

MIGRATION AND REMITTANCES IN KERALA

J. Vineesh Prakash,¹ D.K. Nauriyal² and Noushad A.P³

This paper examines the trends and patterns of international migration in Kerala, and assesses the impact of remittances on the state's economy. It uses annual data of NSDP of Kerala at current prices as a proxy for its economic growth and remittances estimated by the various reports of Kerala Migration Surveys and Kerala Development Reports from 1980-81 to 2013-14. ARDL bound testing methodology has been applied to test the existence of long run relations between economic growth and remittances, which provides a more robust results when sample size is small. Akaike info criterion has also been used to determine the lag length of the ARDL model. The result of the bound test confirms the existences of long run relationship between remittances and economic growth. The results further reveals that remittances have laggard influence on economic growth in the short run. Since, a major portion of remittances is used in building of houses and to meet the household requirements, it led to the growth of a host of industries viz., construction, trade, banking and insurance, transport etc. Traditionally, emigrations from the state are mostly unskilled and semi-skilled in nature, but a recent increase at a declining rate, coupled with steady rise in remittances indicates a paradigm shift from unskilled labour migration to skilled labour migration from the state.

INTRODUCTION

The search for a better life and economic opportunities within and outside a region continues to be the primary reason for migratory movements in the world. The International Organization for Migration conceptualizes migration as “The movement of a person or a group of persons, either across an international border, or within a State. Encompassing any kind of movement of people, whatever its length, composition and causes; it includes migration of refugees, displaced persons, economic migrants, and persons moving for other purposes, including family reunification”. According to United Nations Population Fund, there are an estimated 244 million migrant workers around the world (“Migration”, 2017), which comprise around 3.4 percent of the total population and around 7 percent of the global workforce.

Remittances, on the other hand, are the money, which migrants send back to their home countries usually for the use of their families or eventually themselves (Keeley, 2009). They appear to be one of the largest sources of external finance in the developing countries after foreign direct investment and help these countries to generate foreign exchange earnings (World Bank, 2014). It is generally perceived that remittances helps to improve economic growth and quality of human capital as part of it is utilised towards investing in children's education or health expenses. Even when they are used for consumption, remittances generate multiplier effects, more so in countries with high unemployment (Miambo and Ratha, 2005). It may be pointed out here that the total volume of remittances to developing countries rose from \$57.5 billion in 1995 to an estimated \$429 billion in 2016 (“Migration and Remittances: Recent Developments and Outlook”, 2017).

¹ PhD Candidate, Department of Humanities and Social Sciences, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India. E-mail : vineeshj7@yahoo.co.in

² Vice-Chancellor, Kumaun University, Nainital, Uttarakhand, India. E-mail : dk_nauriyal@yahoo.com

³ PhD Candidate, Centre for Economic Studies, School of Social Sciences, Central University of Punjab, Bathinda, Punjab, India. E-mail : noushadcherukulam@gmail.com

India is currently the highest remittance-receiving nation in the world in absolute terms, followed by China, Mexico and Philippines.

Like rest of the world, India too does have a long history of migration. For instance, in the pre-independence period Indians migrated to other British colonies and worked in plantations and lower level management jobs. Most of them were manual labourers who worked for lower rates. They mainly migrated to the former British colonies such as the Caribbean (Guyana, Jamaica, Trinidad), the Pacific (Fiji), the Indian Ocean (Mauritius, South Africa, and East Africa) and South-East Asia (Malaysia, Singapore) as well as neighbouring South Asian countries (Sri Lanka and Myanmar) etc. There are almost 25 million Indians, constituting nearly 1.5 percent of the total population of India, who live in more than 200 countries across the globe (MEA, 2015). In the post-independence period, migration from India can be classified into three major periods. The first phase began in 1950s, which mostly consisted of skilled workforce migration such as doctors, engineers, scientists, teachers, architects, entrepreneurs etc. They migrated mostly to the developed part of the world such as US, Canada, the UK and other European countries. However, the stringent immigration policies adopted in these countries and limited availability of highly skilled labour, led to gradual decline in these flows. The second phase began in 1970s, which mostly constituted of unskilled and semi-skilled migration. The main reason for such drastic rise in migration from India is the oil shock of 1970s and rising level of unemployment in India (Gulati & Modi, 1983). During this period, major migration flow was towards the oil exporting gulf countries (Saudi Arabia, Bahrain, Kuwait, Oman, Qatar and the UAE) known as Gulf Corporation Council (GCC). Indian migration towards GCC has steadily increased over the period from 2.5 lakhs in 1975 to 3.318 million in 2001 and exceeded 3.5 million at present (Khadria, 2014). The third phase of migration commenced after 1990s especially, after the adoption of liberalization policies. Interestingly, there appears to be an absence of any perceptible pattern in migration during this period. With the adoption of liberalization policies, there is noticeable increase in capital and trade flows to and from various countries which paved the way for higher economic growth and creation of new opportunities in the economy. This transformation of India from a laggard to frontline economy could be a plausible reason for the absence of any definite pattern in the migration activities.

Kerala is a small state located at the southern part of India with 1.2 percent of country's geographical area and 2.7 percent of the overall population of Kerala contributed 35 percent of the migrant's population to the total population going out of India in the last century and 25 percent in the present century (Khadria, 2010). It may be pointed out here that large-scale migration, mostly of unskilled and semi-skilled nature, from the state to the gulf countries began in 1970s. The rise in oil prices due to oil shock of 1970s resulted in sudden influx of substantial funds to oil exporting gulf countries. This paved the way for heavy investment in these countries on developmental projects alluring both skilled and unskilled labour from across the world. Kerala, being very close to it and abundant with these kinds of labourers, availed opportunity leading to heavy outflow of labourers towards the Gulf countries.

Keeping this background in mind, this paper attempts to examine the trends and patterns of international migration from Kerala and assesses the impact of remittances on the state economy.

