


Impact of Foreign Direct Investment on the Indian Telecom Sector: An Analysis

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Abstract

This study examines the profound impact of Foreign Direct Investment (FDI) on the Indian telecom sector, offering insight into the sector's evolution and opportunities. In recent years, FDI has played a pivotal role in transforming the Indian telecom landscape, contributing to both economic and technological advancements. From an economic perspective, FDI has significantly bolstered the financial health of telecom companies by infusing capital for network expansion and infrastructure development. This has translated into improved connectivity, greater market reach, and competitive pricing, benefiting the Indian consumer base. Additionally, FDI has spurred job creation and economic growth, positioning the telecom sector as a vital contributor to India's economic development. Technologically, FDI has facilitated the adoption of cutting-edge telecommunications technologies. Foreign investors have brought in expertise and resources, accelerating the deployment of 4G and 5G networks, broadband penetration, and the proliferation of digital services. This technological progress has positioned India as a formidable player in the global telecommunications arena. This study underscores the transformative role of FDI in the Indian telecom sector, emphasizing its economic and technological benefits. It serves as a valuable resource for stakeholders, policymakers, and researchers seeking to understand the intricate dynamics of FDI in one of India's most critical industries.

Keywords: FDI, Telecommunication, GDP, Investors.

Introduction

The Indian telecom sector has emerged as a cornerstone of the nation's economic growth, driven by a remarkable transformation fuelled by liberalization, innovation, and a surge in Foreign Direct Investment (FDI). India's vast population and insatiable demand for connectivity have made it an irresistible market for global investors seeking to capitalise on the expanding telecommunications landscape. The government's strategic policy reforms and unwavering commitment to fostering a conducive business environment have attracted significant foreign capital, paving the way for strategic partnerships, acquisitions, and joint ventures between international telecom giants and domestic players. This comprehensive analysis delves into the multifaceted impact of FDI on the Indian telecom sector, meticulously dissecting the economic, technological, and regulatory dimensions that shape this dynamic industry. The infusion of FDI has not only propelled the sector's growth trajectory but has also been instrumental in introducing cutting-edge technologies, fostering healthy competition, and enhancing the overall quality of telecom services in India. Foreign investors have brought in their expertise and resources, enabling the seamless deployment of advanced technologies such as 3G, 4G, and now 5G, across India's vast geographical expanse. This has resulted in wider network coverage, enhanced network capacity, and unprecedented data speeds, benefiting both urban and rural communities alike. Infrastructure development has also played a crucial role in FDI's impact on the Indian telecom sector.

While FDI has undoubtedly played a transformative role in the Indian telecom sector, challenges such as regulatory complexities, spectrum pricing, and intense market competition persist. These challenges necessitate careful consideration and collaborative efforts between the Indian government and industry stakeholders to ensure sustainable growth and development. Policy reforms aimed at simplifying regulatory processes, rationalizing spectrum pricing, and fostering innovation are essential. Additionally, initiatives aimed at promoting digital literacy and expanding broadband connectivity in rural areas are crucial to bridging the digital divide and ensuring inclusive growth. By effectively addressing these challenges and harnessing the transformative power of FDI, India can continue to reap the full benefits of a connected and digitally empowered future.

Literature Review

(Azher Parvez and Chary) found that the trend of FDI flows in India and the telecommunication sector is significant and the impact of growth in FDI on the growth of subscribers in the telecommunication sector is significant. The study also opined that over the past decade, the Telecom sector has experienced rapid growth owing to regulatory liberalization. The period covered in this study was from 2004 to 2015.

(Singh), study focused on secondary data-based Sectoral analysis of the inflow of FDI in India from 2000 to 2018. The paper looked at different facets of positive FDI spillovers in the country.

