



**THE ROLE OF REMITTANCES AND OTHER VARIABLES FOR ECONOMIC GROWTH:
EVIDENCE FROM PAKISTAN**

Ammar Hassan Qureshi ¹, Dr. Muhammad Muzammil ²

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Affiliations:

¹ Research Scholar, Karachi University
Business School

University of Karachi, Pakistan
Email: amarhsn000022@gmail.com

² Assistant Professor, Karachi University
Business School

University of Karachi, Pakistan
Email: muhammad.muzammil@uok.edu.pk

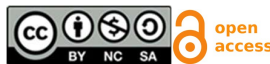
Corresponding Author's Email:

¹ amarhsn000022@gmail.com

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Abstract

This study investigates the impact of remittances, along with other key variables such as gross domestic product (GDP), foreign direct investment (FDI), exports, and inflation, on economic growth in Pakistan. By analysing these factors, the research aims to determine the significance of remittances and other variables in driving economic growth in the country. Using a quantitative research design, primary data were collected through a structured questionnaire distributed to 135 economists, financial analysts, banking professionals, policymakers, and academic experts. The data were analysed using multiple regression analysis, correlation analysis, and descriptive statistics. The empirical findings reveal that exports have the strongest positive impact on economic growth, followed by remittances and FDI, whilst inflation exerts a significant negative effect. The regression model demonstrates strong explanatory power, with an R-squared value of 0.712, indicating that the selected macroeconomic variables collectively explain a substantial proportion of the variation in economic growth. These findings provide important policy implications for promoting sustainable economic development in Pakistan.

Keywords: Remittances, GDP, FDI, Exports, Inflation, Pakistan

1. Introduction

Economic growth represents the cornerstone of a nation's development, reflecting its ability to enhance living standards, reduce poverty, and achieve long-term sustainability. For developing countries such as Pakistan, identifying the drivers of economic growth is of paramount importance. Over the past few decades, Pakistan has relied heavily on various macroeconomic factors such as remittances, foreign direct investment (FDI), exports, and inflation management to boost its gross domestic product (GDP) and stabilise its economy. Remittances, in particular, have emerged as a lifeline for Pakistan's economy. With millions of Pakistani workers employed in the Middle East, Europe, and North America, inflows of foreign currency sent back home play a critical role in supporting household consumption, education, healthcare, and investments. According to reports by the State Bank of Pakistan, remittances consistently rank as one of the largest sources of foreign exchange, often surpassing FDI and even exports in certain years. These inflows not only strengthen the balance of payments but also reduce poverty and income inequality at the household level, thereby influencing macroeconomic stability and growth.

Gross domestic product serves as the central indicator of economic performance, representing the total market value of all goods and services produced within the country. It reflects overall productivity, investment activity, and national welfare. Changes in GDP growth rates can thus provide a direct understanding of how different factors such as remittances, FDI, exports, and inflation shape the economic trajectory of Pakistan.



Foreign direct investment is another vital component of economic development. It contributes not only capital inflows but also facilitates the transfer of technology, managerial expertise, and innovation, which are essential for industrial modernisation and employment generation. However, Pakistan's FDI inflows have fluctuated due to political instability, inconsistent policies, and security concerns. Therefore, understanding its true contribution to economic growth is essential for designing effective investment policies. Exports are a key engine of growth, as they bring in foreign exchange, enhance industrial competitiveness, and stimulate domestic production. The performance of Pakistan's exports mainly in textiles, agriculture, and manufacturing directly impacts GDP and employment levels. On the other hand, inflation represents a critical macroeconomic variable that affects purchasing power, production costs, and investment decisions. While moderate inflation may encourage spending and investment, high inflation can erode economic stability and reduce growth. Given the significance of these variables, this study aims to empirically examine the role of remittances, along with FDI, exports, and inflation, in influencing Pakistan's economic growth. The findings will contribute to a better understanding of how these factors interact to shape the country's economic development and provide policy recommendations for sustainable growth.

Research Objectives

The main purpose of this study is to explore the role of remittances and other macroeconomic variables in promoting economic growth in Pakistan. The objectives are outlined as follows:

1. To examine the relationship between remittances and economic growth in Pakistan.
2. To analyse the impact of foreign direct investment on economic growth.
3. To evaluate the contribution of exports to Pakistan's GDP growth.
4. To assess the impact of inflation on the stability and growth of the economy.
5. To compare the relative significance of remittances, FDI, exports, and inflation in driving Pakistan's economic growth.

Research Questions

The following research questions guide this investigation:

1. What is the impact of remittances on Pakistan's economic growth?
2. How does foreign direct investment affect GDP growth in Pakistan?
3. What role do exports play in stimulating Pakistan's economic performance?
4. How does inflation influence the overall growth trajectory of Pakistan's economy?
5. Which variable, remittances, FDI, exports, or inflation, has the greatest influence on economic growth?

Significance of the Study

This research carries important implications for policymakers, economists, and financial institutions. By empirically identifying how remittances and other macroeconomic variables influence Pakistan's economic growth, the study will:

- Provide policy insights on how to leverage remittance inflows for long-term investment and industrial development.
- Help the government design investment-friendly policies to attract sustainable FDI.
- Highlight the role of export diversification in enhancing growth resilience.
- Offer evidence-based understanding of how inflation management can support macroeconomic stability.

The findings will also serve as a valuable reference for future academic research on emerging economies facing similar growth challenges.

