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Toward a wider market definition in broadband: The case of Turkey

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ABSTRACT

As broadband Internet transforms the way people connect with others, the boundaries between different modes of communications become vague. In recent years, the scope of voice and broadband markets has become a matter of concern for both policymakers and researchers. Until recently, it was thought that DSL and mobile broadband markets were separate markets and therefore they were separately regulated. However, recent empirical evidence in some countries shows that fixed and mobile broadband services are likely to be substitutes. If this is true, the definition of the relevant market for broadband has to be expanded to include mobile networks. This implies that they should be subject to the same regulatory framework. In order to follow this change, we look into the Turkish broadband market, as it is one of the fastest growing in Europe. The paper provides empirical evidence on the existence of fixed-mobile substitution in broadband Internet services in Turkey. We show that fixed and mobile broadband are substitutes in Turkey and they have to be included in the same relevant market definition. As differences between them in terms of speed, reliability and price diminish, customers increasingly see them as substitutes. These changes in the market environment require a reconsideration of the regulatory environment of fixed and mobile broadband markets.

1. Introduction

In recent years, broadband Internet transformed the way people connect with others. Mobile broadband service providers began to offer various services on a wide range of mobile devices such as cell phones and laptop computers. At the global scale mobile broadband subscriptions overtook fixed broadband in 2008 and have had a high growth rate since then. By 2016, mobile broadband is expected to occupy over 80 percent of the broadband market (ITU, 2013). In addition to data services, it provides a medium for voice and television services. These developments make the regulation of broadband the subject of intense debates over the appropriate method of regulation.

The changes on the supply and demand sides make regulatory issues more complicated for broadband markets. As consumers see them as substitutes, keeping mobile broadband and fixed broadband separate creates more issues than it resolves,. In the wake of increasing competition and the existence of similar services for similar prices, the definition of the relevant market becomes controversial. Until recently, DSL and mobile broadband markets were considered as distinct markets and regulated separately. Recent empirical evidence in some countries shows that fixed and mobile broadband services are likely to be substitutes (Srinuan et al., 2012; Grzybowski et al., 2013), and hence the relevant market for broadband should be expanded to include mobile networks. This implies that they should be subject to the same regulatory framework. The question of substitution has important implications in terms of regulatory policy. The existence of substitution may necessitate eliminating differences between fixed and mobile broadband access in terms of regulatory rules. More importantly, the expansion of the relevant market definition change channels of wealth transfers in the market.

In this paper we assess recent empirical studies about FMS in broadband Internet services and present estimations for Turkey. The Turkish broadband market is one of the fastest growing in Europe. In opposition to some of the earlier studies, we argue that the time is now ripe for deregulating fixed broadband markets in order to create a competitive environment where alternative

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methods of broadband can flourish.[1] We provide empirical evidence for fixed-mobile substitution in broadband Internet services in Turkey. We show by using the most recent data that fixed and mobile broadband are substitutes and they should be included in the same market definition. We also provide comparisons with the recent findings on FMS in broadband.

The remainder of the paper is organized as follows. In the second section we assess the literature on fixed-mobile substitution. The Turkish and European regulatory frameworks are outlined and compared in Section 3 to put FMS in perspective. The model and data are explained in the fourth section. Finally, Section 5 wraps up with concluding remarks.

2. Fixed-mobile substitution

In this section we review the literature on fixed-mobile substitution in broadband services. We first lay out the changes in the market structure and regulation in the broadband market along with theoretical background. Subsequently, we assess empirical studies on fixed-mobile substitution in the broadband market.

2.1. Market structure and regulation in the broadband market

The changes in technology and consumer preferences in recent years have opened the doors to a new interpretation of the market structure and regulatory environment in the telecommunications market. Previous studies have found that fixed-line and mobile broadband are substitutes (Cardona et al., 2009a,b; Srinuan et al., 2012).[2] In policy circles, regulators have started to discuss the idea whether they are in the same market (e.g., BEREC, 2011). New empirical evidence may bring a change in regulatory framework, as it would encourage the deregulation of the fixed-line broadband access at the wholesale level, as happened in Austria in recent years.

