The Impact of Foreign Remittances on Labor Productivity: A Case of Pakistan

Nosheena Sattar[1], Kiran Sarwar[2], Asma Sajjad[3]

[1]Department of Management Sciences, COMSATS University Islamabad, Vehari Campus, Pakistan.
  Email:nosheenasattar923@gmail.com
[2]Department of Economics, COMSATS University Islamabad, Vehari Campus. Email:kiransarwar041@gmail.com
[3]Department of Economics, COMSATS University Islamabad, Vehari Campus. Email:asmasajjad310@gmail.com

ARTICLE INFO	ABSTRACT
	This study attempts an empirical analysis of the effect of external remittance on labor productivity in Pakistan. This study used the time series data from 1975 to 2019. The Johanson co-integration approach and Trace and Maximum Lamda tests were used for economic analysis. The personal remittance, Gross Fixed Capital Formation (GFCF), and Officially Exchange Rate (PER) depicted significant and positive relationships and Foreign Direct Investment (FDI) and Trade both variables show positive but insignificant impacts on labor productivity. This study suggests that government should provide incentives for transfer payments to overseas Pakistanis for enhancing the remittances.

Corresponding Author's Email: kiransarwar041@gmail.com

1.　　Introduction

Remittance is the payment of money from a foreign employer to a person in that person's native country. One of the biggest financial inflows to developing countries, according to migrant workers, is money from domestic competition with assistance from other nations (Kifle, 2014). According to the World Bank estimated will total U$$ 585.1 billion in 2016 of which U$$ 442 billion want to develop countries that elaborate 250 million. International workers' remittance moderately expresses growth and is created to be an important focus for development strategists (Shapiro & Mandelman, 2016). The level or household level is where remittances are most essential for aggregation. International workers' remittances have increased new considerations because they are a stable source of outside finance as well as a type of social insurance (Marzovilla & Mele, 2015). With a 6.3% growth rate, the size of worldwide remittances is $414 billion. Worldwide remittances send $75 billion in payments for foreign labor to the rest of the world. A little over 75% of the world's remittances went to developing nations, although they sent no migrant labor abroad (Dilshad, 2013).

The influence of remittance is very noticeable in developing countries with a higher level of monetary growth immigration commonly reduced the labor force participation in the national market, while remittances rise the capital stock of these economies (Sharif, Ahmed, & Abdullah, 2013). The effect of worker remittance has been inspected from different angles in Pakistan and observed that remittance has far to reaching impacts on domestic labor impact poverty (Goschin, 2014). Pakistan's economy is based on remittances. The total amount of remittances sent abroad through authorized channels was $13 billion in 2012–13, or 5% of the nation's GDP (Abou El-Seoud, 2014). In Pakistan, the money that employees send home is intended for both consumption employes send home is intended for abroad immigration and remittance (2009), families with at least one refugee worker in Saudi Arabia spent about 40% of remittances on food consumption alone, while 28% went toward property investment and agriculture products (Chaaban & Mansour, 2012).

Diverse issues determine the inflows of remittance, which comprise micro-factory, and macroeconomic factors, such as the number of laborers, black marker, best, inflation, host,

country, income, GDP of the host, domestic country, etc. In this revision, we examined the impact of remittance on labor Productivity in the case of Pakistan. We used data from 1975 to 2019 in our approximation. The goal of this research is to look into the effect of remittances on labor productivity. For this purpose, we used remittance and some other variables in the model specification such as LUC's population labor force FDI variables have a significant effect on labor productivity.

Table 1: Top Recipient Countries of Remittance (in billions of US dollars), Real GDP Growth Rate (Percentage)

Countries	Remittance of 2018	Growth Rate of 2018
India	62.7	6.83%
China	61.0	6.70%
Philippines	29.0	6.80%
Mexico	28.5	2.30%
Nigeria	19.0	2.7%
Egypt	16.6	4.30%
Bangladesh	13.7	6.92%
Pakistan	19.8	5.70%
Vietnam	13.4	6.81%

Table 1 revealed that some of the countries with strong GDP growth rates were also the greatest remittance recipients. Remittances contribute significantly to economic growth because India, China, and Bangladesh are the top receivers of remittances and have rapid economic development rates as well.