TRENDS AND PATTERN OF INTERNATINAL MIGRATION: KERALA

Migration is the most dynamic factor in Kerala, which reduced unemployment and raised the standard of living of the people considerably (Khadria, 2010). It has been reported that migration has contributed more to poverty alleviation in the state than any other factor including agrarian reforms, trade union activities and social welfare legislations (Zachariah et al, 2001). In order to understand the importance of migration for Kerala vis-a-vis other states, it may be pertinent to have a look at the relevant data which have been summed up in Table 1. The data pertains to nine year period i.e., 2006-2014. The data contained in Table 1 appears to suggest that there was an overall decline in labour outflow from India in 2009 with Uttar Pradesh, exhibiting an increasing trend, Tamil Nadu a declining inclination and Kerala more or less remaining the same both in absolute and relative terms. It also indicates that the share of outflow from Kerala has registered a decline both in absolute and relative terms as compared to other states of India. Tamil Nadu had the largest share in outflow, followed by Kerala in 2006, though in 2014 the picture reverses completely with Uttar Pradesh and Bihar becoming the largest contributors to the outflow of labour from India.

Table - 1
State-wise Labour Outflow from India, 2006-2014 (in 0000s)

States	Years									
	2006	2007	2008	2009	2010	2011	2012	2013	2014	
Andhra Pradesh	97.7	105	97.5	69.2	72.2	71.6	92.8	103	53.1	
Karnataka	24.4	27	22.4	18.6	17.3	15.4	18	17.8	15	
Kerala	120.1	150.5	180.7	119.4	104.1	86.8	98.2	85.9	66	
Maharashtra	15.4	21.5	24.8	19.1	18.1	16.7	19.3	19.6	19.1	
Punjab	39.3	53.9	54.5	27.3	31	31.9	37.5	48.8	48.8	
Rajasthan	50.2	70.9	64.6	44.7	47.8	42.2	50.3	41.7	48.1	
Tamil Nadu	155.6	150.8	128.8	78.8	84.5	68.7	78.2	83.1	83.2	
Uttar Pradesh	66.1	91.6	139.3	125.8	140.8	155.3	191.3	218.3	229.4	
Bihar	36.5	51.8	60.6	50.2	60.5	71.4	84.1	96.9	98.7	
Others	71.6	86.3	75.4	57.1	65	66.5	77.8	101.5	143.4	
Total	676.9	809.5	848.6	610.3	641.4	626.6	747.4	816.7	804.8	
% of Kerala	18	19	21	20	16	14	13	11	8.2	

Source: Ministry of Overseas Indian Affairs, (Annual reports of various years)

In this regard, it would also be interesting to look at the pattern of migration in Kerala which is highlighted in Table 2. Table 2 shows the patterns of emigration from Kerala from 1998 to 2014 and brings to the fore that major portion of migrants from the state migrates to GCC countries with little change in the pattern over the years.

The information, presented in Table 2, also suggests that emigration from the state is on an ascendance since 1998 but registering a rise at a declining rate. It further indicates that emigration from the state was highest to UAE in 2014 with a share of 37.5 percent of the total emigrants, though Saudi Arabia was the biggest destination for migrants from the state in 1998, sharing 37.5 percent of the migrants which gradually declined to 21.8 percent by 2014. The decline in Saudi Arabia seems to be the outcome of the recent policy of 'nationalization' of private sector jobs by Saudi Arabian government which appears to be an offshoot of rise in a series of pro-democracy movements across West Asia also referred to as 'Arab Spring'. In order to offset the discontentment among the locals, Saudi government initiated a series of reforms for promoting the

employment of locals and discourage migration from other countries. Saudi Arabia's Nitaqat law is one such instance, which attempts to classify domestic enterprises based on localization of labour (Kohli, 2014). The primary aim of Nitaqat is to reduce unemployment among the Saudi youths through 'nationalisation' of jobs in the private sector, consequently leading to a gradual decline in migration to Saudi Arabia over the years. The Table 2 also demonstrates that migrations to other countries are relatively small as compared to Gulf region. Migration to USA and UK accounted for 2.9 and 1.6 percent respectively in 2014 and migration to rest of the countries is less than 1 percent of the total emigration from the state.

Table - 2
Pattern of Emigration from Kerala (in 000s)

Countries	Numbers					Per cent				
	2014	2011	2008	2003	1998	2014	2011	2008	2003	1998
UAE	898	883	918	670	421	37.5	38.7	41.9	36.5	31
Saudi Arabia	522	574	503	489	510	21.8	25.2	23	26.6	37.5
Oman	189	195	167	152	139	7.9	8.6	7.6	8.3	10.2
Kuwait	183	127	129	113	68	7.6	5.6	5.9	6.2	5
Bahrain	149	101	101	108	74	6.2	4.5	4.6	5.9	5.5
Qatar	106	148	121	98	62	4.4	6.5	5.5	5.4	4.6
Other West Asia	21	6	0	2	0	0.9	0.3	0	0.1	0
Sub-Total	2070	2037	1941	1636	1278	86.3	89.4	88.5	89	93.8
USA	69	68	102	98	29	2.9	2.9	4.7	5.3	2.2
Canada	11	9	13	4	0	0.5	0.4	0.6	0.3	0
UK	38	44	38	22	0	1.6	1.9	1.8	1.2	0
Other Europe	19	10	9	14	0	0.8	0.5	0.4	0.8	0
Africa	15	12	12	15	0	0.6	0.6	0.6	0.9	0
Singapore	8	11	11	14	0	0.4	0.5	0.6	0.8	0
Maldives	2	7	7	13	0	0.1	0.3	0.3	0.7	0
Malaysia	9	13	12	4	0	0.4	0.6	0.5	0.3	0
Other S. E. Asia	53	16	8	7	0	2.2	0.7	0.4	0.4	0
Australia/New Zealand	38	24	21	6	0	1.6	1.1	1	0.3	0
Others	62	24	13	0	53	2.6	1.1	0.6	0	4
Total	2400	2280	2193	1838	1361	100	100	100	100	100

Source: Kerala Migration Survey (2014)

There appear to be several reasons which can be attributed to the declining migration from the state of Kerala. The first and most important factor seems to be the demographic factor as population in the state is registering a decline especially among the working age group. For instance, during a decade spanning 2001-11, the population in the state grew by only 0.9 percent (from 31.8 million in 2001 to 33.4 million by 2011) which also suggests a decline in population in the working age group (Zachariah & Rajan, 2014). This evidently has implications for the migration. Another factor, which contributed to the decline, is the declining wage differentials between the state and GCC. For instance, the average wages among unskilled workers in the state have risen from Rs. 150 in 2000 to Rs. 450 by 2010 in Kerala (Zachariah & Rajan, 2012). While there has hardly been any corresponding rise in the wages in the GCC. Since major chunk of migrants from the state are unskilled or semi-skilled in nature, the incentive for such workers to migrate has diminished thereby exacerbating the dwindling trend of migration from the state. Another reason could be the increased competition from labourers of other Indian states and countries. Table 1 indicated an increase in the proportion of labour outflows from states such as

Uttar Pradesh and Bihar. These outflows may be mostly unskilled or semi-skilled in nature when social and demographic indicators are taken into considerations. Lastly, the state economy is booming over the years, with growth experienced in many sectors such as real estate, information technology, tourism etc. that created jobs opportunities within the states for both skilled as well as unskilled labourers of the state as well as labourers from outside the state.