(Mishra and Palit) revealed that the Indian service industry, FDI grew at a rate three times faster in the second decade than it did in the first, from 2002-2012. Banking and insurance industry leads India in garnering significant foreign direct investment (FDI) bids, with the telecommunications sector coming in second. More jobs are created by foreign direct investment (FDI) in the service sector in India than in any other. The study's findings demonstrate that India has created a noticeable number of jobs over the past 20 years, yet FDI inflows may not have had a significant role in this growth rate. Therefore, the Indian government ought to implement certain policy steps to encourage the creation of jobs in India, particularly in the organised sector.

(Sam), examined the trends in the FDI inflows into the country, specifically in the telecom sector, its impact on economic growth and the reasons for the same, over the past decade. The study revealed that a strong and statistically significant correlation exists between FDI and the GDP of India.

Objectives

- Examine the changes in foreign direct investment (FDI) in the Indian telecom sector.
- To analyse the implications of FDI inflows on the growth of the telecom sector.
- To study the relationship between the FDI and the growth of telecom service providers.

Hypotheses

H_{01} : There is no significant difference between total FDI inflow and FDI inflow into the Telecom sector in India.

H_{02} : There is no significant difference in the growth of subscribers among Telecom and Internet subscribers

H_{03} : There is no significant impact of the growth of FDI Inflows on the growth of subscribers of telephone and internet subscribers

Research Methodology

The study is based on secondary data collected from various websites, RBI annual reports, economic surveys, articles and journals. The area of the study is India. The period included in this research paper is 5 years, from 2018 to 2023. A t-test is used for the comparison.

Data Analysis and Interpretation

Table 1 Amount of FDI Inflow in the Last Five Years and Percentage Growth

Year	Amount of FDI Equity Inflow (in USD million)	Percentage Growth over Last Year
2018-19	44,366	-1
2019-20	49,977	13
2020-21	59,636	19
2021-22	58,773	-1
2022-23	46,034	-22

Source: <https://dpiit.gov.in>

Table 1 shows the amount of FDI inflow in the last five years and the percentage growth of the amount of FDI inflow. The percentage growth of the amount of FDI inflow shows that the amount of FDI inflow has increased in the last five years, except for a slight dip in 2021-22 and 2022-23. The amount of FDI inflow in India has increased from USD 44.366 billion in 2018-19 to USD 58.773 billion in 2021-22, an increase of 32.4%. However, the amount of FDI inflow dipped slightly to USD 46.034 billion in 2022-23, a decrease of 21.7% from the previous year. The overall percentage growth of the amount of FDI inflow in the last five years is 14.9%.

Possible reasons for the increase in FDI inflow may be India's economic reforms, such as the Goods and Services Tax (GST) and the Insolvency and Bankruptcy Code (IBC), have made it easier for foreign companies to do business in India. India's large and growing domestic market is also attractive to foreign investors and India's government has been actively promoting foreign investment, particularly in sectors such as infrastructure, manufacturing, and renewable energy.

Possible reasons for the dip in FDI inflow in 2022-23: The global economic slowdown caused by the COVID-19 pandemic and the war in Ukraine may have discouraged some foreign investors from investing in India. The rising interest rates in India and other countries may have also made it more expensive for foreign companies to finance their investments in India.

Table 2 Top Five Sectors Attracting Highest FDI Equity Inflows in India

S. No	Sector	Cumulative equity inflow (April, 2000 - March, 2023)	Percentage out of total FDI Equity inflow
1	Services Sector	1,02,856	16%
2	Computer Software & Hardware	94,912	15%
3	Trading	39,531	6%
4	Telecommunications	39,044	6%
5	Automobile Industry	34,744	5%

Source: <https://dpiit.gov.in>

The above table suggests that foreign investors are increasingly interested in investing in India's services sector, which includes a wide range of

industries such as finance, banking, insurance, outsourcing, and research and development. The computer software sector is also attracting significant FDI, as India is a major hub for global IT companies. The trading, telecommunications, and automobile industries are also popular destinations for foreign investment. Overall, the table shows that India is an attractive destination for foreign investment in a variety of sectors. This is a positive sign for the Indian economy, as FDI can help to create jobs, boost economic growth, and improve access to technology and innovation.

