

# Macroeconomic Outcomes of Remittances on the Indian Economy

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## Abstract

Economic globalization has increased interdependence, particularly among the developing economies. This has increased the potential of migration across the national borders. In a similar context, the Indian economy has witnessed a rapid growth in the number of migrants after the phase of globalization. The rise in the migrant stock has led to a massive increase in the income generated through international borders in the form of remittances. India has become one of the top recipients of remittances with 79\$ billion inflows in 2018. The major factor driving the growth of migrant remittances has been the monetary incentives that raise the standard of living of the recipient's households. The rise in the income level of these households also affects other economic parameters including consumption and investment. Apart from this, the pattern of migration has also changed since the past few years with skilled workers migrating to the developed economies and unskilled ones migrating to the Gulf economies. In this context, the present study examines the trend and pattern of remittance inflows in India for the period of 1975-2017. Additionally, the study explores how remittance inflows affect the level of household consumption and investments. This relationship was examined using a two-stage least squares method by framing a set of simultaneous equations. The findings of the two-stage least square estimates indicate that though personal remittances do not impact the gross domestic product of the economy directly. But, an increase in the inflow of personal remittances leads to a rise in consumption and investment which in turn plays an important role in determining the Gross Domestic Product of the economy.

**Keywords:** *Migrant remittances, Foreign Capital, Consumption, Investment, and Economic Growth*

# 1. Introduction

In the past decade, foreign capital has emerged to be one of the largest sources of finance, particularly among the developing economies. One important component of foreign capital that has positively impacted the economic development of the Indian economy is foreign capital investment. This variable has increased the amount of investment and has also led to a rise in the number of employment opportunities (Sahoo & Sethi, 2017). Apart from foreign direct investment which entails a transfer of assets and liabilities among resident and non-resident enterprises, another substantial flow of financial capital inflow is the migrant remittances. As per the recent definition of remittances stated under the sixth edition of the IMF report of 2008, the personal remittances include the personal transfers and the compensation of employees but exclude the taxes, social contribution, and expenditure on transport and travel by the cross – border workers (IMF, 2009). The personal transfers included in the definition are independent of the source of income and the origin of the sending household. The personal transfers included the worker's remittances which comprise of current transfers send by the migrant population who are employed in the new economies and are considered the residents of that economy. Additionally, it includes compensation to the employees which includes the wages, salaries and other benefits which are earned by the individuals who are residents (IMF, 2007).

The concept of remittances having a significant impact on the economic growth of the developing economies was recognized in the early 1980s (Straubhaar & Vādean, 2006). Since then, the remittance inflows to the developing countries have risen tremendously. In 1995, the inflows of remittances to the developing nations has been \$56 billion. Over 15 years, this inflow has increased to reach \$ 334 billion in 2010(UNDP, 2018). Additionally, as per the calculations conducted using the data from the World Bank, Migration and Remittances Fact Book of 2011, the low-income countries received \$194 billion in remittances which was equivalent to 58% of the total remittances received by the developing economies during this period. Further by 2018, the annual remittance flows among the low and middle-income countries increased to reach \$529 billion in 2019 (The World Bank, 2019).

The developing countries are witnessing the growing contribution of remittances for social and economic development in the past few years. One of the major reasons is that these countries are witnessing a phase wherein the major goals of the have been imparting better education, better health care facilities, and so on. The gradual increase in income generates a financial incentive for the household (Comes et al., 2018). This motivates the individuals to migrate from their host country leading to a rise in the migrant stock.

The United Nations Department of Economic and Social Affairs in their report “*Maximizing the Development Impact of Remittances*” highlighted that the stock of migrants increased from 195 million in 2005 to 215 million in 2010 (UNCTAD, 2018b). The rise in the level of remittances has particularly affected the growth and development of the developing economies. Due to this, the remittance amount in many developing economies has exceeded other forms of foreign aid. In 2008, the majority of the economies witnessed a sharp decline in foreign flows due to the global economic recession. However, the record of remittances in the developing economies reached 283\$ billion in 2008 from 265\$ billion in 2007 (UN Migration Agency, 2018). The trend of the flow of remittances occurred from the rich and developed economies to the low-middle income and developing economies (Nwaogu & Ryan, 2015). To understand the pattern and growth of remittance inflows in detail, it is important to understand the migration patterns and the characteristics of migrants for developing appropriate policies that improve the functioning of the remittance market in India. The following section explains the review of the literature of the existing studies focusing on the growth, sources, cost, and distribution of remittances in the Indian economy.

## 2. Literature Review

### 2.1 Importance of Remittances

Worker’s remittances are one of the most important economic factors contributing to growth, particularly in developing countries. As remittances are largely stable and provide direct benefits to the households, some authors conclude that remittances have a positive effect on the economic growth of the developing countries. On the other hand, some authors highlighted that remittances have an insignificant impact on economic growth. The study “Remittances, financial development, and Growth” conducted by (Giuliano & Ruiz-Arranz, 2009) examined the relationship between remittances and growth and analyzed the importance of remittances in the local financial sector development of the country. The OLS and SGMM regression results were examined using two sets of models wherein the first model included investment and the second one excluded it. The results indicated that remittances have a positive effect on economic growth if the investment variable is dropped from the model. On the other hand, the study of (UNEC, 2011) concluded that considering the long term period of 1970 to 2017, the remittances have no overall impact on the economic growth of the developing countries. However, by dividing the period, it was analyzed that remittance had a negative influence on economic growth after the 2000s. This could be the result of an overall economic slowdown

that had occurred in 2008 which resulted in a low level of remittance inflows to the developing countries.

Remittances have become one of the important sources of foreign capital flows particularly in the developing nations. Further, with innovation and technological improvements, the transaction costs have improved due to faster mechanisms for international payments. To this, the study of (Kapur, 2004) stated that in comparison to the other financial flows, remittance is more stable and hence is better than other forms of capital. In a similar context, the study highlighted that the remittance flows to the developing countries fell by 5.27 percent due to the negative influence of the global financial crises. However, the fluctuation was very less in comparison to the fall in the foreign direct investments which lowered by about 31.94 percent during the crises.

In a similar context, the study conducted by (Stojanov et al., 2019) examined the impact of remittance on the six remittance-receiving countries in the six high remittance-receiving countries. These countries have the largest source of foreign exchange earnings. The productive capacity can help the economy in achieving the desired level of economic growth by investing the money in consumption as well as investments. The remittance flows are more stable than inflows of developing economies which are positively related to sustainable development. Apart from this, the remittance inflows finance investment in human capital and have increased household expenditures. The remittance amount further alleviates the credit constraints which promotes economic growth.

Though the other foreign inflows like FDI and development aid could be affected by the recession, lack of knowledge, and financial services, remittances have a major impact on the balance of payments and foreign exchange rates. Remittances serve as the major component of the foreign inflows and in turn helps the economy in stabilizing the exchange rate which in turn as the one of the major developmental tool, particularly in the economies which face the high level of volatility in terms of the exchange rate. This stability improves the overall global competitiveness of the economy. The stability in the exchange rate helps the countries in improving the creditworthiness of the economies. The improvement in creditworthiness can be attributed to lower levels of borrowing costs and greater reliability over the financial system of the country. Further, remittances work through the multiplier effect which in turn increases the level of output (World Bank, 2018a).

## 2.2 Contribution of Remittances for India's Development

The high frequency of economic and financial crises developed the requirement for the social safety nets. Due to this, the low and middle-income countries have become the largest recipient of remittances which has, in turn, contributed to their GDP. India has also witnessed a massive rise in the number of foreign inflows in the form of foreign direct investment and remittance inflows since the 1990s (Jha et al., 2010). Over the period, the remittance flow has increased due to which India has become one of the top recipients with 79\$ billion remittance inflows followed by China with \$ 67 billion and the Philippines with over 32 \$ billion in 2018. Additionally, the pattern of remittance inflows has also transformed over this period(World Bank, 2018b). According to the World Economic Forum, India has become the largest diaspora in the world with 18 million citizens living in other countries and the U.S being the top destination. In 2017, 1.3% of the American population was made up the Indian descents (World Economic Forum, 2019).

During the oil boom of the 1980s, the flow of migrant workers led to an increase in the remittance inflows in West Asia that benefited India's foreign exchange reserves. The economic potential of the government increased wherein several policy initiatives were initiated. These welfare initiatives focused on the welfare of migrant workers. This included the evacuation of the laborers during the gulf war. The emigration act provides the compulsory registration of the recruitment agents and banking system that facilitates the transfer of foreign exchange. Following this, in the 1990s, with the growth in need of getting educated and with the increase in demand of IT professionals, India witnessed a massive rise in terms of migration of skilled Indian labor. A Huge number of skilled IT professionals migrated to the United States and other North American countries. The incentive to migrate was supported by the relaxed regulations and controls which were the result of the opening up of capital account after 1993. Apart from this, attractive deposit schemes initiated by commercial banks also acted as an incentive to non-resident Indians to remit in India. Due to these factors, India witnessed a rapid increase in remittance in the post-reform period (Gjini, 2013). Further, the recent report of RBI indicated highlighted that the authorized dealer banks function through various methods of payment transfers which could include traditional modes including cheques and drafts to the online direct transfers. The online transfers were conducted using the interbank financial telecommunication transfers as well as through the rupee drawing arrangement. These facilities have enabled rupee drawing arrangements wherein the authorized dealer banks have farmed mode under which they remit 75.2% of their remittances to the gulf countries (RBI, 2018b).