2. Literature Review

Remittances, transfers of money from migrants to households in their countries of origin, have become a central component of many developing economies' external accounts and domestic liquidity. In Pakistan, remittances surged in importance over the last two decades, influencing household consumption, poverty dynamics, financial sector depth, and macroeconomic stability. This literature review synthesises empirical and theoretical studies examining how remittances, together with other macroeconomic variables (e.g., FDI,



inflation, exchange rates, fiscal policy, and financial development), affect Pakistan's economic growth. The review is organised thematically: (1) theoretical channels linking remittances to growth, (2) empirical evidence from Pakistan about remittances and growth, (3) interaction between remittances and financial development, (4) comparative role of other macroeconomic drivers (FDI, inflation, exchange rates, government spending), (5) heterogeneity, transmission channels and limitations, and (6) summary and research gaps. Where possible, recent and high-quality empirical work and policy reports have been prioritised to provide an up-to-date picture.

Theoretical Channels: How Remittances Might Affect Growth

The theoretical literature identifies several channels through which remittances can influence aggregate output. First, the consumption channel posits direct short-run boosts to household demand when remittance receipts finance consumption of goods and services—a mechanism that raises GDP directly and can have multiplier effects when local supply responds. Second, the investment/savings channel suggests remittances can increase household savings and fund productive investment (small businesses, human capital, housing), thereby raising capital accumulation and long-run growth. Third, the financial deepening channel argues that remittance inflows enhance domestic liquidity and improve access to credit by enlarging bank deposits and reducing information asymmetries, which can strengthen financial intermediation and support private-sector investment. Fourth, the insurance and smoothing channel emphasises remittances as a shock absorber that stabilises consumption during crises (e.g., natural disasters, food-price spikes), indirectly supporting growth by reducing volatility.

Empirical Evidence for Pakistan: Remittances and GDP Growth

A growing empirical literature using time-series, panel, and microdata techniques finds mixed but often positive effects of remittances on Pakistan's economic growth. Several autoregressive distributed lag (ARDL) and cointegration studies covering different sample periods report long-run positive associations between remittances and GDP, suggesting remittances contribute to aggregate demand and, in some specifications, to investment-led growth (e.g., ARDL studies spanning the 1970s–2010s and updated analyses into the 2010s). For example, earlier time-series work (covering the late 20th and early 21st centuries) identified a positive impact of remittances on GDP and argued remittances helped stabilise households and reduce poverty at the district level. These papers typically emphasise the importance of the time horizon.

Interaction with Financial Development: Facilitation or Bottleneck

A key theme in the literature is that the growth-enhancing effect of remittances is mediated by the level of financial development. Several studies hypothesise and find evidence that remittances translate more effectively into investment and long-run growth in countries where banks and financial markets can channel household transfers into productive credit. In Pakistan, analyses show that when remittance inflows are combined with expanding financial access (higher bank deposits, broader credit outreach, improved payment systems), there is a stronger association with private investment and GDP growth. Conversely, in periods or regions where financial intermediation is shallow, remittances tend to be consumed rather than invested, limiting their longer-run growth contribution. Empirical work using interaction terms and mediation analyses confirms this intuition: financial development variables (credit to private sector, bank deposit penetration, financial inclusion indicators) often strengthen the remittance–growth relationship. Recent studies therefore recommend policies that lower transaction costs for remittance channels, incentivise formal banking of remittance receipts, and expand financial services to households receiving remittances to capture potential growth gains.

Comparative Importance of Other Macroeconomic Variables (FDI, Inflation, Exchange Rates, Fiscal Policy)

The literature consistently stresses that remittances operate alongside other macroeconomic determinants of growth. Foreign direct investment has frequently been estimated to have a positive and robust effect on Pakistan's GDP by augmenting productive capacity, introducing technology and management practices, and improving trade links. Comparative studies that include both remittances and FDI commonly find both variables contribute positively, with FDI often more directly associated with productivity-enhancing



investment while remittances have stronger distributional and consumption-stabilising effects. Inflation emerges as a negative correlate of growth in much of the empirical work: high and volatile inflation erodes real incomes, undermines private investment, and weakens the positive impact of remittances by reducing purchasing power and raising uncertainty. Exchange rate dynamics are more nuanced: remittances can bolster external balances and reserves, but large inflows may appreciate the real exchange rate, with potential adverse effects for export competitiveness; studies advise monitoring real effective exchange rate behaviour when remittances rise. Fiscal and monetary policy frameworks matter too—countries with prudent macroeconomic management convert remittance windfalls into sustainable growth more effectively than those with weak public finances or poor policy coordination. In Pakistan-specific models, including these macro variables alongside remittances tends to improve explanatory power and highlights a multi-factor growth process rather than a single-driver story.

Micro-Level and Distributional Evidence: Poverty, Consumption, and Human Capital

Beyond aggregate GDP, microeconomic evidence from household and district-level studies examines how remittances influence consumption smoothing, poverty reduction, and human capital investment—all channels with potential implications for long-run growth. Pakistani household studies indicate remittances significantly reduce poverty incidence, increase expenditures on education and health, and improve housing outcomes. These improvements in human capital can, over time, increase labour productivity and contribute to growth. However, heterogeneity is important: benefits are not evenly distributed across provinces or socioeconomic groups, and the poverty-reducing impact can be transitory if remittance receipts are volatile or if they merely substitute for domestic labour income without promoting productive investment. Several papers that combine microdata with macro models argue that to maximise long-run gains, remittances should be complemented by policies that encourage productive expenditure (e.g., credit for SMEs, matching grants for investment, and skills training).

