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# Exchange Rate and Foreign Capital Inflows in Developing Countries

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**Abstract:** Exchange rate is an important factor that influences the foreign capital inflows of any country. Therefore, this study examines the influence of exchange rates on foreign capital inflows in developing countries using a panel dataset from 2000 to 2021. For data analysis, pooled OLS model is applied to the data. The study's outcomes show that real effective exchange rate adversely influences the FDI and foreign aid while positively influencing the remittances. It is suggested that exchange rate stabilization in a country enhances its foreign capital flows, so steps should be taken to keep the exchange rate less volatile. For this purpose, the government should increase exports, improve infrastructure to attract more FDI, and develop policies that attract more investors.

**Key Words:** Exchange Rate (ER), Foreign Direct investment (FDI), Remittances(REM), Foreign Aid (FA), Developing Countries(DC'S)

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## 1. Introduction

Foreign capital inflow is an international investment in which the international investors of one country invest their money or services to another country in the hope of return back with actual amount. An investor, corporation, government or any company could make this capital. From foreign direct investment, we can acquire new knowledge about goods, services and technologies that could not be acknowledged without foreign capital inflow. An increased flow of FDI leads to an increased exchange rate of receiving country through which the trade of that country could rise; in this way, the economy's growth also improves.

The exchange rate is the rate at which one country's currency can be traded in another country's currency over the countries. It is important in determining a country's trade and capital inflow. The exchange rate is usually measured in US dollars. The exchange rate is an important economic variable. Exchange rate cannot be fixed; it moves up and down based on demand and supply. Exchange rates affect economic conditions through variations in demand for exports and imports. A decrease in local currency made export more competitive abroad, while imports were less competitive in local countries. A fixed exchange rate enhances the flow of capital from country to country. It makes capable for small countries to attract more capital inflow. Maintaining a stable inflation rate in less developed countries is also important. Low exchange rates provide more employment opportunities in the export industry. The country with lower exchange rates possesses less expensive and competitive exports. Fixed exchange rates attract more international trade and investment. Fixed exchange rates give stable criteria for trade and stable inflation in that country. China has a fixed exchange rate; for this reason, the exports of China are cheaper and are more attractive as compare to other countries and also hinders inflation rates to go upward. Panama, Qatar, Saudi Arabia, Oman, Lebanon, Hong Kong, Cuba, practices fixed exchange rates.

Developing countries are frequently trapped in a cycle of continuous poverty that is seemingly difficult to escape. In this scenario, FDI is crucial since it augments domestic capital to reach the minimum investment to end the cycle of poverty. Due to a lack of cash, developing nations compete to draw ever-increasing amounts of FDI (Ullah et al., 2012). A declining exchange rate could be advantageous or detrimental to foreign investors. For instance, a declining exchange rate might increase exports and bring benefits from FDI-seeking resources. However, foreign investors could also lose money since they must pay expenses to offset transaction and translation losses when currencies decline. They can decide that the costs will be too high to make their investments worthwhile if they think depreciation will continue once they join a country (Dhakal et al., 2010). Considering the above discussion, the main objective of this study is to analyze the influence of exchange rates on foreign capital inflows in developing countries.

## 2. Literature Review

Different studies analyzed the influence of exchange rate volatility on foreign capital inflows; the literature review of these studies is presented in this section. Such as Jacob & Kattookaran (2021) investigated the relationship between foreign capital inflow and exchange rate volatility in India using data from 1995 to 2018. The results showed that foreign capital inflows and exchange rate volatility were negatively related. Tran et al., (2020) analyzed the determinants of foreign capital flows using

data from 2000 to 2019. It was found that private credit, infrastructure, and human resources significantly positively affected foreign direct investment. Consumer price index and foreign direct investment were negatively related. Sikandar et al., (2019) revealed the relationship between remittances and exchange rate volatility using the data from 1973 to 2012. The outcomes showed a negative relationship between exchange rate volatility and remittances. The variable political instability had an insignificant influence on remittance inflows. Muhammad et al., (2018) examined the impact of exchange rate volatility on foreign capital flows in Nigeria by using data from 1970 to 2014. The results revealed the negative relationship between exchange rate fluctuations and foreign capital flow.

Ahmed et al., (2017) examined the influence of exchange rate volatility on export volume in Pakistan from 1970 to 2015. The results depicted that the exchange rate negatively influenced exports, but this influence was insignificant. Haider et al., (2017) explored the determinants of foreign direct investment in Pakistan from 2005 to 2015. The outcomes showed that inflation rate, market size, GDP, exchange rate and trade openness were positive and significant factors of FDI, while variables such as roads, railways, telephone and internet infrastructure showed a positive but insignificant impact on FDI. Khan et al., (2017) described the effects of exchange rate movements on foreign capital flows in Pakistan using the data from 1981 to 2015. The results revealed that current account balance and exchange rate fluctuations negatively affect FDI. Awan et al., (2014) analyzed the factors of foreign capital inflow in Pakistan using data from 1988 to 2012. The results showed that foreign capital flows were significant and positively related to exports, gross national income and capital formation. On the other hand, external debt and imports significantly but negatively impacted foreign direct investment.

