Impact of FDI on the Growth of Telecommunication Sector in Pakistan: Dictatorship vs Democracy

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Abstract

Foreign direct investment is an essential element for economic development growth in all countries, especially developing countries like Pakistan. The last two decades have been crucial for all developing countries in the context of FDI inflow. This study examines the role of FDI in Pakistan's telecommunication sector growth in the dictatorship regime from 2001-02 to 2007-08 and the regime of democracy from 2008-09 to 2018-19. There is a comparison of the role of FDI in Pakistan's telecommunication sector in the regime of dictatorship and the regime of democracy. The telecommunication sector growth is measured by five variables: revenue, subscribers, teledensity, private investment, and the contribution to the national exchequer. Descriptive statistics, correlations, and regression analysis have been used to analyse the data. The results show that FDI has a very significant positive impact on the growth of Pakistan's telecommunication sector in the dictatorship regime; however, in the regime of democracy, FDI impact is not significant. This study will be helpful for the Pakistani government as it attempts to design proper policies and revise similar policies for attracting more FDI in Pakistan's telecommunication sector that were implemented in the dictatorship regime.

Keywords

FDI in Pakistan, Pakistan Telecom Sector, Telecom Sector in Dictator Regime, Telecom Sector Dictator Regime, FDI in Dictatorship and FDI in Democratic Regime

1. Introduction

Foreign Direct Investment (FDI) plays an essential role in social and economic

development in the host country. Economic theories and empirical evidence suggest that FDI positively impacts the host country (IMF, 2010). FDI plays an essential role in the growth of Pakistan's economy especially in the telecommunications sector established in Pakistan with the help of FDI. Most telecom companies operating in Pakistan are foreign companies. The telecom sector was established in the dictatorship regime in 2001-02 to 2007-08. In the regime of dictatorship, the government of Pakistan formed outstanding policies to attract foreign investors and successfully attracted foreign investors in Pakistan's telecom sector. These investments help the growth of Pakistan's overall GDP, create job opportunities in Pakistan's telecom sector, and transfer the latest technology to Pakistan. The trend of using mobile phones has become popular in Pakistan. The import of branded phones increased in Pakistan. Pakistan's telecom sector has started paying vast amounts to the national exchequer. These overall developments help the government of Pakistan to generate revenue and facilitate the Pakistani society. The regime of democracy is based on three tenures: the first tenure was the Pakistan People's Party from 2008 to 2013, the second was the Pakistan Muslim League (N) from 2013 to 2018, and the third was PTI from 2018 to 2022. The democratic regime failed to attract the new FDI and sustain the FDI in the democratic regime. The subscribers of the telecom sector increased every year and the contribution to the national exchequer also increased every year. For the comparison of a democratic regime and a dictatorship regime, the following hypothesis was formed.

2. Research Objective

To examine the impact of FDI in the telecom sector on Pakistan's telecommunication sector growth, a comparison of the regime of dictatorship and the regime of democracy Measuring the growth of Pakistan's telecommunication sector, five variables will be used. There are five Sub-objectives to measure the relationship between FDI and the growth of Pakistan's telecommunication sector as follows:

   a) To examine the impact of FDI in the telecom sector on teledensity.
   b) To examine the impact of FDI in the telecom sector on exchequers.
   c) To examine the impact of FDI in the telecom sector on subscribers.
   d) To examine the impact of FDI in the telecom sector on revenues.
   e) To examine the impact of FDI in the telecom sector on private investment in Pakistan's telecom sector.