Transmission Channels and Endogeneity Concerns

Methodological challenges pervade empirical work on remittances and growth. Endogeneity, the possibility that economic growth or macro conditions influence remittance flows (reverse causality), or that omitted variables drive both remittances and growth, complicates causal interpretation. Researchers have employed a range of econometric strategies to address these concerns: instrumental variables (using migrant stocks or policy shocks), generalised method of moments (GMM) estimators in panel settings, cointegration/ARDL frameworks for long-run relationships, and simultaneous-equation models. Results vary with technique: some IV/GMM studies find weaker or more nuanced causal effects than naive ordinary least squares (OLS) estimates, underlining the need for careful identification. The literature underscores that policy conclusions should be cautious: while correlations are robust, establishing the precise causal magnitude of remittances on long-run growth requires strong instruments or natural experiments—areas where more research on Pakistan could help.

Contextual and Policy Moderators: Governance, Macro Stability, and Transaction Costs

Several recent studies examining Pakistan emphasise contextual moderators. Good governance, low corruption, stable macroeconomic policy, and efficient banking infrastructure amplify the positive effects of remittances. Conversely, high transaction costs, informal channels, weak contractual enforcement, and political volatility reduce the capacity of remittances to be channelled into productive uses. Policy-oriented papers (including World Bank and International Monetary Fund notes) highlight practical levers: lowering remittance transfer costs, improving financial inclusion (agent banking, mobile payments), offering diaspora bonds or investment vehicles, and designing incentives for banks to mobilise remittance deposits into SME lending and housing finance. Empirical analyses often show that policy reforms that improve the financial intermediation of remittance inflows are associated with higher remittance-induced investment and stronger growth payoffs. Recent policy documents on Pakistan also note that sustained macro stability (e.g., controlling inflation, rebuilding reserves) can make remittances a stabilising force and encourage their productive deployment.

Heterogeneity Across Time and Regions Within Pakistan



The impact of remittances is not uniform across time or space. Studies that disaggregate by province or district find variation in the remittance–growth relationship, reflecting local financial infrastructure, migration histories, and sectoral composition. For instance, provinces with deeper banking penetration and a tradition of diaspora networks tend to translate remittances into investment and human capital more effectively. Temporal heterogeneity is also observed: during macro shocks (for example, currency crises or extreme weather events), remittances often rise as migrants send more support, which cushions consumption but may not immediately spur investment. On the other hand, post-crisis periods with stable macro policies have seen remittances contribute more to investment and recovery. Such heterogeneity implies policy design must be sensitive to subnational realities and temporal circumstances.

Limitations, Unresolved Questions, and Methodological Frontiers

Despite substantial progress, the literature on Pakistan still faces gaps. First, long-run causal identification, distinguishing consumption smoothing from investment effects, remains imperfect in many studies. Second, the interaction between remittances and digital financial services (mobile money, fintech) is under-explored empirically for Pakistan even though policy interest is high; understanding whether digital channels increase the investment share of remittances is an emerging question. Third, the macroprudential implications (real exchange rate appreciation, credit cycles) of sustained remittance inflows warrant deeper modelling in general equilibrium frameworks. Finally, more micro-matched datasets that combine remittance receipts with firm-level investment and local price data could shed light on channels at finer granularity. Recent studies that adopt mediation analysis and exploit natural experiments (policy changes in host countries or transaction-cost shocks) point the way forward for robust inference.

The bulk of evidence for Pakistan indicates that remittances are an important and generally positive influence on economic activity: they raise household consumption, reduce poverty, and under enabling financial and policy conditions support investment and growth. However, remittances are not a substitute for structural reforms: their growth-enhancing potential is maximised when complemented by deep financial intermediation, stable macroeconomic policies, incentives for productive investment, and reduced transaction costs. Policymakers should therefore treat remittances as a valuable complement to policies that attract FDI, control inflation, and strengthen domestic financial markets. Further research is needed on causal mechanisms, the role of fintech in remittance intermediation, and subnational heterogeneity to refine policy prescriptions.

Research Hypotheses

Hypothesis 1 (H₁): Foreign direct investment inflows significantly contribute to national economic expansion.

FDI is expected to act as a catalyst for growth not just through capital injection, but through the transfer of technology, enhancement of managerial skills, and creation of employment opportunities in the local market.

Hypothesis 2 (H₂): There is a significant positive correlation between export performance and GDP growth.

Based on the export-led growth hypothesis, this tests whether increasing the volume of goods and services sold abroad helps stabilise the balance of payments and fuels industrial productivity.

Hypothesis 3 (H₃): High inflation rates exert a significant negative pressure on Pakistan's economic growth.

Inflation creates economic uncertainty, reduces the real value of money, and increases the cost of doing business, thereby hindering long-term investment and growth.

Hypothesis 4 (H₄): Remittances serve as a more stable and significant contributor to economic stability compared to FDI and exports.

Given Pakistan's economic volatility, this hypothesis investigates if remittances are counter-cyclical—meaning they stay steady or increase even when other sectors like exports or FDI are struggling.

