

Foreign Direct Investment (FDI) and Telecommunication Sector in India

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Abstract

Foreign Direct investment (FDI) can work as a focal source for the capital formation of any country for its economic development in a significant manner. This can be expected to span over all the industries and sectors including Telecom, particularly in developing countries like India. Over the past decade the Telecom sector has experienced rapid growth owing to regulatory liberalization, however, the sector has been in turbulent phase started from 2014-2015 year, marked by legality of Long-Term Evolution (LTE), roaming agreements, one time Spectrum cost, reframing of allotted spectrum in the 2300+ MHz band, etc. The present paper discusses on the role of FDI in the development of telecom sector.

Keywords: FDI; Economic growth; Public and private sector; TRAI; FIPB

Introduction

Telecommunication is one of the fastest growing industries in India that has undergone an innovative phase over the past few years and stands as the second largest telecommunications market in the world after China. It is due to of liberalization policy telecom sector could attract more FDI flows in private sector participation increased in total telephone connections of the nation. This led the sector to competitive stimulus high telecom penetration and substantial reduction in tariffs. Though foreign telecom players have been present in India for almost more than a decade with tremendous growth, the sector is yet to witness the expected vibrancy and infusion of innovative technologies. FDI in the telecom sector was initially allowed at 74%. It was subject to the condition that Companies bringing in FDI shall obtain necessary license from the Telecom Regulatory Authority of India (TRAI) [1] for undertaking telecom activities. By recent decision government of India did hike FDI ceiling from 74% to 100% through the Foreign Investment Promotion Board (FIPB) and Government's consolidated FDI Policy [2].

The FDI flow into telecom sector was totally Rs 883287.89 million over the period of 2000 to 2015, including telecommunications, with Rs 307695.62 million, Radio paging Rs 272.98 million, Cellular Mobile, Rs 298921.4 million and other related services Rs 276397.89 million. Such FDI flows have moved from the countries, namely, Mauritius with Rs 558845.26 million that constitutes at 64.85%, Singapore with Rs 185458.81 million, equals to 19.10%, Russia with Rs 46011.93 million equals to 4.78%, over the total.

Review of Literature

It is very glare that the importance on telecommunication sector is growing in India due to the development concept in the light of liberalization, globalization and privatization that have brought the changes in the economic dimensions very significantly, so the FDI role getting higher in the sector day-by-day. Hence, there are limited studies on telecommunication sector with regard to FDI in India. Some of the important studies are discussed in the following lines [3].

Yadav et al. [4] in his paper on rapid changes in technology in Indian telecom sector stated that there is a significant impact of technology on the operational aspect of telecom business with increased competition and emergence of rural market.

Fathima et al. in her article on FDI in Telecom Sector presented an overview of FDI in Indian Telecom sector [5]. The article examined the current status of FDI in the Indian telecommunication sector and the issues being faced by foreign companies. The paper concludes with a brief economic examination through relevant factors influencing the level of FDI.

Chennappa [6], in his research discussed on FDI in Telecom sector in India. He opined that many countries allowed FDI based on the growth of tele-density and the per capita income that had gone up to considerable levels.

Objectives

- To study the trend of FDI inflows in India telecommunication sector.
- To study the growth of subscribers of Telecom, Internet and Broadcasting and Cable services in general and subscribers of Major Telecom Companies in particular.
- To study the impact of FDI inflows on subscribers of telecommunication sector.

Hypotheses

Ho1: There is no significant difference between the trend of FDI inflows in India and telecommunication sector.

Ho2: There is no significant difference in the growth of subscribers among telecom, internet and broadcasting and cable services.

Ho3: There is no significant difference among the growth of subscribers of Major Telecom companies.

Ho4: There is no significant impact of growth of FDI Inflows on the growth of subscribers of telecommunication sector [7].