ROLE OF REMMITENCES IN THE DEVELOPMENT OF KERALA

Development Experience of Kerala

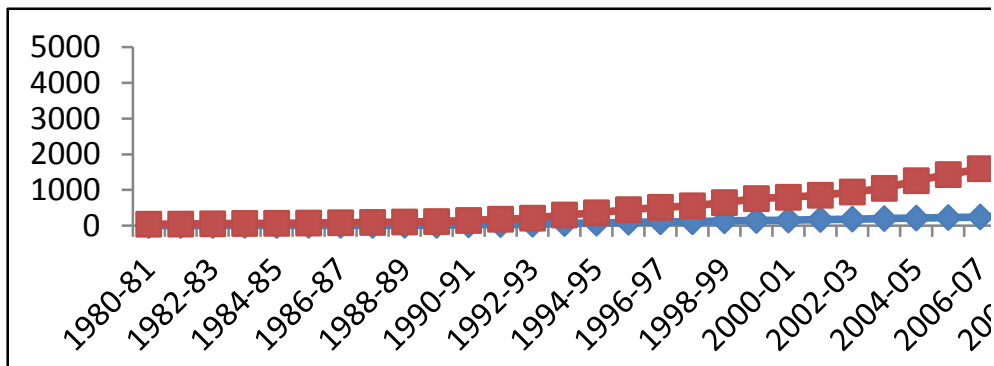
Development experience, which Kerala has undergone, had enticed interests among academicians and policy makers in equal measure, as Kerala has exhibited lopsided development i.e., while achieving huge strides in social development, it lagged behind in economic advancement. It raised curiosity about if it is possible to sustain high human development along with sluggish economic growth? According to census 2011, Kerala has the highest literacy rates in India, registering 94 percent as compared to 73 percent for India. Also, Kerala is the only state in India which has a favourable sex ratio in 2011, as it was 1084 which is at par with some of the developed countries of the world, though India still has an unfavourable sex ratio of 940 females per 1000 males. Life expectancy at birth for Kerala is also very high compared with India, which was 71.4 for males and 76.3 for females during the period 2002-06 against 62.6 for males and 64.2 for females for India (Ministry of Health and Family Welfare, 2008). When it comes to economic growth, massive strides attained in social sector are not matched by corresponding improvement in the economic performance. Economic growth was sluggish in Kerala especially, in the pre-liberalisation period. The Gross State Domestic Product (GSDP) of Kerala grew at Compound Growth Rate (CAGR) of 3.94 from 1971-72 to 2011-12 which is much lower as compared with CAGR of Gross Domestic Product (GDP) of India which was 5.12 during the same period. The annual growth rate of Net State Domestic Product (NSDP) of Kerala and Net Domestic Product (NDP) of India from 1971-72 to 2014-15 as well as the percentage share Kerala in India's NDP reveals that NSDP growth in Kerala was lower as compared to India in the pre-liberalization era. The average annual growth rate of NSDP was 2.82 percent during the period 1971-72 to 1990-91 while it was 4.17 for India as a whole during the same period. The growth rate of NSDP picked in the post-liberalization period, clocking an average annual growth rate of 6.5 percent during the period 1991-92 to 2014-15, growing at par with India's NDP growth which was 6.48 during the same period. Kerala grew at a rapid rate after 2001-02 clocking an average annual growth rate of 7.25 percent during the period 2001-01 to 2014-15, while India grew slightly at lower rate of 7.09 percent. Overall, the percentage share of Kerala in India's NDP declined over the period of time. It was 6.23 percent in 1971-72 which declined to 4.65 in 1991-92 and hovered around 4.5 percent over the years till 2014-15.

Remittances and Economic Growth in Kerala

Turnaround of growth in the Kerala's economy took place in the year 1987-88, as revealed in figure 2. Thereafter, the economy went into a higher growth cycle, growing at an average annual growth rate of 6.5 percent from 1987-88 to 2013-14. This sudden upturn in a low industrialised economy can be attributed to the economic reforms initiated by the national government in the mid-1980s and also by the subsequent surge in remittances due to depreciation of the Rupees in the post liberalization period, when a foreign exchange rate system under managed float

determined by market forces was adopted in India. Remittances to Kerala swelled from 8.9 percent of NSDP in 1980-81 to 22.58 percent by 1992-93 majorly as a result of currency devaluation. Thereafter, there was a steady flow in remittances probably due an increase in emigration.

Figure - 2
Trend Growth of Remittances and Net State Domestic Product in Kerala



Source: Kerala Development Report, Kerala Migration Survey and Economic Review various issues

Figure 2 indicates the growth of NSDP and remittances in Kerala from 1980-81 to 2013-14. It reveals that NSDP of Kerala took upward trend after 1987-88, and thereafter, it started rising steadily. The impact of exchange rate reforms is evident on remittances as there was noticeable increase after 1993-94. It can be seen that there is a kink in the curve representing remittances in the year 2008-09. This kink in curve can be attributed to the global financial crisis of 2008-09. As a result of the crisis, emigrant community of Kerala panicked and remittances to Kerala increased suddenly as panic reaction to the crisis. It appears that the remittances along with economic reforms played a major role in the growth turnaround in Kerala. While remittances brought significantly additional income which raised effective household demand, the economic reforms opened up the market and created market for a wide variety of goods, which led growth of the economy. Taking into account the real time data, it can be stated that remittances are 20.69 percent of the state's NSDP at current prices in 2013-14, 1.2 times the revenue receipts of the Kerala Government, 1.5 times the Government's annual expenditure, and finally, 60 percent of the state's public debt (Zachariah & Rajan, 2014). Thus, remittances acted as a significant source of development income to the state.

