SWEDISH ECONOMIC POLICY REVIEW 9 (2002) 93-128

Competition law, competition policy, and deregulation

Mats A. Bergman*

Summary

■ A number of Swedish industries were deregulated in the early 1990s, most of which were network industries, where there exists a critical bottleneck (infrastructure) stage. Since a firm controlling the bottleneck has significant market power, it is often necessary to implement a competition policy limiting the exercise of this power.

The two traditional methods for controlling market power in this context are price regulation and public control over the entire industry (e.g., through a public utility). Deregulation amounts to abandoning these methods and, in many cases, access regulation is introduced instead. In addition, structural measures, such as vertical and horizontal separation, are often used.

This article argues that access regulation (sector-specific regulation), structural measures and competition law are complementary policy tools. Access regulation gives the entrant access to the essential infrastructure, thus making it possible for the entrant to produce. Arguably, the most important effect of the structural measures is to facilitate regulation. In practice, the most important effect of competition law is to prevent customer lock-ins.

The latter conclusion is supported by an analysis of Swedish competition law cases in recently deregulated industries. The analysis shows that the most important cases concern attempts by the incumbent to lock in customers, e.g., through fidelity rebates or tying. Furthermore, it shows that in the Competition Authority's cases, recently deregulated industries are over-represented, relative to the GDP weight of the industries, by approximately a factor of three.■

JEL Classification: K21, K23, L40, L50.
Keywords: Antitrust, competition law, deregulation, regulatory reform, network industries.

* *Mats A. Bergman is a research fellow at the Department of Economics, Uppsala University.*

SWEDISH ECONOMIC POLICY REVIEW 9 (2002) 93-128

Competition law, competition policy, and deregulation

Mats A. Bergman*

In the early 1990s, Sweden's competitive regime experienced a number of important changes. A new and stricter competition law was enacted in 1993, harmonising the Swedish legislation with that of the EU. A number of industries were deregulated; the taxi market in 1990, domestic air traffic in 1992, both the postal and the telecom markets in 1993 and the electricity market in 1996. The banking market had successively been deregulated during the 1970s and the 1980s, but important steps around 1990 were the abolition of the concession rules (in 1986 and 1990) and the lifting of the restrictions against banks and insurance companies entering each other's markets (in 1991). The rail market was partially deregulated in successive steps in 1990, 1992 and 1996.[1] Finally, Sweden joined the EU in January 1995.

Competition law and sector-specific competition policy are two complementary means of achieving effective competition in deregulated markets. Sector-specific competition policy, in turn, can be divided into structural measures, such as vertical and horizontal separation, and measures directly aimed at controlling pricing and other aspects of firm behaviour, e.g., price and access regulation. It has been argued (Bergman et al*.,* 1998) that sector-specific regulation is critical in recently deregulated markets but that eventually, it can be abolished. This will occur when competition has evolved to the point where the general competition rules are sufficient to ensure an efficient outcome. In order to assess the likelihood of such an evolution, this article describes the roles of competition law and sector-specific competition policy in deregulated markets. In particular, it tries to systematise which types of problems (types of anti-competitive behav-

* *I am grateful for comments from Lars Hultkrantz, Jens Josephson, Jan-Eric Nilsson and Ann-Christin Nykvist, from an anonymous referee and from the editors of this journal.*

[1] See Bergman (2002a) for a detailed exposition of the regulatory changes in aviation, banking, electricity, post, telecom and rail. See The Swedish Competition Authority (2000a,b) for comments on the taxi market.

iour) that have been addressed by the competition law in recently deregulated Swedish markets.

For a new entrant to succeed in a deregulated market, it will always be necessary to be able to attract customers and it will often be necessary to have access to existing infrastructure. Access regulation (i.e., sector-specific regulation) forces the incumbent firm to establish an economic relationship with the entrant, ensuring that the latter can purchase infrastructural services at a regulated price, thereby enabling the entrant to produce. We can also say that sector-specific regulation prevents incumbents from exploiting their control over the infrastructure. Although competition law can also be used for the same purpose, the Swedish experience suggests that the law is relatively ineffective in enforcing access to bottleneck infrastructure.

The most typical application of competition law in such markets is instead against unfair or unreasonable business methods preventing customers from changing suppliers, i.e., against the exploitation of strong customer bases through customer lock-ins in a broad sense. Such lock-ins can be achieved, e.g., by fidelity rebates, tying or predatory pricing.

