CHAPTER VI

REGIONS WITH LOW INFLOW OF FDI (RLIF) IN INDIA

6.1 Introduction

Chapter V gave an account of the determinants and role of FDI in RHIF. The current chapter attempts to examine the determinants of FDI inflows to Regions with Low Inflow of FDI (RLIF) in India during 2007-08 to 2015-16. RLIF encompasses four regions such as Kanpur, Bhuwaneswar, Patna and Guwahati. Each region except Bhuwaneswar contains two or more states or UTs in it. A concise description on the states or UTs included in RLIF has given in the previous chapter (Chapter V). The usage of the terminology (RLIF) is in conformity with the quarterly FDI fact sheet of Department of Industrial Policy and Promotion (DIPP) as of March 2016. In the fact sheet, among a total of 17 FDI regions in India, these four regions (Kanpur, Bhuwaneswar, Patna and Guwahati) ranked 13th, 14th, 15th and 16th respectively in regards to the acceptance of FDI inflows with aggregate FDI of mere *0.36 per cent*(from April 2000 to March 2016). In the fact sheet, the region of Jammu which includes the state of Jammu and Kashmir was marked as the final one (17th). However, the researcher excluded Jammu from the terminology of RLIF on the grounds that the accumulated per cent of FDI inflows in the region from April 2000 to March 2016 is zero [(FDI worth 0.37 billion rupees), FDI fact sheet of DIPP, March 2016].

A study based on an assortment in the form of Regions with Low Inflow of FDI (RLIF) and Regions with High Inflow of FDI (RHIF) (study on the basis of magnitude of FDI inflows) is first in India even so a few studies have come out on the inter-regional variations in FDI inflows to India over different periods of time. The following part outlines the basic characteristics of the economy of RLIF.

6.2 Brief Economic Profile of RLIF

This section sets forth the economic profile of RLIF. The economy of RLIF is somewhat backward with lower annual GDP growth rate in most of the states. The following table (Table 6.1) provides a summary of the economic status of RLIF measured by GSDP at factor cost and in constant prices.

Table 6.1
GSDP (At Factor Cost and in Constant Prices) of RLIF

Indicator	Particulars	Kanpur		Bhubaneswar	Guwahati							Patna		All India	Total of RLIF
		Uttar Pradesh	Utharakhand	Odisha	Assam	Arunachal Pradesh	Manipur	Meghalaya	Mizoram	Nagaland	Tripura	Bihar	Jharkhand		
Economic Indicator	Gross State Domestic Product (GSDP)														
	a. Mean (Rs Bn)	4189.7	602.42	1285.76	783.73	55.78	74.84	116.08	51.94	99.47	161.36	1448.30	956.33		
	b. Median (Rs Bn)	4184.04	608.8	1301.13	768.44	54.22	73.27	117.15	49.79	100.24	154.28	1435.60	935.10		
	c. Standard Deviation (Rs Bn)	677.49	148.06	165.61	131.8937	10.98	12.03	26.09	14.32	17.91	39.62	364.20	211.27		
	d. Standard Deviation/ Mean (%)	16.17	24.58	12.88	16.83	19.69	16.08	22.48	27.58	18.01	24.55	25.15	22.09	17.73	
	e. AAGR (%)	6.22	9.86	4.98	6.56	8.5	5.97	8.89	11.35	6.44	9.59	9.54	7.92	6.96	
	f. CAGR (%)	5.51	8.66	4.39	5.8	7.31	5.26	7.84	9.82	5.68	8.47	8.37	6.92	6.95	
	e. Per Cent to the GDP of India (Average)	8.08	1.15	2.49	1.51	0.107	0.14	0.22	0.098	0.191	0.307	2.75	1.83		18.88

Source: Calculated on the Basis of Data from Handbook of Statistics on Indian States, RBI, 2018.

Note: Each Average Figure Belongs to the period 2007-08 and 2015-16

Kanpur is comprised of two states viz. Utharakhand and Uttar Pradesh. UP is the most populous state in India which accommodates about 200 million people. The economy of the state is largely driven by agriculture. According to Table 6.1, the state's GSDP grew at a CAGR of 5.51 per cent between 2007-08 and 2015-16 (India - 6.95 per cent). The state's GSDP, on average, amounted to 8.08 per cent of the total GDP of India during the period. Uttarakhand is one of the fastest growing states in India, due to the massive growth in capital investments arising from conducive industrial policy and generous tax benefits. According to Table 6.1, the GSDP of Utharakhand grew at a high CAGR of 8.66 per cent between 2007-08 and 2015-16. The state's GSDP accounted for 1.15 per cent of the total GDP of India on average.

Bhubaneswar includes the state of Odisha alone. The state has a developing economy. Table 6.1 says that the GSDP of the state expanded at a CAGR of 4.39 per cent between 2007-08 and 2015-16. The state's GSDP on average amounted to 2.49 per cent of the total GDP of India.

Guwahati consists of seven states such as Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Arunachal Pradesh is the largest state among the seven states located in north-east India. Its GSDP grew at a CAGR of 7.31 per cent between 2007-08 and 2015-16. The state's GSDP, on average constituted 0.107 per cent of the total GDP of India. Assam's GSDP expanded at a CAGR of 5.8 per cent between 2007-08 and 2015-16. The state's GSDP, on average amounted to 1.51 per cent of the GDP of India between 2007-08 and 2015-16. Manipur's GSDP enlarged at a CAGR of 5.27 per cent between 2007-08 and 2015-16. The GSDP of the state accounted for 0.14 per cent of the GSDP of India on average during 2007-08 and 2015-16.

