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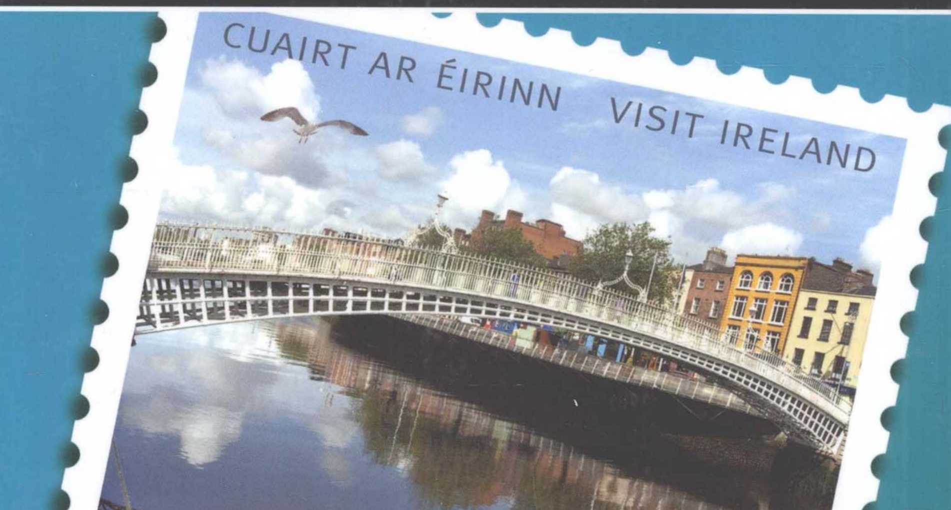
The Role of the Postal and Delivery Sector in a Digital Age



Edited by
Michael A. Crew and Timothy J. Brennan

ADVANCES IN REGULATORY ECONOMICS

The Role of the Postal and Delivery Sector in a Digital Age

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The Role of the Postal and Delivery Sector in a Digital Age

ADVANCES IN REGULATORY ECONOMICS

Series Editors: Michael A. Crew, *CRRI Professor of Regulatory Economics and Director, Center for Research in Regulated Industries (CRRI), Rutgers, The State University of New Jersey, Newark, USA* and the late Paul R. Kleindorfer, *former Paul Dubrule Professor of Sustainable Development, INSEAD, Fontainebleau, France and Anheuser-Busch Professor Emeritus of Management Science, The Wharton School, University of Pennsylvania, USA*

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Preface and acknowledgements

This book is a result of the Center for Research in Regulated Industries' (CRRI) 21st Conference on Postal and Delivery Economics, which was held May 29 to June 1, 2013 at the Portmarnock Hotel, County Dublin, Ireland. The 1st Conference was held in 1990 in the UK. Over the twenty plus years after the 1st Conference, the industry has seen considerable change. These include the opening of postal markets to competition for most countries in the European Union on January 1, 2011. Even more important is the increasing impact of multi-modal competition. As a result of email, social networks, and Internet advertising, important questions are being raised about the future of mail. The conference and this book attempt to address some of the resulting challenges. They follow earlier conferences and workshops. This is the 21st edited volume in CRRI's program on Postal and Delivery Economics.

The conference was made possible by the support of its generous sponsors. We would like to thank sponsors not only for financial support, but also for their intellectual contributions, advice and encouragement, and for supporting service on the organizing committee: Mohamed Adra, John Baldwin, Chris Beaty, Jody Berenblatt, Kristin Bergum, Geoff Bickerton, Stephen Brogan, Jim Bruce, Robert Campbell, Margaret Cigno, João Confraria, Angela Cox, Bernard Damiens, Gene Del Polito, Paul Dudley, Richard Eccles, Charles Fattore, Stephen Ferguson, John Fletcher, Alessandra Fratini, Damien Geradin, Ruth Goldway, Stefano Gori, Herbert Götz, Benjamin Gough, Robert Hammond, John Hearn, Jan Bart Henry, Paul Hodgson, Stuart Holder, George Houpis, Christian Jaag, Luis Jimenez, Denis Joram, Keith Kellison, George Kuehnbaum, David M. Levy, François Lions, Martin Maegli, Leonardo Mautino, Meloria Meschi, Heikki Nikali, Henrik Ballebye Okholm, Chris Paterson, Ted Pearsall, Wolfgang Pickavé, Michael Ravnitzky, Jim Sauber, Michael Scanlon, Gennaro Scarfiglieri, Rob Sheldon, Michael Shinay, Soterios Soteri, Nancy Sparks, Gregory Swinand, Urs Trinkner, Mark van der Horst, Joost Vantomme, Tim Walsh, David Williams, F.W. Worth and Ralf Wojtek.