Concerning structural measures, it is argued that the primary benefit from vertical and horizontal separation is that they facilitate regulation. Hence, there appears to exist a "division of labour" between the three policy tools.

Based on the differences in focus and effectiveness between sector-specific regulation, competition law and structural measures, the main conclusion of this article is that competition law, sector-specific access regulation and structural measures are complementary also in the long run, at least in network industries. Only if the competitive process results in multiple infrastructures (i.e., facilities-based competition) can the sector-specific regulation be dismantled.

Another finding is that the number of cases handled by the Competition Authority indicates that recently deregulated industries are over-represented by a factor of three, in relation to these sectors' share of total value added in the private sector.

The first section of this article discusses the pros and cons of deregulation, in particular in network industries. Section 2 provides an overview of the competition law. Section 3 discusses alternative models for retaining the market power to which control over bottleneck infrastructure gives rise. In Section 4, the role of competition law in deregulated markets and the legal enforcement of the Swedish Com-

petition Authority in such markets are analysed. Finally, Section 5 draws some summarizing conclusions.

1. Deregulation of network industries

For the purpose of this article, deregulations can be defined as regulatory reforms that, completely or partially, liberalise the rules for pricing, entry and exit. This definition includes privatisations increasing the market's influence. An example would be the privatisation of a formerly publicly owned monopoly, in combination with access regulations. However, it does not include privatisations in markets that were already competitive, nor the introduction of competition in services that are mainly publicly financed (e.g., health care and education) through procurement or voucher systems.

A deregulation is often accompanied by the introduction of fairly detailed rules for access pricing, and sometimes also for pricing and entry. This could, for example, be the case when an un-codified state monopoly is incorporated or privatised, while competition is introduced. Such were the cases with the Swedish Post Administration (Postverket) and the Telecommunications Administration (Televerket), now Sweden Post and Telia, respectively. As long as pricing, entry and exit are de facto liberalised, such reforms can still be seen as deregulations, irrespective of the fact that the "quantity" of regulations, measured, e.g., in the number of paragraphs, may increase.

1.1. Pros and cons of regulation

Economic theory has identified three main categories of market failure. These are the inefficiencies caused by market power, external effects and asymmetric information, respectively. Although this was not the sole motivation, an important justification for the previous regulations in the recently deregulated markets was to prevent the exertion of market power. In the following analysis, I will disregard other possible justifications.[2]

[2] Certainly, there exist regulations with other purposes, e.g., to counter-act negative external effects (for example, environmental regulation) or solve problems associated with asymmetric information (e.g., product information and safety standards, consumer protection legislation). However, reforms within these areas are normally not referred to as "deregulations". Other motivations for regulations are distributional concerns and the requirement of universal service obligations (USO). Previously, USO was often achieved within a public utility or by regulating consumer

There are four main negative effects of market power (Tirole, 1988, Ch. 1). First, a firm with market power can increase the price, which transfers wealth from consumers to the producer. Second, a price increase typically has the effect of reducing quantities below the optimal level, resulting in allocational inefficiencies. Third, market power can result in X-inefficiencies, i.e., in weaker cost control. Fourth, firms can waste resources in order to *gain* market power (so-called rent seeking).

On the other hand, there are least five important disadvantages of regulation. First, regulation in itself often weakens the incentives for cost control. An obvious example is cost-based price regulation (cost-of-service, cost plus or rate-of-return regulation). Under such regulations, all or most of a cost increase can be passed on to the consumers, giving the firm little incentives to restrain costs (Armstrong et al., 1994, Ch. 2).

Second, regulation itself introduces a risk element, so-called regulatory risk. When considering undertaking an investment, the firm must calculate with the risk that changes in the regulation will decrease the ex-post profitability of the investment, which reduces the incentives to invest and increases the risk-premium requirement (Armstrong et al., 1994, Ch. 3.6).

Third, there is a risk of regulatory capture, i.e. that the regulators (both the regulatory authorities and politicians) cater for the interests of the industry, rather than those of society as a whole. This could, for example, be due to personal career concerns, or because the industry constitutes a more coherent pressure group in matters pertaining to the industry, than does the large consumer collective (Laffont and Tirole, 1993, Ch. 11; Armstrong et al., Ch. 3.7).

Fourth, there are direct regulatory costs, both for the authorities and the firms. The latter need to provide information to the authorities and sometimes, they need to enter into negotiations or will be drawn into court processes.

Fifth, regulation tends to restrict consumer choice and limit product variety too much.