Meghalaya's GSDP grew at a CAGR of 7.84 per cent between 2007-08 and 2015-16. The state's GSDP, on average amounted to 0.22 per cent of the GDP of India. Mizoram's GSDP progressed at a CAGR of 9.82 per cent between 2007-08 and 2015-16 which signifies the high rate of growth taking place in the economy of Mizoram. On average, the state's GSDP accounted for 0.098 per cent during 2007-08 and 2015-16. Nagaland's GSDP grew at a CAGR of 5.68 per cent between 2007-08 and 2015-16. The state's GSDP, accounted for 0.191 per cent of the total GDP of India on average between 2007-08 and 2015-16. Finally, Tripura's GSDP can also be seen as advanced at a high CAGR of 8.47 per cent between 2007-08 and 2015-16. Tripura's GSDP amounted to 0.307 per cent on average between 2007-08 and 2015-16.

Patna consists of Bihar and Jharkhand. Bihar is one of the strongest agricultural states. The percentage of population employed in agricultural production in Bihar is around 80 per cent, which is much higher than the national average. The state's GSDP progressed at a high CAGR of 8.37 per cent between 2007-08 and 2015-16. Its GSDP amounted to 2.75 per cent of the total GSDP of India during 2007-08 and 2015-16. Jharkhand's GSDP grew at a CAGR of 6.92 per cent between 2007-08 and 2015-16(India- 6.95 per cent). The state's GSDP, amounted to 1.83 per cent of the total GDP of India on average during 2007-08 to 2015-16.

All things considered, it can be summed up that the entire states (12 states) in RLIF did contribute, on average, around 19 per cent only to the total GDP of the country between 2007-08 and 2015-16. Nevertheless, in Utharakhand, Arunachal Pradesh, Meghalaya, Mizoram, Tripura and Bihar, CAGR has exceeded that of All India. It accentuates that these economies have elevated capability to be reinforced in the long run and their

contribution to the total GDP of the country will also be substantively increased. It may also be observed that CAGR is highest for Mizoram (9.82 per cent) among these five states. It enunciates that the quite small economy of Mizoram (contributes only 0.098 per cent to the total GDP), will grow up unparallel in the long run. It is also worth noting that CAGR in other states in RLIF [(Uttar Pradesh, Assam, Manipur, Nagaland and Jharkhand), excluding Odisha] also were not insignificant as they all amounted above five per cent. Thus, it could be envisaged that the economy of RLIF is getting revamped and they will in no time turn out to contribute more than 25 per cent to the total GDP of India. In such an instance, regardless of the lower inflow of FDI to RLIF for the time being, it is inevitable to examine the determinants of FDI inflows to the region primarily with the intention of checking the prospects of a long-run enhancement in the quality and quantity of FDI inflows.

6.3 Trend of FDI in RLIF

RLIF received merely 0.36 per cent (Rs 59.51 billion) of FDI from April 2000 to March 2016. Although FDI has emerged as one of the most vital sources of capital on the eve of liberalization in India, it is a cumbersome state that a significant segment of the country inclusive of RLIF is incapable to attract FDI in reasonable volume and quality. Mukherjee (2011) mentioned that it is essential to derive maximum benefit from the FDI flows and ensure that the rising FDI flows do not lead to an increase in regional inequality. But, with the trifling volume of FDI received by RLIF in a span of 17 years, what else has been created other than regional inequality? The research evidences of Nunnenkamp & Stracke (2007) indicated that the concentration of FDI in a few relatively advanced regions has prevented FDI effects from spreading across the Indian economy.

Nunnenkamp & Mukim (2010) concluded that the concentration of FDI in a few locations could fuel regional divergence in post-reform India since the foreign investors prefer to invest in a few locations featured with the presence of other foreign investors, industrial diversity and better infrastructure. Thus, here the determinants of FDI inflows to RLIF have been checked in detail so as to facilitate policy formulation which may in turn attract FDI to RLIF in adequate quantity and quality. The following table (Table 6.2) presents a summary of the features of FDI inflows to RLIF from 2007-08 and 2015-16.

Table 6.2
FDI Inflows to RLIF- Statistics

Particulars	Kanpur	Patna	Bhubaneswar	Guwahati	India
Average FDI Inflows (Rs Bn)	3.23	0.596	1.81	0.45	1489
Median	2.27	0.25	0.68	0.29	1428
Standard Deviation	2.66	0.90	2.20	0.53	510.16
Standard Deviation/Mean (%)	82.22	150.25	100.6	118.49	34.25
CAGR (%)	57.37	61.19 (With 5 Years)	2.19	25.62	13.01
AAGR (%)	49.49	150.35	202.06	309.57	17.76
FDI inflows (% of GSDP-Average)	0.06	0.02	0.145	0.036	2.83
FDI inflows (% of GFCF-Average)	1.52	0.47	0.78	2.53	4.87

Source: Computed on the Data from the Quarterly Factsheet of DIPP, Various Issues.
Note: All average figures belong to the period of 2007-08 and 2015-16.

