

## ECONOMICS IS NOTHING WITHOUT THE IMPACT OF MACROECONOMIC DETERMINANTS ON ECONOMY OF PAKISTAN

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### ABSTRACT

*This research aims to find the impact of Macroeconomic Variables on Economic Growth of Pakistan. The study helps to understand the implications of Personal Remittances, Inflation Deflator, Electric Consumption, Foreign Direct Investment, Imports, Mineral Resources, GDP Per Capita, Gross Capital Formation, Domestic Credit to Private Investment, Real Effective Exchange Rate, and Broad Money on the Gross Domestic Product of Pakistan. The 51 years of time series data is taken from 1971 to 2021 which is collected from the website of State Bank of Pakistan, International Financial Statistics and from World Development Bank Indicators for the years 2021-2022. The model is tested by using Ordinary least square. All the variables are significant.  $R^2$  is 0.98 which shows that selected independent variables are explaining the variation in dependent variable with the highest percentage. F-Statistics confirms the overall goodness of fit of the model. Stationarity level of the data is analyzed by Augmented Dickey-Fuller (ADF) test. Durbin Watson is 2.0, which is an indication of no autocorrelation. Descriptive Statistics are calculated to see the probability of Jarque Berra. To check the Normality Histogram is drawn. Stability of the model, serial correlation, heteroscedasticity, Normality and Structural Stability diagnostic tests have been applied on the data. LM Test, Ramsey Reset Test, Breusch-Pagan-Godfrey test, Correlation, Covariance Matrix, Correlogram, forecast model, CUSUM and CUSUM SQ and recursive stability graph has been tested to fulfill the conditions of time series analysis. Co-integration test has shown that there is long run association between variants. Another test to see the short run association between change ables show that there is neither one way nor two way causality among them. The findings are that macroeconomic variables Broad Money, Gross Capital Formation in \$, Minerals and GDP/PC\$ have positive significant relationship with is significant relationship with GDP and their respective t-values are 3.6808, 10.99676, 3.55973, 3.0824338 and 2.7287. Imports, Foreign Direct Investment, Electric Consumption and Direct Credit on Private Investment have significant negative relationship with Economic Growth of Pakistan. Their respective t-values are -3.10085, -2.72875, -2.61744 and -6.15435. Personal Remittances, Exchange Rate and Inflation Deflator have insignificant relationship with GDP and their respective t-values 0.809843, 1.062302 and -0.10167. Government should ensure peaceful environment for foreigners to invest in Pakistan. The law-and-order situation, political unrest, high rate of unemployment, increase in prices, devaluation of currency and widening energy crisis needs to be handled from individual level to aggregate level.*

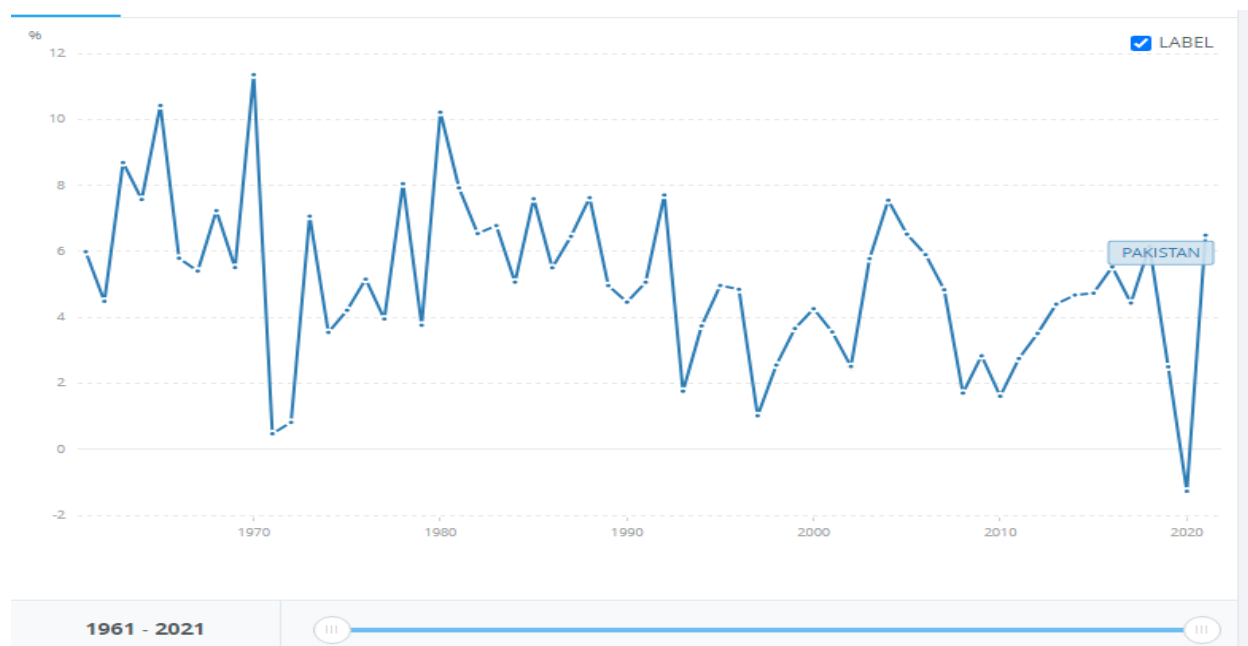
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## INTRODUCTION

Gross domestic product is utilized as a mark of financial development and improvement of an economy. The monetary circumstances and world arrangement of growing, less endlessly evolved or low pay, center pay or major league salary nations characterizations are based on the mathematical worth of financial development pace of the country. All the legislatures, monetary leaders use Gross domestic product for arranging and strategy plans. Monetary Result is the common cost of all items and administrations delivered inside the geological limits of a country throughout a specific time span (Mohsin and Naseem, 2018). The Gross domestic product is on the off chance that we take the complete result created of a country during one financial year and give it some cash esteem then it is known as the public pay of the country. (IJirshar, 2019). A country's pay can either be determined by summarizing result of all areas or by adding livelihoods of all variables of creation or by keeping record of a wide range of costs made by individuals living in a country. One strategy is that we purchase unfamiliar financial backers day to day family items and services. The alternate way is we see remuneration of the relative multitude of laborers, the pay of the specific business, rents, charges, loan costs and import levels (Samuel, Hatane and Nurina, 2015, Abbasi et al, 2021).



If we look in the past resources of Pakistan have declined negatively because of multi facet reasons like increase in imports, price hikes resulting in rising inflation, unsatisfactory level of exports, interest rate shocks, political instability, high growth rate of population, reduction in income and saving, decrease in consumption, recession in the economy, floods, climatic changes, energy crisis, oil prices, devaluation of currency, ill- managed banking system, low level of literacy, poor infrastructure, lack of modern health facilities, unemployment are the major causes of decline in GDP. When the inflation rate shot up, foreign investment also declined, which has devastatingly aftermath on GDP or the financial wellness of the country (Mohsin & Naseem, 2018). There have been numerous studies on the same topic. FDI, Gross National Income & Exchange rate are closely related to each other. FDI has significant positive impact on financial management (Mustapha, 2020). Low exchange rate lower all the things down, wages are reduced attracting investors in that country for earning profit (Azam et al. 2021). More investment means more production and it means higher value of Gross Domestic product (Khushnood et al, 019). A trade deficit occurs when imports exceeds exports and surplus occurs when exports outweigh imports (Lane & Milesi Ferreti, 2000; Alessandria & Choi, 2000).

In mid 2022, the contention among Russia and Ukraine pushed worldwide product costs higher, further speeding up expansion and homegrown expansion. dangers, for example, an ascent in development

weighed vigorously on worldwide financial gauges, with the effect of the conflict updated worldwide development conjectures for 2022 and 2023 somewhere near 0.8 rate focuses and 0.2 rate focuses to 3.6%, separately. The economy's monetary development estimate was modified somewhere around 1.1 focuses to 2.8%, while the viewpoint for created and developing business sectors was likewise reexamined somewhere around 0.6 and 1.0 focuses separately. Over the medium term, standpoints for all gatherings are updated downwards, with the exception of item exporters, which benefit from rising energy and food costs. (Financial Review 2021-2022)

Dollar Currency crisis is deteriorating economic conditions of the country. To get import consignments clear the commercial banks have bound dollar provision to importers with the NOC from the State Bank of Pakistan. This will lead to a situation in which there will be acute shortage of imported food items and medicines. The raw material to make medicine is not available, Pakistan Pharmaceutical association are demanding smooth supply of dollars to the importers otherwise even the life- saving drugs will not be produced. The grain importers are also complaining that due to NOC condition of SBP to get dollars from commercial banks to release the import consignments, the critical grain shortage is expected. There is only stock of pulses for three months and during month of Ramadan people will be suffering from the grain deficiency. Dollar is being traded in Grey Market with the rate higher than the open market by Rs. 15 to Rs,20/= .Dollar rate in open market is Rs.24 and in Grey market rate is Rs.250/=. It has resulted in "Flying of Capital" .Business men are worried about this situation and transferring their money to Bangladesh, Turkey and Dubai.

### **Problem Statement**

Pakistan is the top recipient country for remittances. Since 2001, remittances to Pakistan have increased dramatically. These inflows increase the income of the recipient's family. This sharp increase in income can have different effects on different families. Remittances motivate other families to migrate to developing countries for more income. Some families use these remittances as an investment opportunity, but according to (Jahjah, Chami & Fullenkamp, 2003), they quit their jobs to receive enough money to live happily ever after, leaving the economy in turmoil. Some families can negatively affect growth. Therefore, it is necessary to analyze whether these remittances are contributing or adversely affecting the economy.

