

1 Telecommunications Role in Economic Growth with Respect to 2 Pakistan

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7 **Abstract**

8 This study investigates the relationship between economic growth and development in the
9 telecom sector through foreign direct Investment (FDI) and making good infrastructure for
10 land line and cell phones. We check the impact of the telecom sector, independent variable, on
11 the economic growth, dependent variable, through using questionnaire based of five options
12 likert scale then we used the simple regression model as statistical instrument to check the
13 impact. In this study we shows that the growth in the telecom sector is not consider as a
14 whole growth in the economy.

16 **Index terms**— Telecom, Economic growth, developing countries.

17 **1 Introduction**

18 he economists always consider an important factor for development in infrastructure of telecom in any county to
19 measure growth in that country, therefore for economists, it is a positive sign for the economic growth the
20 investment, which is in the infrastructure that ultimately impacted on the social over head capital, which
21 consider as the education expenditure, health services, and public infrastructure e.g. roads, porches and the
22 telecommunication. Studies measure the growth dividend of investment in telecom sector in developed countries
23 but few have asses the impact of telecom role in developing countries (Hardy, 1980; ??orton, 1992; ??oeller &
24 waver, 2001).

25 It is a well known fact that the transportation cost has heavily influent and high the price of products the
26 economy along with the organization always touch, in this regard and keep on trying to reduce the cost of the
27 product. In OECD Organizational Economic Cooperative Developing) countries the spread of telecom network
28 alone consider the responsible for one 3 rd of out put growth between 1970 and 1990 (Hardy, 1980; ??orton,
29 1992; ??oeller & waver, 2001).

30 It is also consider with this expansion in the telecom network helpful in expending of the market boundaries
31 and information flows (Hardy, 1980; ??orton, 1992; ??oeller & waver, 2001).

32 To understand this phenomena that expansion in the market boundaries and information growth to much
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36 Hanniamalik@live.com before and the after 1860. In 1860 before the innovation of telegraph, markets were
37 considered as close markets and no kind of information can be pulled out from such kind of markets and
38 now there is an expansion in the market boundaries but after the expansion of the telegraphy instruments
39 the market boundaries have gradually increased and the information transmitted from one market to another
40 market (telecommunication & Empire Era 1860-1930). So it means that telecom networks are much helpful in
41 producing economic growth, in decreasing of the transaction cost impacting on the GDP for economy trading on
42 up-word with wide range out put significantly ??Roellar & Verman, 2001). It is to remember that the level of
43 telecom infrastructure working in the OECD countries was very low on the other hand it was at universal level

4 A) PROBLEM STATEMENT:

44 in US and Canada in year of 1970. Where as in the same year the other European countries like France Italy
45 and Portugal had limited telecom infrastructure ??Roeller & Verman, 2001).

46 It is to note that expansion in the modern telecommunication infrastructure from 1970 to 1990 the economic
47 growth has the up-word trend rapidly as compare to the investment in telecom networks field. (Leonard
48 ??averman & Meloria Meschi, 2007). The level of penetration of telecom networks is increasingly on growth
49 dependent which also on the level of penetration initially and nearly universal services; a phone in every house
50 holds and firm as for the government stander the policy to establish the universal services has not only for
51 enhancing the equity for the government but also has the implied appreciation in growth enhancing parameter
52 of the telecommunication infrastructure expansion. (Roeller & Waverman, 2001). According to international
53 organization namely International Telecommunication Union (ITU), 1995, only 214 are the member of this
54 organization where as the rest of world still lack in the development in the telecommunication sector considering
55 modern, efficient, economic system, (Roeller & Waverman, 2001).

56 According to Roeller and Waverman the telecom sector only comprised on fixed line systems rather then no
57 knowing about mobile phones as much in era of 1970 to 1990. Whereas, today there is much development in
58 the telecom sector, the mobile phones have given much weighted especially that members ITU in numbering 102
59 where lowering the penetration phone level in 1995, now there is also an increase in the mobile phone sector as
60 compared to land line phones infrastructure. In this regard we can quote the example of Morocco where the
61 telecom penetration rate was four fixed lines per 100 people and zero in mobile per 100 people in 1995 where as
62 in 2003, 8 years later, mobile penetration was 24 per 100 people while the fixed line penetration remained almost
63 the same. (Leonard ??averman & Meloria Meschi, 2007).

64 2 II.