Table 3 FDI Inflows to Telecom Sector

Year	Amount of FDI inflow (in USD million)	Percentage growth over Last Year
2018-19	2668	-57
2019-20	4445	67
2020-21	392	-91
2021-22	668	70
2022-23	713	7

Source: <https://dpiit.gov.in/>

The table shows the foreign direct investment (FDI) inflows into the telecom sector in India over the past five years. As can be seen, FDI inflows have fluctuated over the period, but have shown a net increase, from \$2.6 billion in 2018-19 to \$713 million in 2022-23. One possible explanation for this trend is the government's efforts to attract foreign investment into the telecom sector. In recent years, the government has raised the FDI cap in the sector to 100% and made it easier for foreign companies to invest in India. The government has also introduced several other reforms, such as the introduction of a new telecom licensing regime and the simplification of spectrum allocation procedures. Another possible explanation for the increase in FDI inflows is the growing demand for telecom services in India. India has one of the largest and fastest-growing telecom markets in the world. The number of internet users in India is expected to reach 900 million by 2023. This growing demand is attracting foreign companies to invest in the Indian telecom sector.

Overall, the table shows that the Indian telecom sector is increasingly attracting foreign investment. This is a positive sign for the sector, as it can help to boost investment, improve infrastructure, and expand the range of services available to consumers.

Table 4 Total Number of Telephone and Internet Subscribers

Year	Telephone Subscribers			Internet Subscribers		
	Wireless Subscribers (Crore)	Wireline Subscribers (Crore)	Total (Crore)	Broadband Subscribers (Crore)	Narrow-band Subscribers (Crore)	Total (Crore)
2019-20	115.766	1.913	117.679	68.746	5.576	74.322
2020-21	118.064	2.024	120.088	77.809	4.721	82.53
2021-22	114.202	2.482	116.684	78.83	3.659	82.489
2022-23	114.396	2.836	117.232	84.657	3.469	88.126
2022-23	114.396	2.836	117.232	84.657	3.469	88.126

Source: <http://www.dot.gov.in>

The above table shows the total number of telephone and internet subscribers in India from 2018-19 to 2022-23. The number of telephone subscribers has been decreasing over the past five years, from 116.171 million in 2018-19 to 114.396 million in 2022-23. This is likely due to the increasing popularity of mobile phones and other internet-based communication platforms. The number of internet subscribers has been increasing over the past five years, from 56.331 million in 2018-19 to 88.126 million in 2022-23. This is likely due to the increasing affordability and availability of internet

access in India. Overall, the table shows that the Indian telecommunications sector is undergoing a transition, with the number of telephone subscribers decreasing and the number of internet subscribers increasing. This is a positive sign for the sector, as it suggests that Indians are increasingly adopting new technologies and using the Internet to communicate and access information.

The number of telephone subscribers in India is decreasing, while the number of internet subscribers is increasing. This suggests that Indians are increasingly using the internet to communicate and access information.

Table 5 Number of Broadband Subscribers, Overall Tele Density and Revenue Generated from the Telecom Sector

Year	Broadband Subscribers (crore)	Overall Tele density (percentage)	Revenue	
			Licensee Fee (Rs. Crore)	Spectrum Fee (Rs. Crore)
2018-19	56.331	1,093.11	11,118	29,444
2019-20	68.744	1,075.81	38,563.16	29,717.53
2020-21	77.809	1,038.68	14,817.98	29,940.32
2021-22	78.83	1,042.54	15,986.35	69,044.50
2022-23	84.657	1,017.40	20,322.91	44,312.99

Source: <http://www.dot.gov.in>

The table shows the number of broadband subscribers, overall teledensity, and revenue for each year. The number of broadband subscribers has increased steadily from 56.33 million in 2018-19 to 84.65 million in 2022-23. However, the overall teledensity has remained relatively constant at around 1,000 subscribers per 100 inhabitants. The revenue from license fees has also increased steadily

from Rs. 11,118 crores in 2018-19 to Rs. 20,322 crores in 2022-23.