Table 6.2 shows that FDI inflows to Kanpur grew at a CAGR of 57.37 per cent (India - 13.01 per cent). The higher CAGR in Kanpur is indicative of the probable increase in FDI inflows in the long run. However, on average, FDI inflows accounted for only a mild per cent of both the GSDP (0.06 per cent) and GFCF (1.52 per cent) of Kanpur, between 2007-08 and 2015-16. Kanpur includes the states of Uttar Pradesh and Utharakhand. Both the states offer conducive business and investment opportunities. The key sectors in Uttar Pradesh (UP) encompasses auto-components, biotechnology, food processing, IT and

Electronic System Design and Manufacturing (ESDM), leather, chemicals and petro chemicals, cement and tourism. UP accommodates large group of suppliers in the auto-component sector. These suppliers are located mostly in the regions of Noida and Ghaziabad. In July 2016, Ford India made an announcement that it is going to extend the retail distribution of Ford genuine parts in UP. The state has an augmenting biotech sector also. In the sector, the state has over 3000 highly qualified scientists functioning in drug research labs. The state capital Lucknow is also known as the biotech capital of the state. The food processing sector of the state is also highly growing since UP is the largest producer of food grains in India. In 2015-16, the state's food grain output amounted to about 18 per cent of the total food grain output of the country. To buoyant the production of food grains, the state has nine agro-climatic zones. The state is also a leader in milk production and produces around 21 per cent of the total milk output of the country. The Information Technology (IT) sector of the state also has been achieving substantial growth. In the IT and ESDM (Electronic System Design and Manufacturing) sector, there are over 25 Special Economic Zones (SEZs) and over 25 IT parks in the state. The state is featured with the presence of an IT city in Lucknow and IT parks in Meerut, Agra, Gorakhpur and Kanpur. Besides, the state occupies the fourth position in the exports of software in India. Furthermore, the state is dominating the production of leather, chemicals, cement etc. It has an augmenting tourism sector also. In summary, it can be noted that the state of UP is offering favourable and lucrative business environment for all types of investors including FDI.

Utharakhand has key sectors such as agro-based industries, IT and IT enabled services, pharmaceuticals and aromatic plants, and tourism. Under the Agri Export Zones (AEZs)

scheme of the government, four AEZs in various parts of the states have been declared. The state has a vigorous IT sector that the export of IT products from Utharakhand expanded at a CAGR of 7.4 per cent between 2009 and 2015. In the pharma sector, the state has three principal pharmaceutical clusters comprising of 300 units and the sector has the proficiency to produce an entire spectrum of pharmaceutical products. Thus, the state is offering wide opportunities to foreign investors also to make bulk investment in all these sectors.

The following section describes the attributes of FDI in the region of Patna.

FDI inflows to Patna grew at a CAGR of 61.19 (with five years) per cent [India - 13.01 per cent (with eight years)] between 2007-08 and 2015-16. However, the ratios (average) of FDI to GSDP (0.02 per cent) and FDI to GFCF (0.47 per cent) are meager comparatively. Even if, the higher CAGR in FDI inflows to the region indicates the high potential of the region's economy to attract more FDI inflows in future to its key sectors; in Bihar (food processing and dairy, textile and leather, renewable energy and tourism) and Jharkhand (textile, apparel and foot wear, mining, food and feed processing, mining, automobile and auto-components, energy, health sector, tourism, IT, ITeS and BPO).

Bihar, which is fundamentally an agrarian economy, renders enough space for FDI in agricultural sector. Bringing more FDI in the sector will make the segment of agricultural value addition in Bihar more vast and profitable. The state has a vibrant textile industry which is largely labour intensive and it provides employment to over one lakh weavers. In the textile sector, the state has a unique product namely Tasar silk which is capable of fetching premium prices. In 2015-16, the state produced around 72.2 tonnes of raw silk. The state also produces 2.5 million bovine hides and five million bovine skins annually.

The state renders enough opportunities in the renewable energy and tourism sectors. Bringing renovation and modernization to the state's textile industry with the help of foreign investment will result in the transformation of the entire economy of Bihar.

Jharkhand has also several significant industrial sectors. It is also a leading state in the production of silk and Tasar silk in India. Around 62 per cent of the total Tasar silk in India is produced by Jharkhand and its Tasar silk produce is getting exported to foreign countries such as US, Europe and East Asian countries. The state is a rich source of various minerals and has a progressed mining industry. It is so rich in mineral wealth that it accounts for around 40 per cent of the total mineral deposits in the country. Around 25 per cent of India's steel is getting produced from Jharkhand. Thus the state offers investment opportunities in various segments of mining such as manufacturing of exploration equipment, mining exploration vehicles, processing and refining equipments and transportation vehicles. The state has several other key sectors such as tourism, auto-mobile components, energy, IT etc which give stage for big business ventures through FDI.

The following section gives an account of the aspects of FDI in Bhuwaneswar.