3. Literature Review

Foreign Direct Investment FDI is the process whereby the resident of one country (Source country) acquires the ownership of assets to control the production, distribution, and other activities of a firm in another country (host country) (Moosa, 2002). Foreign Direct Investment is essential regarding increment of productivity and efficiency concerning both goods and services (Dhingra et al., 2017). Furthermore, (Contractor et al., 2020) findings imply that host country policies not only attract FDI inward but also multinational company (MNEs) strategists in choosing

which nations to invest in. As such, favourable host country policies help MNEs to invest in those countries. (Zekos, 2012) explored FDI as the capital and technology or intangible advantage in the act of establishing or acquiring a foreign subsidiary over which the investing company has extensive management control. There exist multiple modes by which individuals and companies invest in foreign countries, which are joint ventures, mergers and acquisitions, and the establishment of new branches that have distinctive features. On the other hand, (Umeora, 2013) study found that foreign direct investment harmed the community in developing countries, as it only helps the educated and a limited class of people. Another study (Arawomo & Apanisile, 2018) investigated the key determinants of FDI in the Nigerian telecommunication sector. The study found key determinants of FDI in Nigeria's telecom sector are market size, trade openness, government expenditure and inflation. Privatisation of the telecom industry in Pakistan was first affected in the 1990s, and by the end of the year 2000, the privatisation of about US $1.0 billion had been made from the sector (Saeed & Khan, 2017). Similarly, (Ali, 2014) reveals that during the 1990s, FDI increased in many developing countries like Pakistan as the nation adopted liberalised trade policies and investment regimes along with fiscal incentives, tax concessions, and tariff reduction to attract foreign investors to invest in the business and contribute to the economic development of the country significantly. The telecommunication sector remained the top earner of FDI in 2006 in the regime of dictatorship in Pakistan (Inam, 2007).

3.1. Research Gap

A comparison between the dictatorship regime and the democratic regime will also help to understand the Pakistani people and recent government authorities because the Pakistani people believe in democracy. The current government setup is also democratic, and this study will be eye-opening for current official authorities.

3.2. Research Hypothesis

H1: There is a positive relationship between FDI in the telecom sector and the growth of Pakistan's telecommunications sector in the dictatorship regime.

H1: There is a positive relationship between FDI in the telecom sector and the growth of Pakistan's telecommunication sector in the regime of democracy.

3.3. Research Methodology

This study used descriptive statistics and regression analysis to analyse the relationship between FDI and the growth of Pakistan's telecommunication sector. The quantitative method is deployed in this study. Variables, Pakistan telecommunication teledensity, Pakistan telecommunication contribution to the national exchequer, Pakistan telecommunication subscribers, Pakistan telecommunication revenue, and subscribers represent the growth of Pakistan's telecommunication

sector. These are the official indicators of Pakistan's telecommunication sector and are available on the PTA official website and annual reports. Data consist of 6 variables, which are defined as the following:

- **Foreign Direct investment (FDI) in the telecommunication sector**

Foreign direct investment (FDI) in the telecommunication sector is the net FDI in telecoms, which is the difference between FDI inflow and outflow and is measured in millions of dollars in the US.

- **Pakistan telecommunications Tele density (TD)**

Telephone density, or teledensity, is the number of telephone connections for every hundred individuals living within an area. It is measured in percentage.

- **Pakistan Telecommunications Exchequer (EQ)**

Pakistan's telecommunications sector contributes to the national exchequer through regulatory fees, initial and annual license fees, taxes, and activation taxes, which are measured in Billions of Pakistani rupees.

- **Pakistan telecommunication Subscribers (SC)**

The total number of subscribers to different segments of the telecommunication sector: fixed-line subscribers, 3G and 4G subscribers, Wireless loop whole, local loop, broadband subscribers, cellular subscribers, and mobile broadband subscribers. In this study, all telecommunications service subscribers are used as telecom subscribers.

Pakistan Telecommunication Revenue (REV)

The revenue of the Pakistani telecommunication sector comes from the segments cellular, broadband, 3G, 4G, fixed-line, and local loop. It is measured in Millions of Pakistani rupees.

- **Pakistan Telecommunications private investment (PI)**

The overall investment is the local investment, and foreign investment injected into the Pakistani telecommunication sector.