This year's conference benefited greatly from the efforts of the host, An Post. Colm Farrelly was incredibly helpful during the conference, enabling it to operate very smoothly. He and colleagues provided both advice and assistance on numerous occasions and contributed greatly to the success of the event.

We would like to thank our distinguished dinner speakers: Donal Connel, Chief Executive Officer, An Post, Ruth Goldway, Chairman, United States Postal Regulatory Commission, and Joseph Corbett, Chief Financial Officer, USPS. These speeches addressed current issues of regulation and postal reform against the background of increasing multi-modal competition in the postal sector, maintaining the conference tradition of stimulating presentations by distinguished leaders in the industry.

In addition, we thank all authors and participants of the conference. Absent their contributions, the conference and this book would not have been possible. The usual

disclaimers are applicable. In particular, the views expressed reflect the views of the authors and are not necessarily those of the sponsors.

We end with a very special remembrance. On August 24, 2012 Paul R. Kleindorfer died from Amyotrophic Lateral Sclerosis after an ordeal lasting over a year. Throughout, Paul continued to work on various projects – including his duties as co-editor of the book for the 2012 Conference – almost until his dying day. He added his brilliance and joie de vivre to the conferences over more than 20 years. We are privileged to have known Paul and devote this book to his memory.

Michael A. Crew and Timothy J. Brennan

Contents

1. Gross substitutes versus marginal substitutes: implications for market definition in the postal sector*

Timothy J. Brennan[†] **and Michael A. Crew**[‡]

1 INTRODUCTION

Internet competition has had a major impact on the demand for postal services, particularly letter delivery. In the US, total mail volume delivered by the US Postal Service has declined from a peak of 213 billion pieces in 2006 to around 160 billion in 2012, as mailers have shifted correspondence to the Internet (USPS, 2013, p. 5; GAO, 2013, pp. 2–3). At the same time, mobile phone use has grown dramatically, with approximately 323 million mobile phone subscribers in the US in 2012, with data traffic over those phones increasing by a factor of six from 2009 to 2012 (CTIA, 2012). Significant declines in mail volume have been seen in other major countries throughout the world, as smart phones and the Internet take an increasing share of what was previously provided by transaction and advertising (Accenture, 2013, p. 8).

This raises the question of whether postal operators (POs) retain sufficient market power to justify continued public oversight of their pricing. Market definition techniques, pioneered in the 1980s by US competition authorities for use in merger evaluation, have become used around the world to assess market power. Such techniques can be useful in *ex ante* assessments of deregulation, analogizing removal or a regulator to removal of a rival in a merger. However, following Brennan (2008), because POs have lost business to electronic delivery does not necessarily imply that they lack market power. The important distinction is between gross substitutes that reduce demand for a PO's services, and marginal substitutes, where the effect on a PO depends significantly on a PO's prices.[1] Only the latter matters for deregulation, as a PO that has lost business to gross substitutes could retain market power, albeit over a smaller market.

The structure of the chapter is as follows. Section 2 presents the meaning and evolution of the market definition concept in antitrust law and competition policy. Section 3 shows how the concept can be used to inform deregulatory decisions by analogy to removal of a price control through deregulation with removal of a rival's constraint on pricing through merger. Nevertheless, as also discussed in Section 3, the market definition idea does not work in reverse in terms of determining whether a PO is 'market dominant' over

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a particular service.[2] Section 4 elaborates the key theoretical claim, that the firm constraining a PO's power to raise prices – those firms identified as in the defined relevant market – are inherently marginal substitutes. Section 5 uses that framework to show that entry by gross substitutes, even though it does not eliminate market power, reduces the PO's profits that might be available to fund its Universal Service Obligation (USO). Section 6 concludes.