FDI inflows to Bhubaneswar [Mean (Rs 1.81 billion) Median (Rs 0.68 billion) Standard Deviation to Mean ratio (100.6 per cent, India - 34.25 per cent) AAGR (202.06 per cent, India -17.76 per cent)] grew at a CAGR of 2.19 per cent (India - 13.01 per cent) between 2007-08 and 2015-16. Though CAGR is quite lower, the region has higher AAGR implying the advent of more FDI inflows in future. FDI to GSDP ratio accounted 0.145 per cent on average and FDI to GFCF ratio amounted to 0.78 per cent between 2007-08 and 2015-16 in the region. The region, which includes the state of Odisha, has several

key sectors like chemicals, plastics and petro-chemicals, food processing, ancillary and downstream industries in metals, and tourism etc to which large amount of FDI can be brought in. The state has a growing food processing industry and is a leading producer of a variety of horticulture crops in India. The state has a progressing fisheries industry also since it has a long coastline of 485 kilometers. It is the second largest producer of Tiger Shrimps in the country. The state constitutes ten agro-climatic zones. It has eight major soil types which favours the growth of several major crops. Regarding the ancillary and downstream industries in metals, the state has 99 per cent of India's Chromite deposits, 51 per cent of iron ore deposits and 39 per cent of bauxite deposits. The state has several investment regions which make use of this large metal deposit base in the state like Kalinganagar National Investment and Manufacturing Zone (KNIMZ) and Downstream Aluminium Park (DAP) at Angul set up by the state government and along with the private parks like Gopalpur industrial park founded by Tata Steel. The state's tourism and chemical industries are also well progressed.

The following part describes the FDI scenario in Guwahati.

FDI inflows to Guwahati [Mean (Rs 0.45 billion) Median (Rs 0.29 billion) Standard Deviation to Mean ratio (118.49 per cent, India - 34.25 per cent), AAGR (309.57 per cent, India - 17.76 per cent)] grew at a CAGR of 25.62 per cent while that of India is 13.01 per cent between 2007-08 and 2015-16. FDI to GSDP ratio accounted for 0.036 per cent (average) and the FDI to GFCF ratio (average) amounted to 2.53 per cent for the region between 2007-08 and 2015-16. Guwahati, which comprises of all the seven sisters of north-east of India, is attractive for foreign investors to make bulk investment owing to the existence of industrial segments as mentioned below.

The state of Assam has several key sectors such as pharmaceuticals and medical equipments, plastics and petrochemicals, power, river transport and port township, IT, textile handloom and handicrafts, tourism, hospitality and wellness and agri-holrticulture and food processing. In the pharma sector, the state has progressed infrastructure like pharma hub at Balipara and biotech park at Guwahati. Besides, the state has the presence of more than 952 species of medicinal plants. The state has a developed petrochemical industry that it produces almost 15 per cent of India's crude oil. Digboi in Assam is the oldest petroleum refinery in Asia and the crude oil produced in the north east is treated in four refineries in Assam including Digboi. Moreover, the state accounts for almost 50 per cent of the country's onshore production of natural gas. With huge reserves of crude oil and natural gas and the same being available at ideal prices, the state of Assam is an attractive destination for energy, oil and gas based industries. The state provides lucrative opportunities to invest in all other sectors mentioned above.

In Arunachal Pradesh, the key sectors are power, agriculture and forest based industries, textile and handicrafts and tourism. Arunachal Pradesh has major agro and forest based industries in tea, fruit, non-timber plywood and cane. In textile segment, production of raw silk in the state stood at 37 metric tonnes in 2015-16, compared to 12 metric tonnes in 2014-15. The state provides advantageous and appropriate opportunities for conducting investment in its tourism and power sectors as well.

In Manipur, the key sectors are agriculture and allied activities, horticulture, sericulture and bamboo producing industries. Concerning the sericulture industry, Manipur produces four special varieties of silk such as Mulberry, Eri, Muga and Oak Tasar. As regards the

Bamboo industry, Manipur is one of India's largest bamboo producing states and a principal contributor to the country's bamboo industry.

In Meghalaya, the key industries are hydroelectric power, agriculture and horticulture, minerals and tourism and hospitality. Regarding the agriculture sector in Meghalaya the state's turmeric, grown in Jiantia hills, is considered best in the world. Concerning the mineral industry, the state has rich resource base of coal, limestone, uranium and granite.

In Mizoram, the key sectors are bamboo-based industries, fisheries and textiles and handlooms. Bamboo resources occupy around 30 per cent of the geographical area of Mizoram and offers profitable business opportunities. Regarding the fisheries sector in Mizoram, the state has around 24000 hector area of potential fish farming.

In Nagaland, the industries of key importance are agriculture and allied activities, apiculture, mining and sericulture. Regarding the sector of apiculture, the state has the capability to produce 15000 metric tonnes of honey and 100 metric tonnes of wax which generates $ 100 million annually.

In Tripura, bamboo, tourism, IT and rubber are the major industrial segments. Tripura is the second largest natural rubber producing state in India after Kerala.

Thus, it can be perceived that Guwahati which encompasses all the states in north-east for the purpose of accounting of FDI inflows, offers appropriate and remunerative industrial and business opportunities in multifaceted segments. Thus, a large amount of FDI can be attracted in the near future to the Guwahati region with proper policy enactment.

The discussion shows that, *'Inflow of FDI is being rightly directed in Regions with Low Inflow of FDI (RLIF)'*.

6.4 Determinants of FDI Inflows to RLIF

This section examines the determinants of FDI inflows to RLIF. The process of savings and investment in capitalist and mixed economic set ups is more or less centered on financial intermediation, which transforms financial intermediaries the focal point of economic growth. Financial intermediaries are the specialized institutions which borrow from consumers or savers and lend to the firms on the other end who needs resources for investment. Thus financial intermediaries play a vital role in the accumulation of domestic investment. Being an influential macro-economic activity, the extent of financial intermediation or financial sector development would have a bearing on FDI inflows coming to an economy. The studies of Hyun & Kim (2007) and Kaur et al.(2013) validate this statement. Thus, the researcher came to postulate that financial intermediation is a significant determinant of FDI inflows to RLIF. The factor is proxied by 'credits given by scheduled commercial banks'.

