TELECOMMUNICATIONS INFRASTRUCTURE AND ECONOMIC DEVELOPMENT

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Abstract

The term infrastructure generally describes large social overhead capital such as roads bridges, sewer facilities, electricity generation and distribution, and communication networks. These infrastructures provide the basic framework for a nation to support essential public services in order to achieve higher economic growth and a better quality of life. Communications infrastructure, particularly the telecommunications infrastructure, provides facilities for communications and saves time, energy, labor and capital by condensing the time and space required for production, consumption, market activities, government operation, educational and health services. In recent years, the world has experienced an explosive growth in infrastructure technology and its applications, particularly, in telecom industry. Therefore, for optimum utilization of this technological change, it is extremely important to evaluate the contribution of the telecommunications infrastructure to economic growth and productivity.

There are several studies that use aggregate time series and cross section data to investigate the relationship between telecommunications investment and economic development. Their analyses show a strong positive relationship between the investment in telecommunications and economic development. These aggregate level studies though very useful, do not distinguish between the direct and indirect contributions of investment on telecommunications infrastructure towards the growth of various industries and the aggregate economy. The direct contribution of the investment in telecom sector to the aggregate economy emerges from superior productivity growth in the telecommunications industry whereas the indirect effect results from the use of telecommunication services in other sectors in the economy. For example, due to rapid technological change and productivity growth, the prices of telecommunication services have declined significantly together with significant improvement in quality. This phenomenon has encouraged all other industries to substitute telecommunication service inputs for relatively high priced traditional inputs, such as labor and capital and increased the cost efficiency. These effects along with the network externality effects of telecommunications infrastructure are difficult to identify and measure. These effects could be best analyzed in a more disaggregated framework. Based on the existing research in this area, two measurement methodologies are highlighted in this paper. One approach is to use the Input-Output (I-O) framework (Cronin et al, Sanders Associates) and another approach is to capture the contribution of telecommunications
infrastructure by estimating econometric cost model (Nadiri and Nandi). Analysis in this paper suggests that the benefits derived from the telecommunications infrastructure capital is positive and varies considerably across industries. At the aggregate level, the total benefits from this infrastructure is rather sizeable, about 30% to 40% and the effects of this type of capital on input such as labor, material, and capital are not neutral.

**Bibliography:**