4. Data Collection

Secondary data sources are useful in obtaining helpful information about the theoretical background of the research that supports a study. The main advantage is that secondary data are easily accessible because they are often available on the internet and in public libraries. Therefore, researchers save time and money using secondary data (Saunders et al., 2003). This objective is significant and unique in analysing the growth of Pakistan's telecom sector; before FDI arrived in Pakistan's telecom sector, the Pakistan telecom sector was based on only one company, and after FDI in Pakistan telecom sector, it has become the telecom industry. After the boom of FDI, it becomes an industry. It is imperative to analyse FDI's impact on the growth of Pakistan's telecom sector. This objective will help the researcher understand the importance of FDI, and the case study of FDI in telecom sector growth will also help other sectors improve FDI concerning Pakistan. The impact of FDI on the growth of Pakistan's telecom sector analysis will be divided into two parts: the regime of dictatorship from 2001-02 to 2007-08. The second part is the

democratic regime from 2008-09 to 2018-19 when three political parties came into power in Pakistan. These two parts will help the researcher understand the policies and seriousness towards FDI in Pakistan's telecom sector, from dictatorship to democracy. To measure the relationship between the growth of the telecommunication sector and FDI in the telecommunication sector, yearly data from 2001-2002 to 2018-2019 has been collected. The data is collected from the PTA (Pakistan Telecommunication Authority) Annual reports (2001-2019), and data is verified from the Pakistani Economic Survey 2001 to 2019.

5. Methodological Frameworks

We are analysing the role of FDI in Pakistan's telecommunication sector growth in the regime of dictatorship and the regime of democracy.

$$Teledensity\,(2002\text{-}2008) = \alpha + \beta\,(FDI\;Telecom)\,(2002\text{-}2008) + \epsilon \qquad (1)$$

And

$$Teledensity\,(2009\text{-}2019) = \alpha + \beta\,(FDI\;Telecom)\,(2009\text{-}2019) + \epsilon \qquad (2)$$

Equations (1) and (2) shows the impact of FDI on Pakistan's telecommunication teledensity in the regime of dictatorship and the regime of democracy.

$$Exchequer\,(2002\text{-}2008) = \alpha + \beta\,(FDI\;Telecom)\,(2002\text{-}2008) + \epsilon \qquad (3)$$

And

$$Exchequer\,(2009\text{-}2019) = \alpha + \beta\,(FDI\;Telecom)\,(2009\text{-}2019) + \epsilon \qquad (4)$$

Equations (3) and (4) show the impact of FDI on Pakistan's telecommunication contribution to the national exchequer in the regime of dictatorship and in the regime of democracy.

$$Subscriber\,(2002\text{-}2008) = \alpha + \beta\,(FDI\;Telecom)\,(2002\text{-}2008) + \epsilon \qquad (5)$$

And

$$Subscribers\,(2009\text{-}2019) = \alpha + (FDI\;Telecom)\,(2009\text{-}2019) + \epsilon \qquad (6)$$

Equations (5) and (6) show the impact of FDI on Pakistan telecommunication's total number of subscribers in the regime of dictatorship and the regime of democracy.

$$Revenue\,(2002\text{-}2008) = \alpha + \beta\,(FDI\;Telecom)\,(2002\text{-}2008) + \epsilon \qquad (7)$$

And

$$Revenue\,(2009\text{-}2019) = \alpha + \beta\,(FDI\;Telecom)\,(2009\text{-}2019) + \epsilon \qquad (8)$$

Equations (7) and (8) show the impact of FDI on Pakistan's telecommunication revenue in the regime of dictatorship and in the regime of democracy.

$$Private\;investment\,(2002\text{-}2008) = \alpha + \beta\,(FDI\;Telecom)\,(2002\text{-}2008) + \epsilon \qquad (9)$$

And

$$Private\;investment\,(2009\text{-}2019) = \alpha + \beta\,(FDI\;Telecom)\,(2009\text{-}2019) + \epsilon \qquad (10)$$

Equations (9) and (10) show the impact of FDI on Pakistan's telecommunication private investment in the regime of dictatorship and the regime of democracy.

Table 1. Descriptive statistics.