Graph: 1
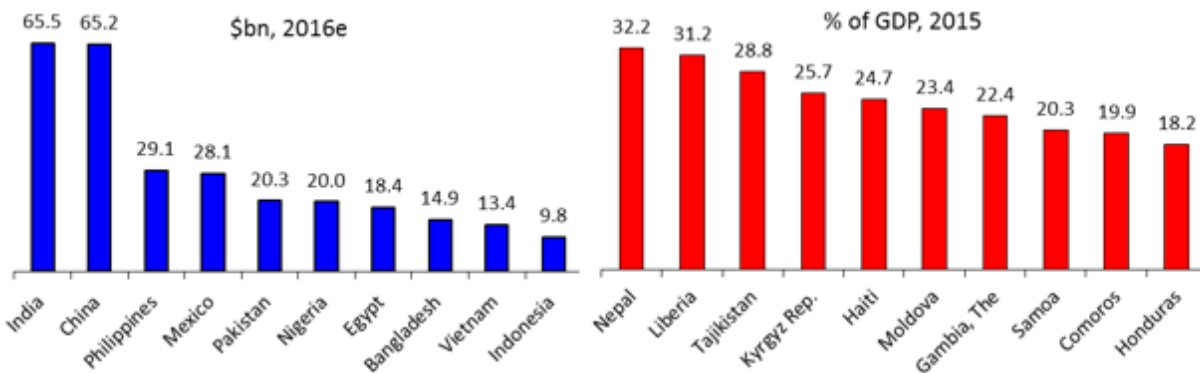
Graph 1 we have below-plotted graphs of developing countries India to Indonesia. India gives a large part of remittances 65.6 (US Dollars), as well as Indonesia, receives 9.8 (US Dollars). Graph 1 we have a below-plotted graph of developing countries Nepal to Honduras. The graph showed that in these developing countries, large a part of GDP depends upon remittance.

This revision inspected the impact of foreign payment on labor productivity. The current study widens the existing work gap. The main basis of funding for improving the socioeconomic circumstances of residents of host countries and promoting economic expansion is now international remittances. The study of the works showed that there are numerous ways to encourage the process of raising labor productivity, including expansion, improvement, physical capital investment in wealth, export volume, adoption of suitable technology, development assistance, political stability, and many others. However, one cannot disregard the importance of workers. Remittance in the process to improve poverty. Therefore, the present study explains the role of international remittance on labor productivity in the case of Pakistan. Furthermore, it makes an effort to analyze both the small and long-term impacts of international remittances on labor productivity. The major research questions of this study included: To inspect the impact of FDI and RER on labor productivity and determine the impact of GFCF and trade on labor productivity.

In this study section 1 contain an introduction. Section 2 contains the literature and section 3 presents the research methodology. Section 4 contains empirical results and interpretation and section 5 contains the conclusion and policy implication.

2. Literature Review

Hassan, Cooray, and Holmes (2017) examined the impact of workers' remittance response offering rates in New Zealand. ARDL techniques were useful to confirm a negative long-run role for real lending rates by using panel data from eighty countries from 1995-2014. The study initiate two effects, first was remittance sending was more sensitive to real interest rates in the case of high remittance. Government policy recommendations include improving monetary conditions. Airola (2007) Mexico's labor supply in response to remittance income. In this study Maximum likelihood approaches were used on the cross-sectional data from 1992-2000. Remittances were one of the huge incomes of Mexican migrants. The writer found that remittance income was a huge and increasing supplier to total output, but some of its belongings may be balanced by lower labor force participation.

Ghorpade (2017) explored the belongings of conflict among the domestic receiver of remittances in Pakistan. In this study time series data was used from 2001-2010. Nursing-related concerns and remittance earnings. For the approximation models, Probit was used. The study inspected remittances from external consequently cannot be easily free-fell local factor posture experiment. Policy implications concentrating spread transfers for encouraging economic movement. Bang, Mitra, and Wunnava (2016) analyzed Remittance Retrieval Income Inequality in the Kenyan Case. The findings were calculated using ordinary least squares. The study found that remittances increase domestic expenditure remittances have an optimistic impact on deficiency and income inequality. By making it easier for poorer households to acquire credit, some implications can be avoided and the household can go past the monetary barriers that prevent migration.

Shapiro and Mandelman (2016) examined the remittances and employ dynamics over the business cycle. The model emphasized the role of remittances in labor supply significance and with labor force contribution. Remittances and self-employment are important foundations of income for households in developing economies. In this revision, the VAR perfect was used for the estimation of the time series data from 2008-2009. The study reached the transfer of remittances increases labor market instability. Adams and Klobodu (2016) examined the payment flows as a source of Capital Growth. Orderly Least Square (OLS) estimates were useful to the panel data of 113 countries from 1970-1998. The consequences of the study showed that remittances were used as an additional for labor income. If the countries that received these remittances used them to cut back on their labor supply and labor market impact, economic migration might turn out to be negative.