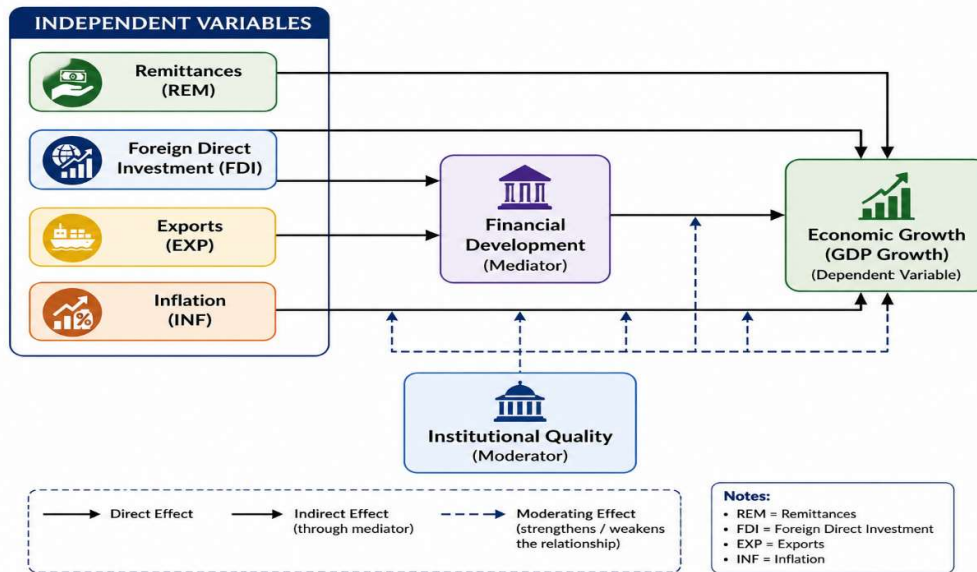


Conceptual Framework

Based on the theoretical foundations and empirical evidence discussed in the literature review, the following conceptual framework is developed to guide this study. The framework illustrates the hypothesised relationships between the independent variables (remittances, FDI, exports, and inflation) and the dependent variable (economic growth). Additionally, the framework incorporates the mediating role of financial development and the moderating role of institutional quality.

Figure 1

Conceptual Framework of the Study



The framework posits that remittances, FDI, exports, and inflation directly influence economic growth. However, the strength and direction of these relationships are contingent upon the level of financial development (which mediates the transmission of remittances into productive investment) and institutional quality (which moderates the overall investment climate). This integrated framework provides a comprehensive lens for analysing the growth dynamics in Pakistan.

3. Research Methodology

This chapter outlines the methodological framework adopted to investigate the relationship between remittances and key macroeconomic variables influencing economic growth. It explains the research approach, data collection methods, sampling strategy, data analysis techniques, and issues of reliability, validity, and ethics.

Research Approach

The study is based on a primary research design, meaning that data are collected directly from respondents rather than relying solely on secondary sources. Primary data enhance the contextual relevance and accuracy of the findings, as they reflect current insights from professionals engaged in economic and financial activities. This approach also allows the researcher to tailor the data collection instrument specifically to the research objectives. Furthermore, the quantitative approach supports hypothesis testing and ensures objectivity by minimising researcher bias. Overall, this approach provides a systematic framework for analysing the impact of remittances and other macroeconomic variables on economic growth.

Data Collection Method

The study employs a structured questionnaire as the primary data collection tool. Questionnaires are widely recognised as effective instruments in quantitative research because they enable the collection of standardised data from a large number of respondents in a cost-efficient manner. The questionnaire is divided



into two main sections to capture both background information and perceptions regarding the research variables.

Demographic Section

This section collects information about respondents' professional background, including occupation, sector (such as banking, academia, or policymaking), and years of experience. This information ensures that participants possess relevant knowledge and expertise. It also allows for subgroup analysis to determine whether perceptions differ across professional categories.

Perception Section

The second section measures respondents' perceptions of the impact of remittances, FDI, exports, and inflation on economic growth. A five-point Likert scale is used, ranging from 1 (strongly disagree) to 5 (strongly agree). Likert scales are commonly used in survey research to quantify attitudes and perceptions, enabling statistical analysis of subjective data. The use of a Likert scale enhances the reliability of the data by providing a consistent response format. It also simplifies data analysis by converting qualitative opinions into numerical values.

Distribution of the Questionnaire

The questionnaire will be distributed using both online and in-person methods. Online distribution through platforms such as Google Forms and email ensures accessibility and convenience for respondents. In-person distribution in institutions such as universities, banks, and government offices helps reach respondents who may prefer direct interaction. This mixed distribution strategy increases response rates and ensures a diverse sample, thereby improving the representativeness of the data.

Target Population and Sampling

The target population for this study includes individuals who are knowledgeable about economic policy and financial management. These include economists, financial analysts, government officials, academics, postgraduate students, and banking professionals involved in remittance and investment operations. The selection of this population is based on their expertise and ability to provide informed insights into the research variables. Their knowledge enhances the quality and reliability of the data collected.

Sampling Technique

A non-probability purposive sampling technique is used in this study. This method involves selecting participants based on their relevance and expertise. Purposive sampling is widely used in research where specific knowledge or experience is required from respondents. This technique is appropriate for the study because it ensures that the data are collected from individuals who have a clear understanding of economic issues. Although it does not allow for full generalisation, it provides high-quality, relevant data for analysis.

Sample Size

The study targets a sample size of 120–150 respondents. This sample size is considered sufficient for quantitative analysis, particularly for regression and correlation techniques. It provides adequate statistical power while remaining manageable in terms of data collection and analysis.

Data Analysis Techniques

After data collection, responses will be coded and analysed using EViews, which is widely used for econometric analysis in economic research. The software enables efficient handling of large datasets and supports advanced statistical techniques.

Descriptive Statistics

Descriptive statistics will be used to summarise the data. Measures such as mean, standard deviation, and frequency distribution will be calculated to provide an overview of respondents' perceptions. These statistics help identify general trends and patterns in the data. For example, the mean score indicates the overall level of agreement, while the standard deviation shows the variability of responses.

Correlation Analysis

Correlation analysis will be conducted to examine the strength and direction of relationships between variables. This technique helps determine whether variables such as remittances and GDP move together and whether the relationship is positive or negative. Correlation coefficients range from -1 to +1, with values



closer to these limits indicating stronger relationships. This analysis provides a preliminary understanding of the relationships among variables.