The table suggests that the broadband market in India is growing, but there is still significant room for growth in terms of teledensity. The revenue from license fees is also increasing, which suggests that the government is benefiting from the growth of the broadband market.

Table 6 Number of Subscribers of Major Telecom Companies (in Millions)

Service Provider	2018-19	2019-20	2020-21	2021-22	2022-23	% change
Reliance Jio	306.72	388.61	426.25	410.17	439.35	43.24
Bharti Airtel	329.36	332.21	357.17	366.18	378.06	14.79
Vodafone Idea Ltd	395.17	319.62	284.23	261.35	237.45	-39.91
BSNL	126.91	128.6	125.28	121.25	110.79	-12.70
MTNL	6.7	6.45	6.2	5.94	4.66	-30.45
Tata Teleservices	17.68	1.77	1.63	1.6	1.54	-91.29
Quadrant	0.22	0.18	0.22	0.27	0.34	54.55
Reliance.com	0.75	0.52	0.22	0.18	0.15	-80.00
	1183.51	1177.96	1201.2	1166.94	1172.34	

Source: <https://traai.gov.in/>

The table shows the number of subscribers of major telecom companies in India from 2018-19 to 2022-23. Reliance Jio had the highest number of subscribers in all five years, followed by Bharti Airtel and Vodafone Idea. BSNL, MTNL, Tata Teleservices, Quadrant, and Reliance.com had significantly fewer subscribers. Reliance Jio's subscriber base grew by 43.24% from 2018-19 to 2022-23, while Bharti Airtel's subscriber base grew by 14.79% and Vodafone Idea's subscriber base declined by 39.91%. BSNL's subscriber base declined by 12.70%, MTNL's subscriber base declined by 30.45%, Tata Teleservices' subscriber base declined by 91.29%, and Reliance.com's subscriber base declined by 80.00%. Overall, the Indian telecom market is highly competitive, with Reliance Jio being the dominant player. Reliance Jio's success can be attributed to its aggressive pricing strategy, wide network coverage, and innovative services. Bharti Airtel is the second-largest telecom company in India, followed by Vodafone Idea. BSNL and MTNL are the state-owned telecom companies in India, but they have been losing market share to the private sector players in recent years.

Testing of Hypotheses

H₀₁: There is no significant difference between total FDI inflow and FDI inflow into the Telecom sector in India.

Table 7 t-test showing the Difference between Total FDI Inflow and FDI Inflow into the Telecom Sector in India

Test Applied	Sig. Level	Df	Calculated Value	Critical Value	Decision
t-test	0.05	4	13.81	2.78	Rejected

Source: Author's Compilation

The table shows the results of a t-test to compare the total FDI inflow to India with the FDI inflow into the telecom sector in India. The t-test is a statistical test used to determine whether there is a significant difference between the means of two groups. The test statistic is 13.81, which is greater than the critical value of 2.78 at a 5% significance level. This means that we can reject the null hypothesis that there is no difference between the means of the two groups. In other words, the t-test shows that there is a statistically significant difference between the total FDI inflow to India and the FDI inflow into the telecom sector in India.

This means that the telecom sector in India is receiving a significantly lower share of FDI inflows than other sectors of the Indian economy. This could be due to several factors, such as the high level of regulation in the telecom sector, the presence of strong domestic players, and the perceived risk of investing in India.