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Received March 22, 2017; **Accepted** March 31, 2017; **Published** April 11, 2017

Citation: Azher Parvez M, Satyanarayana Chary T (2017) Foreign Direct Investment (FDI) and Telecommunication Sector in India. J Telecommun Syst Manage 6: 151. doi: [10.4172/2167-0919.1000151](https://doi.org/10.4172/2167-0919.1000151)

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Data and Methodology

The present paper is an analytical and conclusive research, it used secondary sources of data to ascertain the objectives and examine the hypotheses. To analyses trend and growth of subscribers of telecommunications sector under FDI, data was taken for 10 years period, which spans over 2006-2015. Besides, growth rates, percentages, Co-efficient of Correlation (C.C), t-test and Kendall trend analysis were employed.

Analysis, Discussion and Findings

FDI and Indian telecommunication sector

It can be realized from Table 1 that percentage of FDI inflows in telecommunication sector over the total FDI. For the period of 10 years, i.e., 2005-2006 to 2014-2015, the FDI inflows were not constant, but, fluctuated in most of the years, particularly in the year 2005-06 the flow was very less at Rs 90154.44 Ten million. Similarly, in the year 2005-2006 it was Rs 2751.45. Ten million in the telecommunication sector. In percentage the FDI flows in the sector in 2005-2006 year was 3.05. Hence, FDI registered the highest flows of Rs 248754.05 Ten million, in the year 2011-2012 in the country, whereas, the telecommunication sector registered the highest inflow of FDI in the year 2014-2015 by Rs 17371.82 Ten million, which is equal to 9.45% over the total. In a time span of 10 years, an average FDI flow in India was found at Rs 177087.3 Ten million, whereas, with the telecommunication sector it was found at Rs 7752.20 Ten million, which is equal to 4.33% over total flows of FDI. Hence, the inflows of FDI are very minimal in the telecommunication sector as part of FDI flows in India. Correlation of Coefficient (C.C) between FDI inflows into India and telecommunication sector is traced at 0.3840 (Table 1) [8].

Test of Hypothesis I

Ho1: There is no significant difference between the trend of FDI inflows in India and telecommunication sector.

Result and decision: The calculated value of 't' between FDI inflows into India and TELECOMMUNICATION sector is 3.672 against the critical value 1.833. So the hypothesis is rejected and it means that

there is a significant difference in the trend of FDI inflows in India and telecommunication sector (Table 2).

Subscribers of Telecommunication Sector

Table 3 is an attempt to study the growth of subscribers of telecommunication sector, through the data ranged from 2005-2006 to 2014-2015 pertaining to Telecom (Wireless), Internet and Broadcasting and Cable services. The growth of subscribers was not constant as there was a fluctuation in most of the years, particularly in 2005-2006 the subscribers was very less in number, i.e., 163.09 million. Then it moved from 249.88 million to 351.62 million, 488.60 million, 687.54 million, 921.32 million, 1032.68 million, 986.51 million, 1258.11 million and 1313.81 million of subscribers through the years 2006-2007 to 2014-2015. By segment wise analysis individual subscribers in Telecom (Wireless) and Internet were found in the year 2005-2006, by 90.14 million and 6.94 million respectively. Similarly, in the year 2005-06 it was 66.01 million in Broadcasting and Cable services. Telecom (Wireless), Internet registered a highest number of subscribers, i.e., 944.01 million, 259.79 million in the year 2014-2015, whereas the subscriber of Broadcasting and Cable services were 110.01 million during the same year. By the time span of 10 years, an average subscribers in Telecom (Wireless), Internet, Broadcasting and Cable services were 593.95 million, 62.51 million, 88.86 million respectively, whereas, the total telecommunication sector subscribers were found at 745.32 million (Table 3).

Test of Hypothesis II

Ho2: There is no significant difference in the growth of subscribers among Telecom, Internet and Broadcasting and Cable services.

Result and decision: The calculated value of 'Chi-Square' is 16.80 against the critical value 5.991. So the hypothesis is rejected that there is a significant difference in the growth of subscribers among Telecom, Internet and Broadcasting and Cable services (Table 4).