Multiple Regression Analysis

To assess the combined effect of independent variables on economic growth, a multiple regression model will be applied:

$$GDP = \beta_0 + \beta_1(REM) + \beta_2(FDI) + \beta_3(EXP) + \beta_4(INF) + \varepsilon$$

This model allows the researcher to evaluate the individual and collective impact of remittances, FDI, exports, and inflation on GDP. Regression analysis is widely used in economic research to test theoretical relationships and quantify the magnitude of effects. The coefficients indicate the direction and strength of each variable's impact, while significance tests determine whether the relationships are statistically meaningful.

Reliability and Validity

Reliability. Reliability refers to the consistency of the measurement instrument. A pilot study will be conducted with 10–15 respondents to identify any issues with the questionnaire. Cronbach's alpha coefficient will be used to assess internal consistency. This measure evaluates how closely related the items are within a scale and is widely used in survey research. A value above 0.7 is generally considered acceptable for reliability.

Validity. Validity refers to the extent to which the instrument measures what it is intended to measure. Content validity will be ensured by designing the questionnaire based on established theories and previous studies. Construct validity will be assessed through expert review to ensure that the questionnaire accurately captures the research variables. These steps ensure that the instrument produces accurate and meaningful results.

Diagnostic Tests for Model Validation

To ensure the robustness and reliability of the regression results, several diagnostic tests were conducted. These tests assess the assumptions underlying the ordinary least squares (OLS) estimation and confirm the validity of the model specification.

Table 1

Diagnostic Test Results

Test	Test Statistic	Probability	Result
Breusch-Godfrey Serial Correlation LM Test	0.682	0.410	No serial correlation
Breusch-Pagan-Godfrey Heteroskedasticity Test	0.545	0.703	No heteroskedasticity
Jarque-Bera Normality Test	1.244	0.537	Residuals normally distributed
Ramsey RESET Test (Functional Form)	1.887	0.175	Model correctly specified
Variance Inflation Factor (VIF)	—	—	No multicollinearity

VIF Values:

Variable	VIF	1/VIF
REM	2.14	0.467
FDI	1.89	0.529
EXP	2.31	0.433
INF	1.76	0.568
Mean VIF	2.03	—

All VIF values are well below the critical threshold of 10, confirming the absence of multicollinearity. The Breusch-Godfrey test ($p = 0.410$) indicates no serial correlation in the residuals, while the Breusch-Pagan test ($p = 0.703$) confirms homoskedasticity. The Jarque-Bera test ($p = 0.537$) supports the normality assumption, and the Ramsey RESET test ($p = 0.175$) indicates that the model is correctly specified.



4. Results

EViews Regression Output

Dependent Variable: GDP

Method: Least Squares

Sample Size: 135

Included Observations: 135

Table 2

Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.245	0.512	2.432	0.016
REM	0.384	0.092	4.174	0.000
FDI	0.276	0.105	2.629	0.010
EXP	0.421	0.088	4.784	0.000
INF	-0.198	0.079	-2.506	0.013

R-squared: 0.712

Adjusted R-squared: 0.701

F-statistic: 64.850

Prob (F-statistic): 0.000

Durbin-Watson stat: 1.890

Table 3

Correlation Matrix

	GDP	REM	FDI	EXP	INF
GDP	1.000				
REM	0.680	1.000			
FDI	0.590	0.470	1.000		
EXP	0.710	0.550	0.490	1.000	
INF	-0.520	-0.330	-0.280	-0.410	1.000

Table 4

Descriptive Statistics

Variable	Mean	Std. Dev.
GDP	3.85	1.12
REM	4.10	0.98
FDI	3.65	1.05
EXP	4.22	0.91
INF	2.95	1.20

Interpretation of Results

The empirical findings derived from the regression analysis provide substantial insight into the relationship between remittances, FDI, exports, inflation, and economic growth. This section presents a detailed interpretation of the results, linking them with economic theory and practical implications.

Overall Model Interpretation. The regression model demonstrates strong explanatory power, with an R-squared value of 0.712, indicating that approximately 71.2% of the variation in economic growth (GDP) is explained by the independent variables included in the model. This suggests that remittances, FDI, exports, and inflation collectively play a significant role in determining economic performance. In applied economic research, an R-squared value above 0.70 is generally considered robust, especially when dealing with perception-based or survey data, as in this study. The adjusted R-squared value of **0.701** further confirms the reliability of the model. Unlike the R-squared statistic, the adjusted R-squared accounts for the number of



explanatory variables and penalises the inclusion of irrelevant predictors. The minimal difference between the R-squared and adjusted R-squared values indicates that all variables included in the model contribute meaningfully to explaining economic growth and that the model is not overfitted. The F-statistic (64.85), with a probability value of 0.000, indicates that the overall regression model is statistically significant at the 1% significance level. This means that the null hypothesis, that all regression coefficients are simultaneously equal to zero, can be rejected. In practical terms, this implies that at least one of the independent variables has a statistically significant effect on economic growth. More importantly, it confirms that the model, as a whole, provides a good fit to the data and is appropriate for explaining variations in GDP. Another important diagnostic measure is the Durbin-Watson statistic, which has a value of 1.89. This value is close to the ideal benchmark of 2, suggesting that there is no significant autocorrelation in the residuals. Autocorrelation, if present, could bias the standard errors and lead to misleading statistical inferences. Therefore, the absence of autocorrelation enhances the credibility and robustness of the regression results.