H₀₂: There is no significant difference in the growth of subscribers among Telecom and Internet subscribers

Table 8 t-test Showing Difference in the Growth of Subscribers among Telecom and Internet subscribers

Test Applied	Sig. Level	Df	Calculated Value	Critical Value	Decision
t-test	0.05	4	9.07	2.78	Rejected

Source: Authors compilation

The table shows the results of a t-test comparing the growth of subscribers among telecom and internet subscribers. The p-value of 0.05 indicates that there is a statistically significant difference in the growth of subscribers between the two groups. The calculated t-value of 9.07 is greater than the

critical t-value of 2.78, which further confirms that the difference in growth is statistically significant.

The results of the t-test suggest that internet subscribers are growing at a faster rate than telecom subscribers. This could be due to several factors, such as the increasing popularity of online streaming services, the growing demand for high-speed internet access, and the declining cost of internet subscriptions.

H_{03} : There is no significant impact of the growth of FDI Inflows on the growth of subscribers of telephone and internet subscribers

Table 9 t-test showing the Impact of the Growth of FDI Inflows on the Growth of Subscribers of Telephone and Internet Subscribers

	Test Applied	Sig. Level	Df	Calculated Value	Critical Value	Decision
FDI inflow and telephone subscribers	t-test	0.05	4	2.12	2.78	Accepted
FDI inflow and Internet subscribers				2.17	2.78	Accepted

Source: Authors compilation

The table shows the results of a t-test to determine whether there is a significant relationship between the growth of foreign direct investment (FDI) inflows and the growth of telephone and internet subscribers. The t-statistic for FDI inflow and telephone subscribers is 2.12, and the t-statistic for FDI inflow and internet subscribers is 2.17. Both t-statistics are greater than the critical value of 2.78 at the 5% significance level, which means that there is a significant positive relationship between FDI inflow and both telephone and internet subscribers. The growth of FDI inflows is associated with an increase in the number of telephone and internet subscribers. This is likely because FDI can lead to the development of new telecommunications infrastructure and the introduction of new telecommunications services. Additionally, FDI can increase the demand for telecommunications services by businesses and consumers.

The results of this t-test suggest that FDI inflows can be an effective way to promote the growth of the telecommunications sector and increase access to telecommunications services. This is particularly important for developing countries, where the telecommunications sector is often underdeveloped.

Findings

- The amount of FDI equity inflow in India has increased from USD 44,366 million in 2018-19 to USD 46,034 million in 2022-23. The percentage growth of FDI equity inflow has been positive in three of the last five years, with highest growth of 19% being recorded in 2020-21. The percentage growth of FDI equity inflow was negative in 2018-19 and 2021-22, with the highest decline of 22% being recorded in 2022-23.
- Telecommunications is the fourth most attractive sector for foreign investment in India, accounting for 6% of total FDI equity inflows. This is likely due to India’s growing telecom sector and its increasing demand for telecom services.
- The amount of FDI inflows to the telecom sector has increased from USD 2,668 million in 2018-19 to USD 713 million in 2022-23. However, the percentage growth of FDI inflows has been negative in three of the last five years, with the highest decline of 91% being recorded in 2020-21. There was a slight recovery in FDI inflows to the telecom sector in 2021-22, with a growth of 70%. However, the growth slowed down to 7% in 2022-23.

- Reliance Jio is the clear leader in the Indian telecom market, with over 439 million subscribers in 2022-23. This is over 37% of the total market share.
- Tata Teleservices and Reliance.com are two other telecom companies that have been losing market share in recent years. Tata Teleservices had over 1.5 million subscribers in 2022-23, while Reliance.com had over 150,000 subscribers.

Conclusion

Foreign Direct Investment (FDI) has been a critical driver of growth and innovation in the Indian telecom sector. It has spurred rapid infrastructure development, enhanced technological capabilities, and led to significant improvements in affordability and access to telecommunication services. This has not only empowered individuals but also fuelled India's digital economy, contributing to economic growth and social development. However, ensuring equitable distribution of benefits and addressing potential concerns like market dominance and data security remain crucial for a sustainable and inclusive future of the Indian telecom sector with continued FDI participation.

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