In recent decades, Pakistani workers have started migrating to developed countries in search of better employment opportunities. These workers manage their family's finances by sending money to them. These remittances affect not only the lives of relatives living in their home country, but also the country's economy and other economic indicators. It is important to know whether remittances have a positive or negative impact on a country's economy. Are they important enough to change the country's economic figures? In addition to remittances, the effects of FDI have also been found, as they are similar to remittances but only sent for investment purposes. It is also analyzed whether exchange rate changes affect the country's economic growth, as large inflows of foreign remittances and foreign direct investment can affect the country's exchange rate.

### **Research Objectives**

The objective of the study is to find out the relationship between the selected variables and to find out how much the remittances are contributing to Pakistan's economy and how much significance is there by evaluating the data which is taken from different sources.

- To discover the impact of Selected Macroeconomic Variables on GDP of Pakistan.
- To check diagnostic and residual statistics of the time series data.
- To examine the Co-integration of selected Macroeconomic Variables in the short and long run.

### **Research Questions**

Following are the research questions researcher has proposed for this study.

- Are the selected variables have unit root (stationary)?
- Do the selected changeable are associated with each other both for short or long term?
- Do these selected determinants Granger Cause unidirectional or Bi-Directional in the Short and Long Run?
- Do the selected variables have significant or insignificant positive or negative relationship?
- Do the variables normally distributed?

- Do the variables have multicollinearity?
- Do the variables have Autocorrelation?
- Do the variables have heteroscedasticity?
- Do the model structurally stable?

### **Limitations of the Study**

The outcomes of the study may be effected by the followings limitations.

- Only key macroeconomic variables are chosen for this research.
- Some of the series are not available with the same time period and same base years.
- The data is available for annual basis but for quarterly and monthly basis there is difficulty in getting data due to non-availability of data from the authentic data sources.
- Data on different variables is collected from different sources as one source does not contain all the selected series.

### **Focus of Research**

The essential focal point of this study is to find the effect of key macroeconomic sign of Pakistan like Individual settlements, Unfamiliar Direct Venture, Genuine Powerful Swapping scale, Gross Capital Arrangement, Imports, Expansion Deflator, Wide Cash, Electric Utilization, Minerals, Oil Rents, Homegrown Credit on Confidential speculation on Financial Development of Pakistan. A few explores have been finished in the past to really take a look at the impact of these factors on Financial Development of Pakistan. The factors which will be engaged in this examination will be the Gross domestic product, settlements, unfamiliar direct speculation and conversion scale. As the inflow of settlements in Pakistan are expanding many years they are focal point of concentration and being an emerging nation their commitments is a big deal to the country. There is a discussion on public and global level that whether these factors influence the country's economy emphatically or adversely or their unfavorable impacts are more. So this exploration will find the impact of Macroeconomic Factors on Pakistan's economy. GDP has been chosen as intermediary for Monetary Development of Pakistan's economy.

### **REVIEW OF LITERATURE**

There is an influx of research on the economy of Pakistan. They are used to understand the connections between different stimulators of development. Research has revealed the relationship between employee remittances and various variables.

Dilshad (2013) conducted a study to identify remittances impacting Pakistan's economy. The time series data he used from 1991-2012. Ahmad (2001) analyzed the effect of her FDI in China on Pakistan's financial development. This is an exploratory concentrate wherein the determinants of Pakistan's monetary development were exploratory, unfamiliar direct venture, and Chinese interest in Pakistan's environmentally friendly power area. This Chinese FDI influence tried exchange receptiveness, expansion, trade rates, loan fees, settlements, and environmentally friendly power utilization on Pakistan's monetary development from 1990 to 2019. The limits test results show that there is a long-term connection between the factors. China's unfamiliar direct speculation and utilization of sustainable power affect Pakistan's monetary development.

Anwar (2021) used time series data from 1980 to 2017 to examine the impact of private financing on resident turnout in Pakistan. The money related improvement rate is GDP per capita. Various elements are new immediate theory, secret endeavor, development rate and refund rate. Check stationarity using the extended Dickie-Fuller test and evaluate the condition using the autoregressive distinction slack method. The assessment saw that as, for a really long time, there is a basic and negative association between the private region's local crediting to his DCPS and veritable GDP. GDP deflator and markdown rate will antagonistically impact his GDP in Pakistan. The impact of private hypothesis on Pakistan's flourishing is declining.

Zardoub (2020) analyzed the impact of money related streams on monetary improvement in non-modern countries using board data techniques. The audit explored the impact of new direct endeavor. Settlements and official improvement help for the period 1990-2016 using time series examination and

different control factors like local credit, future, gross fixed capital game plan, and extension. Board data examination results show that the impact of money related streams on monetary improvement is ambiguous. To conclude the impact on Pakistan's money related improvement, we similarly recollected three of his institutional variables for the model: administrative quality, government steadfastness, and law and order. (Ghazali, 2010) examined the causal association between new direct hypothesis, local endeavor, and financial turn of events (Pakistan's Total national output for the period 1981-2008). There is a two-way causal association between FDI, local secret endeavor and financial turn of events. There is a long one-way causality among FDI and GDP. Since there is serious solid areas for a between new direct endeavor, GDP, and local secret theory, cointegration results suggest that these elements supplement new direct hypothesis, support neighborhood speculation, and lift money related development. is appearing.

Ahmad (2013) used time series data from 1978 to 2011 to examine the impact of new repayments on Pakistan's financial turn of events. Different backslide examination shows that GDP is the dependent variable and new direct endeavor, settlements, development and change standard are the free factors. The Expanded Dickey Fuller (ADF) unit root test shows that all variables are level-fixed. Using the traditional least squares method, we insist that there is a positive and basic association among settlements and extension, and that the change scale unfavorably influences GDP. This model has neither heteroscedasticity nor autocorrelation. The explored models are furthermore essentially stable inside 5% of quite far, as shown by CUSUM and CUSUMSQ.

Khan (2011) used the Granger Causality and Board Co-Joining to take apart the association among FDI and yield for the period 1981-2008. For a really long time, FDI has a positive and basic relationship with GDP. For a really long time there is a one-way causality from GDP to FDI, but in the short run there is a two-way causality among FDI and GDP. The results show that at the area level, FDI drives improvement in the fundamental and organization regions, and this advancement drives improvement in his FDI.

Raza (2013) analyzed the effect of FDI and laborers' settlements on private reserve funds in Pakistan. Econometric tests ARDL, causality test, Toda, Yamamoto, altered Wald causality test, and change deterioration test were tried. The outcomes show a positive and huge connection between unfamiliar direct speculation and settlements from laborers and confidential reserve funds in both the short and long haul. There is a two-way causal connection between unfamiliar direct venture, settlements and confidential reserve funds.

Rehman (2022) Inspects the hilter kilter ARDL, the deviated positive and pessimistic impacts of unfamiliar direct venture, individual settlements, gross stores, gross reserve funds and data and correspondence innovation on Pakistan's monetary development from 1976 to 2019. I have affirmed the effect impact. Short-and long haul ARDL results show that complete stores are adversely affecting Pakistan's financial development. Individual settlements affect Pakistan's Gross domestic product. Negative shocks have negative long haul and momentary outcomes. Total reserve funds show that positive shocks emphatically affect financial development in both the short and long run. For unfamiliar direct speculation, positive shocks noticeably affect financial development in the long and present moment. Besides, correspondences and data innovation adversely affect Pakistan's financial development in both the short and long haul.

Kanewar (2017) utilized time series information from 1980 to 2015 to inspect the effect of outside factors on the monetary development of the Fii Islands. Fiji's financial development is impacted by outside variables like imports, settlements and unfamiliar direct venture. The ARDL model was utilized to decide the longterm unfavorable impacts of imports on financial development. Settlements and unfamiliar direct venture decidedly affect monetary development in both the short and long haul.

Jilani (2010) inspected the impacts of the macroeconomic factors expansion, genuine swapping scale, and loan cost on Gross domestic product over a two-year period from 190 to 2011. A few relapse procedures were applied to decide the meaning of factors and to really look at the fit to the model. Expansion and trade rates emphatically affect Gross domestic product, while loan costs adversely affect Gross domestic product.

Muhammad (2001) tried the impact of genuine financing costs on ventures over the period 1964-2012. A cointegration test was utilized to test the drawn out connection between venture, pay and loan costs. Venture is viewed as contrarily connected with pay and loan costs, reliable with financial hypothesis. (Chaudhry, 2013) analyzed how inflation affects sectoral growth in Pakistan. The sectors are agriculture, manufacturing and services and the period he is from 1972 to 2010. Inflation affects production differently in the three sectors. This has had a negative impact on the manufacturing sector, while inflation has accelerated growth in the services sector. Inflation and the agricultural sector also have a positive and significant relationship. So far, the agricultural and service sectors should not have lower inflation. Otherwise, it will adversely affect Pakistan's economic growth.

Khawaja (2007) utilized board information methods from 29 banks to analyze the variables that decide loan fee enhancement in Pakistan. This outcome demonstrates that the proportion of financing cost delicate stores to add up to bank stores is a significant figure loan fee differential. Industry fixation lightly affects net revenues. Likewise, the flood of solidification in the financial area has additionally restricted client decision, adversely affecting edges.