Sector-wise Analysis of the Economy

Sector-wise growth in Kerala exhibits deviance from the established theories of structural change propounded by Kuznets and other like-minded developmental economist. Table 3 highlights the sector-wise percentage contribution to the GSDP of Kerala as well as the GDP of India. The data suggest that the secondary sector especially the manufacturing sector did not mature as expected by the theories of structural change (Kuznets, 1957). The contribution of secondary sector was only 14.08 percent of the Kerala's GSDP in 1971-72 which increased marginally to 18.76 percent in 1981-82 and remained more or less stagnant till 2001-02. Its contribution steadily rose 27.35 percent in 2011-12 which could be attributed to the growth in construction sector which is a sub-sector of the secondary sector. The contribution of construction sector increased dramatically to 15.79 percent of the state GSDP in 2011-12 from 9.48 percent in 2001-02. The manufacturing

sector contributed only 6.20 percent in 1971-72 which increased marginally to 10.17 percent in 2011-12, while manufacturing sector in India contributed 12.70 percent towards its GDP in 1971-72 which increased to 13.82 percent in 2011-12. The CAGR of secondary sector from 1971-72 to 2011-12 in Kerala was 1.08 percent whereas; the CAGR of India during the same period was 5.46 percent. This highlights the absence of any noteworthy industrial development in the state.

Table 3
Sectorial composition of GSDP of Kerala as well as GDP of India

Sectors	Kerala					India				
	1971-72	1981-82	1991-92	2001-02	2011-12	1971-72	1981-82	1991-92	2001-02	2011-12
Agriculture	28.47	23.91	24.76	17.50	11.98	32.39	29.72	24.53	19.82	12.74
Forestry	12.11	6.51	2.26	1.66	1.28	9.60	6.23	4.00	2.70	1.53
Fishing	5.36	2.98	3.19	2.05	1.12	1.16	1.04	1.16	1.05	0.67
Mining	0.31	0.26	0.53	0.33	0.81	2.19	2.79	3.42	2.63	1.74
Primary	46.25	33.66	30.75	21.54	15.20	45.33	39.78	33.11	26.20	16.69
Manufacturing	6.20	8.58	9.35	8.63	10.17	12.70	13.97	13.71	12.92	13.82
EGS	0.52	1.07	0.76	2.36	1.39	1.07	1.41	1.71	1.23	1.06
Construction	7.36	9.05	8.65	9.48	15.79	7.40	7.54	7.35	7.03	8.37
Secondary	14.08	18.70	18.76	20.48	27.35	21.17	22.92	22.77	21.17	23.25
Trade & Hotel	21.62	21.57	21.35	20.64	15.82	10.54	11.92	12.74	16.57	17.57
Transport etc	2.34	3.87	5.39	9.92	8.32	3.64	4.85	5.13	6.72	10.71
Busi Serv	7.78	9.74	11.16	14.23	16.8	7.55	8.24	12.74	14.87	18.92
CSP Services	7.94	12.46	12.6	13.19	16.5	11.76	12.30	13.51	14.46	12.87
Tertiary	39.67	47.63	50.49	57.98	57.46	33.50	37.30	44.12	52.63	60.06

Source: Department of Economics and Statistics, GoK and Economic and Political Weekly Research Foundation (EPWRF) Database

Kerala was predominantly an agrarian economy in 1971-72, with agriculture and allied activities contributing 28.47 percent to the state's GSDP. However, like rest of India, the importance of agricultural sector also declined in this state, though the decline in Kerala was more conspicuous than rest of the country. The CAGR for the primary sector in Kerala was 1.08 percent during the period 1971-71 to 2011-12, which was much lower to India (2.62%) during the same period. If we break down the CAGR into two periods, first period between 1971-72 to 1991-92 and the second period between 1992-93 to 2011-12, then the primary sector exhibits a negative growth of -0.18 percent in the first period, but records a positive but low growth of 2.48 percent in Kerala. During the low growth period (1972-73 to 1986-87) the CAGR of primary sector registered a negative growth of -1.72 percent and the secondary sector recorded a growth of 1.82 percent, while the tertiary sector growth was 2.67 percent. Thus, the low growth before 1986-87 could be attributed to both i.e., fall in primary sector with secondary sector not able to catch up fast to compensate for the fall in growth rate of primary sector. The share of tertiary sector is growing in Kerala over the period of time, analogous to India, clocking 57.46 percent in 2011-12. Sub-sector wise, the contribution of trade, hotel and restaurant was highest in 1971-71 followed by a gradual decline. The role of Financing, Insurance, and Real Estate & Business Services increased over years contributing to 16.8 percent of state's GSDP in 2011-12. Composition of community, Social & Personal Services also increased over the years. Overall, the CAGR of tertiary sector for the period 1971-72 to 1991-92 was 3.01 percent and for the period 1992-93 to 2011-12 was 6.7 percent. The recovery of growth in the economy thus can be attributed to the growth of tertiary

sector. The persistent rise in remittances raised the spending and demand of the people which led to a rise in activities like construction, growth of house financing and banking, trade, hotel and restaurant as well as increased spending in education and health, has led to enlarged contribution by the services sector as well as the construction sector to the state's GSDP (Weiner, 1982 ; Abdulla, 2014). Hence, Kerala, like rest of India, experienced service-sector led growth instead of industrial sector led growth.

Unemployment and Poverty in Kerala

Traditionally, Kerala was plagued with the problem of unemployment (Kannan, 2005) which could be mainly ascribed to the negative growth of primary sector during the low growth period (1972-73 to 1986-87) along with industrial growth not picking up to absorb the unemployed workforce. Migration to greener pastures both to national and international destinations provided much needed relief, though not a concrete solution to the problem of unemployment. Table 4 highlights the incidence of unemployment as a percentage of labour force in both Kerala and India under Usual Principal Status (UPS).