Telecom (wireless) subscribers of companies: Table 5 is an attempt to study the growth of subscribers of Major Telecom companies, through the data ranged from 2005-2006 to 2014-2015, pertaining to Bharat Sanchar Nigam Limited (BSNL), Mahanagar

Year	Total FDI in India (Rs. in Ten millions)	Total Inflow of FDI in Telecommunication Sector		Percentage of FDI inflows in Telecommunication sector over total FDI
		Rs. in Ten millions	Growth rate in per cent	
2005-06	90154.44	2751.45	-	3.05
2006-07	94065.95 (104.34)	2149.58 (78.12)	-21.87	2.28
2007-08	151462.58 (168.00)	5099.56 (185.34)	85.34	3.37
2008-09	202502.66 (224.62)	11684.81 (424.68)	324.68	5.77
2009-10	172570.14 (191.42)	12269.66 (445.93)	345.93	7.11
2010-11	162665.79 (180.43)	7542.04 (274.11)	174.11	4.64
2011-12	248754.05 (275.92)	9011.53 (327.52)	227.52	3.62
2012-13	218381.22 (242.23)	1654.30 (60.12)	-39.87	0.76
2013-14	246447.58 (273.36)	7987.28 (290.29)	190.29	3.24
2014-15	183869.03 (203.95)	17371.82 (631.37)	531.37	9.45
Avg.	177087.3	7752.20	-	4.33

Co-efficient of Correlation (C.C) between growth of FDI inflows into India and growth of FDI in telecommunication sector is 0.3840

Table 1: FDI Flows in India and total inflow of FDI in telecommunication sector.

Test Applied	Sig. level	D.f	Calculated value	Critical value	Decision
t	5%	9	3.672	1.833	Rejected

Table 2: Result and decision of Hypothesis I.

Year	Telecom (Wireless)			Internet			Broadcasting and Cable services (DTH and Cable TV)	Total of Telecommunication sector
	GSM	CDMA	Total	Narrowband	Broadband	Total		
2005-06	69.19	20.95	90.14	5.59	1.35	6.94	66.01	163.09
2006-07	120.47	44.64	165.11	6.93	2.34	9.27	75.5	249.88
			-183.17			-133.57	-114.38	-153.22
2007-08	192.7	68.37	261.07	6.68	3.87	10.55	80	351.62
			-289.63			-152.02	-121.19	-215.6
2008-09	297.26	94.5	391.76	6.62	6.22	12.84	84	488.6
			-434.61			-185.01	-127.25	-299.59
2009-10	478.68	105.64	584.32	6.45	8.77	15.22	88	687.54
			-648.23			-219.31	-133.31	-421.57
2010-11	698.37	113.22	811.59	5.84	11.89	17.73	92	921.32
			-900.36			-255.47	-139.37	-564.91
2011-12	814.06	105.11	919.17	5.7	13.81	19.51	94	1032.68
			-1091.71			-281.12	-142.4	-633.21
2012-13	794.03	73.77	867.8	6.56	15.05	21.61	97.1	986.51
			-962.72			-311.38	-147.1	-604.81
2013-14	847.41	57.1	904.51	190.72	60.87	251.59	102.01	1258.11
			-1003.45			-3625.2	-154.54	-771.42
2014-15	901.26	42.75	944.01	198.03	61.76	259.79	110.01	1313.81
			-1047.27			-3743.4	-166.66	-805.57
Avg.	521.34	726.05	5939.48	43.91	18.59	62.51	88.86	745.32
Mean Rank Kendall Trend Analysis	3			1.2			1.8	-

Table 3: Subscribers growth in telecom, internet and broadcasting and cable services (in Millions).

Test Applied	N	Kendall's W	Df	Asymp. Sig	Chi-Square		Decision
					Calculated value	Critical value	
Kendall Trend Analysis	10	.84	2	.000	16.80	5.991	Rejected

Table 4: Result and decision of Hypothesis II.