Qayyum (2006) analyzed the connection between money development and expansion in Pakistan. Besides, to test the monetarist view that expansion is a monetary peculiarity. Connection examination shows that expansion and cash supply are decidedly associated. To start with, it upholds the monetarist view that the cash supply influences Gross domestic product, which thus influences Pakistan's expansion, and that expansion is a monetary peculiarity for Pakistan. This outcome is because of the SBP's poor money related approach to accomplish its development target.

Wjung (2021), from 1980 he examined the impact of total factor productivity on the development of entrepreneurship in Cameroon in 2018. Applying a three-stage least squares method, we find that total factor productivity significantly improves entrepreneurship development, which has a significant negative impact on technological progress. Another finding is that there is a positive correlation between the development of entrepreneurship and economic development. The development of entrepreneurship and government spending has positive implications. In Cameroon, there was no significant relationship between domestic credit, private investment, and entrepreneurship development. It shows giving.

Khalid (2005) explored the question of which monetary policy should be used to achieve a particular goal in the medium to long term. In order to implement an inflation-oriented monetary policy, certain conditions must be met. B. Understand the determinants and forecasting mechanisms of inflation. Singledigit inflation boosted economic growth. Debt was the main issue, but increased foreign exchange reserves reduced the risk of default. Inflation targeting should be a monetary policy choice to achieve economic stability. This can only be achieved through transparent and committed central bank policies to develop strong fiscal, monetary and financial institutions. We need to develop a model for Pakistan and identify the factors for estimating inflation. Outcomes include import inflation, seigniorage, deficit as a percentage of GDP, monetary depth, and exchange rate depreciation. It shows that openness is the determinant of inflation. If mechanisms are developed to monitor the movements of these variables, the SBP can keep inflation within its target range. This analysis can be used to develop a more comprehensive model to better control inflation.

Asad (2008) concentrated on that the economy's cash supply, pay speed, genuine successful conversion standard, and genuine pay influence expansion. Information from 1973 to 2017 were utilized to affirm that the genuine powerful conversion scale influences expansion. A connection framework shows the connection between these two factors and different factors. There is a positive and critical connection between these two factors.

Bader (2006) analyzed the impact of genuine loan fees on venture levels in Jordan for the period from 1990 to 2005. The speculation tried is that there is a negative connection between the two factors. Cointegration examination is utilized for genuine financing costs, venture levels, and pay levels. The drawn out Dickie Fuller test and the unit root PP test were applied to the information to find the combination request of the factors. We utilized the C0 indispensable, difference deterioration, and motivation reaction to represent dynamic connections between factors. This outcome upholds the financial hypothesis that there is a reverse connection between loan fees and venture. Pay makes a positive difference.

Umaru (2012) inspected the effect of expansion on Nigeria's financial development and advancement. Broadened Dickey Fuller unit root tests and Granger causality tests were utilized. The information are fixed at that level, and there is an one way causal connection among Gross domestic product and expansion. Expansion emphatically affects financial development since it decidedly affects efficiency, creation levels and complete variable efficiency. The high per capita pay in any nation is additionally because of the great expansion rate.

Malik (2001) analyzed the impacts of expansion and Gross domestic product development in four South Asian nations (Bangladesh, India, Pakistan and Sri Lanka). Cointegration and error correction models utilizing yearly information show a positive long run connection between Gross domestic product development and expansion for each of the four nations.

Demand (2013) analyzed the effect of conversion scale systems on monetary development in 13 nations utilizing another true grouping of systems that alludes to the real way of behaving of factors. Results show that drifting trade rates lead to more slow development in agricultural nations. This additionally prompts more prominent result instability. For created nations, the conversion scale system doesn't essentially affect development. The outcomes depend on the development writing and are strong to rectification for endogeneity.

Faria (2001) has concentrated on an economy confronting supported expansion and there is a connection among expansion and creation in Brazil. In the short run, expansion adversely affects yield, however over the long haul, expansion affects yield. These outcomes are applied to a utility capability wherein genuine cash adjusts impeccably supplement utilization.

Ghosh (1998) found a genuinely and monetarily critical negative connection among expansion and development. Board relapse was utilized. The "choice tree" strategy recognizes expansion as the main figure deciding development. The outcome is the momentary development cost of disinflation, pertinent just to the most extreme disinflation.

Hussain (2016), from 1980 he analyzed the impacts of expansion, genuine trade rates, and loan fees on Pakistan's Gross domestic product in 2011. A various relapse investigation was performed to affirm that expansion and loan costs adversely affect Gross domestic product, while trade rates emphatically affect Gross domestic product. Expansion has been seen to adversely affect Gross domestic product because of severe financial approach by the public authority. As the conversion scale to a great extent affects Gross domestic product, emerging nations like Pakistan can keep up with the excellent worth of the swapping scale. You can invigorate the economy by bringing down fixed financing costs.

Hussain (2011) analyzed the connection among expansion and monetary development in Pakistan over the period. This outcome demonstrates that expansion is decidedly connected with financial development in Pakistan. Granger's causality test shows a one-way causality among expansion and Gross domestic product. Blunder rectification models were utilized to perceive how well financial development is connected with expansion temporarily. The outcomes show that expansion has created some distance from its harmony esteem. In the event that an underlying limit is crossed, expansion will lessen Gross domestic product, and fast monetary development can prompt higher expansion.

Irshad (2022) analyzed the effect of unfamiliar direct speculation, exchange worth and trade rates on Pakistan's Gross domestic product from 1972 to 2021. A relapse technique was utilized. The high expansion pace of FDI for significant outcomes extraordinarily affects Gross domestic product. FDI decidedly affects Gross domestic product, while the conversion scale adversely affects Gross domestic product. The exchange balance has essentially nothing to do with Gross domestic product.

Baro (1995) evaluated the effect of expansion on monetary development in 100 nations throughout some undefined time frame. The relapse results show that rising expansion lessens her Gross domestic product per capita, thus does the proportion of speculation to Gross domestic product. Expansion, monetary development, and venture are causal. High expansion is remembered for the example for critical outcomes. Expansion lessens Gross domestic product, yet additionally settles for the easiest option over the long haul.

Hasan (1995) found that higher inflation is associated with supply- side shocks. Monetary and fiscal policies, international prices, government procurement. support or administrative prices, and the emergence

of strong inflation expectations in the economy. Source and administration prices, import inflation, the impact of higher inflation, and tax increases may have contributed to the higher inflation.

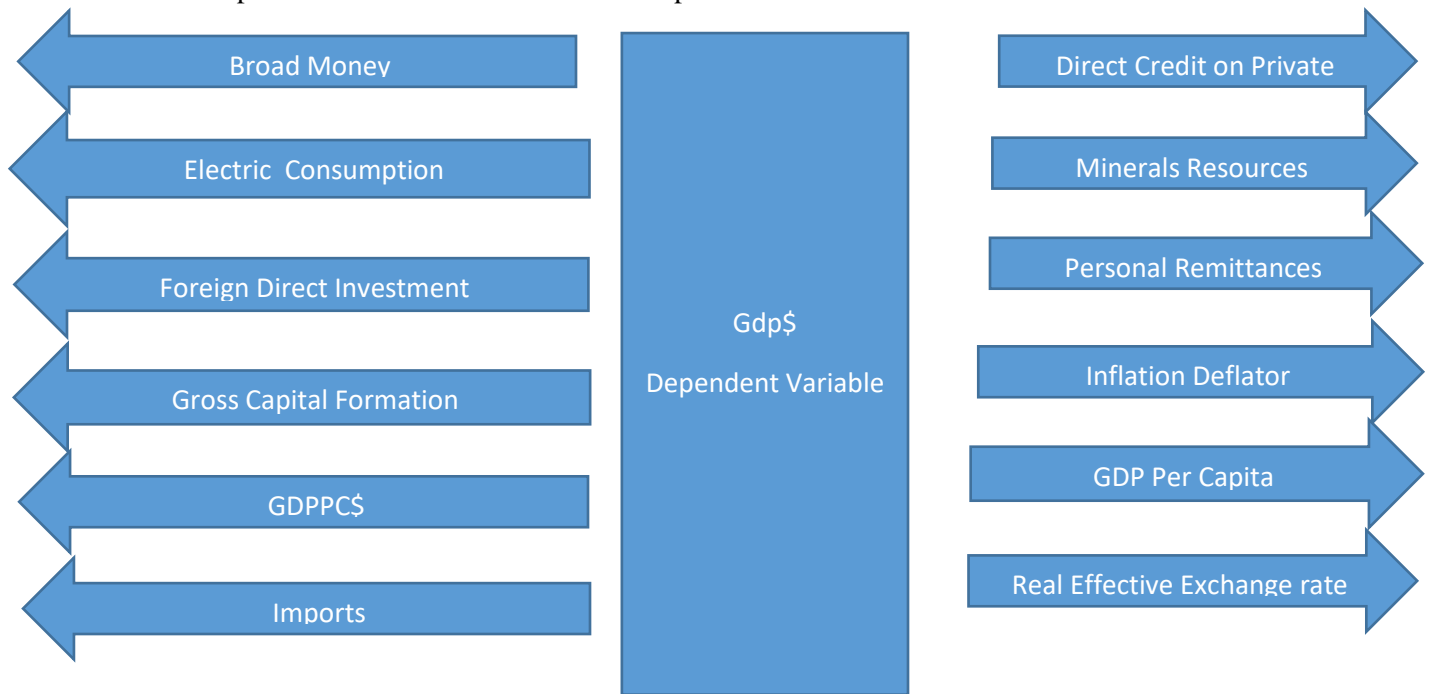
Ahmed (2013) analyzed the impacts of expansion, ostensible conversion standard, unfamiliar direct speculation and capital stock on Pakistan's monetary development. The information he utilized for the period from 1975 to 2011. ADF Unit Root Test, OLS applies. This outcome shows that expansion and swapping scale adversely affect Pakistan's financial development. There is no sequential relationship, heterogeneity, or autocorrelation in the information. The underlying security of the model was tried by CUSUM and CUSUM SQ and viewed the model as primarily stable inside 5% of as far as possible.