Marzovilla and Mele (2015) inspected the impact of remittances on economic growth and exchange rate in Morocco. Using time series data from 1980 to 2014, the VAR technique was used in this study to identify relationships between remittances and Morocco's economic growth. They explored that migrant monetary transfers have been a fundamental economic. They examined that the consequence of the difference in remittances on economic growth does not lose effectiveness with time. Using 61 of the world's top remittance recipient countries' panel data. Second, the current exchange rate in sample countries has no negative effects on domestic labor. Third, governments are required to devote importance to the creation of domestic capital due to the number of labor force samples in such nations.

Goschin (2014) examined remittances as a basis of economic development in the CEE nations. A Fixed effect model was applied to the time series data from 1995-2011. The study originates that remittance is the capital stream that has a Macroeconomic growth viewpoint. Outcomes. This study showed that immigration was likely to decrease the possible GDP in sending countries but the overall net effect was optimistic remittance recompensing for the worker force loss in CEE nations.

Dilshad (2013) examined how remittances from employees affected Pakistan's financial expansion. Employing time series data from 1991-2012. OLS model has been used to identify the association among variables. According to the report, there is a positive link between remittances sent home by employees and Pakistan's economic growth. Arthur suggested some

policy insinuations that invigorated and inspire the inflow of remittances through proper channels. Sharif et al. (2013) discovered the influence of payments on economic growth in Latin America and the Caribbean Area. By using panel statistics from 29 Latin America and the Caribbean region from 1991-2010 fixed effect approximations Generalized Methods of Moment were used to find the association between financial growth and workers' transmittals. The research discovered a positive correlation between M, GDP, and remittances. The writer suggested that remittances increase economic development.

Ziemer (2012) examined worker accumulation and growth in deprived emergent countries. In this study, GMM and Fixed effect techniques were practical on the panel data of 52 countries. The study originates the indirect effect of expatriation and remittances on saving and literacy. The consequences of the study showed that the effect of remittances on growth level and GDP per capita have positive and net migration has an undesirable effect on literacy and speculation but has a constructive impact on growthn. Chaaban and Mansour (2012) examined the impression of remittances on instruction in Eastern Mediterranean countries (Jorden, Syria, and Lebanon). The Profit model was used on the panel data to find the impact of migrant remittances on education. Arthur recommended that the Eastern Mediterranean countries show that a mother's experiences have an advanced outcome on both men's and women's education.

Gupta, Pattillo, and Wagh (2009) explored the impact of arrivals on economic development in Kenya. In this study, ADF tests were used for the non-stationarity of the variables. Through time series data from 1970-2006 to discover the impact of international remittances on financial development, the study analyzed that international remittance inflows and humanoid investment have positive but trade openness has hurt growth in Kenya. The administration must make better strategies for remittances to the achieved level of financial development.

3.   Research Methodology

The study used time series data from numerous sources to evaluate the influence of overseas on labor productivity for the years 1975 to 2019. For all of the variables data used in the analysis were collected from the World Development Indicators (WDI). Labor productivity is a dependent variable and trade, the official rate, and gross foreign direct speculation are independent variables.

3.1. Unit Root Test

To determine whether the variables are stationary, perform the unit root test. First, describe the differences between stationary and non-stationary time series data. If certain criteria are met or satisfied, such as when the malicious, variance, and covariance are all found to be time-invariant, the time series data is said to be stationary Any series, including $seriesY_t$ series, is referred to as stationary if the fundamental condition holds for all values of t and t = 1, 2.

$$E\,(Y_t) = \mu \qquad \text{constant mean} \qquad \textbf{(1)}$$

$$\text{Var}\,(Y_t) = E\,(Y_t - \mu) = \sigma2 \quad \text{constant variance} \qquad (2)$$

$$C\,(Y_t,\, Y_t\, + s) = \text{Cov}Y_t,\, Y_t\, \text{-s}) = \gamma s \text{ covariance be contingent on s, not t} \quad (3)$$

The covariance between any two ethics of sub-t $fromY_t$ from the series was established by equation (3.5) to be contingent solely on the passage of time since those two values (s), rather than on a specific instant in time. By using calculations (3.3) and (3.4), respectively, the series' constant mean and variance were broadcast. In (3.5), the letter "s" stood for "a different part of the time" and "period" amongst two consecutive ethics of the time series Y. Time series data are considered to be non-stationary if the probability distribution of the data mean-variance and covariance is time-dependent.