Table 4
Incidence of Unemployment in Kerala under Usual Principal Status (UPS)

NSSO Rounds	Rural			Urban		
	Males	Females	Persons	Males	Females	Persons
38th (1983)	10.6 (2.1)	17 (1.4)	12.6 (1.8)	11.9 (5.9)	25.6 (6.9)	15.6 (6.4)
43rd (1987-88)	12.5 (2.8)	25 (3.5)	16.6 (3.1)	14.2 (6.1)	34 (8.5)	19.6 (7.2)
50th (1993-94)	7.2 (2)	15.8 (1.4)	9.4 (1.8)	7.6 (4.5)	24.4 (8.2)	12 (5.2)
55th (1999-00)	7.6 (2.1)	19.7 (1.5)	10.9 (1.9)	6.9 (4.4)	26.4 (9.1)	12.5 (5.2)
68th (2011-12)	3.9 (2.1)	22.7 (2.9)	9.4 (2.3)	3.3 (3.2)	19.2 (6.6)	7.8 (3.8)

Note: Figures in the Parenthesis denotes all-India figures

Source: NSSO (various reports)

These estimates indicate the magnitude of unemployment for a long period i.e. chronic unemployment. Table 4 reveals that the problem of unemployment is more persistent among females in Kerala both in rural and urban areas and much higher as compared to all-India estimates i.e. 2.9 percent in rural areas and 6.6 percent in urban areas. The international migration is dominated by men which could be a reason for high level of unemployment among women (Chakraborty, 2005). Unemployment among men in both rural and urban areas was high in 1990s compared to all India average. Since the census of 1991 reported that 89.81 percent people were literate in Kerala, the problem of unemployment might be that of unemployment primarily among the educated youth. There is a steady decline in unemployment among men as per NSS 68th round as compared to the all-India estimates.

Migration and the ensued remittances played a vital role in lifting the masses from absolute poverty (Prakash, 1998 ; Zachariah et al, 2001). Table 5 shows the percentage of population below poverty line in Kerala and India which suggests a marked reduction in population below poverty line during 1980s, when the flow of international migration started rising progressively. There was

sharp reduction to 7.05 percent in 2011-12, while population below poverty line still remained high for the country as a whole at 21.92 percent in the same year. This probably indicates that remittances played an important role in bringing down absolute poverty in the state.

Table 5
Percentage of Population below Poverty Line in Kerala and India

Years	Kerala	India
1973-74	59.79	54.88
1977-78	52.22	51.32
1983	40.42	44.48
1987-88	31.79	38.86
1993-94	25.43	35.97
1999-00	12.72	26.1
2004-05*	11.4	21.8
2011-12**	7.05	21.92

Note: *estimates obtained from NSS 61st Round Data;

** Based on MRP Consumption

Source: Planning Commission, NSSO Report, RBI

Role of Remittances on In-Migration to Kerala

As pointed out earlier, Kerala is witnessing huge inflow of migrant labour from other states of India and most of them are unskilled in nature and largely engaged in the construction sector in which most of remittances from the Gulf countries are invested (Narayana & Venkiteswaran, 2013). The construction sector contributed 15.79 percent of GSDP in 2011-12 compared to 9.48 percent in 2001-02. Traditionally, most of the in-migrants to the state were from neighbouring states such as Tamil Nadu and Karnataka, as is highlighted by Table 6, with Tamil Nadu accounting for 67.75 percent and Karnataka 13.49 percent of the total in-migrants to the state, as per the census of 2001. The contributions of other states, in the other hand, seem to be quite negligible. The total in-migrants were around four lakhs in 2001.

Table 6
In-Migrants to Kerala in 2001

State	Persons	Percentage Share
Tamil Nadu	2,79,702	67.75
Karnataka	55,685	13.49
Maharashtra	18,468	4.47
Andhra Pradesh	9,442	2.29
Pondicherry	8,769	2.12
Uttar Pradesh	5,887	1.43
West Bengal	4,232	1.03
Rajasthan	3,676	0.89
Gujarat	3,394	0.82
Bihar	3,337	0.81
Orissa	3,327	0.81
Delhi	3,013	0.73
Madhya Pradesh	2,480	0.6
Others	11,482	2.77
Total	4,12,849	100

Source: Census of India, 2001

It would also be interesting to see if there was any change in the pattern of migration after 2001. In this regard, a survey conducted by the Gulati Institute of Finance and Taxation (GIFT) in 2013, reveals a drastic change in the pattern of in-migration to the state as can be discerned from the information presented in Table 7.

Table 7
In-Migrants to Kerala in 2013

State	Below 18	18-23	24-29	30-35	36 and above	Not Reported	%age Share
West Bengal	1.36	46.26	29.25	14.97	7.48	0.68	20
Bihar	0.75	34.59	33.08	21.05	9.03	1.5	18.1
Assam	1.57	50.39	34.65	10.24	2.36	0.79	17.28
Uttar Pradesh	0	38.53	38.53	15.6	7.34	0	14.83
Orissa	2.04	34.69	30.61	20.41	10.2	2.04	6.67
Others	1.18	37.65	37.65	14.71	8.82	0	23.13
Total	1.09	40.95	34.29	15.65	7.35	0.68	100

Source: Gulati Institute of Finance and Taxation, GoK (2013)

The information presented in Table 7 suggests that the age group of majority of the migrants stand in-between 18-35 implying that they might have migrated to the state after 2001. The survey conducted by GIFT estimated that the total migrant stock was to be over 25 lakhs, which is a substantial increase as compared to information provided by the census of 2001. The change in the pattern of in-migration to the state suggests that West Bengal accounting for the largest share of in-migrants to the state i.e., 20 percent followed by Bihar and Assam with 18.1 and 17.28 percent share respectively

DATA AND METHODOLOGY

Data Source

The data sources for the study include various reports and publications of Government of India and Kerala, including Ministry of Overseas Indian Affairs (MOIA), Ministry of External Affairs (MEA), Census of India, Kerala Development Report, Kerala Migration Survey and report of GIFT, RBI, NSSO and EPWRF Database. The study has also used annual data on remittances to Kerala and Kerala's NSDP at current prices for the period 1980-81 to 2013-2014 compiled from Kerala Development Report and various reports of Kerala Migration Survey and Economic Review.

Variables

Dependent Variable

The dependent variable of the ARDL model is the state's economic growth. NSDP at current prices is used as a dependent variable in the model to represent state's economic growth.

Independent variable

The independent variable in the model is the remittances to Kerala estimated by various reports of Kerala Migration Survey and Kerala Development Report. As remittances are not considered for the computation of state's domestic product; its importance on states economy is not known. These reports estimate remittances to Kerala by using regression method, under which it is assumed that the ratio of total remittances to household remittances is a linear function of total number of emigrants and total non-residents deposits in the banks in Kerala.

