



GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH
Volume 12 Issue 19 Version 1.0 Year 2012
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Telecommunications Role in Economic Growth with Respect to Pakistan

By Mohsin Shakeel, Raja Abdul Ghafoor Khan & Haniya Rehman Malik

M.Phil Scholar University of Lahore, Islamabad Pakistan

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

Keywords : *Telecom, Economic growth, developing countries.*

GJMBR-B Classification : *FOR Code: 150501 JEL Code : L96, L63 , O32 ,O33*



Strictly as per the compliance and regulations of:



Telecommunications Role in Economic Growth with Respect to Pakistan

Mohsin Shakeel ^α, Raja Abdul Ghafoor Khan ^σ & Haniya Rehman Malik ^ρ

Abstract - This study investigates the relationship between economic growth and development in the telecom sector through foreign direct Investment (FDI) and making good infrastructure for land line and cell phones. We checked the impact of the telecom sector (independent variable) on the economic growth (dependent variable) through questionnaire based on five points likert scale then we used the simple regression model as statistical instrument to check the impact. In this study we show that the growth in the telecom sector is not considered as a whole growth in the economy.

Keywords : *Telecom, Economic growth, developing countries.*

1. INTRODUCTION

The economists always consider an important factor for development in infrastructure of telecom in any country to measure growth in that country, therefore for economists, it is a positive sign for the economic growth the investment, which is in the infrastructure that ultimately impacted on the social overhead capital, which consider as the education expenditure, health services, and public infrastructure e.g. roads, porches and the telecommunication. Studies measure the growth dividend of investment in telecom sector in developed countries but few have assess the impact of telecom role in developing countries (Hardy, 1980; Norton, 1992; Roeller & waver, 2001).

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

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

To understand this phenomena that expansion in the market boundaries and information growth to much dependent on the telecom network in the Era

before and the after 1860. In 1860 before the innovation of telegraph, markets were considered as close markets and no kind of information can be pulled out from such kind of markets and now there is an expansion in the market boundaries but after the expansion of the telegraphy instruments the market boundaries have gradually increased and the information transmitted from one market to another market (telecommunication & Empire Era 1860-1930). So it means that telecom networks are much helpful in producing economic growth, in decreasing of the transaction cost impacting on the GDP for economy trading on up-word with wide range out put significantly (Roellar & Verman, 2001). It is to remember that the level of telecom infrastructure working in the OECD countries was very low on the other hand it was at universal level in US and Canada in year of 1970. Where as in the same year the other European countries like France Italy and Portugal had limited telecom infrastructure (Roeller & Verman, 2001).

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

According to Roeller and Waverman the telecom sector only comprised on fixed line systems rather than no knowing about mobile phones as much in era of 1970 to 1990. Whereas, today there is much development in the telecom sector, the mobile phones have given much weighted especially that members ITU in numbering 102 where lowering the penetration phone level in 1995, now there is also an increase in the mobile phone sector as compared to land line phones

Author : M.Phil Scholar University of Lahore, Islamabad Pakistan

E-mail : shakeel_mohsin@yahoo.com

Author : Lecturer Management University of Lahore, Islamabad, Pakistan. E-mail :ghafoor724@gmail.com

*Author : M.Phil Scholar University of Lahore, Islamabad, Pakistan
E-mail : Hanniamalik@live.com*

infrastructure. In this regard we can quote the example of Morocco where the telecom penetration rate was four fixed lines per 100 people and zero in mobile per 100 people in 1995 where as in 2003, 8 years later, mobile penetration was 24 per 100 people while the fixed line penetration remained almost the same. (Leonard Waverman & Meloria Meschi, 2007).

II. REVIEWING OF LITERATURE

Telecom infrastructure development got a great attention of researchers in recent years. Zhu (1996) attempted to examine the causal relationship running from telecommunications investment to economic development only using a pooled time series analysis based on 17 years data from 23 countries, and found telecommunications investment countries, and found telecommunications investment countries, Madden and Savage (1998) analyzed the relationship between telecommunications infrastructure investment and economic growth by taking a sample of transitional economies in Central and Eastern Europe. The study showed that overall, there appears to be two ways, or mutual causality between telecommunications investment and real economic growth at the aggregate level. Boylaud and Nicoletti (2000) used factor analysis and panel data analysis to examine the effects of market entry, liberalization and privatization on productivity, prices and quality of service in long-distance fixed-line and in mobile telephony in 714 (Zahra, Azim, and Mahmood, 2002) several OECD countries. In another study, Li and Xu (2001) examined the impact of privatization and competition on fixed-line subscriptions, labour and factor productivity in the telecommunication industry worldwide. A study of Yilmaz, *et al.* (2001) indicated that the accumulation of telecommunication infrastructure improves the overall productive capacity at the regional level by examining the impact of telecommunications infrastructure on economic output both at the aggregate and sectoral levels in the United States. Wallsten (2002) used data on telecommunication industry worldwide to analyse whether the sequence of

