

Effect of Regulatory Reform on the Efficiency of Mobile Telecommunications

BACKGROUND

- Regulatory reform of the mobile telecommunications sector has been introduced in recent years to improve productivity and competitiveness.
- Non-parametric Data Envelopment Analysis (DEA) and parametric Stochastic Frontier Analysis (SFA) have often been presented as competing methodologies since they use different procedures to define the efficient frontier. The debate on the robustness of these two performance measurements is receiving growing academic attention.

METHODOLOGY

- The authors examine the effect of different aspects of reform on productivity and its constituent parts in the mobile telecommunications sector.
- The study focuses on the performance of 22 mobile network providers from seven countries over the period 1998-2007.
- The authors exploit the difference between competing methodologies to add robustness to conclusions. The results of a stochastic production frontier function approach and a data envelopment analysis methodology are compared in order to address some of the criticisms which have been levelled at each methodology.
- All the estimated measures of efficiency, total factor productivity change, efficiency catch-up and technological innovation under the two approaches are further analysed econometrically in relation to the impact of mobile sector reforms.

KEY FINDINGS

- The authors find robust evidence that competition and independent regulation improve firm efficiency.
- The results of the analysis imply that it is not necessary for firms to be privatised to be more technically efficient. But privatised firms are more capable of enhancing their total factor productivity growth, efficiency catch-up, and technological innovation in the production process in a shorter time period compared to their public counterparts.
- Comparison of DEA and SFA results suggests that the measures of efficiency and total factor productivity are somewhat sensitive to the choice of methodology. To be confident in the outcomes of analyses, comparisons of performance across decision-making units (and years) need to be checked for robustness using different methodologies.

POLICY ISSUES

- The most robust finding of the study is the positive effect of competition on both levels and growth in firm efficiency. This finding has profound implications for the design of markets. In an area which is sensitive both from a political and business perspective, governments and regulators should encourage active rivalry between four or five firms. However, extending such competition to more entrants may have little, or negative, impact on the productivity of the participants.

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THE CCP

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