Within India, there is a regional distinction in terms of the distribution of remittance income. Due to distinction in terms of regional income, there is a rise in the level of inequality. In 2015, though remittance comprised 4% of the share of the Indian economy, in some of the states including Kerala, Punjab, and Goa. The share of remittances in the State GDP is relatively much higher due to which these States are heavily dependent on the international remittance flows. Due to this, Kerala has witnessed a relatively high level of Human Development Index despite lagging in terms of manufacturing (Banga & Sahu, 2013; Haas, 2007a). The study conducted by (Pande, 2018) revealed that over the last few years more than 2.5 million Keralites have been shifted to other countries. In addition to this, inward remittances have raised the level of economic activities which in turn helped the State of its economic growth.

### 2.3 Impact of Remittances at Macro level

The International Monetary fund and the World Bank also examined the importance of remittances for the developing countries. The studies identified the benefits of remittances as the form of countercyclical as well as a stable source of debt financing particularly for the low-income level countries. Countries like India with a high level of remittances have extra borrowing power to fund the investments which in turn promotes the economic growth in the country. In this context, the World Bank IMF debt sustainability framework which was launched in 2009 allows the remittance recipient countries to carry a higher level of debt when the ratio of remittances is more than 10 percent of the domestic income and 20 percent of the exported goods (Perez-Saiz et al., 2019).

The effect of remittances on economic growth depends on how these are spent. If the remittances are spent on consumption, and then the relative intensities depend on the traded and non-traded goods. If the remittances inflows are spent on imports, then this doesn't lead to a high level of productive capacity in the economy. Due to this, remittance could not have a growth financing impact on reducing the level of poverty in the economy. In this context, the study of (Afram, 2011) stated that the remittance income could act as a source to bring the households out of the state of poverty. Remittances have a consumption smoothening effect which helps the households to utilize their money in high risk and profitable activities due to which the economic benefits from increased investments. Particularly in the Philippines, higher receipt of remittances is associated with a greater amount of accumulation of farm assets which in turn also generates a higher level of self-employment. Apart from this, migrant remittances

also increase the level of savings also improves the overall growth prospects of the country (Adela & Ardita, 2014).

In a similar context, 2018's RBI's report "Globalizing people: India's Inward Remittances" highlighted that more than half of the remittances which are received by India are utilized for consumption purposes. About 20% of these remittances are kept as bank deposits and only 8.3% of the investments are kept in the form of land property. The negative effects of the remittances can be gathered and analyzed using three major analytical topics. The primary effect of an increase in remittance depends on the sensibility of the monetary policy in the country. A rise in the remittances leads to an appreciation in the economy which in turn improves the export competitiveness of the country. The study highlighted that the per capita income and the expected economic growth have a positive impact on the remittances of the economy (Adela & Ardita, 2014).

In this context, the study of (Das, 2015) highlighted concerns regarding brain drain. This fact was argued as skilled migrants tend to earn more than the unskilled ones as education is one of the important determinants of the level of remittances. However, large scale migration of skilled workers leads to a loss of human capital. This human capital could have acted as a valuable asset for the growth and development of the economy. This reduces the supply of skilled labor force in the domestic economy. To this, the book "Remittances and Development" by (Fajnzylber & López, 2008) focused upon the long term debate about brain drain. The author highlighted that the concept of brain drain has two perspectives. When the workers migrate from their origin country then the origin country tends to lose due to loss of positive externalities which are generated by highlighted by skilled workers such as doctors, engineers, and entrepreneurs, and so on. Additionally, the government loses the tax revenue through could be generated through the income of these individuals. On the other hand, potential gains are generated through the higher level of income which they remit to the households in the country of origin.

Another negative impact of the remittance arises in the distribution of the local income distribution within regions of India. The study of (Stojanov et al., 2019) highlighted that inequalities arise among the families with or without the emigrants. The families with migrants witness an increase in income in contrast to the families without the remittances. On the other hand, the optimistic and pessimistic theory in the study of (Samuel & Stephen, 2018) focuses on the fact that a higher level of international remittance inflows tends to reduce the inequality

in the recipient economy. The reduction in inequality is attributed to the removal of the budget constraint of the households which in turn stimulate the demand for goods and services in the economy. Additionally, the income effect of an increase in remittances could also decrease the labor supply in the remittance recipient economy can afford to remit a lesser amount. This is also consistent with the neoclassical economic growth theory wherein the real salary differences that arise within the economies lead to bidirectional flows within the economies due to which the earnings within the economies tend to converge.

Further, the study of (Samuel & Stephen, 2018) investigated another negative impact of remittances which is the Dutch disease. Dutch disease is one of the biggest threats to the remittance inflows in the developing economies which are particularly dependent on remittances in the form of a large share of their GDP. This effect occurs mainly due to too much dependence on remittance inflows leads to an appreciation of the exchange rate. However, this may lead to depreciation due to the amount of remittance inflow falls. In the Indian context, the study “Workers’ remittances and Dutch disease in South Asian countries” (Roy & Dixon, 2016) examined the argument of Dutch disease for India, Bangladesh, Pakistan, and Sri Lanka. The findings of the study indicated that there is a statistically significant effect of the appreciation of remittances on the real exchange rate of these economies. Further, the depreciation of the currency also affects the remittance flows as it takes the remittance flows less attractive.

## 2.4 Informal Sources of remittances

Though many authors widely examine the impact of remittances recorded in the official statistics under the Balance of Payments yearbook which are published by IMF, it is important to notice that the actual value of the remittance amount is much higher. The official remittance channel represents only a portion of the total remittance flow. There exist many informal channels such as self –carry or hand-carried money by the relatives or the modes of hundi system through which are the unofficial ways of remitting money. The World Bank and the IMF report of 2010 revealed that the rise in remittance amount in the past few years would be 50 % more if the remittance through the informal channels is also officially recorded (Puri & Ritzema, 1999).

In this context, the study conducted by (Glytsos, 2005) highlighted that the hawala or the hundi system is one of the commonly used systems for transferring the informal remittances. A

hawala transaction comprises of the remitter and some intermediaries through which money is transferred. In this process, the migrant remitter pays the amount to the intermediary hawaldar in the country in which they are remitting. This hawaldar then contacts the partner service provider in the recipient country. In the context of the hawala system, the study of (Munzele, 2005) focused upon the versatility of the hawala system. The study highlighted that the hawala transactions are adaptable to wars, civil unrest, economic crisis, and blockades. During the 1990s, particularly regarding security concerns, the hawala system was considered to be a reliable and cost-effective mechanism for fund transfers. It enabled the people to transfer the funds into Europe or the United States with a time span of a few hours. In addition to this, this unofficial channel offered an advantage in context to accessibility for the migrants as these channels had the reach even to the remote areas.

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The hawala system remained popular in India till 1993 as the exchange rate of Indian rupee remained regulated during this period. In addition to this, Foreign Exchange Control Act (FERA) had imposed a strict control system that had developed a strict control system over the transactions in foreign exchange wherein a limited number of transactions were permitted in a particular year. However, with the onset of liberalization in 1992, India has witnessed a diminishing role of unofficial channels for remitting the money in India. In 1993, the government framed a market-based exchange rate system which reduced the appeal of the

hawala networks. Further, FERA was replaced by the Foreign Exchange Management Act (FEMA) which imposed limited controls over foreign exchange transactions (MPI, 2007).

## 2.5 Sources of Remittance flow to India

### 2.5.1 Migrants to the American countries

The United States is one of the major sources of remittance to India. The statistics of 2009 point out that about 44% of the Indians migrate to the United States temporarily for employment purposes. This is because, in the United States, the majorities of Indian migrants are highly skilled and earn higher than the median salaries of the Americans. In 2007, the per capita income of the Indian migrants was the US \$50,000. On the other hand, the average income of all the migrants was the US \$ 28,000. Further, in 2017, 57% of the Indian labor outflow is highly skilled workers who migrate to the USA. This 57% comprises of 13 percent of global skilled migrants in the USA (Stojanov et al., 2019).

In a few Latin America and Caribbean countries, the remittance inflows increased by 9.5 percent in 2018. In addition to this, Mexico is the third-largest recipient of remittances with a growth of 11 percent in 2018. Due to multiple job opportunities, Latin America is facing several migrants' movements from Central America. The foreign exchange transactions within the Indian entities to conform to the Foreign Exchange Management Act (FEMA) to promote the foreign exchange market in India. The FEMA empowers for promoting development and maintenance (Adela & Ardita, 2014).

### 2.5.2 Migrants to MENA countries

Among all the countries, the gulf economies contributed to about 40% of the inflow of the worker remittances to South Asia. Gulf countries have also emerged to be one important source of foreign remittances in India. However, about 70 percent of the migrants from India to the Gulf countries are unskilled or semi-skilled. Within the Gulf countries, about 85% of Indian migrants are working as organized labor or technicians. In a similar context, 75% of the migrant Indian workers in the United Arab Emirates are employed as laborers. The statistics from the Ministry of Overseas Indian Affairs indicate that 6-7 lakh workers migrate every year which eventually increased to 7.47 lakh workers migrating during 2012. The high rate of economic growth in the gulf regions is the major reason due to which many expatriates are attracted through South Asian countries which have in turn fueled the level of economic growth. Further, geographical proximity is another reason due to which the workers migrate to the Gulf countries (T.L.S.Bhaskar, 2013).

The study of (Haas, 2007b) highlighted that in the Indian context, the remittances are influenced by the growth of migrant earnings and the economic environment in the source country. These remittances are often motivated by the tax exemptions. In India, the government announced the tax exemptions in the 1980s to improve the foreign exchange reserves position. Due to this, the non-resident Indians were motivated to open the accounts in any of the foreign currencies. The Indian citizens are motivated based on the institutional quality of the country in which they are migrating. In addition to this, the remittances depend on democracy, human rights, and the institutional tax system that India offers to its citizens. In this context, the study conducted by (T.L.S.Bhaskar, 2013) highlighted that MENA countries have greater control over inflation and trade. Further, these economies have better control over financial development. These countries have developed better financial markets by offering credit facilities to the private sector.