Telephone Nigam Ltd. Delhi (MTNL), Airtel Bharti (AB), Vodafone, Reliance Communications (RC), Idea, Tata docomo (TD), Aircel, Unitech (UT) and others. The growth was a fluctuating one in most of the years, particularly in 2005-2006 the company wise Telecom subscribers were less in numbers 17.65 million in BSNL, 2.05 million in MTNL, 19.58 million in AB, 7.37 million in Idea, 15.36 million in Vodafone, 17.31 million in RC, 4.85 million in TD and 2009-2010 year 4.26 million in UT. BSNL registered the highest subscribers of 101.12 million in 2012-2013, MTNL, RC, UT register 5.83 million, 153.05 million, 42.43 million in 2011-2012, respectively and AB, Idea, Vodafone, Aircel was 211.25 million, 174.52 million, 140.72 million, 76.71 million in 2014-2015 year and TD registered with 89.50 million in the year 2010-2011. Over a span of 10 years, an average subscribers in BSNL, MTNL, AB, Vodafone, RC, Idea, TD, Aircel, UT and Others found at 69.56 million, 4.39 million, 128.86 million, 103.41 million, 89.90 million, 75.82 million, 51.30 million, 39.84 million, 29.40 million and 12.47 million, respectively, whereas, the total Telecom (Wireless) subscribers were found at 593.948 million over the study period (Table 5).

Test of Hypothesis III

Ho3: There is no significant difference among the growth of subscribers of major telecom companies.

Result and decision: The calculated value of 'Chi-Square' is 51.42 against the critical value 16.919. So the hypothesis is rejected that there

is a significant difference among the growth of subscribers of Major Telecom companies (Table 6).

Population and Subscribers of Telecommunication Sector in Rural and Urban Areas

Table 7 is an attempt to study the growth of population and subscribers of telecommunication sector through the data ranged from 2005-2006 to 2014-2015 pertaining to rural, urban areas and public, private sectors of telecommunications. The growth of population was not constant, but fluctuated in most of the years; particularly in 2005-2006 the population was least by 1117.73 million. Similarly, in the year 2005-2006 it was 163.09 million subscribers in telecommunication sector and segment wise analysis of individual subscribers in Rural, Urban in the year 2006-2007 and 2005-2006 were very less by 36.14 million and 122.92 million. Hence, population and subscribers of telecommunication sector registered the highest figure, 1254.02 million, in the year 20014-2015 in the country, whereas, in the same year, the subscribers of telecommunication sector registered the highest of 1313.81 million inclusive of subscribers of rural area, 398.73 million and urban area of 915.08 million. Similarly, the growth of subscribers in the Public and Private Service was fluctuating in most of the years; particularly in 2005-0206 they registered 42.99% and 57.01% growth respectively. Then it moved from 34.68%, to 36.47%, 20.84%, 17.28%, 14.89%, 13.69%, 14.49%, 12.87% and 10.85% in the year 2006-2007 to 2014-0215 in public sector, whereas, in private sector 65.32%,

Year	BSNL	MTNL	AB	Vodafone	RC	Idea	TD	Aircel	UT	Others
2005-06	17.65	2.05	19.58	15.36	17.31	7.37	4.85	2.61	-	3.36
2006-07	30.99	2.94	37.14	26.44	28.01	14.01	16.02	5.51	-	4.05
2007-08	40.79	3.53	61.98	44.13	45.79	24.00	24.33	10.61	-	5.91
2008-09	52.15	4.48	93.92	68.77	72.67	38.89	35.12	18.48	-	7.28
2009-10	69.45	5.09	127.62	100.86	102.42	63.82	65.94	36.86	4.26	7.99
2010-11	91.83	5.47	162.20	134.57	135.72	89.50	89.14	54.84	22.79	19.49
2011-12	98.51	5.83	181.28	150.47	153.05	122.72	81.65	62.57	42.43	19.66
2012-13	101.21	5.00	188.20	152.35	122.97	121.61	66.42	60.07	31.68	18.30
2013-14	94.65	3.37	205.39	166.56	110.87	135.61	63.00	70.15	35.61	19.30
2014-15	99.41	5.14	211.25	174.62	110.17	140.72	66.58	76.71	39.61	19.40
Avg.	69.56	4.39	128.86	103.41	89.90	75.82	51.30	39.84	29.40	12.47
Mean Rank Kendall Trend Analysis	6.33	1.17	10.00	8.50	8.17	6.83	4.83	4.33	2.67	2.17

Table 5: Growth in subscribers of major telecom (Wireless) Companies (in Millions).