65 3 Reviewing of Literature

66 Telecom infrastructure development got a great attention of researchers in resent years. ??hu (1996) attempted
67 to examine the causal relationship running from telecommunications investment to economic development only
68 using a pooled time series analysis based on 17 years data from 23 countries, and found telecommunications
69 investment countries, and found telecommunications investment countries, Madden and Savage (1998) analyzed
70 the relationship between telecommunications infrastructure investment and economic growth by taking a sample
71 of transitional economies in Central and Eastern Europe. The study showed that overall, there appears to be two
72 ways, or mutual causality between telecommunications investment and real economic growth at the aggregate
73 level. Boy laud and Nicoletti (2000) used factor analysis and panel data analysis to examine the effects of market
74 entry, liberalization and privatization on productivity, prices and quality of service in long-distance fixed-line and
75 in mobile telephony in 714 (Zahra, Azim, and Mahmood, 2002) several OECD countries. In another study, Li and
76 Xu (2001) examined the impact of privatization and competition on fixed-line subscriptions, labour and factor
77 productivity in the telecommunication industry worldwide. A study of Yilmaz, et al. ??2001) indicated that
78 the accumulation of telecommunication infrastructure improves the overall productive capacity at the regional
79 level by examining the impact of telecommunications infrastructure on economic output both at the aggregate
80 and sectoral levels in the United States. Wallsten (2002) used data on telecommunication industry worldwide
81 to analyse whether the sequence of reforms matters. ??ink, et al. (2002) used data on 86 developing countries
82 worldwide to analyse the impact of telecommunication policy reforms on industry performance. Ding and Haynes
83 (2004) empirically investigated the role of telecommunication infrastructure in long run regional economic growth
84 in China for a sample of 29 regions for a 17 years' period, from 1986-2002. With a panel dataset, they used
85 a dynamic fixed effects model for estimation, which allows testing the relationship between regional economic
86 growth with initial economic condition, fixed investment, population growth, as well as telecommunications
87 infrastructure. On the basis of the results, they showed that telecommunications is both statistically significant
88 and positively correlated to regional economic growth in real GDP per capita in China. The results were strong
89 even after controlling for investment, population growth, past levels of GDP per capita, and lagged growth.
90 They further indicated that the telecommunication investment is subject to diminishing returns, suggesting in
91 this manner that regions at an earlier stage of development are likely to gain the most from investing in telecom
92 infrastructure.

93 The result has been confirmed by more recent analysis of economic growth in OECD by Datta and Agarwal
94 (2004) which indicates that telecommunications infrastructure plays a positive and significant role in economic
95 growth using a similar (but not identical) data set as Roller and Waverman, which includes 22 OECD countries.
96 A dynamic panel data method is used for estimation, which corrects for omitted variables bias of single equation
97 cross-section regression. Again, country-specific fixed effects are included. Their results showed a significant
98 and positive correlation between telecommunications infrastructure and growth, after controlling for a number
99 of other factors.

100 4 a) Problem Statement:

101 The purpose of this study is exploring the relationship between the economic growths and financing through
102 telecom infrastructure.

103 **5 III.**

104 **6 Conceptual Frame Work**

105 IV.

106 **7 Formulation of Hypothesis**

107 The study is explaining to analyze the role of telecom on economic growth with expansion in this sector rapidly
108 deployment of the modern technology. To examine the role of telecoms in growth of the economy with respect
109 to Pakistan telecom sector for this making following Hypothesis.

110 **8 Telecom Sector**

111 Economic Growth

112 **9 FDI Land & Cellular Lines**

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115 Year H1 : There is a significant role of telecom setup in the development of economic growth. Against the
116 null hypothesis there is no role H2 : Foreign Direct Investment in telecom sector plays a positive role for the
117 development of the economic growth.

118 Against the hypothesis there is no positive role.

119 V.

120 **11 Methodology**

121 As this study is focusing to explore the role of telecom sector in gaining the economic growth with respect to
122 Pakistan economy which is considered as an under developed economy. Since it is a volatile market therefore to
123 calculate the role of telecom sector demands a deep analysis of the market and the development in telecom sector
124 is very crucial. To analyze, it is pre-requisite to examine before and after telecom sector role in increasing the
125 GDP and Revenue of the Pakistan economy growth. It is also an important question that all the FDI's go into
126 the telecom sector only or other sectors of the economy can be beneficial. To examine this role we have to check
127 the impact of the telecom sector on economic growth. It is obvious that regression instruments are most logical
128 and appropriate for this.