2 MARKET DEFINITION

Section 7 of the 1914 Clayton Act (since clarified), prohibits mergers that

> of another person engaged also in commerce or in any activity affecting commerce, where in any line of commerce or in any activity affecting commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly.[3]

To interpret this statute, US courts adopted the terms 'product market' and 'geographic market' to refer to 'line of commerce' and 'any section of the country'. Consequently, a crucial issue in merger cases has been 'market definition'. If the relevant product or geographic market includes lots of competitors with fairly small shares, or if the merging firms operate in essentially separate markets, there is little reason to think that competition will be reduced. Alternatively, if the merging firms are large players in the same product and geographic market, the merger is more likely to threaten competition.

Market definition, as currently understood, was first presented in the Horizontal Merger Guidelines issued by the US Department of Justice's Antitrust Division (DOJ) in 1982,[4] since revised and reissued in 1984, and later with the US Federal Trade Commission (FTC), the other national competition law enforcement agency, in 1992, 1997, and 2010. Prior to the 1982 Guidelines, courts had little additional guidance that would speak to the 'inhibit competition' or 'create a monopoly' criteria. To take an example, 'U.S. manufactured automobiles' may be both too narrow – imported cars may be relevant substitutes – and too broad – two-door subcompacts may not be substitutes for sport utility vehicles. In the 1982 Guidelines, DOJ took a major step toward resolving this uncertainty by specifying a procedure to define markets in merger cases. This procedure identified the product and geographic markets relevant to a merger by posing the following question: what is the smallest set of products, and the smallest geographic area of business, in which a hypothetical monopolist could profitably institute a 'small but significant non-transitory increase in price', known in antitrust parlance as the 'SSNIP test'? The orders of magnitude in the SSNIP tests were typically a 5–10 percent increase in price that would stay in place for a year or two. For a merger to be likely to raise price, both firms would have to compete in this relevant market.[5] If a price increase would induce fairly rapid entry, the merger, DOJ would be less likely to try to block it.

This market definition framework has been widely adopted. US regulatory agencies (Federal Energy Regulatory Commission, Federal Communications Commission) use this to review mergers of firms under their jurisdiction.[6] The framework serves as the basis for Canada's Merger Enforcement Guidelines.[7] Although the European Union does not specifically use the term 'hypothetical monopolist', it does say that the relevant market needs to be expanded until 'the set of products and geographical areas is such that small, permanent increases in relative prices would be profitable', using a definition for 'small, permanent increases' akin to the SSNIP test.[8]

Despite the use of the market definition concept around the globe, the market definition process is losing some of its primacy within merger enforcement. By focusing on how much coverage over products and geography a hypothetical monopolist would need to raise price significantly, market definition emphasizes the risk of facilitating collusion among all of the sellers in the market – referred to as 'coordinated effects'. It is poorly designed to address whether there would be higher prices simply because two firms within such a market would no longer be competing post-merger – referred to as 'unilateral effects' (White, 2006). Under the leading framework for assessing unilateral effects mergers, 'upward pricing pressure' (Farrell and Shapiro, 2010) the harm from a merger between A and B arises because when A raises price, it can now capture profits that would accrue to B. With sufficient data, this can be measured directly without reference to a defined market. This reduced need for market definition is reflected in the most recent revision of the Horizontal Merger Guidelines, issued by DOJ and the FTC in 2010.[9]

Despite these recent changes, the market definition paradigm remains useful for understanding the potential effects of deregulating a PO. However, it is not and never has been a basis for ascertaining when a firm has a dominant position in a market. This is examined in Section 3.

3 MARKET DEFINITION, MARGINAL SUBSTITUTES AND DEREGULATING (OR REGULATING) A POSTAL OPERATOR

The Deregulation Question: Marginal Substitutes and Market Dominance

Conventional market definition can be helpful in assessing the merits of deregulating a previously regulated firm. For USPS, this would constitute changing a service's designation from 'market dominant' to 'competitive'. The Postal Accountability and Enforcement Act of 2006 (PAEA) defined market dominant as follows:

> The market-dominant category of products shall consist of each product in the sale of which the Postal Service exercises sufficient market power that it can effectively set the price of such product substantially above costs, raise prices significantly, decrease quality, or decrease output, without risk of losing a significant level of business to other firms offering similar products.[10]