Galbis (1995) analyzed monetary area changes in eight agricultural nations. The monetary circumstance of the nation was investigated, and changes were proposed appropriately, including essential and extraordinary issues. We look at the effect of these changes on money related administration, monetary turn of events, venture and development, and proficient monetary intermediation.

Sulaiman (2013) directed a review looking at the connection between financing costs and interest in Pakistan over the period 1964-2012. A cointegration test is utilized to affirm that there is a negative connection between financing costs and venture.

### CONCEPTUAL FRAMEWORK

The conceptual framework of this research is shown in Figure 2 in which Remittances, FDI and exchange rate are independent variables whereas GDP is dependent variables.



Schumpeter is credited for his analysis of economic growth theory. He believes capital accumulation is the main driver of economic growth. He called entrepreneurs and innovators "heroes of development." Schumpeter believed in the unequal nature of economic growth and called this process the nature of "leaps" (Schumpeter 1934, p.65). Entrepreneurs make a profit, but over time innovations and inventions reduce this profit. "The assumptions of his theory are the efficiency of private property, competitive markets, and financial markets capable of supporting the production of new inventions." Schumpeter designed his theory for democratically and economically developed countries. did.

One more hypothesis was created by Arthur Lewis. His work manages the issues of unfortunate nations, yet with a plentiful workforce (Lewis 1954, p.3). He imagines keeping a low expectation for everyday life temporarily. Saving expands the capital stock and prompts long haul financial development.



"In this way, Lewis' model recommends that imbalance between nations expansions in the short run as a condition for balancing pay levels over the long haul (Lewis 1956, pp. 7-)"

Simon Kuznets fostered a hypothetical help for Lewis hypothesis called Kuznet's bend (Kuznets 1955, pp. 1-2). In the beginning phases of development, the monetary difference is most prominent when work moves from the farming area to the modern area. "Kuznets tracked down a positive connection between the elements of monetary development and the rising extent of the metropolitan populace in the complete populace" (Kuznets 1976, p. 32).

A couple of years after the fact, Walt Rostow thought of another hypothesis comprising of his five phases of financial development. He found that financial advancement relies upon the aggregation of capital (Rostow 1960, pp.4-16). He says the most concerning issue confronting unfortunate nations is getting to the third stage, called "departure." Unfortunate nations deal with issues in light of a "endless loop". He recommends that it very well may be beaten by capital amassing. Nations where inner help isn't accessible can be expanded with outer help.

Rebuilding the economy from a rural stage to a modern stage could spread financial development the nation over, Rostov said. In 1971 Rostov added a 6th phase of financial advancement called 'Correspondence', described by ceaseless improvement in the nature of labor and products (Rostov 1971).  
Big money theory:

The money supply has been found to have a healthy impact on Pakistan's economic growth. The National Bank of Pakistan's monetary policy plays a vital role in Pakistan's economic growth

#### **Gross Capital Formation Theory**

There is a long-term significant positive relationship between total investment and economic growth.

#### **Mineral resource theory**

"Promoting the mineral sector will benefit the Pakistani economy in many ways, as it can improve trade and exports, raise employment and income levels, attract domestic and foreign investment, and accelerate economic growth. prize."

#### **Oil rent theory**

With increasing demand, oil is becoming the most important indicator of Pakistan's economic growth.

#### **Import theory**

A nation's import and product exercises can influence Gross domestic product, trade rates, expansion and loan costs. Rising imports and enlarging import/export imbalances can unfavorably influence a nation's swapping scale. Hypothesis of Gross domestic product per capita:

A nation's Gross domestic product (GDP) is determined by thinking about the financial worth of its labor and products throughout some undefined time frame, typically the year. It is a proportion of financial action. This measure of abundance is split between the country's populace to give Gross domestic product per capita.

#### **Inflation-deflator theory**

Simply put, the GDP price deflator shows how dependent changes in GDP are on changes in the price level. Tracking the prices paid by businesses, governments and consumers represents changes in price levels and inflation levels within the economy. Domestic credit for private investment theory:

Household lending contributes more to GDP formation than government lending.

#### **Gross Capital Formation Theory**

From an economic point of view, gross fixed capital formation is considered the most important factor in domestic investment as an important process to accelerate economic growth

#### **Transmission Theory**

Remittances are associated with the migration of workers to developed countries. Moving labor can cause a brain drain, but it also sends precious money home. Remittances can help alleviate poverty, increase household consumption and investment, and boost national economic growth (Ahmad et al., 2013)

#### **Foreign Direct Investment Theory**

Foreign direct investment is the inflow of funds that serve investment purposes. FDI helps develop infrastructure, create new businesses, and create employment opportunities in host countries (Githaiga,

Nyauncho & Kabiru, 2015). It also transfers new technologies from developed to developing countries, boosting national economic growth.

### **Exchange Rate Theory**

Exchange rates can be fixed or variable and depend on the country and its policies and whether it is a developing or developing country. Exchange rates can affect a country's economic growth if it adopts a floating exchange rate. A study found that developing Asian countries with floating interest rates outperformed countries in the same region that did not have floating interest rates (Jakob, 2015).

### **Research Hypothesis**

H1: There is a positive relationship between remittances and GDP.

H2: There is a positive relationship between foreign direct investment and GDP.

H3: There is a negative relationship between exchange rate and GDP.

## **RESEARCH METHODOLOGY**

The motivation behind this paper is to analyze the effect of key macroeconomic factors, for example, expansion rates, trade rates and loan fees on Pakistan's monetary wellbeing. Optional information from 1971 to 2013 were gathered from different versions of the Pakistan Monetary Overview, World Bank reports, Government Measurements Office and different sites. There are numerous hypotheses created by different financial specialists to distinguish the elements that impact a country's monetary development. In this ongoing review, a different direct relapse model was intended to test the review speculations as follows.

### **Nature of Research**

This study aims to discover the impact of macroeconomic variables on Pakistan's economic growth. This study focuses on causal relationships between various variables, as researchers need to explain the impact of the selected variables on Pakistan's gross domestic product. The approach of this study is deductive as the conceptual and theoretical framework is based on theories discussed by other authors in literature reviews. This is a quantitative study, meaning it relies on measurable data collected from a variety of sources.

### **Data Collection**

In this study, data on variables remittances, GDP, FDI and exchange rate. Data on remittances comes from the National Bank's Statistical Handbook on the Pakistan Economy, while GDP, FDI and exchange rate data come from the World Bank publication on the World Development Indicators dataset. Data on GDP, remittances, oil rents, minerals and total investment. Direct financing for private investment, REER, electricity consumption and foreign direct investment is collected by WDI. Data are from his 51-year annual time series from 1971 to 2021 for this study.

### **Data Assimilation Approach**

Data integration designs depend on the type of data collected. Different types of data integration techniques are used for different types of data, so there is no impact on the outcome of the study. As the data collected for the variables selected in this study are time series data, the software used to analyze this type of data is Eviews. This study uses Eviews version 9 to analyze the data. This software is used to determine the relationship between dependent and independent variables. The software delivers results and interprets them into meaningful results. Based on these results, analyze whether there is an association between variables and how significant it is. These results lead to the conclusion of accepting or rejecting the hypothesis.

### **Research Model**

To investigate the relationship of the information, an exploration model is utilized in view of the kind of examination and information. Since the information is time series it is expected to evaluate that the information is at fixed level. The relapse of non-fixed information might prompt deceptive relapse and the discoveries might be one-sided and conflicting (Karagöz, 2009). The fixed level of an information can be found through unit root test utilizing Increased Dickey-Fuller (ADF) test. Besides, Co-Incorporation strategy is applied on the model to check regardless of whether the factors have short run or long run relationship (Jebran et al., 2016). To additional check the dependability of the model, Sequential Relationship, hetroskedasticity and it are likewise applied to conjecture the econometric tests.

The Implicit model is:

$$GDP\$ = f (BR, EC, FDI, GCF\$, IMP, MINR, PREM, REER, DCP, INFDEF, GDPPC\$)$$

The Explicit model is:

$$GDP\$ = C(1) + C(2)*BR + C(3)*EC + C(4)*FDI + C(5)*GCF\$ + C(6)*IMP + C(7)*MINR + C(8)*PREM + C(9)*REER + C(10)*DCP + C(11)*INFDEF + C(12)*GDPPC\$ + e$$

GDP\$ = Gross Domestic Product in \$

BR= Broad Money

EC= Electric Consumption

FDI= Foreign Direct Investment

GCF\$= Gross Capital Formation in \$

IMP= Imports of Goods & Services

MINR= Minerals

PREM= Personal Remittances

REER= Real Effective Exchange Rate

DCP= Domestic Credit to Private Investment

INFDEF= Inflation Deflator

GDPPC\$= Gross Domestic Product Per Capita in \$

E= Random Error Term.

C(1),C(2),C(3),C(4),C(5),C(6),C(7),C(8),C(9),C(10),C(11),C(12) are the coefficients of independent variables.

All the Yearly Time Series Information has been gathered from World Improvement Pointers, Financial Overviews of Pakistan and Hand Book of Monetary Measurements of State Bank of Pakistan for the time span 1971 - 2021.