Capital expenditure means government spending on goods and services with the purpose of creating future benefits such as infrastructure investments in transport, health, research and development etc. (creation of capital assets for public). Timely capital expenditures by government are inevitable to have proper basic facilities in economies. Through public expenditure, the government influences directly or indirectly production, consumption and distribution of the nation, helping towards the economic and social wellbeing of the society. Othman et al. (2018) observed that government expenditure signifcantly promotes FDI inflows in to developing economies from a panel data analysis of 24 developing countries. Turnovsky (1996) explicated the influence of tax-financed public expenditures on the productivity of the existing stock of capital in two ways. First, public

expenditures directly enhance the productivity of private capital by improving production conditions. Second, these expenditures "also reduce the costs associated with investment and thereby facilitate the accumulation of the flow of new [private] capital." Taken together, these two effects imply that higher public expenditures increase the marginal efficiency of private capital. Following this notion, Nourzad et al (2014) contended that the same complementarity of public expenditure to domestic private investment should also hold for FDI. Receiving insights from these, the researcher hypothesized that creation of capital assets by government has a bearing on inflows of FDI to RLIF, and the factor is proxied by 'government capital expenditure'.

Theoretically it has been proved that investments move to regions with strong industrial and manufacturing outputs. Manufacturing output and linkages are vital for an economy since it makes up a large percentage of a country's GDP. Being an important macro-economic variable, the level of manufacturing output is surmised to have an influential role on bringing FDI inflows to host economies. Thus, 'manufacturing output' has been hypothesized as one of the determinants of FDI inflows to RLIF and 'GSDP in the manufacturing sector' has been used to proxy it. The section provided below depicts the model.

6.4.1 Model

$$FDIINFLOW = \alpha + \beta\ 1\ CREDITSCB + \beta\ 2\ GCE + \beta\ 3\ GSDPMNFG$$

Where, FDIINFLOW stands for FDI inflows, CREDITSCB stands for Credits Given by Scheduled Commercial Banks, GCE stands for government capital expenditure, GSDPMNFG stands for gross state domestic product in the manufacturing sector.

6.4.2 Results

The following table (Table 6.3) presents the statistical characteristics of explanatory variables.

Table 6.3
Statistical Characteristics of Explanatory Variables

Broad Factor Specification	Particulars	Kanpur	Bhubaneswar	Patna	Guwahati	India	Total of RLIF
1. Financial Intermediation	**Explanatory Variable : Credits Given by Scheduled Commercial Banks (CREDITSCB)**						
	Average (Rs Bn)	2231.11	586.78	762.67	383.11		
	Median (Rs Bn)	2098	588	712	369		
	Standard Deviation (Rs Bn)	937.50	192.96	329.85	146.32		
	Standard Deviation/Mean (%)	42.02	32.89	43.25	38.19	37.52	
	AAGR (%)	17.13	13.99	17.91	15.64	15.32	
	CAGR (%)	17.06	13.83	17.84	15.61	15.25	
	% of Bank Credits to GSDP (Average)	44.76	44.92	30.46	27.66		
	% of Bank Credits in the Total Bank Credits of India (Average)	4.53	1.23	1.54	0.79		8.09
2. Capital Asset Creation by Government	**Explanatory Variable: Government Capital Expenditure (GCE)**						
	Average (Rs Bn)	456.73	93.24	230.07	140.24		
	Median (Rs Bn)	343.8	74.4	187.5	129.2		
	Standard Deviation (Rs Bn)	251.09	50.06	115.31	62.52		
	Standard Deviation/Mean (%)	54.98	53.69	50.12	44.58	39.64	
	AAGR (%)	20.82	19.35	19.36	20	16.2	
	CAGR (%)	19.31	18.53	18.08	17.93	15.64	
	GCE as % of Aggregate Expenditure of States (Average)	23.76	19.39	23.28	19.81		
	GCE as % of Total CE of India (Average)	14.37	2.92	7.32	4.54		29.15
3. Manufacturing Output	**Explanatory Variable: Gross State Domestic Product in the Manufacturing Sector at Factor Cost and in Constant Prices (GSDPMNFG)**						
	Average (Rs Bn)	692.74	**175.92**	261.30	**80.85**		
	Median (Rs Bn)	716.25	179.30	257.5	80.64		

				4			
	Standard Deviation	86.75	9.12	36.44	14.05		
	Standard Deviation/Mean (%)	12.52	5.18	13.94	**17.38**		
	AAGR (%)	4.63	**2.21**	3.09	**6.49**		
	CAGR (%)	4.39	**1.87**	2.17	**6.29**		
	GSDP Manufacturing as Per Cent of Total GSDP of States (Average)	14.6	13.94	11.26	**6.04**		

