How Does European Termination Rate Regulation Impact Mobile Operator Performance?

This paper presents an empirical study of the impacts of mobile termination rate (MTR) regulation on European mobile operator performance. It examines the effects of both glide path and asymmetric regulation on incumbents as well as new entrants to this market using a dynamic econometric model accounting for internal and cross performance effects. The study provides strong supportive evidence for current MTR regulation in Europe.

The European mobile industry has evolved recently via service providers emerging in national markets due to liberalisation. It is well known that more players can contribute to market competitiveness, resulting in a gradual decline in retail prices and in more services offered. Also, having more mobile network operators (MNOs) is associated with network interconnection, i.e. mobile users can be connected to any other subscriber (any to any). However, the call originating operator must compensate the network operator for call termination via mobile termination rates (MTRs). Furthermore, with only a few MNOs (with infrastructure) in mobile markets, retail markets are competitive, whereas MTRs set by MNOs are not considered naturally competitive and hence as requiring appropriate regulation.1 More precisely, European MTR regulation contains three rationales. First, as MNOs are designated as having significant market power for call termination there is a need for regulation. Second, in practice, it is evident in Europe that MNOs set excessive MTRs which are much higher than the actual costs of terminating calls.2 Finally, the “raising rivals’ costs” strategy provides MNOs with an incentive to inflate MTRs (and is detrimental to final consumers and small MNOs). Consequently, with the European regulation framework in 2002, National Regulatory Authorities (NRAs) regulated MTRs by capping the level of MTRs set by MNOs. Furthermore, due to the magnitudes of initial MTRs, NRAs only gradually lowered the caps to cost-oriented caps. This approach is called glide path regulation.

In reality, there are few infrastructure-based MNOs in European national markets, with different network sizes due to spectrum limitations. Generally, small networks can result from late entry, while large network operators are often former incumbents. For this reason, European regulators treat MTRs depending on the MNO market position. In particular, NRAs allow an entrant to set higher MTRs than incumbent operators, although the gap between MTRs is gradually reduced over time (asymmetric regulation).

The efficacy of both glide path and asymmetric regulation in the wholesale markets is subject to debate.3 Glide path regulation is often criticised by economists who are of the opinion that high MTRs intensify competition as an operator gains an additional consumer that provides higher MTR revenue.4 Furthermore, in the presence of externalities (on both sides of the market) in the mobile industry, total welfare is maximal when prices for a multi-product

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1 In fact, both retail market prices and MTRs were subject to regulation at the beginning of liberalisation. However, with the new communication framework in 2002, only MTRs remain regulated.
Because of small market shares, new entrant MTRs should be implemented. Indeed, Genakos and Valletti show that when MTRs are regulated at lower levels, there is a waterbed effect and service prices are higher. With lower MTRs, MNOs derive less interconnection revenue, implying a smaller transfer to the end-user, and so increase retail prices to rebalance profits. The size of the waterbed effect is greatest when the firm’s profit is unaffected as retail prices fully adapt to MTR changes. That is, the firm is “profit neutral” with regard to MTR levels. Following this direction, Genakos and Valletti show that OECD MNO profits are only mildly affected by MTR settings, suggesting that the impact of the waterbed is not complete. In the European context, Anderson and Hansen show that the impact of MTR levels on operator profit is insignificant. Accordingly, it appears that glide path regulation may not induce stronger market competition, and that light-hand regulation in wholesale markets should be implemented.

In summary, while the regulatory setting of MTRs substantially impacts on competitive strategy and market development, current economic arguments are unconvincing for regulatory practices, especially with a paucity of analysis on the effectiveness of European MTR regulation. Accordingly, this paper evaluates the impact of MTR regulation on European MNO performance: entrant and incumbent. Furthermore, the firm performance indicators employed for the analysis are market share and profitability (EBITDA margin). By estimating a dynamic econometric model using GMM, the study shows that MTR regulation directly positively impacts on the entrant market share, but negatively impacts on incumbent profit. The market share impact is explained by entrants’ incentive to increase customer base to gain scale economies and strengthen market position. Under call termination-based price discrimination in Europe, the profit effect results from stronger competition via European asymmetric regulation. The empirical results also indicate that MTR regulation indirectly raises the entrant profit and hence strengthens sustainable competition between network operators in the long run. Consequently, the study provides evidence supporting current European MTR regulation.

### Empirical Approach

European operators are categorised as either incumbents or entrants so as to enable the impact of MTR regulation on these groups to be investigated separately.

### Econometric Specification and Estimation Methodology

Next, consider that MNO business performance (e.g. market share or profit) is determined by internal time effects, cross performance effects and MTR regulation.

Operators are likely to accumulate business stocks over time. Hence, MNO business growth is in part based on own performance.

Another firm performance determinant represents the non-systematic relationship between business indicators and the effects possibly due to the firm’s strategic development in Europe’s mobile industry. For example, operators may forego short-run profit to achieve (possibly) long-run market growth. Moreover, with the internal time effects, the relationship within the performance indicator is complex, as it not only affects own values but also other performance indicator future values. For example, higher market share increases the firm’s future share and

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8 M. Armstrong, J. Wright, op. cit.
9 C. Genakos, T. Valletti, op. cit.