The central issue in deregulation is the same as in mergers, the competition policy setting for which market definition was constructed. Since the questions are the same – 'Will a merger lead to a SSNIP?' and 'Will deregulation lead to a SSNIP?' – the framework can be adapted to answer the question. Will a change in the institutional regime predictably result in an increase in price? Or will there be sufficient competition from other firms in the relevant market, sufficiently rapid entry from new suppliers, or sufficiently elastic demand to make such a small but significant, non-transitory increase in price unprofitable?[11]

For a merger in an unregulated environment between a PO and some other entity, the market definition question would be how broadly the market would need to be defined so that a hypothetical monopolist would be able to raise price. As phrased in the above PAEA definition, the purpose of market definition is to identify which products are 'similar'. All suppliers of products that consumers believe are sufficiently close substitutes would need to be included. For example, if the merger were between a PO and the local wireline telephone company, they would constitute the market if the merger enabled a profitable SSNIP. The market would have to be broader if, say, a PO and telephone company price increase would lead enough consumers to communicate over wireless technologies that the SSNIP would be unprofitable. In that case, the market would have to include wireless phones.

Although regulation is not the same as a competition from a profit-maximizing firm, in principle it serves the same purpose as competition from rivals.[12] The analogy with deregulation asks whether a deregulated PO could institute a SSNIP without leading sufficiently many consumers to adopt other communication technologies to render it unprofitable. If yes, the relevant market is defined by the PO and the regulator, and deregulation – removal of the price-constraining entity – would lead to a material increase in the exercise of market power. If the answer is no, for example, because the SSNIP would significantly accelerate the use of email, the market would be broader than postal service. Deregulation would be less likely to lead to an anticompetitive outcome.[13]

However, the different contexts can lead to a different outcome if the market turns out to be narrow. In the merger context, blocking a merger may forgo some scale economies or marketing efficiencies that might result from combining the two merger partners into a single firm, but it leaves competition between those firms intact.[14] In the regulatory context, the analogous decision, not to deregulate, leaves regulation in place. If competition mitigates market power more effectively than does regulation, for example, by providing more effective incentives to control cost, improve quality, and innovate, a stricter test for continuing to regulate might be appropriate. If a SSNIP of 10 percent suffices to block a merger, perhaps a SSNIP of 20 percent would be necessary to justify deregulation.

One other difference between the regulated and unregulated context needs to be kept in mind, particularly in the postal sector. In a regulated environment, the regulator may institute a variety of cross-subsidies, where prices above cost generate revenues to cover losses of below-cost operations. Mail between locations within a city may be less expensive to deliver, particularly within a target time limit, than mail to or between rural locations. A noteworthy US example is charging the same price to mail a letter regardless of the distance the letter travels, whether 54km from Washington to Baltimore or 6,379 km from Miami to Fairbanks. Elimination of regulation would cause the prices of subsidized services to rise, likely by more than a SSNIP. This would be economically efficient and not necessarily indicate market power.

A crucial point here is that market definition, in either context, is about whether consumers would switch to other products *in response to a SSNIP*. It is not about whether they have switched for reasons other than price. Putting it another way, it is only marginal substitutes that matter for the merger or deregulation question. As shown below, a firm may set a higher price after gross substitutes – those consumers have chosen but not on the basis of relatively marginal changes in price – have reduced demand for its product.

Identifying Market Dominance: The Limits of Market Definition

Before showing the different effects gross substitutes can have on a PO's prices and output, it is important to discuss a significant limit of market definition. Market definition was designed to inform judgments on how a change in regime – merger generally, deregulation here – might increase price. It is not designed to address the static question of whether an individual firm or group of colluding firms has market power in the first place. If the issue is whether a single firm or cartel is dominant or a monopoly, the market definition inquiry would be whether that firm would increase its profits by raising prices. If it could increase profits by a price increase, however, it presumably already has done so. Any profit-maximizing firm will raise price up to the point when further price increases would be unprofitable. The price it selects may reflect market dominance, but the market definition test cannot say so.

Consequently, it is incorrect to infer that if a firm faces competition at current prices, it must lack market power. A firm will raise price just to the point where competition is meaningful. In US competition policy circles, this erroneous inference is called the 'Cellophane fallacy', after a 1956 US Supreme Court decision wrongly concluded that DuPont lacked market power in Cellophane because buyers believed other wrapping materials were substitutes.[15] The monopoly price is just that price where buyers begin to regard other goods and services as substitutes. Therefore, the PAEA test for market dominance, whether a PO can raise price or reduce quality without losing significant business to other firms, will not produce the right answer when posed at market rates rather than at regulated rates. If a firm can set the price and quality that maximizes profits, it will no longer be market dominant since it will by definition lose money if it raises price or reduces quality further.