Whether the pros or cons of deregulation carry the greater weight is an empirical question. Bergman (2002a) provides extensive references and concludes that empirical studies based on good data that

prices. Now, the tendency is to procure the non-commercial services required to achieve USO.

can be found in the international literature often find efficiency gains, or price or cost reductions, in the range of 0 to 10 per cent after deregulation. In many instances, gains of around 5 per cent have been reported.[3] Bergman also surveys previous studies of Swedish deregulations. Although there are few or no *quantitative* studies of Swedish deregulations that meet reasonable methodological standards, the Swedish experience in most industries is at least not inconsistent with the international results.

1.2. Network industries and the bottleneck problem

Many of the deregulated industries are network industries; in particular air, banking, electricity, post, rail and telecom. There are two perspectives on network industries. One starts from the observation that there are economies of scale on the supply side in industries with a geographically dispersed infrastructure (see, e.g., Bergman et al, 1998). It is more costly to duplicate, e.g., a railroad network, a telecom network or a network for the transmission and distribution of electricity, than to use a single network more intensely. The other perspective on network industries starts from the observation that there are economies of scale (also) on the demand side, in industries that transport people or goods or transmit information between different points (see, e.g., Economides, 1996). In one-way networks, the flow typically goes from one or a few emission points to many receiving points, as in broadcasting, cable TV and electricity networks. In two-way networks, the flow goes in both directions between all or most points in the network. Examples are telecom, post and some payment system networks.

Many two-way networks are characterized by direct network effects: the benefit from being connected to a network increases with its size. For example, when more subscribers connect to a telecom network or a giro payment system, the individual's utility of the network increases, because she can reach and be reached by a larger number of other subscribers. In many one-way networks, utility does not increase directly with the number of subscribers. However, a larger number of subscribers often increases the variety (the number of TV

[3] However, in a survey of deregulation studies, Winston (1993) concludes that deregulation typically lowers costs and prices with 25-75 per cent. A third extensive survey is Gonec et al. (2000), which reports that previous studies have found price and cost falls of 0-50 per cent after deregulation, but does not conclude what is a "typical" outcome.

programmes or the number of computer applications compatible with a certain computer standard) or the number of service points (the number of ATMs, Automated Teller Machines).[4]

Irrespective of whether the economies of scale have their origin at the supply or the demand side, network industries often have a production structure with several vertically related production stages. In some stages, competition is potentially more viable than in others, in the sense that the minimum efficient scale is smaller in relation to the size of the market. This is often illustrated as in Figure 1, where only one firm can be active in the upstream infrastructure market, the bottleneck, while several firms can be active in the downstream market for service provision. For example, the upstream market can be establishing and maintaining a local telecom network or an electricity transmission and distribution network. The downstream market can then be the telecom services market or the electricity generation and retailing markets, respectively.

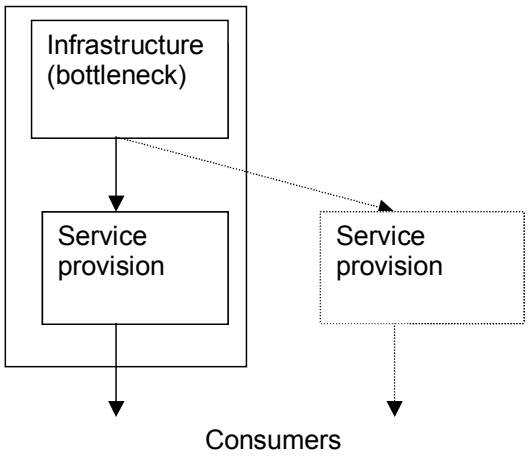
In the context of demand-side network effects, the upstream market can, for example, be the market for computer operating systems, and the downstream market the applications market.

By assumption, there will be market power in the bottleneck stage, which, in itself, gives rise to the negative consequences mentioned in the previous sub-section. However, control over the bottleneck can give rise to market power also in the potentially competitive downstream market. In many instances, turnover in the bottleneck stage is relatively small, in relation to total turnover. For example, a third of the average Swedish household's electricity bill comes from network fees, while airport costs only constitute about a tenth of the total costs for air travel. Similarly, the turnover of the central payment systems (e.g., the central giro and card transaction systems) is only a small fraction of total turnover in the retail banking market.[5]

[4] Networks for passenger transport are two-way networks, but the utility of using (or being able to use) such a network does not increase directly with the *number of passengers*. However, a larger number of passengers increases the frequencies and the *number of destinations*, which can be seen as an indirect network effect. Alternatively, there is a direct network effect in the number of destinations that can be reached.