## 2.6 Outward Remittance flows

On one hand, as with an increase in the migrant stock, India has been the largest recipient of remittances, it is also important to notice that India has been one of the important destination countries for migrants. Most of the migrant populations in India are from neighboring countries including Bangladesh, Nepal, Pakistan, and Sri Lanka. The majority of these migrant populations are either unskilled or semi-skilled workers. The major economic factors that led to a high rate of migration in India are vast scale employment opportunities for low skilled jobs and the demand for cheap labor. In his context, the study conducted by World Bank revealed that the majority of the migrants belong to Bangladesh. These migrants range from about 5 million to 20 million who are concentrated in West Bengal and the other North Eastern States. Following this, migrants from Nepal are the second-largest migrant flow which ranges from 1 million to 3 million. The majority of these Nepalese migrants are concentrated within the five states including Assam, Bihar, Uttarakhand, U.P, and West Bengal (Ratha et al., 2008).

Money Transfer Service Scheme facilities transfer the personal remittances from abroad to the beneficiaries in India. The outward remittance India is permissible under MTSS, the system tie-up (World Bank, 2018a). Particularly in the Indian context, the study conducted by RBI revealed private transfer outflows accounted for about \$ 1.8 trillion in 2007-08. In addition to this, the study highlighted that about 90% of the remittance inflows were used under family maintenance. Further, the majority of the migrants to India belonged to Bangladesh and Nepal. The majority of these migrants migrate to West Bengal, Delhi, Maharashtra, and Northern States (Chinmay, 2011).

## 2.7 Liberalized Remittance Scheme

A liberalized remittance scheme is one of the major benefits that the government offers to the residents of India who remit funds abroad. Under this scheme, the Indian citizens are allowed to remit to USD 2,50,000 within a particular financial year. This foreign exchange facility can be availed by the individuals who are the residents under the foreign exchange facility in Para I under the schedule III of the foreign exchange management amendment rules. This scheme was initially functioning since 2004 with the limit of USD 25,000 has been revived with the current micro and macro-economic conditions. This scheme is not applicable for the corporate entities, partnership firms, and the Hindu undivided families. In addition to this, there exists no restriction on the frequency of remittances under the LRS scheme. Further, under this facility, the remittances can be availed with only the close members of the family wherein family members can't be combined for undertaking the capital account transactions which comprise of bank accounts and purchase of the property. The applicability and effectiveness of the scheme can be examined from the extent that it is applicable even for the minors with the consent of the natural guardian. This, in turn, allows the citizens to operate their business or purchase property abroad (Munzele, 2005).

The money under this scheme can be used to pay expenses including the expenses relating to the traveling, donations, gifts, and maintenance. Apart from this, the remittance amount related to the emigration and availing of the medical facilities can be availed beyond the limit which is prescribed under the LRS. Additionally, this amount can be used in shares, debt instruments and to purchase the immovable properties even in the international market. The scheme is applicable for this permitted limit for any of the current or capital account. Further, the citizens can also maintain and hold foreign currency accounts within the Indian banks for carrying the transactions permitted under the scheme. In a similar context, the report released by RBI highlighted that the outward remittances under the LRS scheme were 8.17 US\$ billion (RBI, 2018b).

## 2.8 Cost of Remittances

The study conducted by RBI in an article published by RBI "Remittances from Overseas Indians: Modes of transfer, transaction cost and time taken" highlighted that how a mode of transferring remittances has changed over -a while. The main instruments used by the migrant remittances in India comprise of electronic wires/ SWIFT, drafts, money orders, and direct

transfers within the bank accounts. The survey conducted in the RBI report of 2010 revealed that amongst the 12 cities, SWIFT/ Electronic transfers has been used 63% of the migrants (RBI, 2010). However, in comparison to direct or instant money transfers, SWIFT transfers are much more costly for the transfer of small values. The major reason attributed to an increase in the use of this source of remittance is the wide network of Indian Bank branches and the minimal amount taken for the transfer of funds. The time taken for electronic transfers in India is about 1-3 days (Afram, 2012).

In terms of the cost of remittances, the study highlighted that there are two types of costs which are associated with remittance transfers in India. The first one is the explicit cost which is the amount of money charged on remitting. On the other hand, the second one is the hidden costs which are the implicit charge in the form of exchange rate wherein the money is charged for the conversion of the foreign currency to the domestic currency. Further, the two elements associated with the cost of transfer in India which include the costs paid by the sender who is remitting the money and the cost paid by the domestic receiver in the form of handling charges (RBI, 2010).

The cost of transferring remittances in India is affected through various factors such as destination, method of transfer, the size of remittances, and regulations in both the source as well as the destination countries. In addition to this, the costs of remittances are also affected by the exchange rate margins and the fees charged to the service providers. With 74% of the remittance transfer conducted through private transfers. The World Bank uses remittance prices worldwide wherein the average cost of sending. Globally, the average cost of sending 200\$ US was 7.1% at the beginning of 2018. By considering India, the average cost of sending 200 US \$ has declined from 9.1% in 2013 to 5.6% in 2018 (RBI, 2018a).

Mode of Delivery	Origin Country	Charges (% of Funds)		Bank/MTO
		Minimum	Maximum	
(i) Banks				
Draft	US	15.0	-	State Bank of India
Cheque transfer	UK, US	0.4	10.0	Bank of India
Wire/cash transfer to bank account	US	-	30.0–40.0	State Bank of India, Bank of America, HSBC, Citibank
Wire	US	5.0	15.0	Bank of Baroda
Wire	Canada	0.4	25.0	ICICI Bank
Wire	US	1.2	30.0	State Bank of India
Bank deposit	US, UK	0.3	8.0	Bank of India
Bank deposit	UK	2.5	-	ICICI Bank
Card transfer	US	3.1	13.0	ICICI Bank
(ii) MTOs				
Online/ACH	Europe	0.4	4.0	Remit2India
Online/ACH	US	3.6	9.0	Remit2India
Online/ACH	UK	4.7	14.0	Remit2India
Bank account/card transfer/cash transfer	US	0.3	12.0	Well Fargo
Cash/bank account	US	0.8	11.0	Cash2India
Bank account to cheque		8.0	-	Xoom
Cash	Canada, US	2.0	15.0	WUMT
Cash	UK	2.5	14.0	WUMT
Cash	US	2.8	14.0	Money Gram
Card transfer	US/UK/ Europe/UAE	3.3	8.0	iKobo

**Table 1: Fee structure of Money transfer to India (Source: (Singh, 2010))**

The transaction cost of remitting the funds depends on the remittance sending and receiving countries with limited control over the costs. Additionally, it is affected by the interface and infrastructure of both sending and receiving countries. In this context, the above table describes the fee structure of the Money transfer to India. The transaction cost of remittance comprises three elements including the charges in the host country, receiving country, and the implicit hidden costs. In this context, the above table describes the fee structure of Money transfer through various international border countries. The table indicates that US bank draft transfers charges through cheques require a charge of about 15%. Similarly, wire transfers charge the maximum rate of 30%. In comparison to this, the online transfers conducted through money transfer operators like Remit2India charge relatively fewer fees and even increases the level of time efficiency.

## 2.9 Agenda under sustainable Development goals

Under the Agenda of sustainable development goals, remittances are not considered important for achieving a high rate of sustainable economic development. Instead, one of the major aims under sustainable development goals is to reduce the number of remittances. This is -because the migrant remittances do not fulfill the need for resources required for increasing the productive capacity. As the major part of total remittances does not contribute to the productive investments, the benefits of remittances can't be realized until there is a certain policy framework to make use of remittances for productive investments. Additionally, these policy initiatives must be supported by certain private initiatives (Stojanov et al., 2019).

In contrast to this, the study conducted by International Fund for Agriculture Development (IFAD) highlighted that if the migrant remittances are spent by developing a policy framework that is targeted for achieving support social and environmental aspects, it can deliver effective results. For instance, the migrant's income is used in agricultural activities then it can create a wide set of employment opportunities. In this context, the IFAD recommended that the government must take the necessary actions to invest in agricultural production. This will, in turn, improve the productivity of the food leading to greater food security. For this purpose, it is necessary to promote services under agricultural production (Imai & Bresciani, 2017).

The report of (UNCTAD, 2018a) focused upon the sustainable development goals of 2030 indicate that under the sustainable goal target, the government aims to reduce the transaction cost by less than 3% of the migrant remittances. Additionally, it aims in reducing the migrant corridors with the costs of more than 5 percent. In addition to this, the least developing economies aim at enhancing the role of remittances through the formal transfers which could be utilized- to finance productive investments. The use of formal channels for the transfer of funds and lower level of costs can be achieved through a proper regulatory framework through which a greater number of financial institutions is allowed for the migrant transfers. A rise in the number of financial institutions allowing the transfer of funds promotes healthy competition among the institutions which in turn reduces the costs of transfer of funds to the end-user. Further, it leads to greater access to funds even in remote or rural areas.

Apart from the policy framework, it was also argued that the inflow of remittances has no proper legal framework. To, this the report of IFAD focused upon the fact that remittance markets must be governed under effective regulations that must be supported through greater transparency. In addition to this, rules must be developed for investing in the remittance

amount in education and health facilities. This can be done by ensuring that the remittance families have the required access to the basic facilities. Further, there should be certain incentives or policies through which the migrant workers can directly pay for the health premiums for their families and could invest in other health insurance products (Niimi et al., 2008). One of the major rationales under the policies used for enhancing the development of migrant remittances is to focus upon the role of migrants in eliminating poverty in some of the families and communities which can be used for present consumption by the families.