Table 6.3 shows that the four regions in RLIF together disbursed only 8.09 per cent of the total credit. Among these, Kanpur dispensed the highest volume (4.53 per cent).The disbursement of bank credit in the region grew at a CAGR of 17.06 per cent between 2007-08 and 2015-16 (India- 15.25 per cent). The average 'credits to GSDP ratio' amounted to 44.76 per cent. In Bhubaneswar, the disbursement of bank credit grew at a CAGR of 13.83 per cent (India- 15.25 per cent) between 2007-08 and 2015-16. The credit disbursed by the region as per cent of the total credit (average) amounted to 1.23 per cent. The average 'credits to GSDP ratio' in Bhuwaneswar accounted for 44.92 per cent. Patna's bank credit grew at a CAGR of 17.84 per cent (India- 15.25 per cent) between 2007-08 and 2015-16. The bank credits as a per cent of All India credit accounted for 1.54 per cent and the ratio of credits to GSDP amounted to 30.46 per cent. In Guwahati, the bank credit grew at a CAGR of 15.61 per cent (India- 15.25 per cent) between 2007-08 and 2015-16. Bank credit as a per cent of the total credit of the country (average) amounted to 0.79 per cent. The average 'credits to GSDP ratio' in Guwahati accounted for 27.66 per cent.

Regarding bank credit, it can be summarized that all regions under RLIF except Bhuwaneswar have their CAGR higher than that of India between 2007-08 and 2015-16, implying that disbursement of bank credit in these regions are going to hike substantively. The following section describes the second explanatory variable of FDI inflows in RLIF, that is government capital expenditure.

According to Table 6.3, the share of all the four regions in RLIF together constituted 29.15 per cent (average) in the total Government Capital Expenditure (GCE) of India during 2007-08 and 2015-16. Among RLIF, Kanpur has the highest share of CE and

Odisha has the lowest. The CE of Kanpur expanded at a CAGR of 19.3 per cent between 2007-08 and 2015-16 (India - 15.64 per cent). The (average) ratio of CE to Aggregate Expenditure (AE) accounted for 23.76 per cent, which is lower relatively and it needs urgent revision from the part of the governments coming under Kanpur region, to have progressive change in their capital expenditures. CE of the region as per cent of the total CE of India, constituted 14.37 per cent (average).CE of Bhubaneswar expanded at a CAGR of 18.53 per cent between 2007-08 and 2015-16 (India - 15.64 per cent). The average CE to AE ratio amounted to 19.39 per cent and is also lower comparatively. Hence the region needs to commit additional fund for capital expenditure. CE of the region as per cent to the total CE of the country amounted just to 2.92 per cent (average).The CE of Patna expanded at a CAGR of 18.08 per cent between 2007-08 and 2015-16 (India - 15.64 per cent). The (average) ratio of CE to Aggregate Expenditure (AE) accounted for 23.28 per cent, which is lower relatively. CE of the region as per cent of the total CE of the country accounted for 7.32 per cent (average) during 2007-08 and 2015-16. The GCE of Guwahati expanded at a CAGR of 17.93 per cent between 2007-08 and 2015-16 (India - 15.64 per cent). The GCE of Guwahati as per cent of its AE accounted for 19.81 per cent between 2007-08 and 2015-16. The region's CE as per cent of the entire CE of the country amounted to 4.54 per cent during the period.

In summary, it may be observed that the ratio of CE to AE is insignificant in RLIF which provides evidences of the relatively reduced volume of government capital investment taking place in these regions. However, since the CAGR of government capital expenditure is higher for all the regions than the nation, a considerable hike in the capital

expenditure can be expected to occur in the long run in RLIF. The following section explains the final explanatory variable, that is, GSDP in the manufacturing sector.

Table 2 shows that at constant prices, the manufacturing GSDP of Kanpur expanded at a relatively low CAGR of 4.39 per cent and low AAGR of 4.63 per cent between 2007-08 and 2015-16. In Bhuwneswar, it grew at a CAGR of just 1.87 per cent and at a low AAGR of 2.21 per cent. Bhuwaneswar has the lowest AAGR and CAGR in manufacturing GSDP among RLIF during the period of study. In Patna also, manufacturing GSDP grew at relatively low CAGR of 2.17 per cent and low AAGR of 3.09 per cent. In Guwahati, GSDP in the manufacturing sector expanded at CAGR of 6.29 per cent and AAGR of 6.49 per cent between 2007-08 and 2015-16. Guwahati has the highest AAGR and CAGR in manufacturing GSDP among RLIF during the period of study.

A review of the GSDP in the manufacturing sector in RLIF discloses that Bhuwaneswar straggles behind other regions with lowest AAGR and CAGR. Nevertheless, Guwahati, which had once lagged behind, is stepping forward with high CAGR and AAGR in manufacturing GSDP. Consequently, Guwahati can be presumed to turn out to be an industrial hub in no time; such a transformation of the region will be effectual in amplifying the pace of development in north-east India.

6.4.3 Correlation Matrix

The following table (Table 6.4) presents the correlation.

Table 6.4
Correlation Matrix
Dependent Variable: FDIINFLOW

	FDIINFLOW	GSDPMANUFG	CREDITSSCBS	CE
FDIINFLOW	1.00			
GSDPMNFG	***0.2***	1.00		
CREDITSCB	***0.41***	0.89	1.00	
CE	***0.17***	0.74	0.85	1.00

The correlation matrix (Table 6.4) shows that FDI inflow in RLIF, being the dependent variable is positively associated to all the explanatory variables.

The coefficient of correlation between FDI inflows and GSDP in the manufacturing sector (GSDPMANUFG) is positive (0.2). It indicates the weak positive relationship subsisting between the two. The association existing between 'Credits given by Scheduled Commercial Banks' (CREDITSSCBS) and FDI inflows is moderately positive with the correlation coefficient being 0.41. The correlation coefficient between 'Government Capital Expenditure' (CE) and 'FDIINLOW', is positive (0.17) which expresses the weak positive relationship prevailing between the two variables.