Variable	2001-02 to 2007-08					2008-09 to 2018-19				
	N	Min	Max	Mean	S.D.	N	Min	Max	Mean	S.D.
FDI Telecom	7	6	1905.1	841.271	852.4532	11	−404.1	815.0	106.927	353.8986
TD	7	3.7	58.8	22.301	21.983	11	20.0	79.6	66.940	16.3688
PI	7	0	3974.9	1592.929	1513.215	11	237.40	1815.7	876.543	484.4777
REV	7	95,094	279,963	167817.3	70544.72	11	333,809	551,916	434230.3	63490.48
SUB	7	0.1	9.24	3.2268	3.58916	11	10.05	30.1	17.171	6.7906
EQ	7	10.05	111.63	62.07	37.65437	11	95.76	243.80	139.072	40.4893

Table 1 above shows the average, variation, and standard deviation for each variable included in the study. Six variables were included in the study, with seven observations each. The above table is divided into two parts. The first is the 2001-02 to 2007-08 FDI in the telecommunication sector and the variables of the growth of Pakistan's telecom sector. The second part is 2007-08 to 2018-19. FDI impact on telecom sector beginning level 2001-02 to 2007-08 peak level of the telecom sector. The average FDI from 2001-02 to 2007-08 was 841.271 million US dollars, while from 2007-08 to 2018-19 was 106.927 million US dollars. The average is meagre in the second part of the study, while the first part shows significant FDI inflow into the Pakistan telecommunications sector.

Table 2. Correlations for 2001-02 to 2007-08.

Variable	FDI Telecom	TD	PI	REV	SUB	EQ
FDI TS	1	-	-	-	-	-
TD	0.823*	1	-	-	-	-
PI	0.850*	0.915**	1	-	-	-
REV	0.866*	0.991**	0.921**	1	-	-
SUB	0.823*	0.999**	0.914**	0.994**	1	-
EQ	0.867*	0.931**	0.942**	0.964**	0.939**	1

*p-value is less than 5% level of significance, **p-value is less than 1% level of significance.

Table 2 shows the correlations between the variables from 2001-2002 to 2007-2008. The result shows that the relationship for SUB with TD and REV is 99.9% and 99.4%, respectively, which is considered a strong relationship. Furthermore, the relationship between TD, PI, REV, SUB, and EQ is above 80%. This is also considering a solid relationship between FDI and the growth of Pakistan's telecom sector variables.

Table 3 shows the correlations between the variables from 2008-09 to 2018-2019. The result shows that the correlation between REV and SUB is 0.898, and the correlation between REV and TD is 0.622, considered a moderate positive

relation. On the other hand, the correlation value between FDI Telecom and TD is −667, which shows a negative relation. Similarly, the correlation between FDI telecom and PI is 0.837, a positive, strong relationship. Furthermore, the FDI telecom sector and revenue of the Pakistan telecom sector have a negative and fragile relationship of −0.444, and the FDI in the telecom sector and subscribers of the Pakistan telecom sector have a negative relationship of −0.290 and a fragile relationship. Finally, the FDI in the telecom and Pakistan telecom sectors has a positive relationship but is weak at 0.17.

Table 3. Correlations for 2008-09 to 2018-19.

Variable	FDI Telecom	TD	PI	REV	SUB	EQ
FDI Telecom	1	-	-	-	-	-
TD	−0.667*	1	-	-	-	-
PI	0.837**	−0.468	1	-	-	-
REV	−0.444	0.662*	−0.278	1	-	-
SUB	−0.290	0.470	−0.333	0.898**	1	-
EQ	0.173	0.360	0.432	0.219	0.036	1

*p-value is less than 5% level of significance, **p-value is less than 1% level of significance.

The result of Table 3 shows that FDI Telecom has a positive, highly significant relation with other factors for the period of 2001-2002 to 2007-2008, and the result of Table 3 shows that FDI Telecom has a negative relation with other factors for the period of 2007-08 to 2018-19. In 2008, after the political instability, the assassination of the ex-prime minister of Pakistan, Benazir Bhutto. After the general election of Pakistan, Benazir Bhutto's husband came into power and became the president of Pakistan, which is considered the most corrupt person in Pakistan. The president of Pakistan, Asif Ali Zardari, came into power, and all the indicators started to decline, and the net FDI started declining. The net FDI in the telecom sector is calculated as (the net FDI = FDI inwards − FDI outwards); hence, most foreign companies started withdrawing their investments. The overall Pakistan net FDI went negative (inwards came significantly less, and outwards FDI was massive).