The changing market structure of broadband and the increasing number of choices to access Internet require a reconsideration of the logic of regulation in telecommunications. In the broadband market competition began with cable Internet services. Many countries now accept that cable and DSL are in the same market. The recent introduction of mobile broadband has considerably changed the market. The distance between mobile and fixed-line networks is closing very fast in terms of quality and price of the services. We expect the fixed-mobile substitution (FMS) in broadband to follow the same path as in FMS in voice services.[3] The similarity of the institutional evolution of both markets brings about convergence as well. The advances in VoIP technology also have played a major role in the evolution of intermodal broadband competition.

The rationale for regulation in the broadband market follows the natural monopoly theory in a number of slightly different forms. When broadband was limited to fixed-lines, regulation seemed easier. The required infrastructure to provide DSL services necessitated full regulation of a natural monopoly. However, the emergence of intermodal competition has weakened the natural monopoly justification of regulation. As the market becomes more oligopolistic as a result of intermodal competition, unregulated oligopoly tends to be more efficient than a strictly regulated monopoly (Shelanski, 2006; Spulber and Yoo, 2009).

We observe that the regulatory view on FMS lags behind the change of seas in economic thinking. The 'wait and see' approach of regulatory agencies favors some operators against others in the fast-changing structure of the telecommunications markets. Recent interactions between the Austrian regulator and the European Commission reflect this approach (BEREC, 2011). The restriction on the competition between fixed-line and mobile operators opens doors to discriminations and anti-competitive consequences. An important consequence of these developments is the changing role of competition and regulation in telecommunications. The existence of FMS requires a new market definition in broadband services. A consequence of FMS is the possibility of deregulating broadband services (Briglauer et al., 2011). As a result, a shift from the regulatory framework to competition policy evolves around the world, somehow slowly and with social costs.

2.2. Review of empirical studies

FMS has been a hot issue in telecommunications markets for the last decade (ITU, 2013). While fixed broadband stalls and loses its importance, mobile broadband continues to grow. The direction of the trend is similar across countries. However, the transition to mobile networks is faster in the developing world as the fixed-line infrastructure is either nonexistent or very limited. In the developed world, fixed-line broadband services, even if they keep their market shares to some extent, begin to lose their high profit margins.

While the connection between fixed-line and mobile telephony services and deregulation of fixed-line telephony market are discussed in the literature to some extent (e.g., Vogelsang, 2010; Briglauer et al., 2011), broadband still remains an area to be explored. The trend in broadband follows the path of the voice market. The direction of empirical studies reflects a trend from complementarity toward substitution between retail mobile and fixed-line broadband services.

Fixed and mobile networks have become substitutes as a result of technological improvements of mobile services and increasing use of mobile networks in recent years (Rodini et al., 2003; Madden and Coble-Neal, 2004; Chu et al., 2009; Narayana, 2010; Vogelsang, 2010). FMS is most visible in telephone services. The substitution between fixed and mobile telephony is well established and a large literature on empirical tests of FMS in telephone services have emerged recently (e.g., Barth and Heimeshoff, 2012; Grzybowski, 2012). The move toward mobile culture and change in cross-elasticities, the fall in mobile network costs and advances in mobile technology play prominent roles in FMS (Briglauer et al., 2011; Heimeshoff, 2008; Yoon and Song, 2003). Income levels are sometimes used to explain the direction of the relationship. In developed countries fixed and mobile services tend to be substitutes whereas complementarity dominates in developing and less-developed countries (Garbacz and Thompson, 2007; Vogelsang, 2010). Similarly, as one country becomes wealthier, the move towards mobile-only consumers accelerates.

Whether households have fixed line broadband services makes an important difference in terms of the substitutability of mobile and fixed line voice services (Grzybowski and Verboven, 2013: 21). The relationship is symmetrical in the sense that if the person has mobile voice services the substitutability between fixed and mobile broadband is also strong. Bundle effects create a slippery slope

[1] As a result, competition policy may take a more prominent role in telecommunications markets. While we do not deal with this issue in this paper, there is an extensive literature on the relationship between competition policy and regulation in telecommunications (e.g., Ardıyok and Oğuz, 2010; Hovenkamp, 2006; and Shelanski, 2006).

[2] The definition of 'substitute' seems quite clear in economics jargon. Positive cross-price elasticities are usually adequate. However, in a market where prices move in the same direction for some reason, further qualifications are necessary. For example, if the prices of fixed and mobile broadband fall at the same time, as it happened in recent times, cross-price elasticities should be approached warily (Banerjee, 2007).

[3] See Vogelsang (2010) for a survey of the fixed-mobile substitution in voice services.