What's Happening with Telecom Reform in Africa and Latin America

Scott J. Wallsten

Since the 1980s, telecommunications markets in developing countries have changed dramatically. Spurred by technological advances and the abysmal performance of incumbent providers, and prodded by the World Bank and other organizations, developing countries have privatized state-owned telecom monopolies, opened portions of their telecom markets to competition and begun building regulatory institutions. Government officials in other countries that have yet to privatize their telecommunications sector can draw important guidance from reforms undertaken in several African and Latin American countries.

Analyses of these reforms typically take one of two forms: case studies or statistical comparisons of sector or firm performance before and after privatization. These studies have found improvements in sector performance following privatization but also suggest that often the regulatory sector does not develop quickly enough. Enough time has now elapsed in enough countries to allow us to extend the existing literature by collecting the requisite data for econometric analyses of the effects of reforms.

Preliminary econometric analysis of telecom reforms in 30 African and Latin American countries from 1984 through 1997 indicates that privatization must be combined with building regulatory institutions to bring about performance improvements. The table shows the countries included in the analysis that explores the effects of privatization, competition and regulation on telecom performance. Indicators of performance include mainlines per capita, payphones per capita, connection capacity per capita, employees per mainline, and prices of local calls. The fact that most of these indicators have been improving points to the importance of analyses of this sector to control for trends and the potential dangers of simple before/after

Countries Included in Analysis

Africa	Latin America
Botswana	Argentina
Cameroon	Brazil
Cote d'Ivoire	Bolivia
Ghana	Chile
Kenya	Costa Rica
Malawi	Colombia
Morocco	Dominican Republic
Mauritius	Ecuador
Mozambique	Guatemala
Nigeria	Jamaica
Senegal	Mexico
Tanzania	Panama
Uganda	Paraguay
South Africa	Peru
Zambia	Uruguay
	Venezuela

Source: Scott Wallsten

Scott Wallsten is an economist at Stanford University and The World Bank. The views expressed here are those of the author and do not necessarily represent those of The World Bank, its Executive Directors, or the countries they represent.

comparisons since the indicators will almost always be better "after."

In this analysis an incumbent is considered privatized if any shares were sold to private investors. The competition proxy is the number of mobile operators in the country that the incumbent does not own. While mobile firms do not compete directly with the incumbent, they provide benchmark comparisons and have the potential to expand capacity quickly at relatively low cost and therefore can represent a credible threat to the incumbent. The regulatory variable is whether the country has a separate, independent regulatory body. This variable may best be interpreted as measuring a country's willingness to undertake regulatory reform rather than the effect of a separate regulator per se.

Methodology Used

The regression analysis controls for per capita income, population, share of the population living in an urban area, whether the World Bank was funding a telecommunications project in the country, net loans from the World Bank as a share of GDP (which proxies for foreign aid), and exports as a share of GDP. It also takes into account whether reform legislation was passed, risk of expropriation as measured by the International Country Risk Guide, and country and year fixed effects.

The analysis finds competition from mobile telecommunications firms to be correlated with increases in mainlines, payphones, and connection capacity per capita, and decreases in prices. The results of privatization are more surprising. Privatization by itself is not statistically correlated with any benefits, and, in fact, is negatively correlated with mainlines per capita and connection capacity. Privatization combined with the existence of a separate regulator, however, is positively correlated with connection capacity and payphone penetration. Moreover, this combination substantially mitigates the negative correlation with mainline penetration.

These results are consistent with conventional wisdom: competition is the best way to bring about performance improvements, and privatization must go hand-in-hand with building regulatory institutions if the telecom industry is to improve. One explanation for the negative results of privatization by itself is that in the absence of regulatory capacity-building a privatized monopoly may look for ways to increase profits that do not necessarily include immediate improvements in service.

Policy Implications

The analysis suggests that introducing competition may produce important benefits. However, privatizing without attention to regulatory institutions may be costly in terms of sector performance. This has important implications for the question of whether, and for how long, to grant a privatized firm an exclusivity period in a country with a weak regulatory environment. Although the price an investor is willing to pay for a telecom firm will be higher the longer the exclusivity period, the cost of a longer exclusivity period may be delays in performance improvements that would come with competition.

While these findings are provocative, they must be viewed cautiously. The main problem—which is a critical issue that future analyses must address—is that causality does not flow solely from reforms to performance. That is to say, this analysis does not capture well the possibility that performance can also affect the nature of reforms.

The analysis controls for passage of reform legislation, which helps mitigate this problem since legislation must precede actual reforms. Indeed, a negative correlation between legislation and performance shows up, suggesting that poor performance can help trigger reforms. Nonetheless, we cannot rule out the possibility that reverse causality drives the negative correlation between privatization and performance—that is, that poor performance helps stimulate privatization efforts.

Another problem is that the data do not allow us to explore the variations of privatization, competition or regulation. The share of the incumbent sold, the sales mechanism and the conditions attached to the sale may all be important. And simply noting whether there is a separate regulator does not begin to address the many flavors and subtleties of regulation. A more rigorous analysis of telecom reforms must begin to deal empirically with these issues.

Enough time has elapsed since reforms began in many countries to make it feasible to conduct rigorous empirical analyses. The work described in this article represents a first attempt. In many ways the results are reassuring—competition shows a strong correlation with telecom performance improvements. Other results should give us pause: privatization is correlated with performance improvements only when it occurs in the presence of a separate regulator. In other words, ignoring regulatory institution-building may be costly. These intriguing results, the importance of the questions and the limitations of this analysis point to the pressing need for continuing this research.