There are various Macroeconomic factors which impact financial development of Pakistan in different ways. Various factors have been taken by numerous scientists to figure out the connection between those factors and monetary development. Here we have chosen 13 informational collections of Macroeconomic Factors as expressed above to figure out their effect on Financial Development of Pakistan. The various selected variables are defined as:

Name of Variable	Symbol of Variable	Definition of Variables	Data Sources of Variable
Economic Growth	GDP\$	"Gross domestic product is the amount of the gross worth added of all makers in the economy, in addition to item burdens, less appropriations excluded from the worth of the item. , or determined without derivations for regular asset consumption and debasement (World Bank definition) involving yearly Gross domestic product development as the reliant variable.	World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan.
Broad Money:	BR	"Wide cash is a classification for estimating how much cash flowing in an economy. It is characterized as the broadest strategy for computing the cash supply of a given nation and is the easiest method for buying labor and products. It incorporates thin cash, alongside different resources that can be changed over into cash."	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"

Electric Consumption:	EC	"Power utilization addresses how much electrical energy that has been consumed throughout a particular time, in units of Wh (or kWh), power request addresses that rate at which electrical energy is consumed for a required result rating, in units of W (or kW)."	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"
Mineral Rents:	MINR	"Minerals are characterized as 'normally happening inorganic components or mixtures with an arranged inside design and trademark compound creation, gem structure, and actual properties.'	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"
Gross Capital Formation:	GCF\$	"Gross fixed capital arrangement (previously gross homegrown speculation) comprises of extra spending on fixed resources of the economy and net change in inventories. "	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"
Gross Domestic Product Deflator:	GDPDEF	"The Gross domestic product cost deflator (total national output), otherwise called the Gross domestic product deflator or suggested cost deflator, measures cost changes for all labor and products delivered in an economy."	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"
Inflation Rate	INFR	"Expansion, as estimated by the Buyer Value Record, mirrors the yearly pace of progress in the expense of the typical shopper to buy a bushel of labor and products at determined spans. B. Might be corrected or changed every year. For the most part, the Laspeyres recipe is utilized (World Bank definition). Expansion rate was taken as a free factor. "	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"
Gross Domestic Product Per Capita:	GDPPEC	"Gross domestic product per capita is a proportion of the estimated worth of a nation's GDP (Gross domestic product) contributed by every individual from that nation's populace. It is determined by partitioning a country's Gross domestic product by its populace. increment."	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"
Personal Remittances	PREM	"Individual exchanges incorporate individual exchanges and representative pay. Individual exchanges incorporate all money or in-kind exchanges made or got by occupant families to or from non-occupant families. incorporates the ongoing migration of	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"

Real Effective Exchange Rate:	REER	"Individual exchanges incorporate individual exchanges and representative remuneration. Individual exchanges incorporate all money or in-kind exchanges made or got by occupant families to or from non-occupant families. incorporates the ongoing migration of	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"
Inflation:	INF	"Expansion is the pace of expansion in costs throughout some undefined time frame. Expansion is normally a wide measure, including general cost increments and the expansion in the typical cost for most everyday items in a country."	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"
Imports:	IMP	"Imports are labor and products bought from around the world by occupants of that country, as opposed to purchasing locally delivered merchandise. will prompt an outpouring of assets from the country."	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"
Foreign Direct Investment	FDI	"Unfamiliar Direct Speculation (FDI) is the proprietorship premium in an unfamiliar organization or task, made by a financial backer, organization or legislature of another country."	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"
Inflation deflator:	INFDEF	<ul style="list-style-type: none"> <li>"The Gross domestic product (GDP) cost deflator, otherwise called the Gross domestic product deflator or the suggested cost deflator, measures cost changes for all labor and products delivered in an economy. The Gross domestic product value deflator depends on a proper crate. It is a more thorough expansion marker than the Buyer Value List (CPI) since it doesn't."</li> </ul>	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"
Domestic credit to private investment	DCP	<ul style="list-style-type: none"> <li>"Homegrown credit to the confidential area alludes to supporting made accessible to the confidential area by monetary firms through advances, acquisition of non-value resources, exchange credits, and other receivables that make a right of reimbursement. ."</li> </ul>	"World Development Indicators-2021 Hand Book of Economic Statistics, SBP Economic Surveys of Pakistan"

## **RESULTS AND DISCUSSION**

To find quantitative expectations as far as reliant and free factors, a relapse examination strategy was utilized showing the singular meaning of every autonomous variable and the general meaning of the model. The following are the consequences of the relapse examination. Unit Root Test: Stationary means that mean, variance and covariance of the selected series are constant overtime. It means there is no trend in the time series. If we draw graph then it shows that fluctuations are reverting back to mean.

To check stationary is important before taking regression analysis because otherwise the results will become spurious i-e meaningless. So in order to run regression analysis we have to make the series stationary.

H0: There is a unit root (series is non stationary)

Rule of Thumb:

We will reject null hypothesis.

If the Probabilities at intercept & intercept + trend is  $\leq$  Probability value at 5 % then we reject the null hypothesis.

**UNIT ROOT AUGMENTED DICKEY FULLER TEST- ADF**

ADF test statistics	t-Statistics	Prob.*
BR	-1.874564	0.0000
DCP	-6.4175	0.0000
EC	-5.74298	0.0000
FDI	-4.82545	0.0002
GCF\$	-5.2077	0.0001
GDP\$	-5.53701	0.0000
GDPDEF	3.362491	1.0000
GDPPC\$	-5.87375	0.0000
IMP	-7.10426	0.0000
INFDEF	-7.84181	0.0000
MINR	-5.3936	0.0000
PREM	-5.99264	0.0000
ORENT	-8.27596	0.0000
REER	-5.5106	0.0000

**Multiple Regression Analysis:**

The purpose of regression analysis is to predict the cause and effect of variables. Apply regression analysis whenever you need to predict changes in one variable due to changes in another variable.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.92E+10	3.44E+10	-1.71971	0.0934
BR	1.05E+09	2.85E+08	3.680827	0.0007
EC	-1.38E+08	52813304	-2.61744	0.0125
FDI	-6.50E+09	2.38E+09	-2.72875	0.0095
GCF\$	4.097483	0.372608	10.99676	0
IMP	-1.09E+09	3.53E+08	-3.10085	0.0036
MINR	2.25E+11	6.32E+10	3.559738	0.001
PREM	6.14E+08	7.58E+08	0.809843	0.4229
REER	95835719	90215120	1.062302	0.2946
DCP	-2.69E+09	4.38E+08	-6.15435	0
INFDEF	-1.7E+07	1.65E+08	-0.10167	0.9195
GDPPC\$	1.54E+08	40289107	3.824338	0.0005
R-squared	0.997744	Mean dependent var		1.08E+11
Adjusted R-squared	0.997108	S.D. dependent var		1.07E+11
S.E. of regression	5.73E+09	Akaike info criterion		47.97962
Sum squared resid	1.28E+21	Schwarz criterion		48.43416
Log likelihood	-1211.48	Hannan-Quinn criter.		48.15331
F-statistic	1568.056	Durbin-Watson stat		1.791074
Prob(F-statistic)	0			

a. Dependent Variable: GDP in Dollars.

The output matrix above shows that the macroeconomic variables broad money, total investment in \$, minerals, and GDPPC\$ are significantly and positively related to GDP with t-values of 3.6808, 10.99676, 3.55973, 3.0824338, and 2.7287, respectively. Imports, foreign direct investment, electricity consumption, and direct lending to private investment are significantly negatively associated with Pakistan's economic growth. The respective t-values are -3.10085, -2.72875, -2.61744, and -6.15435. Individual settlements, conversion scale, and expansion deflator are not fundamentally connected with Gross domestic product and their particular t-values of 0.809843, 1.062302, and -0.10167. In the model rundown table over, the capitalized 'R2' represents the connection coefficient. The R2 connection coefficient decides the request and course of related factors from the example information. There are a few relationship coefficients that portray the strength and heading of connection between's factors. This reach incorporates "+1" and "- 1". On the off chance that there is areas of strength for a direct connection between the factors, the worth of 'R2' will be near '+1'. It is a negative line while the worth of "R2" is near "- 1". In the event that the 'R2' esteem is zero, this demonstrates an identified connection between the factors and a feeble connection between the factors.

R2 shows the amount of the free factor predicts the reliant variable. The synopsis model table shows a R2 worth of 0.9977. This implies that his 99.77% of Pakistan's monetary development is made sense of by the chose free factors. High upsides of 'R2' however little unexplained variances recommend that monetary development additionally relies upon numerous different variables, like political soundness, government strategy, government utilization, and nation's imports and commodities. demonstrates that This might be because of the way that the F-measurement shows the consolidated impact or generally speaking viability of the model, and the likelihood of the F-measurement for checking integrity of fit is The model is good if the probability value of the F-statistic is  $\leq 5\%$ .

To examine the overall significance of the Model F statistic, we show a significant value of 1568.56 at 0.0000. ANOVA models further describe the relationship between dependent and independent variables. The overall results of the F-statistics show that the model is optimal and the selected macroeconomic variables (broad currency, electricity consumption, direct lending to private investment, imports, minerals, oil rents, GDP) deflators, total investment, Inflation, personal remittances, GDP per capita, exchange rate) compared to GDP.

### **Correlogram**

"The correlogram gives a good impression of the autocorrelation between pairs of data of different time periods. It is used as a tool to check the randomness of the data set. It is the same as the number of data values with different time lags. It is done by calculating the autocorrelation."