Another sustainable development goal is to take urgent action for climate change. As migration is one of the major causes of climate change due to negative effects through weather-related shocks, it is necessary to encourage the migrant groups to invest in the services or products which are designed to manage the climate-related risks and the natural disasters. Further, the migrant investors must be encouraged to invest huge funds in sustainable agricultural irrigation and infrastructure which can be used for managing water resources effectively. Lastly, sustainable consumption can be promoted by developing awareness programs in the remittance-receiving communities that focus on environment-friendly consumption wherein productive investments are given priority over the expenditure in the luxury goods (Pande, 2018).

To utilize the number of remittances for productive investments, the study of (UNCTAD, 2018a) revealed that remittances can be utilized for productive investments through the creation of specific financial instruments. This can be done through the formation of housing and education accounts for the families of the migrants in their origin country. This offers a wide number of opportunities for the migrants to invest in their home country.

## 2.10 Distribution of Remittances

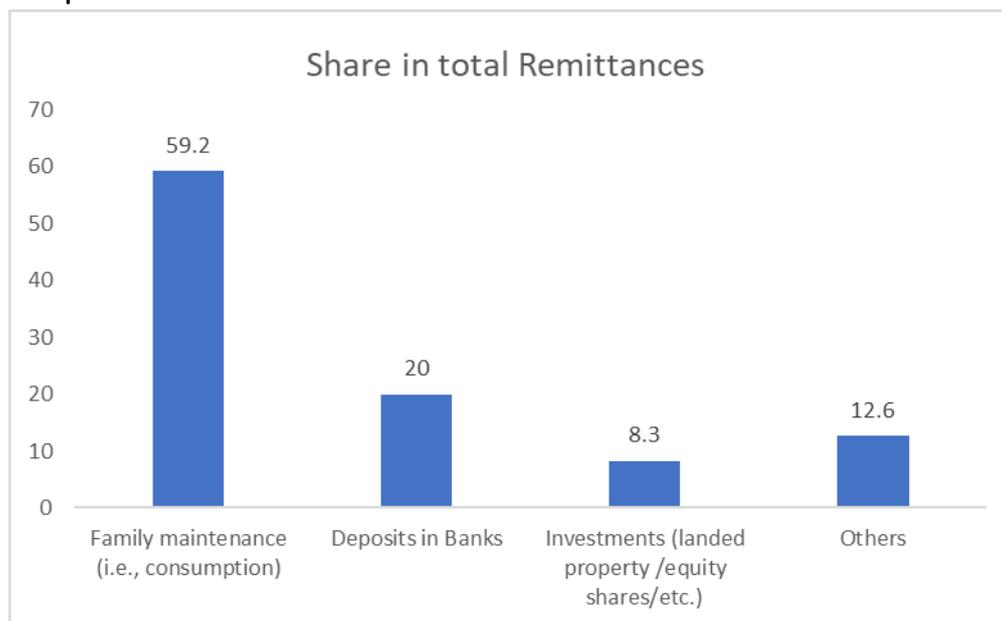
### 2.10.1 Size of Remittances

Size of remittances	Less than or equal to US\$ 200	Between US\$200 - US\$500	Greater than or equal to US\$ 500
Share in total remittances	2.7	27	70.3

**Table 2: Size-wise Distribution of Remittances in 2016-17 (Source: RBI, 2018)**

The above table shows the size -wise distribution of remittances as per the inward remittance survey of 2016-17. The findings in the above table indicate that more than 70% of the total transactions were of more than the US \$ 500. Additionally, 27% of the total transactions were between the US \$200 to the US \$ 500. Thus, share in the total remittances was largest for the size of remittance which is greater than or equal to the US \$ 500.

### 2.10.2 Purpose of Remittances



**Table 3: Share in total remittances in 2016-17 (Percentage) (Data Source – RBI,2018)**

The above graph depicts the share in the total remittances for the period of 2016-17. The graph indicates that about 59% of total remittances are utilized for family maintenance. In addition to this, 20% of the deposits. Further, about 8.3% of the total remittances were utilized for investments. Thus, it can be said that most of the inward remittances are utilized for consumption purposes or Family maintenance.

## 2.11 Role of diaspora bonds

Remittances have played a significant role in availing finance to deal with economic recessions. The finance was used in the form of diaspora bonds, a type of debt instrument used for issuing finances through the overseas diaspora. These bonds were used to support the balance of payment crisis. In 1991, an amount of \$1.6 billion was issued in the form of Indian Development Bonds (Suhas L Ketkar, 2010). During this period, India was successful in controlling huge trade deficits, deflation, and devaluation of the currency. Following this, the diaspora bonds were issued in 1998 of an amount equivalent to \$4.2 billion. Subsequently, the India Millennium deposits of an amount of \$5.5 billion were issued in the form of India Millennium deposits in 2000 (Ketkar & Ratha, 2007). The diaspora bonds have offered the non-residential Indians with a higher return on the investments. The funds could be utilized either for long-term investments or to generate high social value.

Bond Type	Amount	Year	Maturity	Minimum	Coupon
India Development Bond	\$1.6 bn	1991	5 years	Not available	
USD					9.50%
GBP					13.25%
Resurgent India Bond	\$4.2 bn	1998	5 years		
USD				2,000*	7.75%
GBP				1,000**	8.00%
DM				3,000*	8.25%
India Millennium Deposits	\$5.5 bn	2000	5 years		
USD				2,000*	8.50%
GBP				2,000*	7.85%
EUR				2,000*	6.85%

*Table 4: Diaspora Bonds issued by India (Source: State Bank of India)*

## 2.12 Research gap

In the present decade, India is witnessing a massive increase in the number of remittance inflows. This has led to a rise in the level of income, in turn, contributing to growth in the level of consumption and investment. Due to the incentive of earning a higher level of income, the rate of migration of both skilled and unskilled workers has been significantly high but the

income generated through the migration of skilled workers is relatively much higher. However, some of the authors argue that unskilled workers remit a greater amount than skilled workers. In this regard, the present study examines the difference between the amount remitted by the skilled and unskilled workers. The higher level of income can contribute to a high level of economic growth. However, it also has a negative effect in terms of brain drain. In addition to this, remittances may only contribute to a higher level of consumption patterns by fulfilling the basic needs of the households. In this context, the present study examines how consumption and investment pattern changes with the level of remittances. Additionally, it examines how the level of remittances affects the level of economic growth in the country.

Though in recent years, the number of remittance inflows in India has increased rapidly due to which remittances emerged as one of the major subjects of research but the data on remittances are less reliable than the data on the other items in the balance of payments accounts. There was a lack of confidence in the estimates of remittance till the 20<sup>th</sup> century. This led to higher inconsistency in terms of the coverage of the remittance data. The major reason behind this is the lack of clarity in terms of the definition of remittances. Most of the previous studies have considered the workers' remittances to examine the impact of remittances on economic growth.

However, workers' remittances also include the current transfers by those migrants who are employed in the new economies and are considered to be the residents of the country in which they are citizens. To solve this problem, the World Bank has recently introduced a new definition of remittances wherein personal remittances have been defined as the sum of personal transfers and the compensation of the employees. Personal transfers capture all current transfers in cash or kind that involves the resident and non-resident which is independent of the source of income of the sender. On the other hand, compensation to the employees includes the income of border, seasonal, and other short-term workers who are employed. It includes wages and salaries in kind and in cash earned by individuals in the economies other than those in which they are residents. The previous research studies examined the impact of remittances on the economic growth of India, the research targeted only worker's remittances that don't accurately explain the definition of remittances. Thus, it is important to examine the impact of remittances on economic growth by considering the recent definition of personal remittances capturing the compensation of employees and personal transfers.

The higher level of money spend through remittances can act as consumption and economic stabilizer, but in such a situation, if the level of remittance falls unexpectedly, it may drive the

country towards recession. In this regard, the present study is examining whether the level of growth in remittance income is derived by consumption or investment. Though many previous studies have examined the impact of remittance on the economic growth of India, one major limitation of these studies has been that more than half of these studies have considered worker's remittances into consideration. These studies have not taken into account the proper definition of remittances which comprise both compensations to the employees and the personal transfers. In this context, the present study fills this research gap by considering the recent definition of remittances as per the sixth edition of the IMF report. Further, it compares the remittance amount with the level of foreign direct investments to examine the trend in the growth of remittances.

## 2.13 Research Questions

To fulfill the research gap, the following research questions were being addressed: -

Q1.) What is the impact of an increase in remittances on consumption, investment and economic growth of the country?

Q2.) Which countries remit more inflows to India?

Q3.) Do the unskilled workers remit more money than the skilled ones?

Q4.) Do remittance inflows outperform the foreign direct investment in India?

## 3. Research Methodology

### 3.1 Research Design

In the present study, a descriptive research design was used by the researcher to examine the extent to which the macro-economic variables including investment, consumption, trade and foreign trade investment impacts the gross domestic product of the economy. Further, it helps in describing the trend of remittances across North American, European and the MENA countries. Also, explanatory research is used for examining the positive and negative effects of growth in remittances.

### 3.2 Data Collection

To examine the personal remittances on the economic growth of the Indian economy, secondary data for all the variables considered in the previous section was collected from 1975

to 2017. As India had witnessed an increase in the amount of remittance inflow during the 1980s, a time-series data for 43 years is chosen. This will help in examining the long-term trend in the growth of remittance inflows and its impact on macroeconomic variables including gross domestic product, consumption, and investment. Additionally, to examine the trend of the region-wise transfers, data for bilateral country-wise transfers has been captured from 2010 to 2017. Due to limited availability, data for bilateral transfers has been captured only for seven years. The bilateral transfers were classified according to three different regions including North American countries, European countries, and the MENA countries. The source of data collection for all the variables have been the World Development Indicators of the World Bank.