Dickey and Fuller (1979) developed the Augmented Dickey-Fuller Hypothesis in, which employs the component root test to control if variables are stable. The primary thing to do is to determine whether the data is stationary at the order I (0), which shows that it is at level 0, and doesn't need any more action. If this requirement is not met, we must render it immobile at the order I (1). If this situation is not satisfied, go to the stationery in I (2), and so on if the series requires that the difference become stationary series will then be combined at order Z_t I at that point (d). If an accidental walk model was applied and there were no obvious trends in the time series data, the data flowed up or down.

$$Y_t = a + Y_t + \varepsilon_t \qquad (4)$$

The comparison (3.6) is a stationary $|\rho| = 1$ then AR (1) process in equation (4.6) is non-stationary $| \rho | < 1$. Besides, AR (1) process in the calculation (3.6) reduce to a non-stationary random walk series if complaints were fulfilling $a = 0$ and $| \rho | = 1$ and in case of a random walk with drift if $a \neq 0$ and $| \rho | = 1$.

Table 2: ADF Unit Root Test

Variables	Level		1st Difference		Order of Integration
	T-statistics	P-value	T-statistics	P-value	
LP	-1.841	0.657	-3.766	0.036**	I(I)
REM	1.543	0.970	-3.402	0.000*	I(I)
GFCF	-3.000	0.970	-12.286	0.000*	I(I)
FDI	-2.760	0.212	-16.101	0.000*	I(I)
TRADE	2.472	0.997	-2.895	0.046**	I(I)

All variables were subjected to the improved Dickey-Fuller test at the level of difference. These study results show that all variables are stationary at the initial variance. All variables are thus integrated in the order I(I).

To check whether the data of the first stationery, the Dickey-Fuller test, and the Augmented Dickey-Fuller test can be performed. We will use the ADF test to include the error term's serial correlation probability. Regressions made by them support ADF. The first equation lacks a steady trend.

$$Y_t = \rho Y_{t-1} + \varepsilon_t \qquad (5)$$
$$Y_t = a + \rho Y_{t-1} + \varepsilon_t \qquad (6)$$
$$Y_t = a + \rho Y_{t-1} + \beta_{t} + \varepsilon_t \qquad (7)$$

Where: Y_t = relevant time series, a = constant (intercept), t = time trend, and ε = residual term. The following will be our alternative and null theories:

Null hypothesis   H0: $\rho = 1$ (Data is not stationary)

The alternative hypothesdoes is   H1: $\rho \neq 1$ (Data is stationary)

The results of the ADF tests will dictate the strategy or procedure we must employ to estimate the model. If every variable listed above is stationary at the level, the Johansen co-integration approach will be used.

The Johansen co-integration technique should not be used, if each variable is stationary at the I (0) and I border (1). A sophisticated method known as the autoregressive dispersed lag model (ARDL), developed by Pesaran, Shin, and Smith (2001), can be used to solve this problem. The enhanced Dickey-Fuller test establishes the strategy or approaches to be used in estimating the model specified above and stated in the calculation (3.2). The ARDL technique suggested by Pesaran et al. has remained secondhand to estimate the model in equation (3.2)

because all of the variables we have presented are stationary at the interaction of I (0) and I. The Autoregressive Distributed Lag technique to model estimate will now be covered.

3.2. Johansen Juselius Test

Most frequently, the Johansen and Juselius (1990) co-integration test is employed. This test is founded on a vector autoregressive (VAR). The Johansen and Juselius approach is frequently used to investigate the co-integration status of a collection of non-stationary data. Numerous co-integration relations can be analyzed using the Johansen co-integration test. When all factors are considered to be endogenous, the choice of output factors and the normalization of the variable have no impact on the test. In this case, a VAR model treats each of the endogenous components of the composition as a function of its lagged values.

3.3. Steps of the Johanson Approach

Step 1

As the first stage of the Johansen technique, the variables that will be investigated are initially checked for integration order. The majority of financial time series are non-stationary and need integration. The key problem at this stage to avoid erroneous regression is to find stationary co-integrating relationships between non-stationary variables. This is the ideal situation when the co-integration test is carried out and all the variables have the same order after integration. However, a co-integrating relationship might exist when the variables I(0), I(1), and I(2) are included in a model.

Step 2

Since Gaussian error terms are necessary, choosing the right lag time might be challenging. The absence of the variables could affect the values of lag length. The mislaid variables are comprised of the error term, which may have an impact on the model's short-term behavior. A cautious analysis is wanted for the data. A functional relationship must exist before estimation may be done on the additional variables. It is standard procedure to simulate system shocks using dummy variables. A VAR model is often used to control the ideal lag time.