Table 4. Regression analysis considering TD as a dependent variable.

Variable	2001-02 to-2007-08			2008-09 to 2018-19		
	Estimate	S.E.	P	Estimate	S.E.	P
Intercept	4.454	7.563	0.582	70.240	4.065	0.000
FDI telecom	0.021	0.007	0.023	−0.031	0.011	0.025
R²	0.677			0.445		
F	10.47**			7.220*		

Table 4 shows the regression analysis of the model by considering TD as the

dependent variable and by applying it to two datasets, one from 2001-02 to 2007-08 and the second from 2008-09 to 2018-19. Results from the first part of the dataset show that the model is significant and that the model has a 67.7% explained variation. The result shows a positive relation between FDI in telecom and teledensity, so we accept the hypothesis, which says there is a positive relationship between FDI in the telecom sector and the teledensity of Pakistan's telecommunications sector from 2001-02 to 2007-08.

On the other hand, results from the 2008-09 to 2018-19 dataset show that the model is significant, and the model has just 0.445% of the explained variation. So, statistically, there is a relationship between FDI and teledensity. The hypothesis is rejected, and the alternative hypothesis is accepted, which says there is a relationship between FDI in the telecom sector and the teledensity of Pakistan's telecommunication sector from 2008-09 to 2018-19.

Table 5. Regression analysis considering PI as a dependent variable.

Variable	2001-02 to 2007-08			2008-09 to 2018-19		
	Estimate	S.E.	P	Estimate	S.E.	P
Intercept	323.007	481.838	0.532	754.093	88.504	0.000
FDI telecom	1.51	0.418	0.015	1.145	0.250	0.001
R^2	0.723			0.700		
F	13**			20.977**		

Table 5 shows regression analysis of the model by considering PI as a dependent variable and by applying it to two datasets, one from 2001-02 to 2007-08 in the regime of dictatorship, and the second from 2008-09 to 2018-19 in the regime of democratic. The results from the first dataset show that the model is significant and has 72.3% explained variation. In addition, the results from the second dataset show that the model is highly significant, and the model has just 70% explained variation. The results show a positive relationship between FDI in the telecom sector and private investment.

Table 6. Regression analysis considering REV as a dependent variable.

Variable	2001-02 to 2007-08			2008-09 to 2018-19		
	Estimate	S.E.	P	Estimate	S.E.	P
Intercept	107521.83	21341.832	0.004	442739.297	18971.228	0.000
FDI telecom	71.672	18.502	0.012	−79.577	53.596	0.172
R^2	0.75			0.197		
F	15.007**			2.204		

Above, Table 6 shows the regression analysis of the model by considering telecom sector REV as a dependent variable and by applying it to two datasets, one from 2001-02 to 2007-08 in the regime of dictatorship, and the second from 2008-

09 to 2018-19 in the regime of democracy. The results from the first dataset show that the model is significant and has 75% explained variation. On the other hand, the results from the second dataset show that the model is insignificant as the model has just 19.7% explained variation. The results show that FDI had no impact on the revenue of Pakistan's telecommunication sector from 2008-09 to 2018-19. There is no statistically significant relationship between FDI and Pakistan's telecom sector revenue.

Table 7. Regression analysis considering SUB as a dependent variable.

Variable	2001-02 to 2007-08			2008-09 to 2018-19		
	Estimate	S.E.	P	Estimate	S.E.	P
Intercept	0.312	1.234	0.811	17.766	2.167	0.000
FDI telecom	0.003	0.001	0.023	−0.006	0.006	0.388
R^2	0.677			0.084		
F	10.491**			0.825		

Above, Table 7 shows the regression analysis of the model by considering the total number of telecom subscribers as a dependent variable and by applying it to two datasets, one from 2001-02 to 2007-08 in the regime of dictatorship, and the second from 2008-09 to 2018-19 in the regime of democracy. The results from the first dataset show that the model is significant and 67.7% explained variation. The result shows there is a positive impact of FDI on the number of subscribers in Pakistan. On the other hand, results from the second dataset show that the model is insignificant with just 8.4% explained variation. The results also highlight that statistically there is no relationship between FDI and the number of subscribers of Pakistan's telecom sector from 2008-09 to 2018-19.