### 3.3 Data Analysis Procedure

Quantitative analysis is used in the present study to derive insights through the data. The data collected by the researcher was entered into Excel for the trend analysis. The variables considered in the present study have variation in terms of the spread of the data and the units in which it is measured. The official exchange rate is measured in local currency units and trade is measured in terms of percentage of GDP. On the other hand, other variables like government final consumption expenditure, gross domestic product, net inflows of foreign direct investment and household final consumption expenditure are measured in US dollars. This leads to inconsistency within the data. To maintain consistency within the data, the data is standardized using the following formula: -

$$z = \frac{X - \mu}{\sigma}$$

$\mu$  is the mean of data and the  $\sigma$  is the standard deviation of the data. After standardizing the data in Excel, it is imported to STATA for further analysis.

The two-stage least square method has been adopted to examine the relationship between remittance inflows, investment, and consumption. For this purpose, the following regression equations were formed: -

$$GDP_t = \alpha_0 + \alpha_1 REM_t + \alpha_2 HFCE_t + \alpha_3 FDI_t + \alpha_4 GFCE_t + \alpha_5 GFCE + \alpha_6 ER + \alpha_7 TRADE + u_{1t}$$

(1)

$$GFCF_t = \beta_0 + \beta_1 REM_t + \beta_2 ER_t + \beta_3 INF + \beta_4 CRPVT_t + \beta_5 GDP + u_{2t} \quad (2)$$

$$HFCE_t = Y_0 + Y_1 REM_t + Y_2 CRPVT_t + Y_3 FDI_t + Y_4 GDP_t + Y_5 POP_t + \mu_{3t} \quad (3)$$

The details of the variables are explained in the table given below: -

<b>Variable name</b>	<b>Details of a variable name</b>
<b>REM</b>	<i>Personal Remittances in US dollars.</i>
<b>GFCF</b>	<i>Gross fixed capital formation used as a proxy for Investment</i>
<b>GFCE</b>	<i>Government final consumption expenditure</i>
<b>TRADE</b>	<i>Trade as a percentage of GDP</i>
<b>GDP</b>	<i>Gross Domestic Product</i>
<b>FDI</b>	<i>Foreign Direct Investment</i>
<b>HFCE</b>	<i>Household Final Consumption Expenditure</i>
<b>ER</b>	<i>Exchange Rate</i>
<b>CRPVT</b>	<i>Credit to the private sector</i>
<b>POP</b>	<i>Population</i>
<b>INF</b>	<i>Inflation</i>

*Table 5: Description of the Variables*

## 4. Data Analysis

The present section represents the analysis of the data. The first sub-section highlights the remittance flows in 2017. This is followed by another sub-section which indicates the remittance flows in North American, European and the MENA countries. Subsequently, the trends of remittances, FDI, foreign aid and net migration stock. Further, in the next section, the results of descriptive statistics, correlation and the results of two-stage least squares are presented. -

## 4.1 Trend Analysis

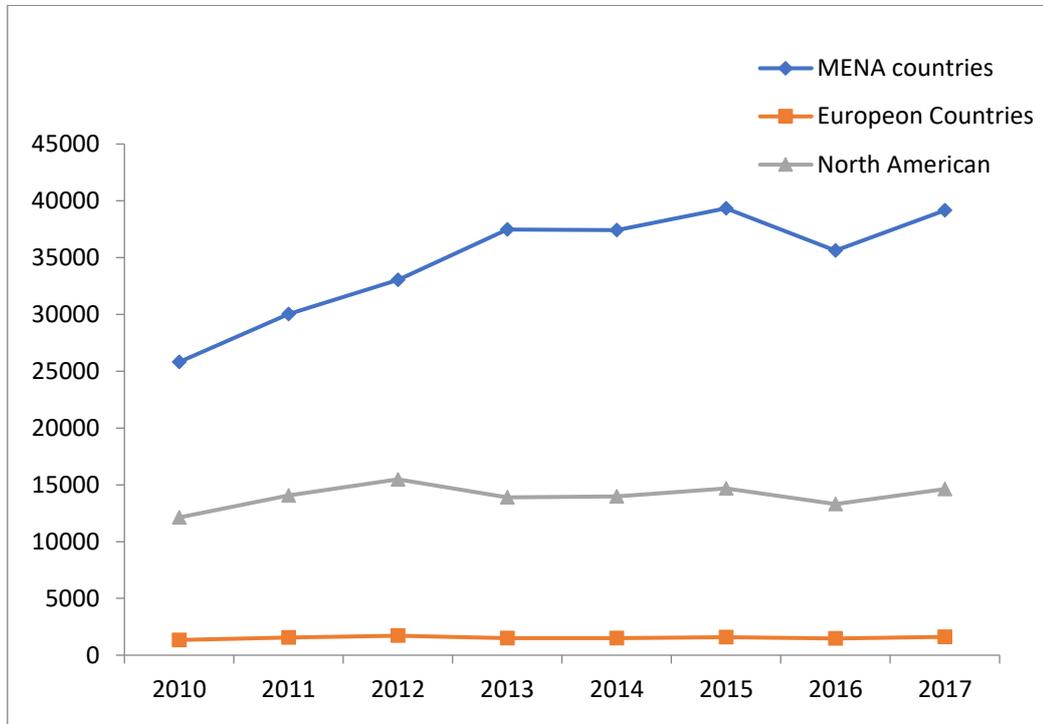
### a. Remittance Flows in 2017



**Figure 1: Remittance inflows in 2017 (In US \$ million) (Source: Estimates of the Paper, Data source: World Bank)**

The above diagram highlights the country-wise distribution of the remittance inflows in India from the world in 2017 according to World Bank data. The figure indicates that the maximum remittance countries include the United Arab Emirates, the United States of America, North America, Australia and some of the European countries. In 2017, the maximum amount of remittance inflows was from the United Arab Emirates with about 13,823 million dollars followed by the United States with about 11,715 million dollars. In a similar context, to examine the remittance inflows in India, RBI surveys the bank branches across the Indian States. The survey results of 2010 indicated that the North America region was the most important source of remittance inflows with a share of about 38% in the total remittances while the Gulf countries accounted for an average of 27% of the total remittance inflows to India. This trend had undergone a major transformation over some time. The survey results of 2016-2017 indicated that over 90% of the migrants are working in gulf countries which accounts for 50% of the total remittances.

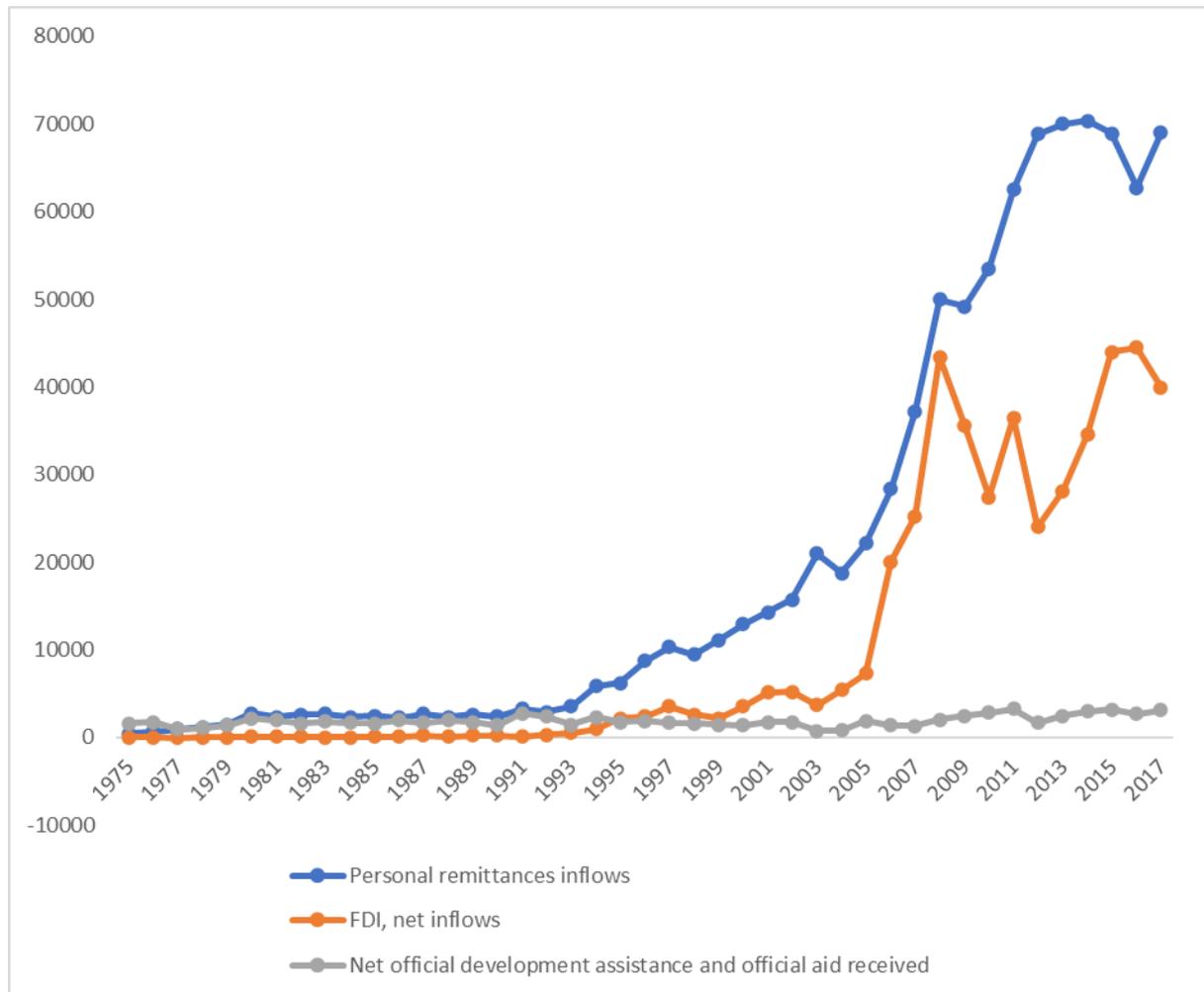
## b. Remittance flows in North American, European and MENA Countries



**Figure 2: Trend of Remittances inflows (In US \$ millions) (Source: Estimates of the Paper, Data Source: World Bank)**

The above figure indicates the trend of remittance inflows in the three groups of countries including the MENA countries, European countries, and the North American Countries. The figure indicates that while the remittance inflows from the European and North American countries have relatively stable, the remittance inflows from the MENA countries have risen consistently from 2010 to 2017. The figure indicates that the remittance inflows from the MENA Countries increased from 25811.2US \$ million to 39153.52 US \$ million. In contrast to this, the remittance inflows in the North American countries have increased from 12,124 US \$ million to 14,626 US \$ million. Further, the remittance inflows from the European economies also increased from 1338.43 US \$ million to about 1608.818 US \$ million. This points out that a massive amount of remittance inflows occurs from MENA countries. This is due to the vast amount of unskilled and semi-skilled workers migrating to these countries. This also points out that unskilled and semi-skilled workers migrating to the MENA countries remit a greater amount than the skilled workforce who are migrating to the North American and MENA countries.

