



## Merger simulation using average market share: An application to the Optimus–TMN mobile merger case

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### ABSTRACT

This paper develops a new merger simulation methodology based on the analysis of the performance change of a hypothetical firm with average market share. It applies the methodology to the Optimus–TMN mobile telecom merger case in Portugal, within the context of the December 2006 decision by the Portuguese Competition Authority to authorize the merger between their respective parent companies, Sonaecom and Portugal Telecom. The results suggest that the Optimus–TMN merger would have resulted in 3.8% higher prices and 14.9% lower marginal costs, and would have been welfare-enhancing. These findings attest to the importance of the “efficiency defense” hypothesis of mergers. They suggest that competition authorities are warranted in allowing further consolidation in the telecom sector, but that consolidation should be accompanied by strict retail price–cap regulation.

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### 1. Motivation

In contrast with the natural monopoly principle that guided the regulatory oversight of fixed network incumbents until the 1980s, from the outset of digital mobile telecommunications in the early 1990s, regulators promoted competition as a means to improve industry performance. The rapid industry growth experienced in the 1990s and early 2000s, in a sense vindicated the regulatory approach and resulted in a growing preference for allowing market forces to determine outcomes and in a less prominent role for regulation in the sector, particularly regarding the retail market. On the one hand, the regulators attempted to create conditions that facilitated new entry, namely through wholesale market regulation, though, as the industry matured, there have been fewer instances of large scale entry. On the other hand, regulators have, for the most part, refrained from retail price regulation. In addition, they have accepted reductions in the number of competitors, even when these led to large increases of the Herfindahl–Hirschman index (HHI), seen as problematic by the standards of earlier decades.<sup>1</sup>

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<sup>1</sup> Indeed, mergers and acquisitions have been a feature of the mobile telecommunications industry, particularly since the beginning of this decade. For example, in the US, the industry was already “highly concentrated” according to the Department of Justice Merger Guidelines (HHI of 1800), even before the Cingular–AT&T Wireless and the Sprint–Nextel mergers in 2004 and 2005, which took the HHI in the average US market first from 2900 to 3100, and then to 3300 (based on pre-merger market shares). This implies that there is now the equivalent to three equal sized operators in the average US market (Bajari, Fox, & Ryan, 2008). In fact, Fox (2005) argued that the US mobile telecommunications industry was more concentrated in 2005 (HHI of 6000 based on radio-spectrum licenses) than in 1998, when the industry was characterized by a duopoly. Other developed countries have also experienced growing consolidation. In Austria, the number of operators fell from 5 to 4 and the HHI rose from 2880 to 3430, following the acquisition of Tele.ring by T-Mobile Austria in 2005. In the UK in 2009, the T-Mobile UK and Orange UK merger proposal, with the stated aim of attaining cost efficiencies, would reduce the number of the main mobile network operators from 4 to 3, with the HHI rising from approximately 2300 to 3200 (based on pre-merger market shares).

However, mobile telecommunication mergers pose a challenge to the prevalent regulatory policy, since there is an inherent contradiction in relying on competition to ensure efficient outcomes while simultaneously allowing further industry consolidation.

Merging parties typically argue that merger proposals are driven by efficiency gains and by quality improvements that benefit consumers, such as expanded network coverage or the ability to invest in better technology. Nonetheless, these claims should be seen with some skepticism: after all, merger proposals are subject to regulatory review and approval. Merger regulations in the US and in the EU prohibit mergers that result in impediments to “effective competition”. Therefore, it can hardly be expected that merger parties put forward a merger rationale based on market power claims.