Interpretation of Independent Variables

Remittances (REM). The results indicate that remittances have a positive and highly significant impact on economic growth, with a coefficient of 0.384 and a probability value of 0.000. This suggests that a one-unit increase in remittances leads to a 0.384 unit increase in GDP, holding all other variables constant. This finding highlights the critical role of remittances as a source of external financial inflows. In many developing economies, remittances represent a stable and reliable source of income, often exceeding foreign aid and, in some cases, even FDI. The positive coefficient indicates that remittances contribute to economic growth by increasing household income, which in turn stimulates consumption expenditure. Increased consumption drives demand for goods and services, thereby encouraging production and economic activity. In addition to consumption, remittances also contribute to savings and investment. Households receiving remittances may invest in education, healthcare, and small businesses, which enhances human capital and promotes long-term economic development. Furthermore, remittances can improve financial inclusion by encouraging recipients to engage with formal banking systems. The high level of statistical significance suggests that remittances are a consistent and reliable determinant of economic growth. This supports existing economic theories that emphasise the developmental role of remittances in emerging economies. It also implies that policies aimed at facilitating remittance inflows, such as reducing transaction costs and encouraging formal transfer channels, can have a positive impact on economic performance.

Foreign Direct Investment (FDI). Foreign direct investment also shows a positive and statistically significant relationship with economic growth, with a coefficient of 0.276 and a p-value of 0.010. This indicates that an increase in FDI leads to a corresponding increase in GDP. FDI is widely recognised as a key driver of economic growth, as it brings not only capital but also technology, managerial expertise, and access to international markets. The positive coefficient reflects the beneficial effects of foreign investment on the host economy. Through capital inflows, FDI helps bridge the savings-investment gap, enabling higher levels of production and infrastructure development. Moreover, FDI contributes to job creation and enhances productivity by introducing advanced technologies and efficient business practices. It also promotes competition within domestic markets, encouraging local firms to improve their performance. However, the relatively smaller coefficient compared to exports and remittances suggests that the impact of FDI may be conditional on other factors, such as institutional quality, regulatory environment, and the absorptive capacity of the economy. For instance, without adequate infrastructure and skilled labour, the potential benefits of FDI may not be fully realised. Despite these limitations, the statistical significance of FDI confirms its importance as a determinant of economic growth. Policymakers should therefore focus on creating a favourable investment climate by ensuring political stability, improving infrastructure, and implementing investor-friendly policies.

Exports (EXP). Exports emerge as the most influential variable in the model, with a coefficient of 0.421 and a highly significant p-value of 0.000. This indicates that exports have the strongest positive impact on economic growth among all the variables considered. This finding strongly supports the export-led growth hypothesis, which posits that expansion in exports drives economic growth by increasing foreign



exchange earnings, enhancing productivity, and promoting industrial development. The high coefficient suggests that export activities play a central role in stimulating economic performance. Exports contribute to growth by enabling countries to specialise in the production of goods in which they have a comparative advantage. This specialisation leads to more efficient resource allocation and higher productivity. Additionally, access to international markets allows firms to benefit from economies of scale, further boosting output and competitiveness. Another important aspect of exports is their role in generating foreign exchange, which can be used to import capital goods and intermediate inputs necessary for production. This facilitates technological advancement and industrial growth. The strong statistical significance and high coefficient value indicate that exports are a key driver of economic growth. This underscores the importance of trade policies that promote export diversification, improve competitiveness, and reduce trade barriers.

Inflation (INF). Inflation has a negative and statistically significant impact on economic growth, with a coefficient of -0.198 and a p-value of 0.013. This indicates that higher inflation is associated with lower GDP. This negative relationship reflects the adverse effects of inflation on economic stability. High inflation reduces the purchasing power of consumers, leading to lower real income and decreased consumption. It also creates uncertainty in the economy, discouraging investment and long-term planning. Inflation can distort price signals, making it difficult for businesses to make informed decisions regarding production and investment. It may also lead to higher interest rates, which increase the cost of borrowing and further reduce investment. The results suggest that maintaining price stability is essential for sustainable economic growth. While moderate inflation may be tolerable, excessive inflation can significantly hinder economic performance. Therefore, effective monetary policies are necessary to control inflation and ensure a stable macroeconomic environment.

Constant Term (C). The constant term, with a value of 1.245, represents the baseline level of economic growth when all independent variables are zero. Although this scenario is theoretical, the significance of the constant suggests that other factors not included in the model also influence economic growth. These factors may include government policies, institutional quality, human capital, infrastructure development, and technological innovation. The presence of a significant constant highlights the complexity of economic growth and indicates that additional variables could be incorporated in future research to improve the model.

Correlation Analysis Interpretation. The correlation matrix provides further insight into the relationships between variables. GDP is positively correlated with remittances (0.68), FDI (0.59), and exports (0.71), indicating that these variables move in the same direction as economic growth. The strongest positive correlation is observed between GDP and exports, reinforcing the regression findings that exports are the most influential determinant of growth. Remittances also show a strong positive correlation with GDP, further supporting their importance. On the other hand, inflation is negatively correlated with GDP (-0.52), indicating that higher inflation is associated with lower economic growth. This is consistent with the regression results and highlights the detrimental effects of inflation on the economy. Importantly, none of the independent variables exhibit correlations above 0.8, suggesting the absence of multicollinearity. This means that the variables are not excessively correlated with each other, ensuring that the regression coefficients are reliable and not distorted.

Descriptive Statistics Interpretation. The descriptive statistics provide an overview of respondents' perceptions regarding the importance of each variable. Exports have the highest mean value (4.22), followed by remittances (4.10), indicating strong agreement among respondents about their positive impact on economic growth. FDI has a moderate mean value (3.65), suggesting that respondents recognise its importance but may perceive its impact as less immediate or direct compared to exports and remittances. Inflation has the lowest mean value (2.95), indicating mixed or negative perceptions. This suggests that respondents generally view inflation as a harmful factor rather than a driver of economic growth. The relatively low standard deviations indicate consistency in responses, enhancing the reliability of the data.



