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Effects of political stability and sector regulations on investments in African mobile markets

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ABSTRACT

This study analyses the effects of regulation and political stability on the allocation of mobile telecommunication investments in the African continent between 2001 and 2011. To better understand the dynamics of investment in telecommunications, a framework was developed to assess factors that determine investments in the telecom industry at the country and industry level, particularly institutions, market size/demand level, market structure and investing cost.

The results show that investments in the mobile telecommunications industry are dependent on regulation and liberalization; however, no statistical evidence was found for the effect of political stability as measured by the democratic process. Furthermore, the study has shown that market structure factors, especially competition, market size and the cost of investing in a country, are important in determining the allocation of mobile telecommunications investments among African countries.

1. Introduction

The advancement of the mobile telecommunications industry in Africa has been the most successful technology catch-up ever on the continent. For example, mobile penetration increased from 2% in 2000 to 45% in 2010. The earlier undeveloped state of the telecommunications industry in developing countries, lasting mostly until 2000, was not due to lack of demand but rather insufficient supply as the state-owned incumbent fixed-line operators could not sufficiently invest in telecommunication infrastructure, limiting access only to cities (Ros, 1999). By the year 2000, most African countries had begun to embrace telecommunications policy reforms, particularly market liberalization and sector regulation, to spur development in the telecommunications sector.

As part of the telecommunication policy reforms that took place, most countries established national telecommunication regulatory authorities at the core of the new framework to liberalize and regulate the industry. These authorities are mandated not only to monitor and ensure a level playing field in individual national markets but also to shape the markets and encourage development of the industry by introducing and monitoring competition in different market segments. By 2010, 77% of all countries in the African continent had established national regulatory authorities (ITU, 2012).

Following these policy reforms and large unmet demand, private annual investment in African mobile telecommunications increased from USD 2.7 billion in 2000 to more than four times that a decade later (World Bank, 2014). As most African countries lack domestic capital, most of the investments in the sector have resulted from foreign capital flows. This is unlike other regions such as Europe, where

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major investments in the sector were from domestic sources, especially through their incumbent fixed-line operators (Hoernig, Bourreau, & Cambini, 2014), which are now fully or partially privatized. In the case of Africa, telecommunication markets have been pioneered by a handful of major mobile service providers with operations in multiple countries. For example, in 2010, the South African-based MTN was operating in 16 African countries; in the same year, the seven largest mobile operators had control of more than 75% of all subscribers in the continent's 54 countries. These operators have been investing in mobile telecom infrastructure, delivering basic as well as advanced telecommunication services.

Major telecommunication firms with a portfolio of multiple mobile operations in Africa, assess political stability (see Henisz & Zelner, 2001; Duso & Seldeslachts, 2010) and the regulatory environment (see Gasmi, Noumba, & Virto, 2010; Kim et al., 2011) – together with other factors such as market demand and competition – to decide on the destination of their initial and continuous investments. Given that other factors that define the attractiveness of a national market, such as physical and demographic attributes, are stationary or slowly changing, countries are mainly competing to attract investments in the sector with the presence and quality of political and regulatory institutions in their home markets.

Concurrently, even with the recent successes, African countries face an increasing need for infrastructural investment in the telecommunication industry due mainly to three reasons. First, it has been established that investments in telecommunications infrastructure spur socio-economic development (Roller & Waverman, 2001), especially in developing countries (World Bank, 2009); hence, African countries cannot afford to be left behind in the new economy. Second, due to rapid and constant technological advancement in the telecommunications industry, countries are required to continuously invest in network upgrades, such as from 2G to 3G, and 3G to 4G, as well as to increase network capacity and coverage, especially to rural areas where a larger share of the African population resides (Williams, Mayer, & Minges, 2011). Third, some countries need to urgently expand their mobile network coverage to increase access to and penetration of telecommunication services. In fact, despite the overall growth in mobile penetration in African countries, some countries are still lagging (Moshi, 2013). For example, average mobile penetration in Africa reached 60% in 2012; however, countries such as Ethiopia, Burundi and Eritrea had 24%, 22% and 7%, respectively. It is therefore a paramount concern for African countries to attract more investments in the telecommunications sector to meet demand as well as promote development.

This study attempts to answer the main research question, what is effect of political stability and sector regulation on investment in the mobile telecommunications industry among countries in Africa after 2000? Did operators take these factors for granted when determining the scale of telecommunication investments and if not what aspects mattered? Thus, the paper complements Luiz and Stephan (2012)'s quasi-qualitative study investigating the antecedents of the internationalization of South African telecommunications firms into Africa. In so doing, this study contributes to the existing literature in several ways. First, it focuses on mobile telephony, particularly in the African continent where mobile technology is more appropriate, and the literature on telecommunication investment in the continent is still scarce. This is unlike most previous studies, which focused on fixed networks (Henisz & Zelner, 2001). Second, contrary to the period covered in Henisz and Zelner (2001) and Gasmi et al. (2010), which investigated periods before the policy reforms, this study examines a period of high activity in mobile telecommunications infrastructure investments across African countries, ranging from 2001 to 2011; hence, it captures the recent developments in the industry more appropriately.

The rest of the paper proceeds as follows. Section 2 provides a detailed background of issues in investments in the African mobile telecommunication industry and that industry's subsequent growth. The literature review is given in section 3. section 4 provides the framework for analysis, and section 5 describes the data used and econometric model specifications. Section 6 reports the analysis results, and section 7 concludes the paper.

2. An overview of investment in the African telecommunication industry

2.1. The trend of telecom investments after the turn of the century

The rapid growth of mobile telephony in the last decade has been widely noted as a successful outcome of the telecommunication market reforms that have been taking place throughout the world in the last three decades. As a consequence of these sector reforms, the region witnessed high flows of foreign capital from within the region, mostly from South Africa and recently Nigeria, as well as from outside the continent, especially from European and Indian operators (Williams et al., 2011). For example, once significant amounts of investments were directed to mobile telecommunication beginning in 1990, Africa increased its share of international capital invested in mobile telecommunication from only 4% in the 1990s to 12% of the accumulated total for telecommunications in developing countries in 2008 (World Bank, 2014). Furthermore, by 2008, Sub-Saharan Africa had accumulated approximately US$ 49 billion in the telecommunications sector, which was mostly used for deployment of mobile networks (Williams et al., 2011). As Fig. 1 depicts, investment flows have grown over time in the African telecommunication sector, peaking in 2010. Most investment flows were during the latter half of the decade, as strategic multinational telecommunications operators increased their presence in multiple African countries and upgraded their mobile networks to third generation technologies (Curwen & Whalley, 2014). After the peak at 2010, investments have shown a downward trend. One possible explanation is saturation of mobile services in most urban centres. Further, the average revenue per user (ARPU) is on the downward trend as operators extend their services in rural areas where profits are low.[1] As a result, it is not attractive to invest more where the returns are likely to be lower.

Given that a significant portion of these investments have been designated for deployment of network infrastructure, their increase in the continent rendered access to ICT infrastructure, especially mobile signals, to the majority of the African population. In particular,

[1] https://ppi.worldbank.org/~/media/GIAWB/PPI/Documents/Data-Notes/Telecom-Sector-Update-2014.pdf.