[5] Bergman (2002a). Excluding taxes, the distribution and transmission costs account for more than half of the production costs for the electricity bought by a typical household, while this share is lower for large industrial consumers.

Figure 1. The bottleneck problem



The idea that control over one monopoly stage in a succession of otherwise competitive stages gives control over all stages and hence yields the same profit as would control over all stages, has been recognised at least since the 1950s. This is sometimes known as the "law of one profit". Similarly, it has long been recognised that it may be more efficient to have one vertically integrated monopoly, than to have a succession of monopolies (Spengler, 1950). More recent research has shown that a vertically integrated monopoly may also be preferable to a market structure where one stage is monopolised and the other stage is competitive. On the other hand, it has been demonstrated that the opposite may also be true: that a firm that controls one stage may, to the detriment of efficiency, foreclose rival firms in the potentially competitive stages (Tirole, 1988, Ch. 4).

2. Competition law

The purpose of competition law—known as antitrust law in the US—is to limit the negative consequences of market power.[6] This is achieved through three main prohibitions: the prohibition against

[6] There is a debate as to whether the measure of success is (or should be) consumer welfare or total social welfare. For example, under the latter standard, a merger reducing consumer surplus, but increasing total welfare, would be allowed. On balance, the standard used in practice appears to be consumer welfare.

agreements restricting competition, the prohibition against the abuse of a dominant position and the prohibition against mergers leading to a dominant position.[7]

2.1. The three main prohibitions

Anticompetitive agreements

Article 81 of the EU Treaty prohibits "agreements between undertakings […] which have as their objective or effect the prevention, restriction or distortion of competition", whereas Section 1 of the US Sherman Act prohibits "every contract, combination […] , or conspiracy, in restraint of trade". Note in particular that the law does not require the agreement to be effective in restraining competition for it to be prohibited. Clearly, under both legislations, the prohibitions are potentially far-reaching. Therefore, only such agreements that restrain competition *unreasonably* are prohibited in practice. This includes blatant offences, such as price fixing or customer allocation between rivals. However, in many cases, firms are allowed to set up joint ventures, sell through exclusive channels *et cetera*, even though this limits or eliminates competition between certain firms. The intention is, of course, that efficiency-improving cooperation should be allowed, while collusion that only reduces competition should not. Sometimes the distinction between efficiency-improving and competition-reducing agreements is not obvious, however.

There are some differences between European competition law and US antitrust law as to exactly which types of agreements are allowed. An important difference in procedure is that under current European rules, two firms may obtain explicit exemptions from the prohibition. The implication is that the firms will have an advance notification from the competition authorities that the agreement is allowed. Such exemptions are given by the European Commission or the national competition authorities, either on an individual basis or for a whole class of agreements—so-called group exemptions.[8] Under

[7] Here, the terminology is in accordance with EC competition law. See below for the closest correspondences in US antitrust law. Although there are significant differences between the two legislations, both are structured around three main prohibitions with roughly the same basic thrusts.

[8] The on-going reform of the European competition rules, the so-called modernisation, is likely to result in individual exemptions being abolished.

the US rules, there is no similar possibility to obtain advance notifications and hence, agreements must be settled at the firms' own risk.

Abuse of dominance

Article 82 of the EU Treaty prohibits the abuse of a dominant position. In order to understand the implications of this prohibition, one must first understand the meaning of a "dominant position" and, second, the meaning of "abuse".

The EU Court has repeatedly defined a dominant position as "a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by giving it the power to behave to an appreciable extent independent of its competitors, customers and ultimately of consumers."[9]

For practical purposes, this statement can be interpreted as a requirement that the firm has a high degree of market power.[10] Although market shares are not the only indicator of market power, Carlsson et al. (1999, pp. 234-235) conclude from legal practice that dominance is only rarely found for firms with market shares below 40 per cent, while market shares above 50 per cent are a strong indication of dominance.[11] A relatively recent development in EU competition law is that more than one firm can be found to collectively hold a dominant position, so-called collective dominance. This could be the case if up to three or four firms with relatively equal market shares have a combined market share of around three quarters or more (Withers and Jephcott, 2001).