### c. Remittances, FDI and Foreign aid

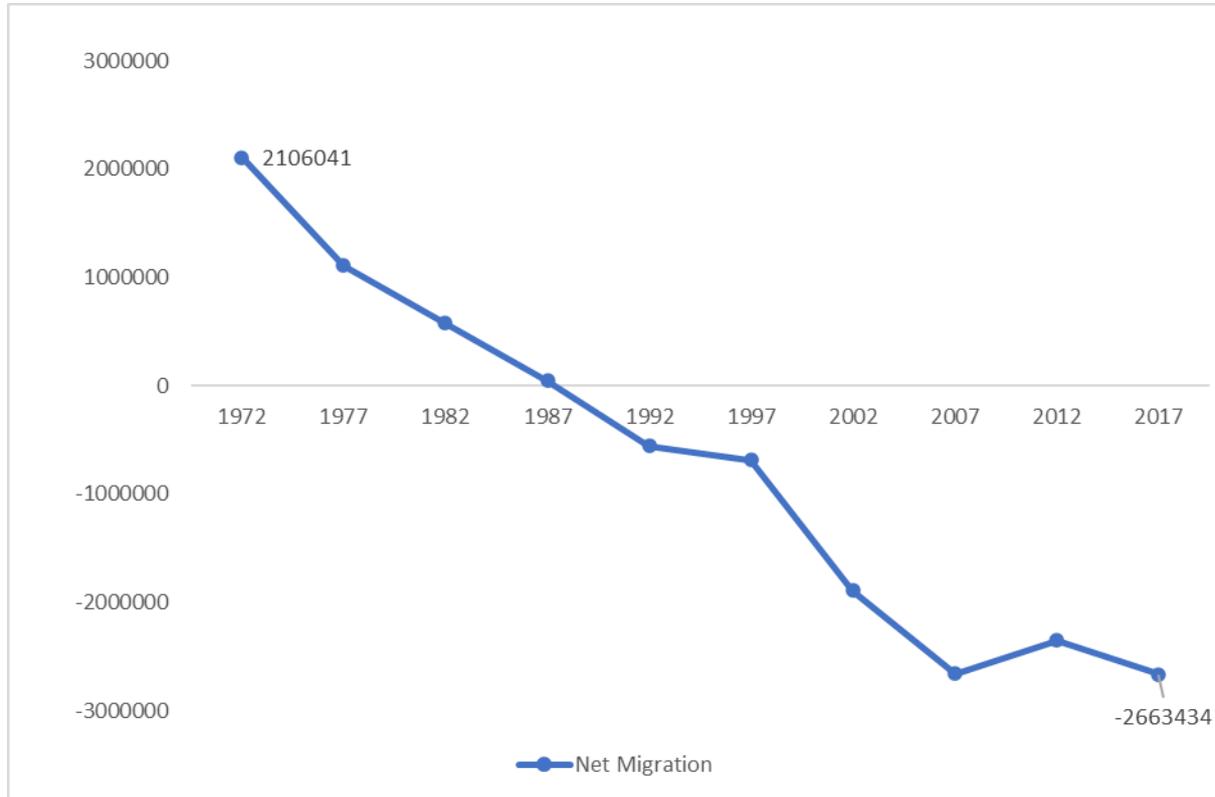


**Figure 3: FDI, Remittances and Foreign aid (In US \$ million) (Source: Estimates of the Paper, Data source: World Bank)**

The above diagram highlights the trends for net inflows of FDI, personal remittance inflows and net official foreign aid during the period 1975 to 2017. The trends indicate that till 1995, FDI inflows, foreign aid, and the personal remittance inflows remained stabilized. After 1995, both personal remittance inflows and FDI increased but the level of foreign aid remained constant. However, the increase in personal remittance was much greater than the increase in foreign direct investment. Additionally, the graph indicates that in the post-crisis period, personal remittances increased at a much higher rate than the increase in foreign direct investment. The level of personal remittances increased from the US \$ 12,883 million in 2000 to the US \$ 68,967 million in 2017. As the remittances have increased at a much higher rate

than the foreign direct investment, the gap between the two inflows widened over some time due to which the remittances have increased to reach about 79\$ billion in 2018.

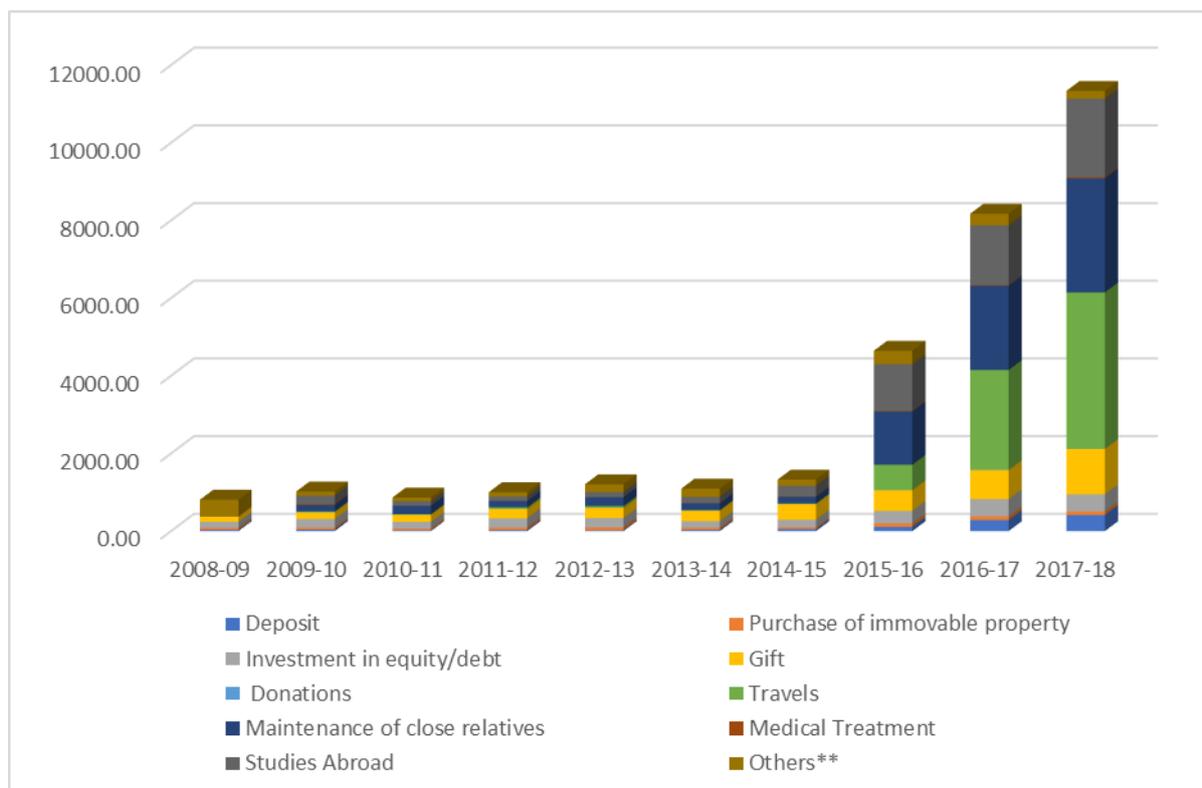
#### d. Net Migration Stock



**Figure 4: Net Migration Stock (Source: Estimates of the Paper, Data source: World bank)**

The above figure highlights the net migration stock of India based on the data collected through the World Bank Website. The net migration stock highlights the difference between the number of immigrants which highlights the number of people who leave the country and the number of emigrants which reflects the number of people who leave the country. The net migration stock varied from 2.1 million in 1972 to negative of 2.6 million in 2017. The figures indicate that the number of emigrants increased over some time in comparison to immigrants.