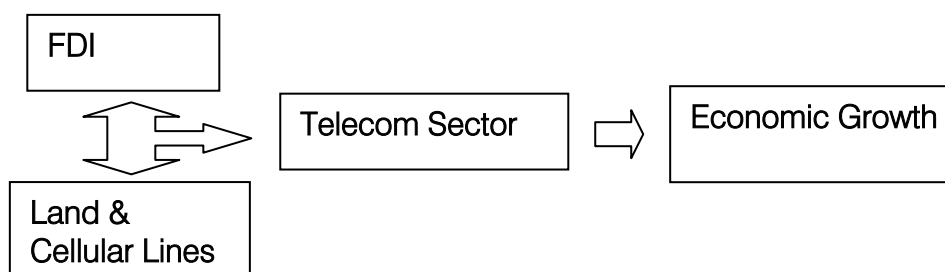
reforms matters. Fink, *et al.* (2002) used data on 86 developing countries worldwide to analyse the impact of telecommunication policy reforms on industry performance. Ding and Haynes (2004) empirically investigated the role of telecommunication infrastructure in long run regional economic growth in China for a sample of 29 regions for a 17 years' period, from 1986-2002. With a panel dataset, they used a dynamic fixed effects model for estimation, which allows testing the relationship between regional economic growth with initial economic condition, fixed investment, population growth, as well as telecommunications infrastructure. On the basis of the results, they showed that telecommunications is both statistically significant and positively correlated to regional economic growth in real GDP per capita in China. The results were strong even after controlling for investment, population growth, past levels of GDP per capita, and lagged growth. They further indicated that the telecommunication investment is subject to diminishing returns, suggesting in this manner that regions at an earlier stage of development are likely to gain the most from investing in telecom infrastructure.

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

a) Problem Statement:

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

III. CONCEPTUAL FRAME WORK



IV. FORMULATION OF HYPOTHESIS

The study is explaining to analyze the role of telecom on economic growth with expansion in this

sector rapidly deployment of the modern technology. To examine the role of telecoms in growth of the economy with respect to Pakistan telecom sector for this making following Hypothesis.

H1 : There is a significant role of telecom setup in the development of economic growth.

Against the null hypothesis there is no role

H2 : Foreign Direct Investment in telecom sector plays a positive role for the development of the economic growth.

Against the hypothesis there is no positive role.

V. METHODOLOGY

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

regression instruments are most logical and appropriate for this.

a) Statistical Instruments:

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

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

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

Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.502	.253		1.983	.050
	FDI can enhance the GDP?	.344	.055	.399	6.246	.000
	FDI can be used to enhance PCI.	.577	.069	.521	8.323	.000
	FDI may consider good tool play important role in telecommunication infrastructure.	.452	.062	.370	7.314	.000
	Expansion in cellular and land line is a symbol of increase in GDP.	-.310	.063	-.360	-4.886	.000
	Cellular and land line infrastructures expanded in result of increment of PCI.	-.090	.049	-.119	-1.836	.070
	Cellular and land line infrastructure expansion is the result of economic growth.	-.211	.052	-.213	-4.019	.000
	FDI can be considering an indicator of GDP growth in economy.	.184	.035	.220	5.236	.000
	PCI of economy can be showed FDI level in the	-.475	.042	-.527	-11.183	.000
	PCI level of the economy is influenced by the expansion in cellular and land line infrastructure.	.280	.060	.247	4.632	.000

a. Dependent Variable : Telecommunication sector is really back bone of the economic growth

VI. DISCUSSION

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

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

a) Managerial Implications

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

b) Limitations:

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

VII. CONCLUSION

Our study shows that development in telecom sector can become back bone of the economic growth for the modern economic universe through the development in this sector really be a leap – frogged in cellular industry at the result of which most of the economies do have de regulated this sector significantly as the result of which FDI is available for this sector especially in mobile. With the help of FDI the telecom infrastructure can be restructured and be helpful in exulting the economic growth and the elevation of poverty in developing countries like Pakistan by providing the information regarding pricing, job

opportunity and the markets it is also a fact that the growth in the telecom sector cannot be become as the substitute for the actual economic growth and offsets the negative economic effects cause by the over overarching exogenous shocks but a good facilitator for the economic growth for trickling down.