Methodology

To assess the impact of remittances on the state's economy, this paper applies Autoregressive Distributed Lag bounds (ARDL) test for co-integration on NSDP at current prices and remittances to Kerala. Before applying ARDL test, the data have been checked up for the stationarity with the help of Augmented Dickey-Fuller (ADF) test as the co-integration technique requires the time series data not to be integrated of the order two $\{I(2)\}$. The critical bounds value computed by Pesaran et al are valid only when the time series which are integrated of the zero or one $\{I(0)$ or $I(1)\}$ (Pesaran et al, 2001).

ARDL Bound Testing Approach to Cointegration

There are a fair number of techniques for estimating the long run relations among the time series data. These include the two-stage procedure suggested by Engle and Granger (Engle and Granger, 1987), Johansen and Johansen and Juselius commonly known as Johansen cointegration test (Johansen & Juselius, 1990) and ARDL bounds test for cointegration (Pesaran & Shin, 1999). In the present study, ARDL approach has been applied for the fact that there are several problems with the procedure given by Engle and Granger as it cannot identify multiple long run relationships or cointegrating vectors among the variables. Similarly, Johansen cointegration test is applicable only if all the time series are non-stationary and integrated of same order. On the contrary, ARDL approach overcomes these limitations and provides much robust results. It can be applied whether the variables are $I(0)$ and/or $I(1)$ and is statistically more robust approach to determine the cointegrating relations in small or finite samples. Thus, the present study uses ARDL approach, developed by Pesaran et al, for determining the long and short run relationship between state NSDP and remittances to Kerala. Here the natural logs of the two variables are taken and the procedure developed by Pesaran et al has been applied (Pesaran et al, 2001). The ARDL model for NSDP and remittances is given in the following equation:

$$\Delta \ln(NSDP)_t = \alpha_{01} + \alpha_{11} \ln(NSDP)_{t-1} + \alpha_{21} \ln(RMI)_{t-1} + \sum_{i=1}^l \beta_{1i} \Delta \ln(NSDP)_{t-i} + \sum_{i=0}^m \beta_{2i} \Delta \ln(RMI)_{t-i} + \varepsilon_t(1)$$

Where, Δ is the first-difference operator, \ln is the logarithm operator and ε_t is the white-noise disturbance term. The coefficients α_s shows the long-run parameters, whereas the β_s are the parameters that show the short-run dynamics of the model. The structural lags l , m are determined by using minimum Akaike info criterion (AIC).

The ARDL approach is a three step procedure for determining the long run relationship (Pesaran et al., 2001). The first step is to estimate the equation (1) by OLS method and obtain F value. The existence of long run relations can be ascertained by obtaining the F value, which tests the joint significance of the coefficients of the lagged levels variables. Where the null hypothesis $H_0 = \alpha_1 = \alpha_2 = 0$ against the alternative one $H_1 = \alpha_1 \neq \alpha_2 \neq 0$. The computed F-statistic is then compared with sets of critical values for the bound test. Pesaran et al. (1996) have tabulated two sets of critical values for the bound test and were reproduced by Pesaran and Pesaran (1997) and Pesaran et al. (2001). The first set assumes that all variables to be $I(0)$, the lower critical bound (LCB) and the other set assume that all are $I(1)$, upper critical bound (UCB). For testing for the long-run relationship, we compare the computed values with the sets of critical values and reject the null in favour of the alternative that there exists a long-run relationship between remittances and

economic growth of Kerala, if the test statistic exceeds the UCB value at appropriate level of significance. On the other hand, we fail to reject the null hypothesis at a particular significance level, when the sample test statistic is below the associated LCB value. In this case, the null is then accepted regardless of whether the underlying orders of integration of remittances and growths are I(0) or I(1). Finally, when the obtained test statistic falls in between the upper and lower bounds value, we can interpret that the results are inconclusive at the given significance level.

In the second step, once co-integration is established, by the bound test, long run model for $\ln(NSDP)_t$ can be estimated.

$$\ln(NSDP)_t = \alpha_0 + \sum_{i=1}^p \alpha 1i \ln(NSDP)_{t-i} + \sum_{i=0}^q \alpha 2i \ln(RMI)_{t-i} + \varepsilon_t \quad (2)$$

The orders of the ARDL (p, q) model in the two variables are selected by using AIC.

In the last and final step, we obtain the short-run dynamic of the parameters by estimating an error correction model associated with the long-run estimates. This is specified as follows:

$$\Delta \ln(NSDP)_t = \beta_0 + \sum_{i=1}^p \beta 1i \Delta \ln(NSDP)_{t-i} + \sum_{i=0}^q \beta 2i \Delta \ln(RMI)_{t-i} + \phi ECT_{t-1} + \varepsilon_t \quad (3)$$

Where, β_i are the short-run coefficients of the model, ϕ is the speed of adjustment parameter and ECM is the error correction term.

RESULTS

The impact of remittances on NSDP is analysed with the help of ARDL model. The results of ADF test for all the variables used in the analysis at levels as well as at first difference have been presented in Table 8. The number of lags used in the test is determined by Schwartz Bayesian Information criterion. In the ADF test, the null hypothesis is a unit root, which means that the variable is non-stationary, against the alternative hypothesis that there is no unit root which implies that the variable is stationary (Dickey & Fuller, 1979). Here, the computed value of the test statistics is compared with the critical values as well as probability values for accepting or rejecting null hypothesis. If the computed value of t-statistic is less than the critical value, at appropriate level of significance, or probability value is more than 5 percent, then the null hypothesis is accepted that the variable has a unit root. On the other hand, if the computed value of t-statistic is more than critical value at a desired level of significance or the probability is less than 5 percent then the null hypothesis is rejected and the alternative hypothesis is accepted i.e. the variable is stationary.

Table - 8
Results of ADF Test

Variables	t-Statistic	Critical Values at 5 % At Level	Prob.	Remarks
LnNSDP	-1.934095	-3.552973	0.6143	Non-Stationary
LnRMI	-1.186168	-2.957110	0.6681	Non-Stationary
After '1st' Difference				
$\Delta \ln NSDP$	-4.658558	-3.557759	0.0039	Stationary
$\Delta \ln RMI$	-8.133905	-2.957110	0.0000	Stationary

Source: Authors' Calculations

From the results, presented in Table 8, it can be deduced that, at levels, the computed value of t-statistic is less than the critical value at 5 percent level of significance and probability is more than

5 percent, thus, accepting the null hypothesis that the all the variables have a unit root that is, the variables are non-stationary at levels. At first difference, the computed values of t-statistic are more than the critical values and the probability is less than 5 percent for all variables, thus, rejecting the null hypothesis and accepting the alternative hypothesis that the variables do not have unit root, at first difference. Thus, all the variables are non-stationary at level but they are stationary at first difference. That is, all the variables are integrated of the one I(1). Thus, none of the variables is I(2), which makes it possible to apply ARDL model. The Table 9 reports the results of bound test.