Bilawal et al., (2014) explored the association of exchange rate and foreign capital inflow in Pakistan from 1982 to 2013. The results showed that FDI and exchange rate were positively correlated. Aftab et al., (2012) modelled the relationship between Pakistan's sectoral exports and exchange rate uncertainty using data collected from 2003 to 2010. It was found that exchange rate volatility and exports were negatively associated, whereas exports and foreign income were positively connected. Khachoo & Khan (2012) analyzed the factors of foreign direct investment in developing countries using data from 1982 to 2008. The results showed that total reserves, market size, wage rate and infrastructure were significant towards FDI. Total reserves, GDP, infrastructure and size of the market positively affected FDI. Ellahi (2011) analyzed the influence of the exchange rate on foreign capital flows in Pakistan using data from 1980 to 2010. The ARDL model showed that FDI and exchange rate variations were negatively related in the short run, whereas in the long run, exchange rate volatility and FDI were positively connected. Nyarko et al., (2011) examined the relationship between foreign direct investment and exchange rate volatility in Ghana from 1970 to 2008. The results showed a weak relationship between foreign direct investment and exchange rate volatility.

Osinubi et al., (2009) analyzed the influence of exchange rate volatility on foreign capital inflow in Nigeria by using the data from 1970 to 2004. The results revealed that FDI and GDP were positively related. Interest rate showed positive relation towards foreign direct investment. The main variable, exchange rate volatility, was a significant and positive factor of FDI. Coleman & Tettey (2008) analyzed the relationship between foreign capital flows and exchange rate fluctuations in sub-Saharan Africa using data from 1970 to 2002. The results showed that foreign direct investment and real exchange rate were negatively related. Demirhan & Masca (2008) explored the factors of foreign direct investment in developing countries from 2000 to 2004. It was found that the per capita growth

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rate, degree of openness and telephones were significant and showed a positive effect on foreign capital flows, while tax rate and inflation rate were significant and negatively related to FDI. Udoh & Ewaikhide (2008) described the impact of inflation uncertainty and exchange rate volatility on foreign capital inflow in Nigeria using data from 1970 to 2005. The outcomes revealed that the exchange rate movements and inflation rate significantly and negatively influenced FDI. It was also observed that the size of the government sector, infrastructural development and international competitiveness were essential factors of foreign capital inflows. Chen et al., (2003) observed the relationship of private sector credit and remittances in pacific island countries by using the data from 2004 to 2016. The results showed a positive relation between remittances inflow and private sector credit.

## 3. Data and Methodology

To analyze the influence of exchange rates on foreign capital inflows in developing countries, panel data of developing countries is used during the period from 2000 to 2021. The data is collected from World Development Indicator (WDI). Foreign capital inflows are measured using foreign direct investment (percentage of GDP), personal remittances (percentage of GDP), and net bilateral trade. The core independent variable used in a study is the real effective exchange rate, while the control variables are inflation rate (consumer price index), government spending (percentage of GDP), GDP per capita (current US dollars), and financial development (domestic credit to the private sector as a percentage of GDP). The unit root test is applied to check the stationarity of data while the pooled OLS method is employed to estimate the parameters. The following three models are developed to analyze the influence of exchange rates on foreign capital inflows in developing countries:

$$FDI_{it} = \beta_o + \beta_1 CPI_{it} + \beta_2 GGFCE_{it} + \beta_3 GDPPC_{it} + \beta_4 FD_{it} + \beta_5 REER_{it} + u_{it}$$

$$PR_{it} = \beta_o + \beta_1 CPI_{it} + \beta_2 GGFCE_{it} + \beta_3 GDPPC_{it} + \beta_4 FD_{it} + \beta_5 REER_{it} + u_{it}$$

$$NBA_{it} = \beta_o + \beta_1 CPI_{it} + \beta_2 GGFCE_{it} + \beta_3 GDPPC_{it} + \beta_4 FD_{it} + \beta_5 REER_{it} + u_{it}$$

Where;

FDI = Foreign direct investment

PR = Personal remittances

NBA = Net bilateral aid inflows

CPI = Consumer price index

GGFCE = General government final consumption expenditure

GDPPC = GDP per capita

FD = Financial development

REER = Real effective exchange rate

ε = error term

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## 4. Data Analysis

This section is designed to present the data analysis. Firstly, unit root test is applied to check the data stationarity. The outcomes are reported in Table 1. The outcomes show that all the variables included in a study are stationarity at level; therefore we have used pooled OLS method for the long-run estimation of the parameters.