Step 3

It is critical to determine if a dynamic model's intercept or tendency belongs in the short-run perfect, the long-run model, or both models. The following statement describes the normal situation where the VECM has access to every reasonable choice.

$$\Delta z_t = r_1 \Delta z_{t-1} + \dots\dots + r_{k-1} \Delta z_{t-k-1} + \alpha \begin{pmatrix} \beta \\ \mu_1 \\ \delta_1 \end{pmatrix} \left(z_{t-1} 1t \right) + \mu_2 + \delta_2 t + \mu_2 \tag{8}$$

And it is possible to show the case for this equation. The co-integration equation (CE) predicts that there will be a continuous (with a coefficient μ_1) and a trend (a coefficient δ_1), but the short-term model predicts a constant coefficient subscript μ_2) and a tendency with a coefficient δ_2) in the short-run VAR model. The five different models that Johansen recognized (Johansen, 1995).

Johansen defined five typical categories of deterministic trends (Johansen, 1995). One may develop a sound theory about the trend in light of the evidence. The "Pantula principle" (Johansen, 1992) permits the choice of the least restrictive model to the most preventative model (i.e., one without deterministic components). The first model that embraces co-integration will be the preferred one.

Step 4

Both Johansen and Juselius (1990) and Johansen (1988) proposed methods for calculating the number of co-integrating associations, and both include studying the matrix. This is an r-ranked k×k medium.

(a) One method analyzes the rank ($\prod$) = r null hypothesis with the hypothesis rank (r+1). There must be co-integrating vectors and rise to r co-integrating interactions is the null

hypothesis. The null hypothesis in this situation is the co-integrating vectors and up to r co-integrating relationships. Alternative theories propose the existence of (r+1) vectors. The foundation of test statistics is found in the characteristic roots, which are obtained through the estimate process. To evaluate Eigenvalues as significantly distinct from zero, they are arranged in descending order. The statistics below are used to determine how many attributes.

$$\lambda \max (r, r+1) = -T \ln (1-\lambda_{r+1}) \qquad (9)$$

The highest Eigenvalue, often max, is the test statistic that is based on the highest Eigenvalue.

(b) The second approach depends on a likelihood ratio test for the matrix trace. The trace statistics take into consideration the possibility that further Eigenvalues beyond the rth would improve the trace. In this situation, the null hypothesis is that r or fewer co-integrating vectors. It should be known that the trace statistics are equal to zero when all $\lambda_i=0$. The closer the roots of the features are to unity, the more negative the $\ln (1- \lambda_i)$ is, and the higher the suggestion statistics as a result. r^{th}

$$\lambda_{trace}(r)= -T\sum_{i=r+1}^{n}\ln(1 - \lambda_{r+1}) \qquad (10)$$

Step 5

The method's second step is to look for weak homogeneity. Information regarding the long-run relationship is contained in the matrices $\Pi=\alpha\beta$, where β is the matrix of long-run coefficients and α denotes the speed of adjustment coefficients. The fact that $r \leq n-1$ co-integrating vector alpha should make it clear that (n-r) columns must all equal zero since, co-integrating vectors are in β (Dickey, Bell, & Miller, 1986).

We can see that determining which rows are equivalent to zero when testing for weak homogeneity regards long-run structures. If a variable z is simply a purpose of insulated variables, and the strictures of the equation producing it are different from the parameters used by the other variables in the system, it is considered weakly exogenous. S would disappear from the y equation and become weakly exogenous, therefore, the first row of the matrix contained just zeros. We can eliminate a variable as an endogenous component of the system if it turns out to be weakly exogenous.

3.4. Model Specification

The following functional form was used to begin our research on the relationship between econometric activity, individual remittances, GDPPC, ERE (official conversation rate), GFCF, and trade. This functional form was used to examine the actual relationship between worker productivity in Pakistan from 1975 to 2017 and remittances received from abroad.

We express the impact of foreign remittances on labor productivity as follows from the theoretical framework:

LP=f (REM, FDI, ERE, GFCF) (11)

The econometric of the model can be written as:

$$LP = \beta_0 + \beta_1 REM + \beta_2 FDI + \beta_3 GFCF + \beta_4 ERE + \varepsilon \qquad (12)$$

Where:

LP= Labor Productivity (Percentage)

REM = Personal Remittances Received (Percentage)

FDI = External Direct Investment (Percentage)

GFCF = Gross Fixed Capital Formation (Percentage),

ERE= Trade as (Percentage)

4. Empirical Results
4.2. Co-integration test by Johansen Juselius

Because all the variables are stationary on the early change, we perform the Johansen Juselius co-integration test. The Trace statistic (trace) and the Maximum Eigen (max) likelihood ratio test statistics, which are most frequently employed to identify the number of co-integrating vectors in the study, are used to calculate the findings of the Johansen co-integration test.