Enhanced efficiency and quality are outcomes that are acceptable and desirable from a policy maker perspective. Williamson (1968) was the first to argue that antitrust authorities should account for efficiency gains in evaluating mergers, and should be careful in disallowing mergers even with modest efficiency gains. Moreover, a large body of literature argues that mergers are, to a large extent, driven by efficiency gains (Farrel & Shapiro, 1990; Levin, 1990; Salant, Switzer, & Reynolds, 1983). Regulators, on the other hand, will be concerned and likely oppose the merger if the rationale for the merger lies in increased market power (and higher prices). Indeed, merger regulations tend to focus on the effect of mergers on “effective competition” and on prices, and only recently have started to take into account efficiency gains. For example, only starting with the 1997 revision of the DoJ–FTC Horizontal Merger Guidelines, were parties “invited” to offer efficiency claims, and prior to that date antitrust agencies and courts rejected efficiencies as a positive factor (Parisi, 2009). In the European Union, a provision to take into account efficiencies in merger cases was only adopted as part of the 2004 EC Merger Regulation reforms (Parisi, 2009).

To the best of the authors’ knowledge, in recent years, there has not been (in western countries) a single instance of a mobile telecommunications merger proposal that failed to be authorized by the regulatory authority. While one should be careful about generalizations, given the latitude of remedies imposed to authorize these mergers, these decisions can be interpreted as indicating that regulators do not consider the market power effects of the merger significant nor do they see “impediments to effective competition”.

In addition, to the extent that the “efficiency defense” is explicitly or implicitly taken into consideration, these decisions suggest regulators at least partly agree with the efficiency gains and quality improvement claims put forward by merging parties (Williamson, 1968).

This discussion gives rise to three questions. First, is mobile industry consolidation driven by efficiency gains or added market power? Second, are regulators warranted in authorizing further mergers in this industry? Third, what are the implications for the regulatory approach of the sector?

If industry consolidation is driven by efficiency gains, then regulators may be warranted in authorizing further mergers. However, increasing efficiency may suggest that the industry is a natural monopoly, in which case it would have to be regulated as such. Among other things, this suggests some type of retail price regulation would be required. Thus, if mergers are driven by efficiency gains, then the regulatory approach towards the sector may have to be revisited.

On the other hand, if mergers are driven foremost by market power gains, they are prohibited under current merger laws. In that case, regulators are not warranted in authorizing further mergers and the industry’s merger review process may have to be rethought.

In order to address these questions, this article uses an international dataset of mobile operators and analyzes the December 2006 decision by the Portuguese Competition Authority (hereafter PCA) to authorize the €10.5 bn (later revised to €11.6 bn) merger offer of Sonaecom for Portugal Telecom (PT). The decision was (and still is) interesting because it authorized the creation of a duopoly in three of the relevant markets associated with the mobile network<sup>2</sup> subsidiaries of the two groups, Optimus and TMN, respectively, with a combined 2006 subscriber market share of approximately 64%. It would have resulted in an increase of Portugal’s mobile communications market HHI from approximately 3650 to 5400 (based on pre-merger market shares). In defense of the merger, Sonaecom claimed that the Optimus–TMN merger would result in substantial efficiency gains and no price effects due to existing “market conditions” (Autoridade da Concorrência, 2006a).

The merger proposal was considered hostile by the targeted group, PT, owner of TMN. After an one-year long merger process, the PT shareholders rejected a motion to change the bylaws regarding voting restrictions and, as a result, the merger failed. Nonetheless, the PCA decision provides an interesting and unique test case for evaluating the “efficiency defense” of the mobile telecommunications industry consolidation process (Williamson, 1968). It is the only known instance where a duopoly would have resulted from an authorized merger.

This paper makes two main contributions. First, by providing evidence that increased market concentration, measured by the average market share, results in higher average industry efficiency, and by applying these results to show that the Optimus–TMN merger would have been both efficiency and welfare enhancing, the paper provides part support, on “efficiency defense” grounds, for the past regulatory policy stance of allowing further industry consolidation. On the other hand, by finding that increases in market concentration result in higher retail prices, the paper suggests that retail price–cap merger remedies are warranted.

<sup>2</sup> The decision was based on the analysis of the effect of the merger on 46 relevant markets, but this paper focuses only on the impact that the Optimus–TMN merger would have had on the performance of the Portuguese mobile-voice communications market. Mobile-voice communications represented approximately 80% of the €3bn mobile telecommunications industry or approximately 33% of the overall €7.3bn electronic telecommunications industry in Portugal in 2004.

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