



# Telecommunications reform and efficiency performance: Do good institutions matter?



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## ARTICLE INFO

Available online 16 October 2013

**Keywords:**  
Telecommunications  
Institutions  
Reform  
Efficiency  
Distance function

## ABSTRACT

Until recently, most studies investigating telecommunication reforms performance have failed to incorporate the importance of institutions into the empirical analysis. This study highlights the importance of institutional governance on telecommunications efficiency and provides empirical results for the impact of institutions on reform outcomes. It provides significant evidence that the institutional environment in which reform progress takes place is an important determinant for successful reform. This study uses the stochastic distance function approach to capture the role of institutions in explaining efficiency differences across 70 countries. The empirical analysis reveals that policy stability in the form of substantive checks and balances on executive power is the most important aspect for successful reform. Independently, legal integrity improves telecommunications efficiency through privatization, while greater freedom from corruption influences the effectiveness of a regulatory body.

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## 1. Introduction

The world telecommunications industry has undergone significant physical and structural transformation since the early 1980s. Driven by unrelenting technological change and market forces, telecommunications today is one of the world's most dynamic economic sectors (Mayer, Butkevicius, Kadri, & Pizarro, 2003). Equally important is the liberalization and privatization of the telecommunications sector, which has become a veritable worldwide wave of change. To date, the market structure as well as the regulatory framework for the telecommunications sector continues to evolve.

The 1990s witnessed the greatest period of policy reform in the telecommunications industry since its inception. National carriers were privatized, new competitors licensed, and an increasing number of new services introduced. During these years, traditional orders of state monopolies were overthrown by the wave of change in the new structure of the telecommunications sector, which gave rise to the convergence of the telecommunications, broadcasting, and information technology industries. Advances in information and communication technology have also brought about new challenges in the regulatory and legislative regimes.

Sectoral reform, which began in only a few countries in the early 1980s, intensified and became widespread in the 1990s. The wave of telecommunications reform that started to emerge in a few highly developed economies spread quickly and has reached worldwide proportion. Since the early 1990s, more than 150 countries have at least modified pre-existing telecommunication legislation or introduced new telecommunication acts (ITU, 2008). These various new legislations not only established a new structure for the industry but they also underline the idealistic way in which the telecommunications

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market should work. In addition, the new legislations also led to the creation of new regulatory bodies as part of the commitment to monitor the sector as well as to protect the welfare of consumers and competitors.

As of the early 1990s, less than 40 countries had partially privatized their incumbent telecommunications operator. However, by the beginning of 2000, almost half of the countries in the world had fully or partly privatized their incumbent telecommunications operators. As of 2008, more than 123 out of 191 countries had a private or privatized national fixed-line incumbent (ITU, 2008).<sup>1</sup> In essence, the monopoly-based system, which has dominated the world's telecommunications markets for over three-quarters of a century, continues to decline in popularity.

Apart from encouraging the trend for a competitive market, the establishment of separate regulators is also considered as one of the most visible signs of sector reform. As market conditions grow tougher and more new services are offered, regulators are needed not only to monitor fair competition, but also to ensure affordable and quality services. In the beginning of the 1990s, there were only 10 independent telecommunications regulators in the world. After a decade, the number of countries that had created a regulatory body exceeded the number of countries that had allowed private investment in fixed-line incumbent operators.<sup>2</sup>

In spite of the growing consensus that reform is desirable, experience in developing countries, however, has shown that implementing and sustaining workable restructuring is more complicated than in the more developed counterparts (Gasmi & Virto, 2010; Jamasb, 2006).<sup>3</sup> Due to over expectations that private sector involvement and reforms will bring increased resources and efficiency for the sector, some delusions concerning these policies has set in (Hoffman, 2008). Indeed, for some developing countries, economic and sectoral performances have even been more disappointing after reforms.

A wide array of studies has been done in exploring the relationship between reform and sectoral performance; surprisingly, there is dearth of research which assesses the impact of reforms from the dimensions of efficiency and productivity. While, on the one hand, existing literature continue to support the global pace of reform in promoting teledensity growth and quality services (Fink, Mattoo, & Randeep, 2002; Li & Xu, 2004; Ros, 1999; Wallsten, 2001), all these studies have failed to acknowledge the relevance of diversity in governance and regulatory capacity to sectoral achievement. Since institutions goes hand in hand with the reform process, it is therefore critical to differentiate sources of improvement as well as to explicitly understand its impact in a dynamic setting.

Focusing on the impact of reforms and diversity of governance and regulatory capacity, this study addresses contemporary issues concerning success or failures of reforms efforts by looking at how these components affect the varying efficiency levels within the industry and across borders. While concerted efforts have been applied to study the role of reforms and more recently the impact of reforms on private participation and investment, little emphasis has been given to the role of regulatory settings and governance in explaining diversity in efficiency performance, particularly in the telecommunications industry.

Considering these neglected issues, this study attempts to complement studies of types of telecommunication reforms from the efficiency performance perspectives. In addition, given the significant contribution of the telecommunications sector, it is therefore proposed that understanding the forces behind telecommunications reform success and failure will prove significant for the industry as well as for other infrastructure industries. In short, this study seeks to answer two vital questions: (1) What benefits, if any, do reforms provide to the productive efficiency of the industry?; and (2) To what extent do variations in regulatory governance and institutional settings affect reforms performance and industrial efficiency?

The rest of this paper is organized as follows. Section 2 provides a discussion of reform practices and obstacles in developing countries. Sections 3 and 4 describe the methodology and data used, respectively. Section 5 reports the empirical findings, which comprise the distance function and efficiency estimates. Finally, Section 6 concludes the paper.

## 2. Reform practices and obstacles in developing countries

The privatization, deregulation, and liberalization movement of the 1980s, which started in the United Kingdom and the United States and then extended to Europe and some Latin American countries, has provided a significant amount of useful experience. Though the immediate impetus for reform has come mainly from the inadequate performance of old institutional arrangements, a closer look at some developing countries reveals few obstacles and other amplified motivations.

While developed countries have reformed mainly in response to the pressures of large business users who are responding to globalization of the world economy, reform in many developing countries was generally initiated by the government as part of larger structural economic adjustment programs aimed at battling fiscal crises (Petrizzini, 1995). Rather than well-structured reforms with the possibility of market competition, privatization was given the highest priority

<sup>1</sup> In the late 1990s, more than 60 percent of the global mobile market and 72 percent of the Internet market were open to competition. These figures jumped to almost 90 and 93 percent, respectively, in 2007 (ITU, 2008), and show no indication of slowing down.

<sup>2</sup> To date, the world has more than 150 national agencies to regulate the sector, a figure that has increased by more than 40 percent since the late 1990s (ITU, 2008). In total, this figure corresponds to over 75 percent of 191 International Telecommunication Union (ITU) member countries.

<sup>3</sup> Within this background, it is perhaps not surprising that many reforming countries have encountered unexpected problems and have achieved their goals to a varied degree (Estache et al., 2006; Fink et al., 2002).

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