Table - 9
Results from the bound test

Lower Bound Value	Upper Bound Value	Critical Value
4.94	5.58	1% Significance Level
3.62	4.16	5% Significance Level
3.02	3.51	10% Significance Level

Note: Computed F-statistics = 7.177760

Source: Authors' Calculations

Here, the computed F-statistics is 7.177760 which exceeds the upper bound value at 5 percent significance implying that the null hypothesis can be rejected at the 5 percent significance level and the alternative hypothesis can be accepted. It suggests the existence of long-run relationship between remittance and economic growth of Kerala. Here cointegration is established, so we can estimate the long-run model. Table 10 provides the estimates of the long-run coefficients of the model. The results indicate that long run coefficients are statistically significant at 1 percent level.

Table - 10
Estimated Long-run Coefficients

Variable	Coefficients	t-statistics	Probability
C	9.067072	1.988218	0.0654
ln(RMI)	0.758040	3.378324	0.0041

Source: Authors' Calculations

The estimated coefficient of remittance (*lnRMI*) has a positive and significant impact on economic growth of Kerala (*lnNSDP*) at the 1 percent level of significance in the long run. The results, as presented in Table 10, suggest that in the long run 1 percent increase in remittances will, on an average, result in 0.75 percent increase in growth of the state. Table 11 presents the results of the error Correction Model. The coefficient of Error Correction Term (ECT) is negative and significant at 1 percent level of significance.

The result confirms the existence of cointegration between economic growth and remittances to the state. The coefficient of ECT indicates speed of adjustment or time taken to correct the disequilibrium in the short run and converge with the long run equilibrium. The coefficient of ECT is -0.04 which means 4 percent of the imbalance is corrected in the first period. Since we are using annual data, the first period will be the first year suggesting that the speed of adjustment towards long run equilibrium, due to disequilibrium in short run, is 4 percent per year. The coefficients of this model indicate the short run dynamics. The results show that remittances have a positive but insignificant effect on economic growth up to three lags. The fourth lag is significant and has a positive impact. This means that in the short run remittances has limited

impact on economic growth while it has a significant impact in the long run. Under diagnostic test serial correlation, normality, heteroskedasticity and structural stability of the models are checked. Table 12 shows the results of Jarque-Bera test of normality, Breush-Godfrey Serial Correlation LM Test and Breusch-Pagan-Godfrey heteroskedasticity test.

Table 11
Error Correction Representation for ARDL Model (1, 8)

Variable	Coefficients	t-statistics	Probability
$\Delta \ln(\text{RMI})$	0.029163	0.575884	0.5732
$\Delta \ln(\text{RMI})(-1)$	0.064115	1.299025	0.2135
$\Delta \ln(\text{RMI})(-2)$	0.008658	0.187803	0.8535
$\Delta \ln(\text{RMI})(-3)$	0.133480	3.048230	0.0081
$\Delta \ln(\text{RMI})(-4)$	0.034444	0.851997	0.4076
$\Delta \ln(\text{RMI})(-5)$	-0.030460	-0.739871	0.4708
$\Delta \ln(\text{RMI})(-6)$	-0.105390	-2.420806	0.0286
$\Delta \ln(\text{RMI})(-7)$	-0.063373	-1.414562	0.1776
ECT (-1)	-0.043105	-4.940079	0.0002
$R^2 = 0.635654$		Adj. $R^2 = 0.392757$	
F-statistic = 2.616969 Prob.(0.045185)		DW-statistic = 2.079612	

Source: Authors' Calculations

Table 12
Diagnostic Tests

	Value	Probability
Normality Test (Jarque-Bera statistic)	4.4384	0.1087
Serial Correlation (Breush-Godfrey Serial Correlation LM Test)	0.0583	0.8126
Heteroskedasticity Test (Breusch-Pagan-Godfrey)	0.8513	0.5920

Source: Authors' Calculations

The results suggest that there is no problem of autocorrelation and heteroskedasticity in the model and that the model is normally distributed. Here, for testing the stability of the parameters, the cumulative sum of recursive residuals (CUSUM) and the CUSUM of square (CUSUMSQ) tests have been applied. The results indicate the absence of any instability of the coefficients because the plot of the CUSUM and CUSUMSQ statistic falls inside the critical bands of the 5 percent confidence interval of parameter stability.

CONCLUSIONS

The result of the bound test confirms the existences of long run relations between remittances and economic growth. The long-run estimates of the model exhibits a positive and significant effect on economic growth. The error correction representation which reveals the short-run dynamics reconfirms the existences of long-run relations between economic growth and remittances through the negative and significant coefficient of Error Correction Term. The results further reveals that remittances have laggard influence on economic growth in the short run. As the results suggests, the fate of remittances and economic growth in the state are entwined. It can be seen that states economy picked up after economic reforms and subsequent devaluation of currency which led to consequent rise in the value of remittances. The contention that remittances have a long run impact on growth becomes stronger, when we look at other evidences like the sharp reduction in absolute poverty especially after remittances started growing and fall in unemployment particularly among the males and the growth of construction sector, where large chunk of remittances are invested.

Since, a major portion of remittances is used in building of houses and to meet the household requirements. It led to the growth of host industries viz., the construction, trade, banking and insurance, transport etc. The growth of construction sector also created a host of opportunities for semi-skilled and unskilled labour from and outside the state. Thus, Migration and ensuing remittances have played vital roles in the development of the state. Traditionally, emigrations from the state are mostly unskilled and semi-skilled in nature, but a recent increase at a declining rate, coupled with steady rise in remittances indicates a paradigm shift from unskilled labour migration to skilled labour migration from the state.

