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The demand elasticity of mobile telephones in the Middle East and North Africa

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ABSTRACT

This study investigates the components of the mobile telephone demand in several countries in the Middle East and North Africa (MENA) between 1995 and 2007. We find that the magnitude of demand elasticities do not entice collusive behavior between service providers because the effect of price reductions is neutral on total revenues. We also find that the cost of service and administrative corruption have a strong negative effect on mobile penetration, which, surprisingly, is higher in countries with more unequal income distribution. The study discusses how market reforms in developed countries fail to translate to developing countries because several negative externalities are often overlooked.

1. Background

It is now well recognized today that the openness of the telecommunication sector contributes significantly to economic growth and social welfare. Despite efforts exerted throughout the past few years to liberalize the telecom markets, the range of competition varies considerably across MENA countries. For example, none of the countries in North Africa has yet reached the level of liberalization of Jordan and Bahrain. Comparatively, the markets in Lebanon, Libya and Iran are particularly crippled, and struggling with high service tariffs or entry barriers. With the exception of Qatar and the UAE, currently all the markets in the MENA region have two, three or even four mobile service providers.

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In Qatar, the concession granted to the current and only mobile service provider (Q-Tel) will expire in 2013, and this date will mark the end of all cellular monopolies in the main MENA countries.

In terms of subscriber base, Egypt has the largest mobile subscriber base in the MENA region with considerable growth rates since 2004. This is followed by Saudi Arabia where the number of mobile subscribers has double digit growth rates but with a penetration rate around 53%, a figure below other Gulf Corporation Council (GCC) countries (Hasbani et al., 2009).

The available economic studies on the telecom sector in MENA are based on older data that precede the recent penetration of the mobile sector (for example the significant study in this sector – by Rossotto et al., 2005 – is based on data for 1999) or focus on a specific country (for example Egypt, in the case of Galal, 1999). The recent performance of the telecom sector, and mobile services in particular, has not received the necessary attention it deserves, nor has the pace of market transition from monopoly to competition been investigated. This void occurs at a time when several MENA countries are currently evaluating various liberalization schemes of their mobile industry. Hence, there is a need to reassess the future market demand for airtime and sales revenues of this sector and relate these findings to the optimal market structure and the regulatory landscape that a government would select to obtain the maximum social welfare.

This study is divided into 6 sections. Section 1 explains the problem and states the objectives. Section 2 reviews the literature on the mobile telephone service industry in various markets. Section 3 relates this literature to specific MENA countries by describing the state of their mobile telephone sector and its development. Section 4 describes the data set, the sources used, and the time period of the investigation. In Section 5, we estimate the price elasticities that are key to set the tariffs of the mobile service operators across various MENA countries. Section 6 concludes the paper and discusses the policy implications by relating the calls for greater competition with the need of a stronger regulating agency to oversee the reforms in the mobile telephone sector.

2. Value added

In the telecom literature, there is vast empirical evidence revealing that privatization and deregulation of that sector has led to performance improvements. For example, Chakravarty (2007) looked at the diffusion of mobile telephony in Asia between 1993 and 2004. His results indicate that entry and competition have played a major role in increasing the diffusion of cell phones. Furthermore, he found that the presence of an independent telecom regulator and the capacity of fixed line telephone exchanges have positively affected the diffusion of mobile services by increasing the size of the network.

In Europe, the mobile telecommunications markets have largely been left unregulated, but more recently they began to draw regulators' and policy makers' attention (see, e.g., European Commission, 2004). While competition remains a goal, some regulatory agencies, including for example the UK Competition Commission, have argued that the mobile telecommunications industry as a whole is not prone to effective competition, due to the oligopolistic industry configuration (see Competition Commission, 2003). This argument rests on the fact that there is only a limited amount of radio spectrum available and as the fixed and common costs associated with mobile network investments are relatively high, mobile telecommunications markets may resemble natural oligopolies (see Gruber and Verboven, 2001; Valletti, 2003). On the opposite end of this argument, concerns have been voiced by various regulatory authorities about the low level of competition in mobile telecommunications markets, especially with respect to the potential for collusive behavior.

3. The state of the mobile telephone sector in MENA countries

The countries in MENA have embraced telecom liberalization at various speeds, and as a requirement for accession to the World Trade Organization. The liberalization is developed in two strategies. The first step requires the enactment of a clear telecom law and the establishment of an independent regulatory authority. In the second phase, which is contingent on the success of the first step, the telecom authority can begin to liberalize the telecom market.