In the correlogram plot, check that the Q-Stat probability is greater than 0.05 and the spike is within the dotted line to ensure no autocorrelation. If the autocorrelation plot first shows autocorrelation, the peak occurs from two dashed lines, and the Q-Stat probability is less than 0.05, then the problem can be solved by taking the first difference.

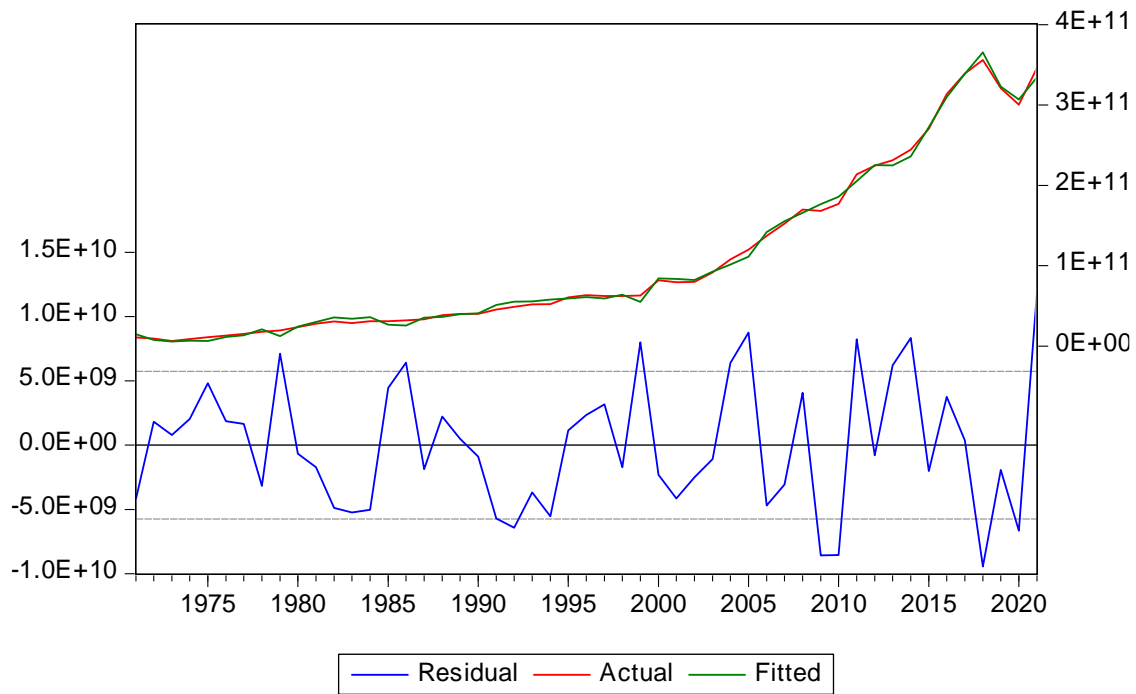
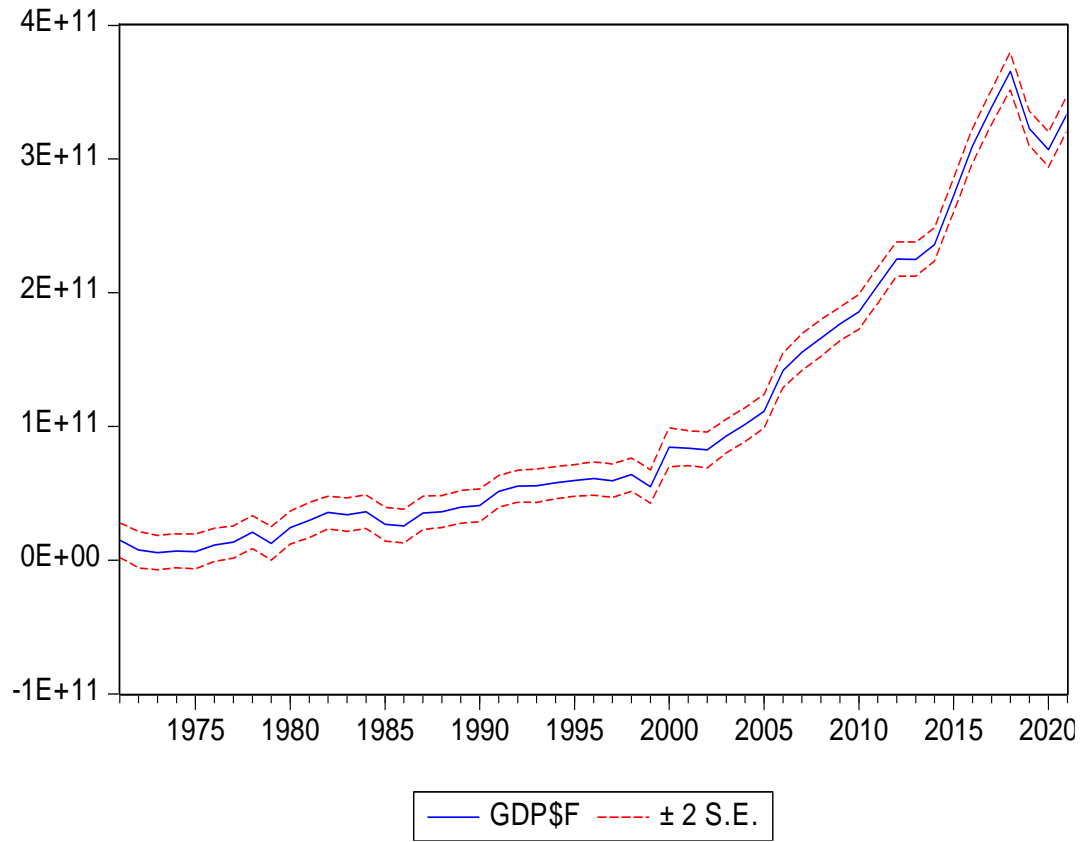
Sample: 1971 2021

Included observations: 50

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 0.255	0.255	3.4517	0.063
		2 -0.160	-0.241	4.8406	0.089
		3 -0.018	0.106	4.8595	0.182
		4 0.082	0.020	5.2389	0.264
		5 0.287	0.305	10.013	0.075
		6 0.181	0.028	11.958	0.063
		7 0.119	0.216	12.818	0.077
		8 -0.024	-0.130	12.853	0.117
		9 -0.017	0.094	12.872	0.168
		10 0.251	0.135	16.973	0.075
		11 0.137	-0.028	18.233	0.076
		12 -0.019	-0.047	18.257	0.108
		13 0.002	0.019	18.257	0.148
		14 -0.056	-0.137	18.482	0.186
		15 -0.034	-0.095	18.567	0.234
		16 -0.004	-0.091	18.568	0.292
		17 0.009	-0.054	18.575	0.353
		18 0.025	0.020	18.626	0.415
		19 -0.126	-0.127	19.967	0.397
		20 -0.100	-0.028	20.837	0.407
		21 0.041	0.073	20.990	0.460
		22 -0.034	-0.043	21.098	0.515
		23 -0.042	0.023	21.272	0.564
		24 -0.086	-0.016	22.017	0.578



Forecast of Model



Correlation matrix and covariance Analysis:

	BR	DCP	EC	FDI	GCF\$	GDP\$	GDPDEF	GDPPC\$	IMP	INFDEF	MINR	PREM	REER
BR	1	-0.21345	0.650509	0.565518	0.728181	0.713903	0.685171	0.702958	0.025577	-0.28202	0.748974	0.169608	-0.51874
DCP	-0.21345	1	-0.45106	0.223741	-0.69676	-0.7444	-0.781	-0.58411	0.107604	-0.12437	-0.34856	-0.23081	0.341255
EC	0.650509	-0.45106	1	0.589398	0.806379	0.784333	0.739389	0.956328	0.031041	-0.07406	0.673724	-0.08333	-0.94401
FDI	0.565518	0.223741	0.589398	1	0.334292	0.263877	0.186852	0.473486	0.218765	-0.03762	0.55759	-0.2472	-0.54911
GCF\$	0.728181	-0.69676	0.806379	0.334292	1	0.993536	0.963275	0.931641	0.024655	-0.10966	0.726048	0.253774	-0.64782
GDP\$	0.713903	-0.7444	0.784333	0.263877	0.993536	1	0.9845	0.919587	0.001116	-0.10493	0.721643	0.28956	-0.62598
GDPDEF	0.685171	-0.781	0.739389	0.186852	0.963275	0.9845	1	0.888185	-0.03126	-0.08538	0.701501	0.325855	-0.59274
GDPPC\$	0.702958	-0.58411	0.956328	0.473486	0.931641	0.919587	0.888185	1	0.064621	-0.11372	0.716238	0.113861	-0.85577
IMP	0.025577	0.107604	0.031041	0.218765	0.024655	0.001116	-0.03126	0.064621	1	-0.06819	0.154176	0.427327	0.075579
INFDEF	-0.28202	-0.12437	-0.07406	-0.03762	-0.10966	-0.10493	-0.08538	-0.11372	-0.06819	1	0.03234	-0.3272	0.035148
MINR	0.748974	-0.34856	0.673724	0.55759	0.726048	0.721643	0.701501	0.716238	0.154176	0.03234	1	0.179455	-0.54671
PREM	0.169608	-0.23081	-0.08333	-0.2472	0.253774	0.28956	0.325855	0.113861	0.427327	-0.3272	0.179455	1	0.284168
REER	-0.51874	0.341255	-0.94401	-0.54911	-0.64782	-0.62598	-0.59274	-0.85577	0.075579	0.035148	-0.54671	0.284168	1