References

- Abdulla, M. P. (2014): "Emigration and Consumerism: A regional experience", *IOSR Journal of Economics and Finance*, Vol. 2(4), August.
- Census of India (Various Rounds): Office of the Registrar General and Census Commissioner, Government of India, New Delhi.
- Chakraborty, A. (2005): "Kerala's changing development narratives", *Economic and political weekly*, Vol. 40(6), February.
- Dickey, D. A. and Fuller, W. A. (1979): "Distribution of the estimators for autoregressive time series with a unit root", *Journal of the American Statistical Association*, Vol. 74(366a), November.
- Engle, R. F., and Granger, C. W. (1987): "Co-integration and error correction: representation, estimation, and testing", *Econometrica: Journal of the Econometric Society*, Vol. 55(2), March.
- EPWRF (2017): "National Accounts Statistics of India", Retrieved from www.epwrfits.in
- Government of India (GoI) (2008): "*Kerala Development Report*", Planning Commission, New Delhi.
- GoI (2014): "*Kerala Development Report*", Planning Commission, New Delhi.
- Government of Kerala (GoK) (1988): "*Report of the Survey on the Utilization of Gulf Remittances in Kerala*", Department of Economics and Statistics, Thiruvananthapuram.
- GoK (2013): "*Report on Different Aspects of Migrants and Return Migrants*", Department of Economics and Statistics, Thiruvananthapuram.
- GoK (Various Issues): "*Economic Review*", Government of Kerala, State Planning Board, Thiruvananthapuram.
- Gulati, S and Modi, A. (1983): "Remittance of Indian Migration to the Middle East: An assessment with special reference to Migration from Kerala", *WP No. 182*, Centre for Development Studies, Thiruvananthapuram.
- Johansen, S and Juselius, K (1990): "Maximum likelihood estimation and inference on cointegration—with applications to the demand for money", *Oxford Bulletin of Economics and statistics*, Vol. 52(2), May.
- Kannan, K. P (2005): "Kerala's Turnaround in Growth: Role of Social development, Remittances and Reform", *Economic & Political Weekly*, Vol. 40(6), February.
- Keeley, B (2009): "International Migration: The human face of Globalization", in *OECD insights*, Organization for Economic Co-Operation and Development.
- Khadria, B. (2010): "Paradigm Shifts in India's Migration Policy Toward the Gulf." In *Viewpoints, Migration and the Gulf*, Middle East Institute, Washington D C.
- Khadria, B (2014): "The dichotomy of the skilled and unskilled among non-resident Indians and persons of Indian origin: bane or boon for development in India?", In *Indian Skilled Migration and Development*, Springer, New Delhi.
- Kohli, N (2014): "Indian Migrants in Gulf Countries", In *Development in Gulf Region*, Pentagon Press, New Delhi.
- Kuznets, S (1957): "Quantitative Aspects of Economic Growth of Nations: Industrial Distribution of National Product and Labour Force", *Economic Development and Cultural Change*, Vol. 5(4), July.
- Migration. (2017, June 14). Retrieved from <http://www.unfpa.org/migration/>
- Migration and Remittances: Recent Developments and Outlook. (2017, April 28). Retrieved from www.worldbank.org/en/news/press-release/2017/04/21/remittances-to-developing-countries-decline-for-second-consecutive-year/

- Ministry of Health and Family Welfare (2008): “*National Health Profile 2008*”, Ministry of Health and Family Welfare, New Delhi.
- Ministry of External Affairs (MEA) (2015): “*Annual report 2015-16*”, Policy Planning and Research Division, Ministry of External Affairs, New Delhi.
- Miambo, S. M and Ratha, D (2005): “*Remittances: Development impact and Future Prospects*”, World Bank, Washington.
- Ministry of Overseas Indian Affairs (2008): “*Annual report 2007-08*”, Ministry of Overseas Indian Affairs, Government of India, New Delhi.
- Ministry of Overseas Indian Affairs (2012): “*Population of Non-Resident Indians (NRIs): country wise*”, Ministry of Overseas Indian Affairs, Government of India, New Delhi.
- Ministry of Overseas Indian Affairs (2014): “*Engaging Diaspora: Connecting Across Generations*”, Ministry of Overseas Indian Affairs, Government of India, New Delhi.
- Narayana, D & Venkiteswaran, C. S (2013): “*Domestic Migrant Labour in Kerala*”, Labour and Rehabilitation Department and Gulati Institute of Finance and Taxation, Government of Kerala, Thiruvananthapuram.
- NSSO (Various Rounds): “*Employment and Unemployment in India*”, National Sample Survey Office, India.
- Prakash, B. A (1998): “Gulf Migration and Its Economic Impact: The Kerala Experience”, *Economic & Political Weekly*, Vol. 33(50), December.
- Pesaran, M. H., Y. Shin, and R. J. Smith (1996): “Testing for the ‘Existence of a Long-Run Relationship’”, *WP No. 9622*, Department of Applied Economics, University of Cambridge.
- Pesaran, H.M and Pesaran, B. (1997): “*Microfit 4.0*”, England: Oxford University Press.
- Pesaran, M and Shin, Y (1999): “An autoregressive distributed lag modeling approach to cointegration analysis”, In *Econometrics and economic theory in the 20th century: The Ragnar Frisch centennial symposium*, Cambridge University Press, Cambridge.
- Pesaran, Shin Y. and Smith R.J (2001): “Bounds testing approaches to the analysis of level relationship”, *Journal of Applied Economics*, Vol. 16(3), May-June.
- RBI (2014-15): “*Handbook of Statistics on Indian Economy (2014-15)*”, Reserve Bank of India (RBI), Mumbai.
- Weiner, M (1982): “International Migration and Development: Indians in Persian Gulf”, *Population and Development Review*, Vol. 8(1), March.
- World Bank (2014): “*Migration and Remittances Data*”, World Bank. Retrieved from <http://econ.worldbank.org>.
- Zachariah, K. C, Mathew E T and Rajan S I (2001): “Social, Economic and Demographic Consequences of Migration on Kerala”, *International Migration*, Vol. 39(2), June.
- Zachariah, K. C and Rajan S I (2012): “Inflexion in Kerala’s Gulf connection: Report on Kerala Migration Survey 2011”, *WP No. 350*, Centre for Development Studies, Thiruvananthapuram.
- Zachariah, K. C and Rajan S I (2014): “Dynamics of Emigration and Remittances in Kerala. Report on Kerala Migration Survey 2014”, *WP No. 463*, Centre for Development Studies, Thiruvananthapuram.