6.4.4 Regression Results

The regression model is explained below.

Table 6.5
Pooled OLS Regression, Dependent Variable- FDI Inflows

Particulars	Coefficient	Std. Error	t-ratio	P-value	Significance level
const	−7.61	6.06	−1.25	0.22	
CREDITSCB	5.65	1.23	4.58	<0.0001	***
CE	−2.54	0.93	−2.72	0.0104	**
GSDPMNFG	−2.58	0.92	−2.8	0.0084	***

Mean dependent var	*5.88*	*S.D. dependent var*	*2.5*
Sum squared resid	*126.98*	*S.E. of regression*	*1.99*
R-squared	***0.42***	***Adjusted R-squared***	***0.36***
F(3, 32)	*7.76*	*P-value(F)*	*0.00049*
Log-likelihood	*−73.77*	*Akaike criterion*	*155.54*
Schwarz criterion	*161.87*	*Hannan-Quinn*	*157.75*
rho	*0.25*	*Durbin-Watson*	*1.38*

Note: Table shows Pooled OLS Regression results. Period of observation (Time-series length) is 9 years starting from 2007-08 to 2015-16. No. of observations is 36. No. of cross sections is 4. Independent variables are lagged by 1 year to avoid endogenity problem. Dependent and Independent variables are measured in natural logarithms. *** denotes significance at 1 percentage level. ** denotes significance at 5 percentage level.

In this model, the estimation method used is pooled OLS regression using a total of 36 observations. Panel data containing four cross sectional units with time series length of nine is used for estimation. Four regions in the RLIF viz. Kanpur, Bhuwaneswar, Patna and Guwahati are the four cross sectional units in the data.

With respect to 'Credits Given by Scheduled Commercial Banks (CREDITSCB) in RLIF' which represents the volume of financial intermediation, the coefficient is positive and significant at one per cent. It signifies a uni-directional causality existing between the extent of financial intermediation and FDI in RLIF including Kanpur, Bhuwaneswar, Patna and Guwahati. That means, with an increase in the financial intermediation

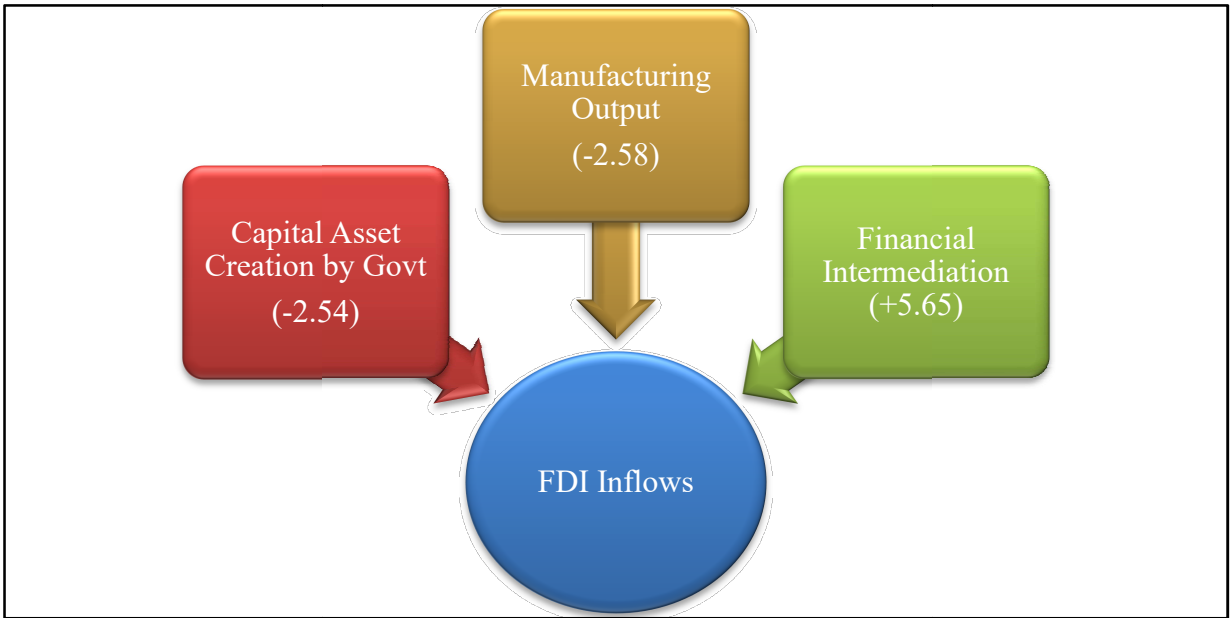
activities represented primarily by 'Credits Given by Scheduled Commercial Banks (CREDITSCB) in RLIF, FDI to those regions boosts up.

In the case of the capital asset creation by Government in RLIF, the coefficient of 'Government Capital Expenditure' is negative, but significant at five percent; which denotes the uni-directional negative causality existing between fiscal sector and FDI inflows in the RLIF. It signifies that, with a diminution in the government capital expenditure in RLIF, FDI inflows to the region increase.