Table 3: Test of clear co-integration (Trace Statistics)

Total estimated CE (s)	Eigenvalue	Trace Statistic	Critical Value (0.05)	Probability
None*	0.801398	198.0051	150.5585	0.0000
At most 1*	0.687390	134.9635	117.7082	0.0026
At most 2*	0.522557	89.61443	88.80380	0.0436
At most 3	0.458812	60.78129	63.87610	0.0886
At most 4	0.423518	36.83575	42.91525	0.1774

It also indicates the long-term association between the dependent and independent variables. Johansen Juselius is performed for the series as the first difference or first order of the series is integrated (1). The table is divided into four columns: the critical values based on the traces of Mackinnon-Haug-Michelis (1999), the trace statistic, the critical values based on the predicted values, and the likelihood that these values would occur. The trace testing shows co-integration calculations at the 0.05 level. The first and second values of the trace statistic, both 198.0051, are higher than the critical value of the trace statistic 150.5585. Additionally, trace values are higher than trace critical levels. Following that, the trace value in the third row is 60.78129, which is less than the trace critical value of 63.87610. The trace values in the fourth and fifth rows are also less than the trace critical values. So we can interpret that there are four at most co-integrated vectors that exist according to the trace statistic. These are the first two equations that show the two co-integrated values where the trace statistic is less than the trace critical. The results of the unconstrained co-integration rank test are displayed in Table 4.3. The outcomes are in line with the factors' significant long-term correlation. The number of co-integrating equations is shown in the first column of the table.

4.3. Test of Unrestricted Co-integration (Maximum Eigen Value)

The hypothesized value is displayed in the first column of the above table, while the Eigen values are shown in the second column. The critical values are listed in the third and fourth columns, respectively, and the probability of these values is shown in the last column. There may be a co-integration equation and a long-term association between the variables so because the second value of the Max statistic is larger than the Max critical. The p-value, in this case, is also less than the 5% level of confidence, which is a rejection of the hypothesis. The first value of the max-Eigen statistic (63.04156) is higher than the critical (50.59985), which shows that the co-integrated vector exists.

Table 4: Test of Unrestricted Co-integration (Max-Eigen Value)

Total estimated CE (s)	Eigenvalue	Statistics Using Max-Eigen	Critical Value: 0.05	Probability
None*	.801398	63.04156	50.59985	.0017
At most 1*	.687390	45.34912	44.49720	.0403
At most 2*	.522557	28.83314	38.33101	.3992
At most 3	.458812	23.94554	32.11832	.3522
At most 4	.423518	21.48161	25.82321	.1690

The hypothesis is also rejected in this instance since the p-value is lower than the 5% confidence threshold. Where there is no co-integration equation, all other Max statistic values are less than the Max critical. The Max-Eigen value mentioned above therefore also denotes three integrated equations at 0.05%level. These three numbers represent the hypothesis' rejection at a 5% degree of confidence.

Table 5: Long Run Results

Dependent Variable: Labor Productivity				
Variables	Constant	Std. Error	t – statistic	Probability
REM	-0.1176	0.0377	-3.1224	0.0000
GFCF	0.5831	0.0421	13.8362	0.0070
RER	0.0058	0.0005	11.9947	0.0141
FDI	0.7560	0.1440	5.2495	0.1302
TRADE	3.7582	0.9707	3.8718	0.2410
C	3.9168	1.6822	2.3284	