129 **12 a) Statistical Instruments:**

130 To check the impact of telecommunication on the economic growth we used the questionnaire comprising of
131 eleven questions. We distributed this questionnaire to the students of the different universities in Rawalpindi &
132 Islamabad. The sample size of our study is 113. We distributed and collected the questionnaire from our sample,
133 23 questionnaires were rejected on the basis of biasness and incompleteness.

134 We used simple regression model to check the relation between telecommunication sector and economic growth.
135 On analysis we found that telecom sector plays a significant role in enhancing the economic growth of Pakistan
136 therefore our first hypothesis proved.

137 Similarly to check the relationship between FDI and the economic growth we also used the simple Regression
138 model that shows the result that FDI has also a significant effect in the economic growth so our second hypothesis
139 also positively proved.

140 **13 Discussion**

141 This study explores the relationship between economic growth and telecom sector development. The result
142 shows that there is strong relationship between both variables. In other words we can say that our dependent
143 variable which is economic growth, has really become back bone of the economy in modern era for the developing
144 countries like Pakistan if the policies may in the line of foreign investor ??Sridhar,2000). It is very important for
145 the government to re-evaluate the policies to attract the foreign investor as well as for the environment suited
146 for direct foreign investment so that capital investment required for the telecom infrastructure can be built in
147 the country ??Sridhar, 2004). According to table there is significant effect of fixed line as well mobile phone
148 penetration on the economic growth on controlling on the factor production like capital and labor ??Sridhar,
149 2004).

150 The impact of the mobile and land line phone penetration in growth of developing countries are estimated
151 against there impacts which are not taken as per the country specific social environment then mobile phone
152 contribution has a positive effect on national output up to 16.2% for all developing countries ??Sridhar, 2004).
153 In the case of Pakistan the cell phone penetration from the period of 1998 -2001 is accounted for up to 53.83%
154 compounded annual growth rate ??Sridhar, 2004).

155 **14 a) Managerial Implications**

156 Research shows in the context of Pakistan how telecom investment can impact on penetration with the increase
157 the investment in telecom sector how and at what extant growth in the economy would be to such a level. It is
158 also cleared from other researchers finding that a 1% penetration increment in mobile phones the growth rises
159 up to 6.75% correspondingly.

160 **15 b) Limitations:**

161 This research is made on cross-sectional basis and this research can be taken on time series data which produce
162 better results to enable us to use a good measure to determine the supply of investment in telecom sector.

163 **16 VII.**

164 **17 Conclusion**

165 Our study shows that development in telecom sector can become back bone of the economic growth for the
166 modern economic universe through the development in this sector really be a leap -frogged in cellular industry
167 at the result of which most of the economies do have de regulated this sector significantly as the result of which
168 FDI is available for this sector especially in mobile. With the help of FDI the telecom infrastructure can be
169 restructured and be helpful in exulting the economic growth and the elevation of poverty in developing countries
170 like Pakistan by providing the information regarding pricing, job opportunity and the markets it is also a fact
171 that the growth in the telecom sector cannot be become as the substitute for the actual economic growth and
172 offsets the negative economic effects cause by the over overarching exogenous shocks but a good facilitator for
173 the economic growth for trickling down. ¹

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Model

		Unstandardized Coefficients			Standardized
		B	Std.	Error	Coefficients
				Beta	t
1	(Constant)	.502	.253		1.98
	FDI can enhance the GDP?	.344	.055	.399	6.24
	FDI can be used to enhance PCI.	.577	.069	.521	8.32
	FDI may consider good tool play telecommunication infrastructure.	.452	.062	.370	7.31
	Expansion in cellular and land line is a symbol of increase in GDP.	-.310	.063	-.360	-4.88
	Cellular and land line infrastructures expanded in result of increment of PCI.	-.090	.049	-.119	-1.83
	Cellular infrastructure expansion is the result of economic growth.	.211	.052	-.213	-4.01
	FDI can be considering an indicator of GDP growth in economy.	.184	.035	.220	5.23
	PCI of economy can be showed FDI level in the economy. PCI level of the economy is influenced by the expansion in cellular infrastructure.	-.475	.042	-.527	-11.1
		.280	.060	.247	4.63
			and landline		

[Note: a. Dependent Variable : Telecommunication sector is really back bone of the economic growth VI.]

Figure 1: Table Model

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17 CONCLUSION

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