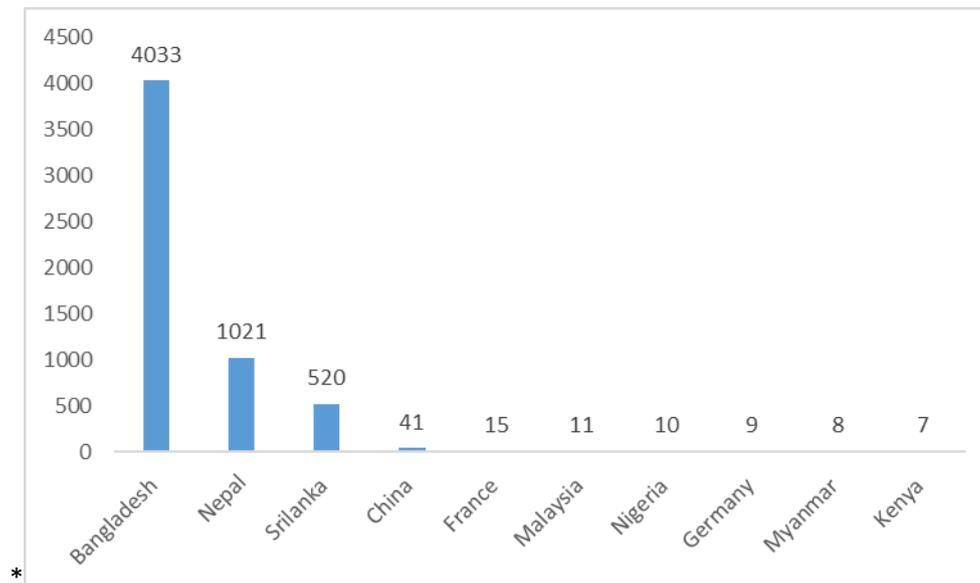
### e. Outward Remittances



**Figure 5: Outward remittances (In US \$ million) (Source: Estimates of the paper, Data source: World Bank)**

The above figure highlights the flow of outward remittances for the resident individuals for the period of 2008-09 to 2017-18. The graph focuses on the distribution of outward remittance flows during this period. This indicates that in comparison to 2008-09, the flows of remittances increased, particularly to pursue studies abroad, travels and in the form of deposits. The amount of deposit increased from 30 \$ US million in 2008-09 to 414.94 \$ US million in 2017-18. In a similar context, the outward remittance flows to study abroad increased from 217 \$ US million in 2009-10 to 2021 \$ US million in 2017-18. Further, it is important to note that the total amount of migrant remittances increased from 808 \$ US million in 2008-09 to 11,333 \$ US million in 2017-18. Thus, most of the migrants from Bangladesh, Nepal, and Sri Lanka either deposit the

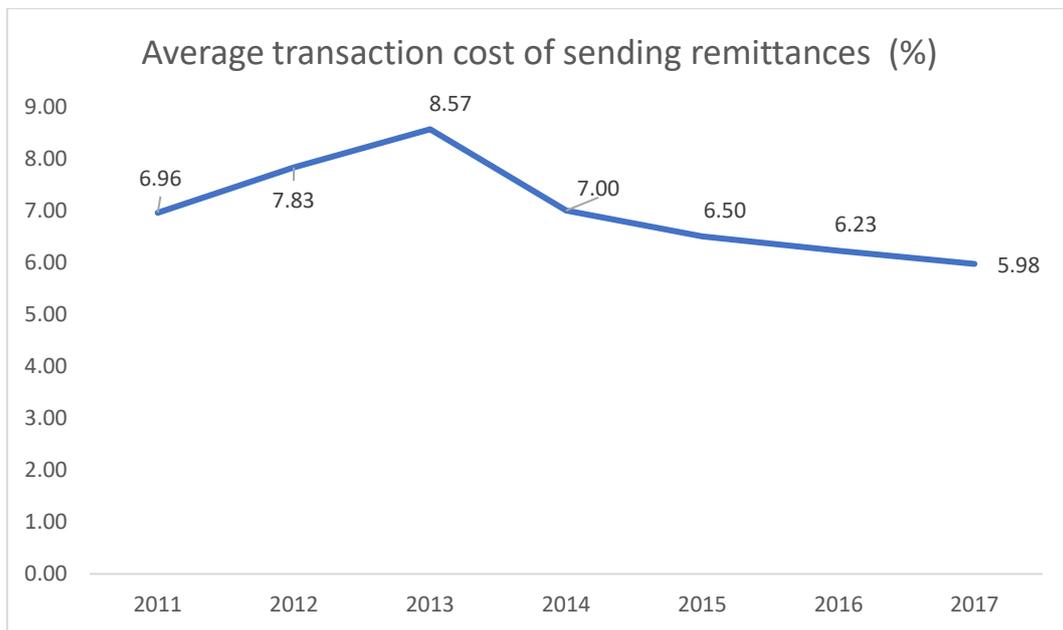
remitted amount in the form of deposits or use this remitted amount for financing studies either of their own or for household members.



**Figure 6: Outward flows of remittances in 2017 (In US \$ million) (Source: Estimates of the paper, Data source: World Bank)**

The previous studies in the literature review highlighted that India has been an important destination for migrants from Bangladesh. In a similar context, the graph shown above highlights the top 10 remittance outflows in 2017. The graph indicates that migrants from Bangladesh remitted the highest amount of 4033 US \$ million in 2017, followed by 1021 US\$ million from Nepal and 520 US \$ million from Srilanka. Thus, it can be said that India has been an important designation for the migrants from nations including Bangladesh, Nepal, Pakistan, and Srilanka.

## f. Cost of remittances



**Figure 7: Cost of remittances (Source: Estimates of the paper, Data Source: World Bank)**

The above graph highlights the average transaction cost of sending the remittances to India from 2011 to 2017. The statistics in the graph indicates that in 2011, the average transaction cost in 2011 was 6.96 %. This cost increased to reach 8.57% in 2013 which was mainly attributed to the increase in the use of SWIFT/ Electronic transfer by the migrants. The migrants switch over to this method of transfer of funds because it undertook minimal time in comparison to the other methods. Further, with the efficient functioning of the remittance corridors, the remittance cost declined from 8.57% in 2013 to 5.98% in 2017.

### 4.1.2 Descriptive Statistics

<i>Variable</i>	<i>Observations</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
<b>REM</b>	44	1.56E-11	1.011561	-0.83528	2.200793
<b>GFCF</b>	44	-9.46E-16	1.011561	-0.87753	2.356145
<b>TRADE</b>	44	1.19E-07	1.011561	-1.06101	1.906309
<b>GDP</b>	44	6.05E-16	0.993158	-0.87185	2.547905
<b>FDI</b>	44	-2.99E-11	1.011561	-0.71513	2.122298
<b>GFCE</b>	44	1.24E-11	10.11561	-9.02866	27.38018
<b>ER</b>	44	-1.46E-10	1.011561	-1.30739	1.817854
<b>HFCE</b>	44	1.99E-17	1.011561	-0.90129	2.710329
<b>CRPVT</b>	44	-4.16E-15	1.011561	-1.41023	1.667676
<b>INF</b>	44	9.87E-16	1.011561	-3.97442	1.727168
<b>POP</b>	44	-1.55E-15	1.011561	-1.65053	1.62107

*Table 6: Descriptive Statistics (Source: Estimates of the paper)*

The above table shows the summary table including the mean, standard error and confidence level. The variables include personal remittances, gross fixed capital formation, and trade as a percentage of GDP, foreign direct investment, government expenditure, exchange rate, and household final consumption expenditure and exchange rate.

### 4.1.3 Correlation

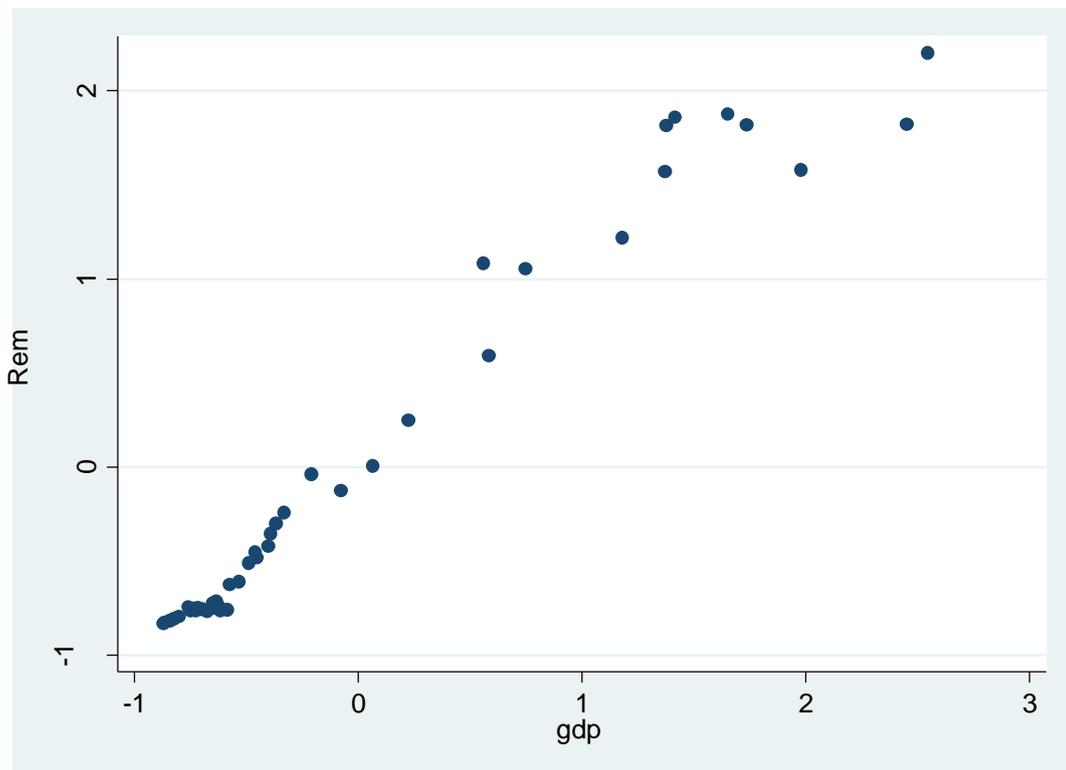
	<b>REM</b>	<b>GFCF</b>	<b>TRADE</b>	<b>GDP</b>	<b>FDI</b>	<b>GFCE</b>	<b>ER</b>	<b>HFCE</b>	<b>INF</b>	<b>CRPVT</b>	<b>POP</b>
<b>REM</b>	1.00										
<b>GFCF</b>	0.99	1.00									
<b>TRADE</b>	0.90	0.89	1.00								
<b>GDP</b>	0.98	0.99	0.84	1.00							
<b>FDI</b>	0.95	0.95	0.86	0.94	1.00						
<b>GFCE</b>	0.98	0.99	0.84	1.00	0.94	1.00					
<b>ER</b>	0.85	0.84	0.85	0.85	0.78	0.85	1.00				
<b>HFCE</b>	0.97	0.99	0.82	1.00	0.94	1.00	0.84	1.00			
<b>INF</b>	-0.05	-0.05	-0.02	-0.08	-0.05	-0.08	-0.13	-0.09	1.00		
<b>CRPVT</b>	0.96	0.95	0.95	0.93	0.93	0.92	0.84	0.91	-0.14	1.00	
<b>POP</b>	0.88	0.88	0.91	0.87	0.83	0.87	0.97	0.86	-0.03	0.91	1.00