The data is then subjected to trace and maximum tests to control the long-term relationship between the variables. As a result of analyzing the equation affecting the impact of external remittance on labor productivity, we are now able to estimate the long-term coefficient using the Johansen co-integration approach. Using the Johansen approach, we estimated a model using a variety of variables, but some of the results were not significant, so we removed those. Finally, we get model results showing that all variables are significant and that the t-statistic values are excellent. Based on all parameter choices, the model is performing properly. Personal remittance, GFCF, exchange rate, foreign straight investment, and commerce are the five explanatory factors that we have identified. First, discuss the negative value of the coefficient and how the primary variable (personal transmittals) affects labor productivity. The constant of 0.1176 indicates a long-term, significant inverse relationship between remittances and labor productivity. Therefore, a 1% rise in personal remittances will negatively affect labor productivity by -0.1176%. In Pakistan, the primary factor affecting worker productivity is personal remittances. Both directly and indirectly, personal remittances have an impact on labor productivity. International remittances lower current accounts, improve the balance of payments, and reduce external borrowing—all of which have a direct negative effect on labor productivity. Domestic labor productivity suffers as a result of a shortage of human capital. International remittances unintentionally lower worker productivity by promoting greater investment and saving. Foreign direct investment is the second independent element. For every percent increase in foreign direct investment, labor productivity rises by 0.7560 percent. By directly producing new jobs and indirectly creating jobs through connections with domestic and international markets, foreign direct investment has a favorable effect on labor productivity in the host countries. The third one is GFCF, which has a coefficient value of 0.5831 that is both significant and positive. Construction of schools, offices, hospitals, private residences, and commercial and industrial buildings are all examples of what is referred to as gross fixed capital formation, or GFCF. This term also refers to land improvements, such as fences, ditches, and drains, as well as the purchase of plant machinery and equipment. Forth at 0.0058 percent, the exchange rate's coefficient is officially positive and significant. A 1% increase in exchange rates would result in a 0.0058 % improvement in labor productivity. Fifth, business product access to international markets "Comparative advantage" employment "Labor productivity" "its coefficient value 3.7582 percent positive and significant if 1 percent increase trade cause to boost the labor productivity is 3.7582 percent.

Table 6: Stability Condition

Variables	C.I Vector	E.C constant	Implication E.C	Probability**
LP	1	-0.05954	-0.05954	0.001
REM	-2.21273	0.188364	-0.4168	0.040
GFCF	-4.00621	0.056005	-0.22437	0.000
RER	2.39185	0.110505	0.264311	0.0201
FDI	-1.78875	0.125722	-0.22489	0.1310
TRADE	0.189311	-0.23129	-0.04379	0.1902

Remittances, the GFCF, the official exchange rate, distant direct investment, and trade are all autonomous variables, while labor productivity is a dependent variable. The C.I. value and labor productivity were shown in the second column. The probability is significant because the Eigen coefficient's value is undesirable, which is necessary for stability, and payment results are significant since the Eigen Coefficient's value is negative as well. C. I is equal to 1. Moreover, officially, there is a negative and insignificant association between FDI and trade values and labor output, although there is an optimistic and strong correlation between worker

productivity and the exchange rate. The results of this table, however, validate that the stability criterion is satisfied because the dependent variable and independent variables all have negative values and the sum of the Eigencoefficients is less than 0.7050 percent.

5. Conclusion

Worldwide remittances are a dependable basis of income and aid in increasing labor productivity in Pakistan. Countries employ international remittances for a range of objectives. The individual increased the country's labor productivity by using foreign remittances for both personal expenditure and investment. The importance of foreign remittances has prompted a reconsideration of the prior study's research question and findings in this one. This chapter goes into great detail about various policy ramifications that might improve the effectiveness of international remittances as a strategy for increasing labor productivity. This chapter concludes the analysis of the effect of international transfers on labor productivity from 1975 to 2019 by employing the Johansen Juselius co-integration method on a simple linear econometric model. The key factors that affect labor productivity have been proven to be the proportion of personal remittances received, FDI, gross fixed capital development, official exchange rate, and trade receipt percentage. All data were derived from the World Development Indicator. The empirical findings and their interpretation are examined. Personal transfers reveal a long and significant negative connection. Personal remittances have indirect benefits such as improving the balance of payments, reducing the current account deficit, and reducing reliance on external copying via human capital. International remittances also promote productivity growth in investments and investment, which raises labor productivity indirectly.

Founded on the answers of this study, policymakers and the government should promote foreign remittance inflows. To reverse the negative and important impact of foreign transmittals on labor productivity. The subsequent policy changes are recommended to improve remittances to Pakistan from abroad and boost worker productivity: The impression of remittances on labor efficiency for sample nations having a remittance share of GDP has not yet been taken into account. Therefore, efforts should be made to increase the effectiveness of the appropriate routes for receiving remittances. The biggest barrier to money transfers is the high cost of sending money through financial institutions (Bank, 2010). The government should lower the cost of sending money back via transfer. The management should direct profitable banks and other money transfer agents to lower fees for this reason. The home country's administration necessity takes various steps to foster party-political stability and economic growth for those who are sending money home to do doing. The abroad Pakistani Foundation should offer advice on boosting investment opportunities in profitable fields in the homeland to promote foreign remittances.