REFERENCES RÉFÉRENCES REFERENCIAS

1. Alleman, J., Hunt, C., Michaels, D., Mueller, M., Rappaport, P., & Taylor, L. [2002]. *Telecommunications and economic development*: http://www.colorado.edu/engineering/alleman/print_files/soafrica_paper.pdf
2. Bayes, A., Braun, J.V., & Akhter, R. [1999]. *Village pay phone and poverty reduction: Insights from a Grameen Bank initiative in Bangladesh*. Center for Development Research (AEF), *Universitat Bonn*, Bonn, Germany, Discussion papers on development policy No. 8. <http://www.zef.de/publications.htm>.
3. Chatterjee, S., Thachenkary, C.S., & Katz, J.L. [1998].
4. Cronin, F.J., Parker, E.B., Colleran, E.K., & Gold, M.A. [1991]. Telecommunications infrastructure and economic growth: An analysis of causality. *Telecommunications Policy* (December): 529-535.
5. Cronin, F.J., Parker, E.B., Colleran, E.K., & Gold, M.A. [1993a.] Telecommunications infra-structure investment and economic development. *Telecommunications Policy* (August): 415-430.
6. The Economist, The real digital divide, Mar 10th 2005, (accessed August 12, 2005). http://www.economist.com/printedition/displaystory.cfm?Story_ID=3742817
7. Eggleston, K., Jensen, R., & Zeckhauser, R. [2002]. *Information and communication technologies, markets, and economic development*. Department of Economics working paper, Tufts University. (RePEc: tuf: tuftec: 0203)
8. Garbade, K. D., & Silber, W.L. [1978]. Technology, communication and the performance of financial markets: 1840-1975. *Journal of Finance* 33 (3): 819-831.
9. Gourieroux, C., Monfort, A., & Trognon, A. [1984]. Pseudo Maximum Likelihood Methods: Applications to Poisson Models. *Econometrica* 52: 701-720.
10. Greene, William. [2000]. *Econometric Analysis*. New Jersey: Prentice-Hall.
11. Gurbaxani, V. [1990]. Diffusion in Computing Networks: The Case of Bitnet. *Communications of the ACM*, December, 33(12), 65-75.
12. Hardy, A. [1980]. The role of the telephone in economic development. *Telecommunications Policy*. 4(4): 278-286.
13. Roller, L.H. & Waverman, L. [2001]. Telecommunications infrastructure and economic development: A simultaneous approach. *American Economic Review* 91 (4): 909-923.

14. Souter, D. [1999]. The Role of Information and Communication Technologies in Democratic Development. *Info: Journal of Policy, Regulation, and Strategy for Telecommunications Information and Media* 1 (5) October: 405-417.
15. Sridhar, V. [2000]. Create FDI-friendly conditions in Telecom. <http://www.economictimes.com> (accessed December 11, 2000).
16. Sridhar, V. [2003]. Tariff Forbearance for Competition, *Economic Times*, <http://www.economictimes.com> (accessed May 19, 2003).
17. Sridhar, Kala S., & Sridhar, V. [2003]. The Effect of Telecommuting on Suburbanization: Empirical Evidence, *Journal of Regional Analysis and Policy* 33 (1), 2003: 1-25.
18. Sridhar, V., Rameshan, P., & Sahadevan, K.G. [2000]. *Indian Telecom: Analysis of Pricing, Technology & Policy, IIML Monograph Series 01*. Indian Institute of Management, Lucknow.
19. Singh, Nirvikar, 2002. "Information Technology as an Engine of Broad-Based Growth in India," in *The Knowledge Economy in India*, ed. Frank-Jürgen Richter and Parthasarathi Banerjee. London: Palgrave Macmillan.
20. Waverman, Leonard, Meschi, M., & Fuss, M. [2005]. The Impact of Telecoms on Economic Growth in Developing Countries, *Vodafone Policy Paper Series* 2 (March): 10-23.
21. Wong, Poh-Kam. [2002]. ICT Production and Diffusion in Asia: Digital Dividends or Digital Divide? *Information Economics and Policy* 14: 167-187.
22. World Bank. [2003]. World Development Indicators Online (WDI Online), 2003. Washington, DC: World Bank. <http://www.worldbank.org> (accessed May 2004).
23. World Economic Forum. The Global Information Technology Report, 2003-04. Geneva, Switzerland: World Economic Forum. www.weforum.org/

This page is intentionally left blank