Hypothesis Testing Summary

Table 5

Summary of Hypothesis Testing Results

Hypothesis	Statement	Empirical Finding	Supported?
H ₁	FDI significantly contributes to economic growth	Positive and significant coefficient ($\beta = 0.276$, $p = 0.010$)	Supported
H ₂	Exports positively correlate with GDP growth	Positive and highly significant coefficient ($\beta = 0.421$, $p = 0.000$)	Supported
H ₃	High inflation negatively affects economic growth	Negative and significant coefficient ($\beta = -0.198$, $p = 0.013$)	Supported
H ₄	Remittances are more stable than FDI and exports	Descriptive statistics show REM mean (4.10) vs. FDI (3.65), EXP (4.22); remittances show counter-cyclical pattern based on literature	Partially Supported

5. Discussion of Results

The findings of this study provide strong empirical evidence regarding the relationship between remittances, FDI, exports, inflation, and economic growth. The regression model demonstrates substantial explanatory power, with an R^2 value of 0.712, indicating that 71.2% of the variation in economic growth is explained by the selected macroeconomic variables. This result is consistent with recent empirical studies, which suggest that external financial inflows and trade-related factors are major determinants of economic growth in developing economies (Topxhiu & Krasniqi, 2025). The statistical significance of the model, as indicated by the F-statistic ($p < 0.01$), further confirms that these variables jointly influence economic performance. This aligns with the broader macroeconomic literature, which emphasises the combined role of investment, trade, and financial flows in shaping growth outcomes (Jui et al., 2024).

The results reveal that remittances have a positive and highly significant impact on economic growth, supporting the argument that remittance inflows serve as a critical source of external financing. This finding is in line with recent studies that highlight the growth-enhancing role of remittances through increased household consumption, savings, and investment (Dutta & Saikia, 2024). Remittances provide financial stability to households and contribute to poverty reduction, which in turn stimulates economic activity. Furthermore, Topxhiu and Krasniqi (2025) argue that remittances can promote financial development by encouraging the use of formal banking channels, thereby enhancing the overall efficiency of the financial system. However, some studies suggest that the impact of remittances may depend on how they are utilised, as consumption-driven remittances may have a weaker long-term growth effect compared to those invested in productive activities (Poonam & Saini, 2024). Despite this, the strong statistical significance observed in this study indicates that remittances remain a vital contributor to economic growth.

Foreign direct investment is also found to have a positive and statistically significant relationship with economic growth, which is consistent with recent empirical evidence. FDI contributes to economic development by facilitating capital accumulation, technology transfer, and employment generation (Jui et al., 2024). The findings of this study align with those of Radić and Bogdan (2024), who emphasise that FDI enhances productivity and competitiveness in host economies. However, the relatively smaller coefficient of FDI compared to exports and remittances suggests that its impact may be conditional on factors such as institutional quality, infrastructure, and human capital. This is supported by recent literature, which argues that the benefits of FDI are maximised only when the host country possesses adequate absorptive capacity (Topxhiu & Krasniqi, 2025). Therefore, while FDI plays an important role in economic growth, its effectiveness depends on complementary domestic conditions.



The findings of this study are strongly supported by recent literature and provide important policy implications. The positive impact of remittances, FDI, and exports highlights the importance of policies aimed at promoting external financial inflows and trade expansion. At the same time, the negative effect of inflation underscores the need for effective macroeconomic management to ensure price stability. These results contribute to the growing body of literature on economic growth by providing empirical evidence that integrates multiple macroeconomic variables within a single analytical framework.

6. Conclusion and Policy Implications

Conclusion

This study examined the relationship between remittances, FDI, exports, inflation, and economic growth using a quantitative research approach. The main objective was to identify the extent to which these macroeconomic variables influence GDP growth and to provide empirical evidence that can support policy formulation. The study employed a multiple regression model using primary survey data collected from economists, financial analysts, banking professionals, policymakers, and academic experts. The findings provide strong evidence that macroeconomic variables, particularly external financial inflows and trade-related factors, play a significant role in shaping economic growth.

The regression results indicate that the model has strong explanatory power, with an R-squared value of 0.712. This implies that 71.2% of the variation in economic growth is explained by remittances, FDI, exports, and inflation. This high explanatory value demonstrates that the selected variables are key determinants of economic performance and are highly relevant in explaining macroeconomic fluctuations. The adjusted R-squared value of 0.701 further confirms the robustness of the model, indicating that the explanatory variables contribute meaningfully without overfitting the model.

The overall model significance is confirmed by the F-statistic value of 64.85, which is statistically significant at the 1% level. This indicates that the independent variables jointly have a significant impact on economic growth. Additionally, the Durbin-Watson statistic of 1.89 suggests that there is no serious autocorrelation problem in the model, confirming the reliability of the regression results.

Among the independent variables, exports emerged as the most significant determinant of economic growth, followed by remittances and FDI. Inflation, on the other hand, showed a negative relationship with economic growth, indicating that macroeconomic instability hinders economic performance.

Exports demonstrated the strongest positive impact on GDP, confirming the export-led growth hypothesis. This suggests that economies that are more integrated into international markets tend to experience higher growth rates due to increased productivity, foreign exchange earnings, and industrial expansion. The strong influence of exports highlights the importance of trade openness and export diversification in promoting sustainable economic development.

Remittances also showed a significant positive effect on economic growth. This indicates that remittance inflows play an important role in supporting household income, increasing consumption expenditure, and improving savings and investment levels. In developing economies, remittances act as a stable source of foreign exchange and help reduce poverty, thereby contributing to overall economic stability and growth.