*Table 7: Correlation Table (Source: Estimates of the paper)*

The above table represents the Pearson correlation which shows the relationship among variables. The highest correlation among is among the remittances (rem) and gross fixed capital formation (GFCF) which is 0.99 which means the correlation between remittances and gross fixed capital formation is about 99%. This means that the level of investment is very strongly related to the number of personal remittances. This indicates that the investment and personal remittances are strongly related. In addition to this, remittances are 98% correlated with the

gross domestic product of the economy. Further, trade and government expenditure also depict a high rate of correlation. Apart from this, inflation is negatively correlated with other variables including personal remittances, gross fixed capital formation, trade, gross domestic product, exchange rate, foreign direct investment, government final consumption expenditure, and the household final consumption expenditure. This indicates that with a rise in inflation, the amount of gross domestic product, foreign direct investment, trade, and the exchange rate falls.

#### 4.1.4 Relationship between Remittances and GDP



*Figure 8: Scatter Plot (Source: Estimates of the Paper)*

The above graph shows the scatter plot between remittances and gross domestic product throughout 1975-2017. The graph indicates that as the remittance inflows increase the level of the Gross domestic product also increases in an economy. The scatter plot highlights a linear pattern indicating a linear relationship between gross domestic product and remittances. Thus, there exists a positive relationship between the remittances and the gross domestic product of the economy.

### 4.1.5 Two-Stage Least Squares Estimates

The research methodology section presented the simultaneous equations, dynamic model, in which ordinary least squares (OLS) estimators are biased and inconsistent. This inconsistency arises due to the correlations which exist between the endogenous variables and the stochastic disturbance terms. The endogeneity of the variables is also tested using the Durbin Wu Hausman test. The results of the Durbin Hausman test which is an augmented regression test for endogeneity for the residuals of gross fixed capital formation and household fixed consumption expenditure are shown in the table given below. The table indicates that the p-value is 0.03 and 0.00 which is less than a 5% level of significance in the model. The p values indicate that the OLS estimates will not be consistent.

<b>GFCF res</b>	=	0
<b>F(1, 40)</b>	=	4.52
<b>Prob &gt; F</b>	=	0.0397
<b>HFCE res</b>	=	0
<b>F( 1, 40)</b>	=	5.52
<b>Prob &gt; F</b>	=	0

To derive consistent estimates of the structural coefficients, a two-stage least squares method is used. The first set of the equation includes the dependent variable as the gross domestic product includes two endogenous variables including the gross fixed capital formation and household fixed consumption expenditure. three exogenous variables including the remittances, exchange rate, and foreign direct investment. Further, the set of instrument variables include the government final consumption expenditure and trade as a percentage of GDP.

<b>GDP</b>	<b>Coef.</b>	<b>Std. Err.</b>	<b>Z</b>	<b>P&gt;z</b>	<b>[95% Conf.</b>	<b>Interval]</b>
<b>GFCF</b>	0.279521	0.018221	15.34	0	0.243807	0.315234
<b>HFCE</b>	0.70612	0.011556	61.1	0	0.683471	0.728769
<b>REM</b>	-0.00648	0.013012	-0.5	0.618	-0.03199	0.019019
<b>ER</b>	0.010493	0.003391	3.09	0.002	0.003848	0.017138

<b>FDI</b>	-0.00355	0.005974	-0.59	0.552	-0.01526	0.008155
<b>_CONS</b>	-0.00036	0.001743	-0.2	0.838	-0.00377	0.003059

*Table 8: TSLS estimates (Source: Estimates of the paper)*

The above table highlights the results of the two-stage least square estimates of the macroeconomic model. The results indicate that the gross fixed capital formation, the household final consumption expenditure, and the exchange rate significantly impact the gross domestic product of the economy. This means that with an increase in investment, consumption and with a rise in the value of the exchange rate, the gross domestic product of the economy also increases. With one unit of increase in the gross fixed capital formation, the GDP of the economy increases by 0.279 units. Also, with one unit of increase in the household fixed consumption expenditure, the GDP of the economy increases by 0.70 units. However, the amount of increase in the level of personal remittances has no significant impact on the gross product of the economy.

<b>GFCF</b>	<b>Coef.</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>	<b>[95% Conf.]</b>	<b>Interval]</b>
<b>GDP</b>	0.608097	0.102833	5.91	0	0.406549	0.809645
<b>REM</b>	0.34468	0.100587	3.43	0.001	0.147533	0.541827
<b>FDI</b>	0.06138	0.045525	1.35	0.178	-0.02785	0.150607
<b>_CONS</b>	0.000364	0.013558	0.03	0.979	-0.02621	0.026937

*Table 9: TSLS Estimates (Source: Estimate of the paper)*

The above table highlights the extent to which the gross fixed capital formation is affected through gross domestic product, remittances, and foreign direct investment. The instrument variables are inflation and credit from the private sector. The results of the table indicate that remittances and gross domestic product are significant. As the level of personal remittances increases by 1 unit, the gross fixed capital formation increases by approximately 0.344 units. This indicates that an increase in the amount of personal remittances in an economy increases leads to a rise in the amount of investment in the economy.

<b>HFCE</b>	<b>Coef.</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>	<b>[95% Conf.]</b>	<b>Interval]</b>
<b>GDP</b>	1.247098	0.036197	34.45	0	1.176152	1.318043
<b>REM</b>	0.20576	0.037759	-5.45	0	-0.27977	-0.13176

<b>FDI</b>	-0.02214	0.020692	-1.07	0.285	-0.06269	0.018419
<b>_CONS</b>	3.88E-05	0.006213	0.01	0.995	-0.01214	0.012217

*Table 10: TSLS estimates (Source: Estimates of the paper)*

The above table indicates that with the rise in the gross domestic product and the personal remittances, the household final consumption expenditure of the economy also increases. As the personal remittances amount increases by 1 unit, the level of household final consumption expenditure increases by 0.205 units. In a similar context, if the gross domestic product increases by 1 unit, the level of household final consumption expenditure increases by approximately 1.247 units. This indicates that both rises in the personal remittance amount and gross domestic product lead to an immense amount of increase in the household final consumption expenditure.

## 5. Conclusion

The present study examines the macroeconomic outcomes of the economic growth of the Indian economy from 1975 to 2017. It examines the effect of a rise in remittances on several macroeconomic variables including gross domestic product, consumption, and investment. Additionally, it explores the country-wise remittance inflows to India which also helps in evaluating the pattern of skilled and unskilled workers remitting money to India. Lastly, the study explores the extent to which the remittance inflows outperform the foreign direct investment in India. Primarily, the findings of the study indicate that the remittance inflows are highest from the MENA countries. Among these MENA countries, the United Arab Emirates remitted the maximum amount of remittance inflows in 2017. As a majority of the migrant stock in the United Arab Emirates are either unskilled or semiskilled workers, this indicates that pattern of remittance inflows have changed wherein unskilled and semiskilled workers remit more amount in comparison to the skilled workers. Additionally, in terms of the trends of personal remittances, foreign direct investment and foreign aid, the findings indicate that since the 1990s, the inflows of personal remittances grew at a much faster rate than the foreign direct investment and official development assistance. Further, the amount of remittance cost has also reduced over a while. Apart from this, in terms of the outward flow of remittances, Bangladesh, Nepal, and Sri-lanka receive the largest amount in terms of outflows of remittances.

Due to errors between the among the endogenous variables and stochastic disturbance terms, a two-stage least squares estimation mechanism was implemented. The findings indicated that the remittances positively impacted the gross fixed capital formation and the household final consumption expenditure. This indicates that when the amount of personal remittance inflows increases in an economy increases, it leads to a rise in the amount of investment and consumption expenditure in an economy. Personal remittances play a significant role in affecting the macroeconomic variables within the Indian economy. The positive demand-side effects are realized in the form of a rise in consumption and investment. Thus, remittance inflow indirectly contributes to the greater amount of injections into the circular flow of income in the economy. Further, being a stabilized source of foreign capital, personal remittances can be useful for maintaining the current account balance and can prevent liquidity overhang.

The present study presented a broad overview of the macroeconomic outcomes of a rise in the personal remittance inflows on the Indian economy. The study compares the pattern of migration and a rise in personal remittance inflows across different regions. Apart from this, it also explores the impact of rising remittance inflows on consumption, investment and gross domestic product of the economy. However, the study doesn't examine the region-wise effect of the growth in remittances on the macroeconomic parameters due to the limited availability of data. Thus, future studies should focus upon the region wise impact of migration stock and rise in the remittance inflow on the macroeconomic parameters in the Indian economy.

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