

Analysis of the role of international network effects on the diffusion of 3G mobile communication networks

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Abstract

Previous studies have found evidence of important network effects in mobile telecommunications at the national level. However, there is a lack of empirical research concerning network effects at the international level. In this paper, we provide empirical evidence that mobile phones diffusion is positively influenced not only by national network effects, but also by international network effects. International network effects were defined as the installed base of mobile phone subscribers of handset export partner countries weighted by their geographical proximity to the home country. Based on our findings, we conclude that the policies most conducive to increase mobile penetration rates concern international standardization and technological choice, rather than price regulation. Moreover, competitive and innovative markets of complementary products that generate indirect network effects -such as mobile handsets and mobile Internet applications- are key factors for the diffusion of new generations of wireless communications. We used a quarterly database of 105 countries from 2007 Q1 to 2010 Q1. Our specification of mobile service demand follows the multinomial logit model with inverted market shares and includes instrumental variables. The model was estimated by the Arellano-Bond dynamic panel-data estimator that uses one-step difference GMM. *JEL codes:* L96. Industry studies: Telecommunications. F10. Int. economics: Trade *Keywords:* Mobile phones, Network effects, Global standards,

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