	covariance matrix												
C	BR	EC	FDI	GCF\$	IMP	MINR	PREM	REER	DCP	INFDEF	GDPPC\$		
C	1.19E+21	-2.81E+18	2.35E+17	2.03E+19	8.74E+09	7.20E+17	-3.85E+19	1.43E+19	-2.53E+18	-1.90E+18	-6.72E+17	-9.73E+17	
BR	-2.81E+18	8.13E+16	-1.2E+15	-7.35E+16	-2.6E+07	2.00E+16	-6.97E+18	-4.6E+15	-1.5E+15	-3.94E+16	1.45E+16	7.33E+14	
EC	2.35E+17	-1.2E+15	2.79E+15	-5.48E+16	10607858	2.52E+15	-2.54E+17	9.08E+15	8.54E+14	6.95E+15	4.63E+14	-1.6E+15	
FDI	2.03E+19	-7.35E+16	-5.48E+16	5.67E+18	-1.9E+08	-2.96E+17	-3.58E+19	4.53E+17	-3.16E+16	-5.96E+17	-2.11E+16	2.09E+16	
GCF\$	8.74E+09	-2.6E+07	10607858	-1.9E+08	0.138837	39444965	-4.6E+09	1.11E+08	-1.8E+07	73829453	6001841	-1.4E+07	
IMP	7.20E+17	2.00E+16	2.52E+15	-2.96E+17	39444965	1.25E+17	-1.85E+18	-6.78E+16	-6.6E+15	7.62E+15	-2.1E+15	-4E+15	
MINR	-3.85E+19	-6.97E+18	-2.54E+17	-3.58E+19	-4.6E+09	-1.85E+18	4.00E+21	-1.45E+19	1.03E+18	1.89E+18	-4.01E+18	4.34E+17	
PREM	1.43E+19	-4.6E+15	9.08E+15	4.53E+17	1.11E+08	-6.78E+16	-1.45E+19	5.74E+17	-3.87E+16	5.73E+15	4.52E+16	-1.57E+16	
REER	-2.53E+18	-1.5E+15	8.54E+14	-3.16E+16	-1.8E+07	-6.6E+15	1.03E+18	-3.87E+16	8.14E+15	7.93E+14	-2.2E+15	1.82E+15	
DCP	-1.90E+18	-3.94E+16	6.95E+15	-5.96E+17	73829453	7.62E+15	1.89E+18	5.73E+15	7.93E+14	1.92E+17	1.44E+16	-4.1E+15	
INFDEF	-6.72E+17	1.45E+16	4.63E+14	-2.11E+16	6001841	-2.1E+15	-4.01E+18	4.52E+16	-2.2E+15	1.44E+16	2.73E+16	-6.3E+14	
GDPPC\$	-9.73E+17	7.33E+14	-1.6E+15	2.09E+16	-1.4E+07	-4E+15	4.34E+17	-1.57E+16	1.82E+15	-4.1E+15	-6.3E+14	1.62E+15	

Breusch-Godfrey Lagrange Multiplier Test (LM TEST): - The absence of autocorrelation is the null hypothesis for the LM test. If we see that the probability value of the F-statistic is more than 0.05 and the F-statistic value is very small. It confirms that the regression model's autocorrelation poses no issues. The following table shows F-statistics Probability and value which fulfills the above-mentioned conditions that F-Statistics Probability is more than 0.05 and F-Statistics value is lesser in numbers so we conclude that there is no autocorrelation.

LM TEST OF CORRELATION			
<b>Breusch-Godfrey Serial Correlation LM Test:</b>			
<b>F-statistic</b>	<b>0.121364</b>	<b>Prob. F(2,37)</b>	<b>0.8861</b>
<b>Obs*R-sq</b>	<b>0.332392</b>	<b>Prob. Chi-Square(2)</b>	<b>0.8469</b>
Null hypothesis:	No serial correlation	at up to 1 lag	

Ramsey reset test: -

The invalid speculation is  $t=0$ , and that implies that the powers of the fitted qualities don't have a relationship that makes sense of the reliant variable  $y$ . This intends that there are no discarded factors in the model. An elective speculation is that the model experiences a precluded variable issue.

From the Ramsey Reset TEST summary, we know that the likelihoods for the t-statistic, F-statistic, and likelihood ratio are greater than 0.05, implying that the estimated model has no specification error.

Ramsey RESET Test			
Equation: UNTITLED			
Specification: GDP\$ C BR EC FDI GCF\$ IMP MINR PREM REER DCP			
INFDEF GDPPC\$			
Omitted Variables: Squares of fitted values			
	Value	df	Probability
t-statistic	0.225128	38	0.8231
F-statistic	0.050682	(1, 38)	0.8231
Likelihood	0.067976	1	0.7943
F-test summary:			
	Sum of Sq	df	Mean Squares
Test SSR	1.71E+18	1	1.71E+18
Restricted	1.28E+21	39	3.29E+19
Unrestrict	1.28E+21	38	3.37E+19
LR test summary:			
	Value	df	
Restricted	-1211.48	39	
Unrestrict	-1211.45	38	

**Heteroskedasticity Test**

The Null Hypothesis states that no heteroskedasticity exists (= homoskedasticity exists).

H1: There is Heteroscedasticity in the model.

Thumb Rule is if the p value < 00.05, Reect H0

Heteroskedasticity Test: Breusch-Pagan-Godfrey

heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.620159	Prob. F(11,39)	0.1312
Obs*R-squared	15.9958	Prob. Chi-Square(11)	0.1413
Scaled explained SS	6.388264	Prob. Chi-Square(11)	0.8462

	Value	df	Probability
t-statistic	0.225128	38	0.8231
F-statistic	0.050682	(1, 38)	0.8231
Likelihood ratio	0.067976	1	0.7943
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	1.71E+18	1	1.71E+18
Restricted SSR	1.28E+21	39	3.29E+19
Unrestricted SSR	1.28E+21	38	3.37E+19
LR test summary:			
	Value	df	
Restricted LogL	-1211.48	39	
Unrestricted LogL	-1211.45	38	

Here all the p values are greater than 0.05 so we accept H0. It means there is no Heteroscedasticity

**Co-Integration Test**

“The cointegration test identifies scenarios where two or more nonstationary time series are combined such that they cannot deviate from equilibrium over time. used to make decisions.”

The purpose of the cointegration test is to see long-term associations or relationships between variables. Alternatively, apply cointegration analysis whenever you need to see the correlation between series, i.e. whether the series co-integrate with each other.

H0:

No cointegration (no long-term relationship between variables).

Rule of thumb:

Reject H0 if probability value ≤ 5%

When

A trace statistic has exceeded the critical value.

Maximum unique stat exceeds critical value. The trace test shows 8 cointegration equations at the 0.05 level. The maximum eigenvalue test shows 5 cointegrations GI(e) at the 0.05 level

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05 Critical	
No. of CE(s)	Eigenvalue	Statistic	Value	Prob.**
None *	0.952289	665.2052	334.9837	0
At most 1 *	0.92345	516.1178	285.1425	0
At most 2 *	0.847103	390.1972	239.2354	0
At most 3 *	0.760431	298.1758	197.3709	0
At most 4 *	0.735644	228.159	159.5297	0
At most 5 *	0.635934	162.9665	125.6154	0
At most 6 *	0.51384	113.456	95.75366	0.0018
At most 7 *	0.477653	78.11628	69.81889	0.0094
At most 8	0.351867	46.29456	47.85613	0.0696
At most 9	0.263956	25.04521	29.79707	0.1598
At most 10	0.179536	10.0284	15.49471	0.2786
At most 11	0.006753	0.332015	3.841466	0.5645

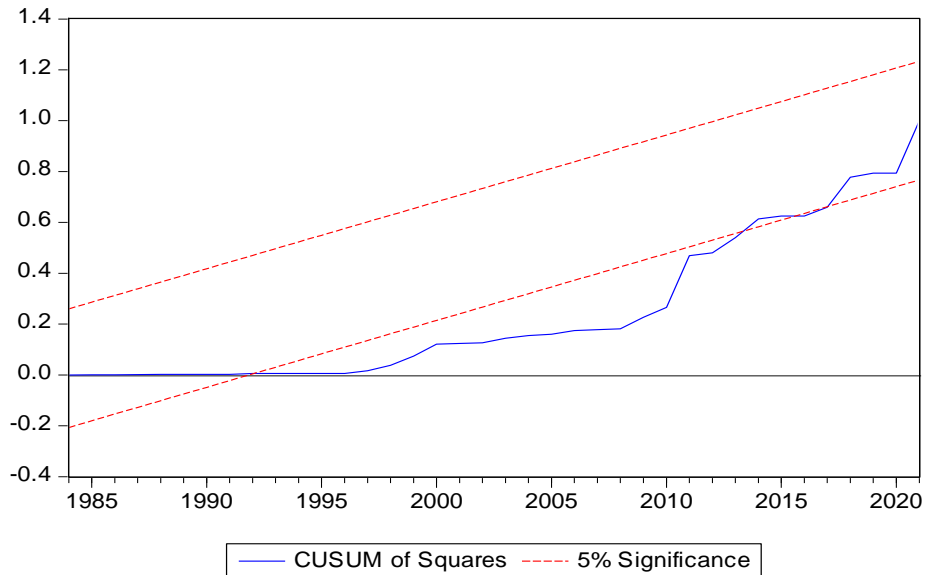
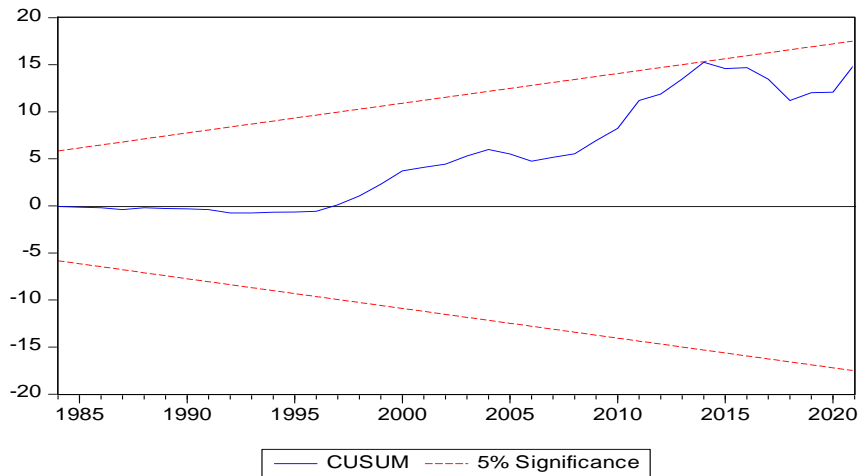
Trace test indicates 8 cointegrating eqn(s) at the 0.05 level  
 \* denotes rejection of the hypothesis at the 0.05 level  
 \*\*MacKinnon-Haug-Michelis (1999) p-values

