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Telecom reforms in the EU: Prices and consumers' satisfaction

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ABSTRACT

The paper shows the impact of privatization and liberalization on consumers in the telecommunication sector for 15 EU countries. Policy reforms are summarized by the OECD regulatory indicators (REGREF) that consider the extent of privatization, vertical disintegration, and market entry. After controlling for other country variables, first, a test of the impact of ownership and regulatory changes on consumer prices is given. In the second step, the Eurobarometer data on consumers' satisfaction about quality and prices of the telecommunication service are considered. The analysis confirms the importance of market regulation in reducing prices but minimizes the role played by privatization per se. Overall, the findings offer only mixed evidence, and somehow contradict, the hypothesis that all the reforms work in a similar way across the EU countries.

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1. Introduction

The telecom sector is not just one among the network industries that experienced a policy paradigm shift over the last twenty years, it has been its core laboratory world-wide and the one where the reforms started earlier. If one had to pick up a single year as the turning point, 1984 would be the most convenient one, with the parallel divestiture of AT&T in the US and of British Telecom in the UK. The meaning of divestiture was however quite different across the two sides of the Atlantic. AT&T was a privately regulated monopolist that was broken up in seven regional Bell operating companies. British Telecom was a public corporation that after privatization was under a regime of regulated duopoly along with another privatized operator, Mercury. In both cases, institutional changes, away from regulated and integrated monopoly in the US, and from integrated public monopoly in the UK, were officially motivated by a willingness to establish competition in the industry. It has been widely acknowledged that to ensure an effective transition to a competitive market, however, divestiture policies need to be accompanied by regulatory reforms. The simple change of the ownership structures, from public to private, in fact, is not sufficient for the market to become effectively opened, breaking up the monopolies, and guaranteeing better conditions for private investors to enter the market. In most countries, governments surrendered their powers to national regulatory authorities, with the aim of overseeing and regulating the interactions between incumbents and entrant firms (Edwards & Waverman, 2006), protecting the consumers, and ensuring adequate infrastructure investments (Alesina, Ardagna, Nicoletti, & Schiantarelli, 2005).

At the same time, a dramatic process of technological change reshaped the industry. Regulators and law-makers had to frequently adjust their views because of entirely new developments. The new industry reform paradigm points to privatization and liberalization (Newbery, 2000).

This paper tests whether the reform process, as measured by regulatory indicators, is correlated with benefits to the consumers. After all the final evaluation of the reforms should be based on testing of what it delivers to the users of the

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service. Ideally one would look to detailed case histories, considering long time series. A complementary approach would be to consider cross-country evidence. Under the latter perspective, the EU offers something near to a natural experiment. On one side, there is one policy actor, the European Commission, who pushes towards a well defined reform package, as embodied in telecom directives, on the other side, there are the member states that more or less in compliance with the EU legislation, show big differences in reform design, sequencing, timing, market structures. Another attractive aspect of a cross-country empirical study is that, different from other network industries, such as electricity, countries are not exogenously constrained in technology adoption by intrinsic geographic characteristics. This allows focusing on country differences in ownership, institutions, competition, and other industry features, under a common technological trend.

In the present paper there is a focus on price trends in the EU-15 (i.e., before accession in 2004 and 2007 of mostly transition countries) on one side, and consumers satisfaction with prices (and quality) of the fixed telephone service, on the other side. A similar study in this context has been conducted by Copenhagen Economics (2005a, 2005b) for the European Commission. In the present study, however, there is use of different data sources in order to enlarge the dataset and increase the number of observations. Moreover, the impact is also investigated on other related prices borne by consumers, such as monthly telephone subscription and connection charges. Furthermore, the REGREF indicators for market regulation are used, as proposed by the OECD. For customers' satisfaction the focus is on three waves of the Eurobarometer survey (2000, 2002, 2004), while for prices and other industry features on Eurostat and ITU data.

The structure of the paper is the following one. Section 2 briefly reviews the empirical literature; Section 3 proposes a general theoretical framework; Section 4 presents data sources and some descriptive statistics, while Section 5 is about modeling price dynamics; Section 6 offers probit estimation of consumer satisfaction with prices and quality; Section 7 concludes with suggestions for further research and policy implications.

2. Literature review

Despite the large body of empirical literature on telecommunication and its changing institutional setting, relatively little attention has been paid to price determinants.

Li and Xu (2004) use a large set of 177 countries over the period 1990–2001 to estimate the impact of privatization and competition on telecommunication with ITU and World Bank data. They find positive effects of privatization on output, productivity and resource allocation but their estimates show that full privatization increases both output and prices of local calls. They propose two possible explanations: a combination of strong network externalities and non-competitive behavior among existing operators, or an increase in service quality (not captured by data) that drive up the cost of phone calls. However, they employ only simple dummy variables to capture shifts in regulation. Moreover, they do not find a significant effect of competition on prices and a modest one in containing the adverse effect of privatization (interaction term).

Cave and Vogelsang (2003) point out that intermediate price can play an important role in promoting competition and influencing final prices, while Bauer (2003) finds no statistical evidence of price rise eventually determined by the substantial license fee paid by mobile operators.

In a recent paper Grzybowski (2008) examines, like in the present work, the impact of regulation on telecommunication prices estimating a reduced form model for European Union from 1998 to 2002. Regulation and cost factors (including technology) explain 94% of price variation and the former have a significant negative impact on incumbent retail price. Prices are taken from the study Teligen realized for the European Commission, and cover a period of four years only. As measures for regulation he uses several micro-variables taken from the different EC Implementation Reports like carrier pre-selection, number portability and local loop unbundling, and a dummy for market liberalization. In a previous paper Grzibowski (2005) studied the mobile market estimating a reduced form model using panel data for the EU countries from 1998 to 2002 and showing the relationships between mobile and fixed telephony markets. Liberalization of fixed telephone has a negative impact on the prices of mobile services and a positive effect on the demand while competition enhancing measures like the introduction of number portability has a negative impact on mobile call prices.

Boylaud and Nicoletti (2001) estimate a panel with data on 23 OECD countries in 1991–97 and show that prospective competition (proxied by the number of years remaining to liberalization) and effective competition (proxied by the market share of new entrants) both reduce the price of all the telecommunication services but no clear evidence could be found concerning the effect of the ownership structure of the industry on performance and price. Edwards and Waverman (2006) studied intermediate price in 15 European countries for few years (1997–2005) and found that public ownership increases interconnection prices while regulator's independence decreases it.

Estache, Goicoechea, and Trujillo (2006), in a paper focused on the link between corruption and utilities reform, analyzed a large sample of countries and found that privatization of incumbent telecom operator increases prices while establishing an independent regulatory authority decreases them.

Gasmi and Virto (2010) studied fixed charges for telephone and cellular prices in 29 developing and 23 developed countries looking for the effect of different institutional governance and found that privatizations increase prices in developing countries while has no effect on developed economies.

As compared with earlier literature, in this paper longer time series and more detailed information on regulatory reforms in the EU have been considered in the empirical analysis.

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