Although market definition is inappropriate for ascertaining market dominance over a particular product by a firm or group of firms acting collectively, it points the way toward a test for dominance (Brennan, 2008). That test asks not how many products or geographic areas would have to be covered by a hypothetical monopolist for a SSNIP to be profitable. It instead asks what this firm (or group of colluding firms) would do if forced to reduce prices a small but significant nontransitory amount. If the firm is acting competitively, a lower price would lead it to reduce output, as marginal sales where marginal cost is close to the initial price would no longer be profitable. If the firm has significant market power, it would increase output, as a price limit would mean that it no longer has an incentive to reduce output in order to raise prices.

Unfortunately, there will rarely if ever be a natural experiment to see if this test is passed. One would need entry from outside firms, charging a price a small but significant amount below the going price, perhaps if a government had temporarily lifted a trade barrier or altered a tariff. This, however, seems highly unlikely. This test also begs exactly the main policy question a dominance test would want to inform – whether a firm needs to be regulated. In effect, this dominance tests asks, 'If the firm were regulated, would output rise or fall?'. To decide whether a firm is market dominant, and thus to see if regulation is worthwhile, the theoretically appropriate test says that a firm is market dominant only if regulation would be worthwhile. For this reason, and the lack of applicable empirical data, defining whether a firm is its own market is likely to remain an educated guess.

4 GROSS SUBSTITUTES AND PRICES

In assessing deregulation, the intuition may be that because of gross substitution, for example, as a result of a new technology, the deregulated firm must now lack market power. The postal sector application would be that the growth of email means that letters could no longer be priced at a monopoly level.[16] This intuition goes beyond the postal sector. In the telephone sector, it would imply that a provider's standard wire-based 'plain old telephone service' no longer has market power because of mobile telephones. This intuition is misleading. A gross substitute undoubtedly shrinks the market available to the incumbent provider. Letter delivery is a smaller business because of email, but this need not mean that a sole provider of letter delivery would lack market power.

Consider eyeglasses and contact lenses. Undoubtedly, the use of contact lenses and technological innovations that have reduced their cost and made them more comfortable to wear has cut into the demand for eyeglasses. However, that need not mean that a hypothetical monopolist of eyeglasses would lack the ability to institute a profitable SSNIP. To say that contact lenses removed potential market power over eyeglasses is to say that a hypothetical monopolist large enough to institute a SSNIP would not be limited to eyeglasses; it would have to include contact lenses as well.

This is possible but not intuitively plausible. In our terms, this is because contact lenses are gross substitutes for eyeglasses but not marginal substitutes. For contact lenses to be marginal substitutes, it would have to be that a large fraction of eyeglass wearers – enough to matter for profitability – would turn to contact lenses just because the price of eyeglasses went up 5 or 10 percent. Undoubtedly some would switch in response to a small price increase. Undoubtedly as well, were eyeglasses cheap enough for consumers to regard them as disposable while contact lenses carried price tags in the 10 thousand euro range, few other than millionaires might switch from eyeglasses. Both of those are consistent with the idea that contact lenses lie outside the relevant market for eyeglasses, because the choice between them is not highly sensitive to relatively marginal changes in relative prices. Factors having to do with appearance or convenience likely hold greater sway.

Instead, contact lenses are gross substitutes for eyeglasses. Their existence depresses demand for eyeglasses below what it would be had contact lenses never been invented. Yet they are not marginal substitutes, where the choice between the two is sufficiently sensitive to price to preclude a hypothetical monopolist from raising the price of eyeglasses above what one observes with competition among rival eyeglass suppliers.

Notably, while the presence of marginal substitutes will constrain a PO's ability to raise price, incursion by a gross substitute can cause prices to increase. The specific condition for this is set out in:

Proposition 1: Assuming constant marginal cost, incursion by a gross substitute will raise the incumbent's profit-maximizing price if it makes demand less elastic at the profit-maximizing price.

Proof: Appendix 1A.1.

At the profit-maximizing price, the price–cost margin – the fraction of the price that is above marginal cost – equals the inverse of the absolute value of the elasticity of demand.