Hypothesized		Max- Eigen	0.05 Critical	
No. of CE(s)	Eigenvalue	Statistic	Value	Prob.**
None *	0.952289	149.0874	76.57843	0
At most 1 *	0.92345	125.9206	70.53513	0
At most 2 *	0.847103	92.02139	64.50472	0
At most 3 *	0.760431	70.01682	58.43354	0.0025
At most 4 *	0.735644	65.19243	52.36261	0.0015
At most 5 *	0.635934	49.51059	46.23142	0.0216
At most 6	0.51384	35.33967	40.07757	0.1553
At most 7	0.477653	31.82173	33.87687	0.0862
At most 8	0.351867	21.24935	27.58434	0.2614
At most 9	0.263956	15.01682	21.13162	0.2877
At most 10	0.179536	9.696381	14.2646	0.2326
At most 11	0.006753	0.332015	3.841466	0.5645

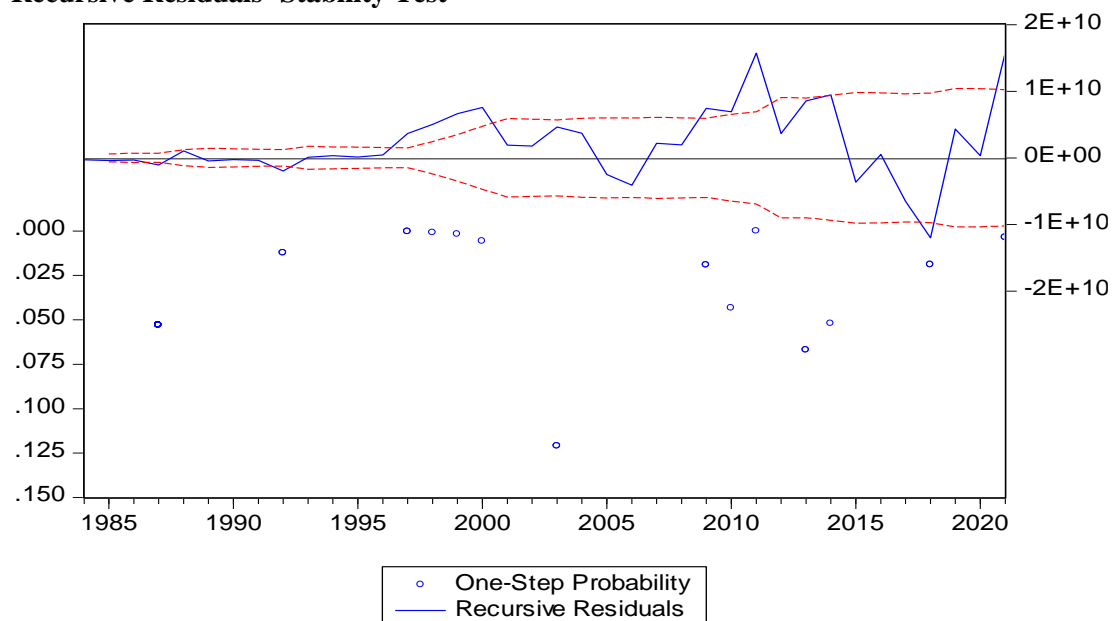
Max-eigenvalue test indicates 6 cointegrating eqn(s) at the 0.05 level  
 \* denotes rejection of the hypothesis at the 0.05 level  
 \*\*MacKinnon-Haug-Michelis (1999) p-values

**Cusum Test-Stability Test**

The combined aggregate (CUSUM) of recursive residuals and the CUSUM of square (CUSUMSQ) tests are applied to survey the boundary steadiness (Pesaran and Pesaran, 1997). The aggregate total test-CUSUM shows the normal orderly varieties in the relapse coefficients and the combined amount of squares test demonstrates unexpected changes from the consistency of the relapse coefficients. The charts for CUSUM and CUSUMSQ tests. Since the plots of the CUSUM and CUSUMSQ measurements fall inside the basic groups of the 5% certainty timespans dependability so there is no unsteadiness. Subsequently, there exists steadiness in the coefficients over the example period



### Recursive Residuals- Stability Test



### Granger Causality Test

A causal connection between two factors X and Y can be demonstrated utilizing the purported Granger causality test, named after the English econometrician Sir Clive Granger. This test utilizes the Understudy's t-measurement and F-measurement tests to decide when the worth of the variable X gives measurably critical data about the development representing things to come worth of the variable Y.

The consequences of the Granger causality test show that the variable doesn't display one-way or two-way Granger causality with one another.

### Practical Implications

All selected variables affect the country's economic growth. Once remittances are started, the inflow of remittances will increase year by year, becoming a major source of foreign currency acquisition next to foreign direct investment. Remittances increase household incomes, raise the living standards of recipients and eliminate poverty. It also provides investment opportunities for recipients. Remittances help stabilize exchange rates and minimize current deficits. Increased remittances can increase the supply of dollars and strengthen the national currency. In addition, increased household income will lead to increased consumption, which may also increase the country's imports. Electricity consumption, oil rents, minerals, direct financing of private investment and gross capital formation also affect a country's GDP. Fluctuations in macroeconomic variables therefore lead to an increase in production, which increases the country's gross domestic product.

### CONCLUSIONS AND RECOMMENDATIONS

The study summarizes the study as a whole, highlights key aspects of the study, and explains the findings of the study. In addition, there are also some recommendations.

### CONCLUSION

The primary motivation behind this study is to reveal insight into the effect of settlements on the Pakistani economy. The motivation behind this study is to quantify settlements, unfamiliar direct venture, wide cash, power utilization, minerals, oil rents, direct loaning to private speculation, imports, absolute dollar speculation, expansion deflators, Gross domestic product per capita, conversion standard. to distinguish the connection between, which is the free factor and GDP is utilized as the reliant variable. Time series

information from 1971 to 2021 are acquired to play out this review. The model decided to play out the numerous relapse examination shows positive importance for BR, GCF\$, MINR, and GDPPC. Devil, FDI, EC and DCP are adversely and altogether connected with Gross domestic product at the 5% importance level. PREM, REER, and INFDEF have essentially nothing to do with Gross domestic product. Cointegration tests are utilized to see present moment and long haul connections between factors. The drawn out Dickey-Fuller test (ADF) was applied to track down factor stationarity for both level and first contrast. All series and gathering measurements were applied as demonstrative tests for time series information. Actually look at unmistakable measurements, relationships, covariance grid, correlogram, ordinarieness test, LM test, Ramsey reset test, Breusch-Agnostic Godfrey test, sequential connection and heteroscedasticity tests to check whether your model is steady. Expectation test to analyze. A multicollinearity test is performed to check whether there is a connection between the free factors. Granger causality test to establish that there is nobody way or two-way causality between these factors and financial development. A CUSUM test is likewise applied to address recursive solidness.

### **RECOMMENDATIONS**

The study suggests that policy makers can control inflation growth in countries by implementing tools such as controlling the market money supply through open market operations, setting interest rates, and setting bank reserve requirements. It suggests that strict measures should be taken to curb it.

The Pakistani government should take serious steps to control inflation, including: B. Reduce imports and increase exports, reduce government spending, prioritize the agricultural sector, take food prices seriously, increase and utilize low-cost energy sources, and eliminate security threats. This research emphasizes on the need of tight policies against reduction of inflation, controlling money supply, decrease in imports, better utilization of natural and energy resources, rise in exports, reduction in government expenditure, encourage investment and monitor exchange rate devaluation and flow of remittances.

The recommendations based on the current findings are mentioned below:

- Based on the results, it recommends government to give incentives to people to invest in productive ventures in order to get long run benefits.
- Remittances increases the purchasing power of people which then start buying imported goods which should be discouraged as it nullify the effect of remittances inflow. • Governments should take steps to minimize transaction costs to encourage more people to send money through formal channels.
- Favorable tax, interest and exchange rate conditions had to be created to attract more foreign direct investment.
- Pakistan's imports are higher than its exports, so the exchange rate needs to be stabilized. Therefore, a high exchange rate can cause inflation.

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