Test Applied	N	Kendall's W	Df	Asymp.Sig	Chi-Square		Decision
					Calculated value	Critical value	
Kendall Trend Analysis	6	.95	9	.000	51.42	16.919	Rejected

Table 6: Result and decision of Hypothesis III.

Year	Population of Country (million)	Total Subscriber of Telecommunication sector		Subscribers of Telecommunication sector			
		(million)	Growth rate in per cent	Rural (million)	Urban (million)	Public	Private
2005-06	1117.73	163.09		40.17	122.92	42.99	57.01
2006-07	1134.02 (101.46)	249.88 (153.22)	53.21	36.14 (89.97)	213.74 (173.88)	34.68 (80.67)	65.32 (114.58)
2007-08	1150.20 (102.9)	351.62 (215.60)	115.60	62.28 (155.04)	289.34 (235.39)	36.47 (84.83)	73.13 (128.27)
2008-09	1166.23 (104.34)	488.60 (299.59)	199.59	111.63 (277.89)	376.97 (306.68)	20.84 (48.48)	79.16 (138.85)
2009-10	1186.00 (106.11)	687.54 (421.57)	321.57	190.88 (475.18)	496.66 (404.05)	17.28 (40.19)	82.72 (155.1)
2010-11	1210.57 (108.31)	921.32 (564.91)	464.91	273.54 (680.95)	647.78 (526.99)	14.89 (34.64)	85.11 (149.29)
2011-12	1213.37 (108.56)	1032.68 (633.2)	533.20	323.27 (804.75)	709.41 (577.13)	13.69 (31.84)	86.31 (151.39)
2012-13	1223.58 (109.47)	986.51 (604.89)	504.88	342.50 (852.63)	644.01 (523.93)	14.49 (33.71)	85.51 (150.0)
2013-14	1238.89 (110.84)	1258.11 (771.42)	671.42	377.78 (940.45)	880.33 (716.18)	12.87 (29.94)	87.13 (152.83)
2014-15	1254.02 (112.19)	1313.81 (805.57)	705.57	398.73 (992.61)	915.08 (744.45)	10.85 (25.24)	89.15 (156.38)
Avg.	1189.46	745.32	-	215.69	529.62	21.90	79.10

Table 7: Population and subscribers of telecommunication sector.

Test Applied	Sig. level	D.f	Calculated value	Critical value	Decision
t	5%	9	0.09563	1.833	Accepted

Table 8: Result and decision of Hypothesis IV.

73.13%, 79.16%, 82.72%, 85.11%, 86.31%, 85.51%, 87.13%, and 89.15% in same years. In a time span of 10 years, an average population in India was found at 1189.46 million, whereas, the total subscribers of telecommunication sector were found at 745.32 million. Similarly, Rural and Urban registered the average numbers of subscribers of 215.6 million, 529.62 million respectively (Table 7) [9].

Test of Hypothesis IV

Ho4: There is no significant impact of growth of FDI Inflows on the growth of subscribers of telecommunication sector.

Result and decision: The calculated value of 't' between growth of FDI inflows in telecommunication sector and the growth of subscribers of telecommunication sectors is 0.09563 against the critical value 1.833. So the hypothesis is accepted that there is no significant

impact of growth of FDI Inflows on the growth of subscribers of telecommunication sector (Table 8).

Conclusion

FDI is the main source for capital formation in India. Since the entry of FDI government of India make such source to penetration into almost all sectors including telecommunication sector. The study by analysis found that in the trend of FDI flows in India and telecommunication sector is significant different because the total flow into telecommunication sector was just 4.3% over the total FDI flows in India over the 10 years period of time that spans over 10 years. Not only that growth in subscribers among Telecom, Internet and Broadcasting and Cable services is also differing a lot as proved by Kendall trend analysis caused by the change in requirement of people. Even in the

case of growth in subscriber in numbers among major telecom is also highly volatility and insistence give to intimacy commutation. Hence, the impact of growth in FDI on the growth of subscriber of in number in telecommunication sector is in significant. It does mean to say that FDI is playing a submissive role in telecommunication sector as it is working as only a focal source of capital and not able to create any difference. It is also caused by less utilization of FDI give cost of FDI.

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