References

Abou El-Seoud, M. S. (2014). The effect of interest rate, inflation rate, and GDP on national savings rate. *Global Journal of Economics and Management Perspective, 3*(3), 1-7.

Adams, S., & Klobodu, E. K. M. (2016). Remittances, regime durability and economic growth in Sub-Saharan Africa (SSA). *Economic Analysis and Policy, 50*, 1-8. doi:https://doi.org/10.1016/j.eap.2016.01.002

Airola, J. (2007). The use of remittance income in Mexico. *International migration review, 41*(4), 850-859. doi:https://doi.org/10.1111/j.1747-7379.2007.00111.x

Bang, J. T., Mitra, A., & Wunnava, P. V. (2016). Do remittances improve income inequality? An instrumental variable quantile analysis of the Kenyan case. *Economic Modelling, 58*, 394-402. doi:https://doi.org/10.1016/j.econmod.2016.04.004

Bank, W. (2010). THE WORLD BANK ANNUAL REPORT 2010.

Chaaban, J., & Mansour, W. (2012). The Social-Economic Situation of Middle East Youth on the Eve of the Arab Spring.

Dickey, D. A., Bell, W. R., & Miller, R. B. (1986). Unit roots in time series models: Tests and implications. *The American Statistician, 40*(1), 12-26.

Dickey, D. A., & Fuller, W. A. (1979). Distribution of the estimators for autoregressive time series with a unit root. *Journal of the American statistical association, 74*(366a), 427-431. doi:https://doi.org/10.1080/01621459.1979.10482531

Dilshad, W. B. (2013). Impact of Workers' Remittances on Economic Growth: An Empirical Study of Pakistan's Economy. *International Journal of Business and Management, 8*(24), 126. doi:http://dx.doi.org/10.5539/ijbm.v8n24p126

Ghorpade, Y. (2017). Extending a lifeline or cutting losses? The effects of conflict on household receipts of remittances in Pakistan. *World Development, 99*, 230-252. doi:https://doi.org/10.1016/j.worlddev.2017.05.024

Goschin, Z. (2014). Remittances as an economic development factor. Empirical evidence from the CEE countries. *Procedia Economics and Finance, 10*, 54-60. doi:https://doi.org/10.1016/S2212-5671(14)00277-9

Gupta, S., Pattillo, C. A., & Wagh, S. (2009). Effect of remittances on poverty and financial development in Sub-Saharan Africa. *World Development, 37*(1), 104-115. doi:https://doi.org/10.1016/j.worlddev.2008.05.007

Hassan, G., Cooray, A., & Holmes, M. (2017). The effect of female and male health on economic growth: cross-country evidence within a production function framework. *Empirical Economics, 52*, 659-689. doi:https://doi.org/10.1007/s00181-016-1088-2

Johansen, S. (1988). Statistical analysis of cointegration vectors. *Journal of economic dynamics and control, 12*(2-3), 231-254. doi:https://doi.org/10.1016/0165-1889(88)90041-3

Johansen, S. (1992). Testing weak exogeneity and the order of cointegration in UK money demand data. *Journal of Policy modeling, 14*(3), 313-334. doi:https://doi.org/10.1016/0161-8938(92)90003-U

Johansen, S. (1995). Identifying restrictions of linear equations with applications to simultaneous equations and cointegration. *Journal of econometrics, 69*(1), 111-132. doi:https://doi.org/10.1016/0304-4076(94)01664-L

Johansen, S., & Juselius, K. (1990). *Some structural hypotheses in a multivariate cointegration analysis of the purchasing power parity and the uncovered interest parity for UK*. Retrieved from

Kifle, M. T. (2014). The Role of International Remittance on Economic Growth in Ethiopia: An Autoregressive Distributed Lag Approach. *AAU Institutional Repository*.

Marzovilla, O., & Mele, M. (2015). Remittances, economic growth, exchange rate regime: the case of Morocco. *European Journal of Economics, Finance and Administrative Sciences, 7*(1), 106-123.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of applied econometrics, 16*(3), 289-326. doi:https://doi.org/10.1002/jae.616

Shapiro, A. F., & Mandelman, F. S. (2016). Remittances, entrepreneurship, and employment dynamics over the business cycle. *Journal of International Economics, 103*, 184-199. doi:https://doi.org/10.1016/j.jinteco.2016.10.001

Sharif, T., Ahmed, J., & Abdullah, J. (2013). Human resource development and economic growth in Bangladesh: An econometric analysis. *European Journal of Business and Management, 5*(7), 133-144.

Ziemer, N. (2012). Strategic management and entrepreneurship as economic development tools.