The coefficient obtained for 'Gross State Domestic Product in the Manufacturing Sector' is also negative, but significant at one per cent level. It indicates that FDI inflows to RLIF augment with a fall in the manufacturing output in RLIF. The results show that, *'The FDI in RLIF is explainable by financial intermediation, manufacturing output and capital asset creation by the government'.*

The empirical findings can be conceptualized as follows:

Figure 6.1
The Conceptual Model



Source: Compiled by the researcher

The conceptual model (figure 6.1) clearly demonstrates that factors such as manufacturing output, capital asset creation by government and financial intermediation significantly influence the external capital flows in the form of FDI inflows to RLIF. While the impact of both manufacturing output, capital asset creation by government is negative, financial intermediation exert positive impact on FDI inflows to RLIF.

6.5 FDI Scenario in Kochi

Kochi constitutes both Kerala and Lakshadweep in the accounts of FDI inflows of RBI. However, the Union Territory of Lakshadweep hardly receives any FDI. However, the brief industrial profile of Lakshadweep (2015-16) published by the department of Micro, Small and Medium Enterprise (MSME) Development Institute, Thrissur, which is functioning under the MSME ministry of government of India, identified infrastructural constraints as the major hindrance behind the process of industrialization in Lakshadweep. In such an instance, the sole receiver of FDI inflows in the region of Kochi is Kerala. In Kerala itself, the interest of foreigners to commit direct investment is principally revolving around the locality of Kochi and other regions in the state lie more or less omitted by foreign investors (as well as by domestic investors) and the case inside the state except in Kochi is identical to that of the low FDI regions in India. Mani (2014) identified that four constraints are in operation there behind the industrial backwardness of Kerala viz. land, labour, environmental conciousness of the society, and the role of buroeucracy. Nevertheless, industrial scenario in Kerala is progessing year by year. For instance between 2007-08 and 2015-16, Gross Fixed Capital Formation (GFCF) in Kerala expanded at a CAGR of 26.76 per cent against the national CAGR of 10.97 per cent. In

2007-08, GFCF of Kerala accounted for a mere 0.97 per cent of the state's GSDP. However, by 2015-16, the value of the variable turned into 3.97 per cent.

Now Kerala has several key industries like tourism, food processing, Textile-handloom-handicrafts, IT etc. with it. The state is home to 48 co-operative societies that promote handicraft industry and in 2015-16, the state produced handloom worth $ 53.4 million. IT is another key industry in the state. The state has more than 500 IT companies and it employs more than 50000 professionals. The state has built up IT infrastructure in the form of IT parks such as Technopark in Trivandrum and Kollam and Infopark in Kochi which are notified as special economic zones. Regarding the food processing industry, the state is a major exporter of spices, marine products, Cashew, Coffee and pickles. Cochin Special Economic Zone, one of the seven central government owned special economic zones is in Kerala. A number of other SEZs are also operating in Kerala. The state has a robust and flexible policy environment aiming at strengthening of existing industries and making them more efficient. As a result of these conjoined output, foreign investment to Kerala has increased moderately between 2007-08 and 2015-16. This is evident from the following Table (6.6).

Table 6.6
FDI Inflows to Kochi

Sl No	Items (from 2007-08 to 2015-16)	Kochi	India
1	Average FDI Inflows (Rs-Billion)	7.05	-
2	Median (Rs-Billion)	4.11	-
3	Standard Deviation (Rs Billion)	6.99	510.16
4	Per cent of Deviation (Standard Deviation/Mean)	99.15	34.25
5	AAGR (%)	1.84	13.01
6	CAGR (%)	20.22	17.76
7	FDI Inflows as Percentage of GSDP of the region (Average)	0.34	2.83
8	FDI Inflow as Per Cent of GFCF of the region (Average)	22.45	4.87

Source: Computed on the data from the various issues of FDI fact sheets of DIPP and handbook of statistics on Indian states, RBI.

One of the notable things is that Kerala is having progressive FDI inflows with its inflows expanded at a CAGR of 20.22 per cent between 2007-08 and 2015-16 to reach at Rs 5.89 million in 2015-16 from a lower volume of Rs 1.35 million in 2007-08. CAGR in the FDI inflows of India during the same period is just 6.01 per cent. However, Kerala has to go a long distance forward to make its composition of FDI inflows on its GFCF and GSDP higher.

It may be inferred that the state of Kerala has distinguished its strengths and weaknesses and has formulated suitable policies to develop strengths and conquer weaknesses. Although the state could achieve a portion of its targeted policy, *it requires additional capital* from stable and uninterrupted sources, for the full-fledged realization of its targets. It not only needs capital, but also sophisticated technology, marketing resources, management resources etc. to buoyant the developmental activities in its economic sectors. Against such a backdrop, the most feasible solution to tackle the problem of deficiency of resources is to attract enough foreign aid, especially in the form of FDI.

6.6 Conclusion

This chapter discusses two significant aspects; trend of FDI in RLIF and determinants of FDI in RLIF. A review of the trend of FDI in RLIF showed that the inflow of FDI is being rightly directed. The CAGR of FDI inflows is above that of India for three major sub regions under RLIF. These are Kanpur, Patna and Guwahati. The determinants of FDI inflows in RLIF have been identified as *manufacturing output*, *capital asset creation by the government* and *financial intermediation*. FDI scenario in Kochi is also explained. In Kochi, one of the regions which receive moderate inflow of FDI in India, the trend of FDI inflows is also in the right direction since it grew at higher per cent of CAGR than that of India.