**Table 1: Unit Root Analysis**

| Variable | t-statistics | Probability | Remarks |
|---|---|---|---|
| **FDI** | -2.96 | 0.00 | I (0) |
| **REM** | -7.66 | 0.00 | I (0) |
| **NBA** | -3.30 | 0.00 | I (0) |
| **CPI** | -4.35 | 0.00 | I (0) |
| **FD** | -6.55 | 0.00 | I (0) |
| **REER** | -2.10 | 0.01 | I (0) |
| **GDPPC** | -5.95 | 0.00 | I (0) |
| **GGFCE** | -4.73 | 0.00 | I (0) |

**Source:** Author's Calculations

To analyze the influence of exchange rate on foreign capital inflows, we have used pooled OLS method and outcomes are reported in Table 2. Foreign capital inflows are measured using foreign direct investment, remittances, and foreign air. The results show that a real effective exchange rate negatively impacts the FDI and foreign aid while positively impacting the remittances. The coefficient of REER shows that if REER increases by one percent, the FDI and foreign aid decrease by 1.053 and 0.728 percent, respectively. Similarly, a one percent increase in REER increases remittances by 0.5051 percent. It suggests that the expected values of investment projects are lower when exchange rates are highly variable, and FDI is lower as a result. Similarly, remitters consider the value of the domestic currency when they remit. Because it favors the sender domestically, the local currency's depreciation can boost the ratio of remittances.

The variable inculcation rate is found to be negatively and significantly related to the FDI while positively and significantly related to the remittances. The coefficient of CPI shows that if CPI increases by one percent, the FDI will decrease by 0.8076 percent. Similarly, a one percent increase in CPI led to an increase of the remittances by 0.8584 percent. The variable government spending is also found to be a positive and significant factor in FDI and remittances. The coefficient of GGFCE shows that if GGFCE increases by one percent, the FDI will increase by 0.8076 and 0.7125 percent, respectively. The variable GDPPC show a positive and significant association with FDI and foreign aid while a negative association with remittances. The coefficient of GDPPC shows that if GDPPC increases by one percent, the FDI and foreign aid increase by 0.9572 and 0.7644 percent, respectively. Similarly, a one percent increase in GDPPC leads to decreased remittances by 0.8597 percent. Lastly, the variable financial development shows a positive and significant association with FDI and remittances while negatively and significantly linked to foreign aid. The coefficient of FD shows that if FD increases by one percent, the FDI and remittances also increase by 0.2903 and 0.1836 percent, respectively. Similarly, a one percent increase in FD led to a decrease in foreign aid by 0.3131 percent.

**Table 2: OLS Estimates of Exchange Rate and Foreign Capital Inflows in Developing Countries**

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| Variable | FDI | Remittances | Foreign Aid |
|---|---|---|---|
| **CPI** | -0.8076*<br>(-3.8378) | 0.8584*<br>(6.1483) | 0.2994<br>(1.3095) |
| **GGFCE** | 0.3662**<br>(2.1083) | 0.7125*<br>(6.0910) | 0.1142<br>(0.5965) |
| **GDPPC** | 0.9572*<br>(3.3211) | -0.8597*<br>(-4.4102) | 0.7644**<br>(2.3925) |
| **FD** | 0.2903**<br>(2.3287) | 0.1836**<br>(2.1740) | -0.3131**<br>(-2.2627) |
| **REER** | -1.0530*<br>(-2.8671) | 0.5051**<br>(2.0547) | -0.7280***<br>(-1.8043) |
| **C** | 6.7841**<br>(2.5677) | 1.4779<br>(0.8313) | 19.7894*<br>(6.8022) |

**Source:** Author's Calculations

## 1. Conclusions and Recommendations

This study investigates the influence of exchange rates on foreign capital inflows in developing countries. The study used the panel dataset of developing countries from 2000 to 2021. FDI, Trade, personal remittances, Net bilateral aid flows and external debt stocks are measured as dependent variables. The independent variables are the consumer price index, GDP per capita, real effective exchange rate, general government final consumption expenditure and domestic credit to the private sector. The study found that the consumer price index and real effective exchange rate were negative, while the variables of general government final consumption expenditure and financial development positively influenced the FDI in developing countries. On the other side, real effective exchange rate, consumer price index, general government final consumption expenditure and financial development have a positive impact on personal remittances whereas GDP per capita depicts negative relation with personal remittances. Net bilateral aid flows are positively influenced by GDP per capita, consumer price index and general government final consumption expenditure while negatively related to domestic credit to the private sector and real effective exchange rate. Considering the study's outcomes, it is concluded that a real effective exchange rate adversely influences the FDI and foreign aid while positively influencing the remittances. It is suggested that exchange rate stabilization in a country enhances its foreign capital flows, so steps should be taken to keep the exchange rate less volatile. For this purpose, the government should increase exports, improve infrastructure to attract more FDI, and develop policies that attract more investors.

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