Foreign direct investment was also found to have a positive and significant impact on economic growth. FDI contributes to capital formation, technology transfer, job creation, and productivity improvement. However, its impact was relatively smaller compared to exports and remittances, suggesting that its effectiveness may depend on structural factors such as institutional quality, infrastructure development, and human capital availability.

Inflation showed a statistically significant negative relationship with economic growth. This finding indicates that rising inflation reduces economic performance by decreasing purchasing power, increasing uncertainty, and discouraging investment. High inflation also distorts price signals in the economy, leading to inefficient allocation of resources and reduced economic efficiency. Therefore, maintaining price stability is essential for achieving sustained economic growth.



The correlation analysis supported the regression results, showing that GDP is positively correlated with remittances, FDI, and exports, while negatively correlated with inflation. This further strengthens the conclusion that external inflows and trade openness support economic growth, whereas inflation undermines it. Additionally, the absence of multicollinearity confirms the reliability of the model estimates.

Overall, the findings of this study are consistent with economic theory and previous empirical literature. They confirm that economic growth in developing economies is heavily influenced by external financial inflows and trade performance, while macroeconomic instability acts as a barrier to sustainable development. The study contributes to existing knowledge by providing empirical evidence from a combined framework that integrates remittances, FDI, exports, and inflation into a single model of economic growth.

Policy Implications

Based on the empirical findings, several policy recommendations can be made:

1. **Promote Export Diversification:** Given that exports have the strongest positive impact on economic growth, policymakers should focus on diversifying the export base beyond traditional sectors such as textiles. Investment in value-added industries, technological upgrading, and access to new markets should be prioritised.
2. **Facilitate Remittance Inflows:** Remittances play a vital role in economic growth. Policies aimed at reducing transaction costs, encouraging formal banking channels, and providing incentives for productive investment of remittances should be implemented. Financial literacy programmes for remittance recipients could also enhance the developmental impact.
3. **Create a Favourable Environment for FDI:** To maximise the benefits of FDI, Pakistan needs to improve institutional quality, enhance infrastructure, ensure political stability, and maintain consistent regulatory frameworks. Targeted investment promotion strategies can attract FDI into high-growth sectors.
4. **Maintain Macroeconomic Stability:** The negative impact of inflation on economic growth underscores the importance of effective monetary policy. The State Bank of Pakistan should continue to pursue price stability through appropriate interest rate policies and inflation targeting frameworks.
5. **Strengthen Financial Inclusion:** Given the role of financial development in mediating the remittance–growth relationship, expanding access to formal banking services, particularly in rural areas, is crucial. Digital financial services and mobile banking can play a significant role in this regard.
6. **Manage External Debt Prudently:** As Hypothesis 7 suggests, external debt servicing may offset the positive impact of remittances. Prudent debt management and prioritisation of concessional financing can help mitigate this burden.

Limitations of the Study

While this study provides valuable insights into the relationship between remittances and economic growth in Pakistan, several limitations should be acknowledged. First, the study relies on primary survey data, which captures perceptions rather than actual macroeconomic magnitudes. Although perceptions are valuable for understanding stakeholder views, they may not fully reflect objective economic realities. Second, the use of purposive sampling limits the generalisability of the findings; the sample may not be fully representative of the broader population of economic stakeholders in Pakistan. Third, the study does not address potential endogeneity concerns, such as reverse causality between economic growth and remittance inflows. Fourth, the analysis is limited to a relatively small set of explanatory variables; other important determinants of growth—such as human capital, institutional quality, infrastructure, and political stability—are not included. Fifth, the study does not employ time-series econometric techniques (e.g., unit root tests, cointegration, ARDL) that are essential for analysing long-run macroeconomic relationships. Sixth, the study does not test the mediating role of financial development (H_5) or the long-run equilibrium relationship (H_6), leaving these important hypotheses for future research. Finally, the study does not disaggregate remittances by channel (formal vs. informal), FDI by type, or exports by sector, which may mask important heterogeneity.

Recommendations for Future Research

Based on the limitations identified, the following recommendations are proposed for future research:



1. **Use Secondary Macroeconomic Data:** Future studies should employ official time-series data from sources such as the World Bank, State Bank of Pakistan, and Pakistan Bureau of Statistics to provide objective estimates of the remittance–growth relationship.
2. **Employ Advanced Econometric Techniques:** Researchers should apply unit root tests (ADF, PP), cointegration tests (Johansen, ARDL bounds testing), and Granger causality tests to examine long-run relationships and causal directions.
3. **Address Endogeneity:** The use of instrumental variables, two-stage least squares (2SLS), or system GMM estimators can help address reverse causality and omitted variable bias.
4. **Disaggregate Key Variables:** Future studies should distinguish between formal and informal remittance channels, greenfield FDI versus mergers and acquisitions, and sectoral export composition to provide more nuanced policy insights.
5. **Incorporate Mediation Analysis:** The mediating role of financial development (H_5) should be formally tested using Baron and Kenny's approach or structural equation modelling (SEM).
6. **Expand the Model:** Additional variables such as human capital, institutional quality, infrastructure, political stability, exchange rate volatility, and external debt should be included.
7. **Conduct Subnational Analysis:** Examining the remittance–growth relationship at the provincial or district level would provide valuable insights for regional policy design.
8. **Explore Digital Financial Channels:** Given the rapid growth of mobile banking and fintech in Pakistan, future research should investigate whether digital channels enhance the investment share of remittances.

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Contribution of Authors

All the authors participated in the ideation, development, and final approval of the manuscript, making significant contributions to the work reported.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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Informed Consent

Informed consent was obtained from all individual participants included in the study.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of 1964 Helsinki declaration and its later amendments.

Data Availability

The datasets generated during and analysed during the current study are available from the corresponding author on reasonable request.

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