rehman et al., 2021).

Testing the Hypothesis

H1: There is a significant relationship between FDI and GDP.

From the above table, the beta is 0.117 indicating the strong relationship variation in Economic growth. The t valueand significance (p) value are 7.914 and 0.000 respectively, which is less than 0.05 tends to lead to the hypothesis approved.

H2: There is a significant relationship between CPI and GDP.

From the above table, the beta is 0.977 indicating the strong relationship variation in Economic growth. T valueand significance (p) value is 20.601 and 0.000 respectively, which is less than 0.05 tends to lead to the hypothesis being approved.

H3: There is a significant relationship between External Debt and GDP.

From the above table, the beta is -0.01 indicating a negative relationship in Economic growth. T valueand significance (p) value is -0.26 and 0.979 respectively, which is greater than 0.05 and tends to lead to the null hypothesis not being approved. Analternative hypothesis: “H0: There is no significant relationship between external debt (ED) and gross domestic product (GDP)." hence proved for external debt. But due to economic considerations, this variable is being used for consideration.

H4: There is a significant relationship between Population growth and GDP. From the above table, the beta is 0.064 so, which indicates the strong relationship variation in Economic growth. The t-valueand significance (p) values are 3.036 and 0.004 respectively, which is less than 0.05 tends to lead to the hypothesis being approved.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study is conducted to ascertain the impact of macroeconomic indicators such as (FDI), inflation (CPI), external debt(ED), and population growth (PG) on the economic growth of Pakistan from 1970-2018 almost 49 years (secondary data) is taken from World Bank site (www.worldbank.org). The majority of study materials in published studies highlight the benefits of hyperinflation, mass migration, and investment from abroad. Multiple linear regression and correlation analysis have been utilized in data evaluation to demonstrate the link between the variables. Although, the study reveals that the consumer price index is more highly correlated with economic growth than foreign direct investment and population growth. Meanwhile, only the external debt shows a negative correlation with economic growth measured in the gross domestic product (GDP). From data knowledge, the study indicates that the external debt null hypothesis is not proved and the alternative hypothesis leads and FDI, CPI, and PG proving the null hypothesis.

Recommendation

Our findings have given us the chance to formulate some Pakistani policy implications. The determination coefficient demonstrates that foreign direct investment (FDI) has a favorable impact on Pakistan's economic growth, thus the government must focus on boosting the FDI ratio in the nation to speed up Gross domestic product. To encourage substantial effort in Pakistan and entice more international enterprises and entrepreneurs, the authorities should foster a biz culture and make it simple to transact there. The Pakistani government needs to tighten monetary stimulus and utilize the state Pakistan's central bank to minimize risky interest rates in order to reduce the state's CPI.To decrease the risk for CPI, it is also necessary to enhance stockpile strategy, currency rate policy, and wage management. National policy must be maintained in accordance with the objectives of credit counseling. It is necessary to define the adjustment of the foreign debt framework, the choice to borrowing, and the strategy to raise the money. We need to expand our working population, start new businesses to reduce migration flows, and start new endeavors for Pakistan's younger breed even though. According to our research, the hypothesis is confirmed and is contributing to the nation's economic growth. Economic growth is equal to population growth plus GDP per capita.The nation's local government is accountable for building the city's infrastructure, establishing stable economic strategies and an atmosphere that is conducive to business, as well as expanding the home market. To open up chances for both local and international investors, as well as for local business owners, so that no path could go untried for Pakistan's economic development. Other factors that may have a significant impact on the economy of Pakistan including the overall trade in goods (imports plus exports), currency exchange, cost of borrowing, and labor force, were not taken into account in the study. Research is also required to investigate this discrepancy in the outcomes.

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