Table 8. Regression analysis considering EQ as a dependent variable.

Variable	2001-02 to 2007-08			2008-09 to 2018-19		
	Estimate	S.E.	P	Estimate	S.E.	P
Intercept	29.852	11.355	0.047	136.959	13.296	0.000
FDI telecom	0.038	0.010	0.012	0.020	0.038	0.611
R^2	0.752			0.030		
F	15.135**			0.277		

Table 8 shows the regression analysis of the model by considering telecom's contribution to the exchequer as a dependent variable and by applying it to two datasets, one from 2001-02 to 2007-08 in the regime of dictatorship, and the second from 2008-09 to 2018-19 in the regime of democracy. The 2001-02 to 2007-08 dataset results show that the model is significant and has 75.2% explained variation. The results show there is a statistically positive relationship between FDI and the Pakistan telecom sector's contribution to the national exchequer. On the

other hand, results from the 2008-09 to 2018-19 dataset show that the model is insignificant, with just 0.3% explained variation. Thus, the result shows there is no statistically significant relationship between FDI and the Pakistan telecom sector's contribution to the national exchequer.

6. Conclusion

FDI in Pakistan's telecommunications sector played a vital role in the development of the Pakistani economy at the beginning of 1996. In Pakistan, ten significant companies are providing their telecom services to Pakistani society, and out of these ten, seven companies are foreign-owned. All seven companies bring large amounts of FDI into the Pakistan telecommunications sector and have established their businesses in Pakistan. This is one of the critical reasons FDI is essential for Pakistan's telecommunications sector. The first foreign company, Mobilink (Egyptian-based), flourished in the Pakistan telecommunications sector. Within three to four years, six more foreign companies had invested in Pakistan and started their operations there. FDI has always played an essential role in Pakistan's telecommunication sector. This is why a lot of studies have been conducted in the last two decades on the importance of FDI in Pakistan's telecommunication sector. (Rehman et al., 2011) argued that Pakistan is a very prominent country for FDI, and foreign countries such as the USA, UK, China, UAE, Malaysia, Norway, Egypt, and Saudi Arabia are investing in Pakistan.

Similarly, (Imtiaz et al., 2015) concluded that Pakistan was considered one of the significant and most promising countries for telecom growth between 2005 and 2008. Most of the studies focus on FDI and economic growth, exchange rate, FDI, and employment. However, the relationship between FDI and Pakistan's telecommunications sector growth was neglected entirely, which is why this study was conducted. The above results show that the dictatorship regime is very ideal for the growth of Pakistan's telecommunication sector with the help of FDI. Conversely, in the regime of democracy, the FDI has not significantly impacted the growth of Pakistan's telecommunication sector. Thus, it is concluded that FDI positively impacted the growth of Pakistan's telecom sector during the dictatorship regime, and the sector has grown significantly.

Contribution to the Knowledge

This research has investigated the impact of FDI on the growth of Pakistan's telecommunications sector during both its dictatorship and democratic regimes. This study differentiates the policies of dictatorship regimes and democratic regimes. Which era successfully attracted the highest amount of FDI in Pakistan's telecommunication sector?

Project Benefits for GOP and Policies Makers

This research shows the role of FDI and the importance of FDI in Pakistan's telecommunication sector. The telecom sector's contribution to the national exchequer

has undoubtedly enhanced Pakistan's economy. The exploration of FDI on a monthly and yearly basis will help the GOP to understand the trends of FDI in Pakistan's telecom sector, what the policies of specific years were, and what role good governance and law and order played in optimising FDI in Pakistan.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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