A general definition of the concept abuse has turned out to be elusive. In a much-cited statement, the EU Court has defined abuse as practices different from those governing normal competition and which are likely to hinder the maintenance or development of the

[9] *United Brands* (27/76) [1978] E.C.R. 207, para. 65. See also Korah (1997, p. 78).
[10] See, however, Korah (1997), section 3.2, for a thorough discussion of the concept from a legal point of view.
[11] The question of how markets are defined is not discussed in this article, although it is an important issue in competition law. See, e.g., the European Commission's notice on the definition of the relevant market for the purposes of Community competition law, at
http://europa.eu.int/comm/competition/antitrust/legislation/entente3_en.html#nature

competition still existing on the market.[12] Clearly, this statement does not provide sufficient guidance for judges, let alone the general public.

To some extent, the interpretation of the prohibition in Article 82 is simplified by the four examples provided in the Treaty of Behaviour of what may constitute an abuse. Rewritten in plainer language, the four examples are: the imposition of unfair prices or trading conditions; the practice of limiting production, markets or technical development; discrimination between trading partners; and tying of unrelated products. The full text of the article does not provide much further guidance as to *what* prices or trading conditions are unfair, et cetera. In all events, the list of possible abuses is not exhaustive.

In this respect, European competition law is similar to the Anglo-Saxon common law tradition: the written laws are phrased very generally. Hence, precedence from judicial decisions forms the law and the extent of the prohibition must be explored by an analysis of the legal practice. For example, predatory pricing is a subcategory of unfair prices and conditions. A definition of what constitutes predatory pricing was given in the *AKZO* case: prices below the average variable cost *or* prices below the average costs *in combination with* an intent to eliminate a rival.[13]

In conclusion, firms with a dominant position in a market are, in the legal sense, subject to certain limitations. Behaviour that is legitimate for a small firm may be illegitimate for a firm with a high degree of market power.

The closest US correspondence is Section 2 of the Sherman Act, which makes it unlawful for a company to "monopolize, or attempt to monopolize" trade or commerce. According to the interpretation of that law, it is not necessarily illegal for a company to have a monopoly or try to achieve a monopoly position. The law is violated only if the company tries to maintain or acquire a monopoly position through unreasonable methods. For the courts, a key factor in determining what is unreasonable is whether the practice has a legitimate business justification.

An obvious difference between Section 2 and Article 82 is that under the former, it is the attempt to *achieve* or *maintain* a monopoly position that may be illegal, while under the latter, it is the exploitation (or

[12] For the original statement by the Court, see *United Brands* (27/76) [1978] E.C.R. 207 and *Michelin* (322/81) [1983] E.C.R. 3461.
[13] AKZO Chemie BV v. Commission (62/86) [1991] E.C.R. I-3359.

abuse) of an *existing* position of dominance. Hence, the applicability of the US rules does not rely on the somewhat formalistic test of whether a firm is dominant. In practice, however, the difference is not fundamental. The prospect of a firm monopolising an industry is only realistic if the firm already has a high degree of market power. Hence, the effect of Section 2 of the Sherman Act is similar to that of Article 82: firms with a high degree of market power are subject to stricter behavioural constraints than other firms.[14]

Merger control

According to Regulation 4064/89, mergers[15] between two firms or more are not allowed, if the merger "creates or strengthens a dominant position as a result of which effective competition would be significantly impeded in the common market or in a substantial part of it."[16] As in the application of Article 82, the definition of dominance is critical. Once more, a firm may hold a dominant position alone, or the firms in a tight oligopoly may collectively hold a dominant position. The definition of the relevant market, within which the question of dominance is analysed, is again of fundamental importance.

Under Section 7 of the US Clayton Act, mergers resulting in a substantial lessening of competition are not allowed (the so-called SLC test). One interpretation of the difference between the European dominance test and the US SLC test is the following. Under the dominance test, all mergers resulting in a certain *level* of market power being obtained are prohibited, while the magnitude of the change is unimportant. Under the SLC test, all mergers resulting in a sufficiently large *increase* in market power are prohibited, irrespective of the levels of market power before and after the merger (Stennek, 1998). Under this interpretation, some mergers that would be prohibited under the US rules are not prohibited under the EU rules, and vice versa. In most cases, however, the outcome under the two legislations will be the same.

Another interpretation is that an SLC test is incorporated within the dominance test. Under this interpretation, a position of dominance can, by definition, not be achieved unless competition is sub-

[14] See, however, note 38.
[15] In legal contexts, the concept "concentration", rather than the concept "merger", is used.
[16] Reg. 4064/89, republished as corrected in O.J. 1990. L257/14, [1990] 4 C.M.L.R. 286. Citation from Article 2.2.

stantially lessened. Furthermore, if a firm's dominance is strengthened only a little, competition is necessarily substantially lessened. Hence, the second interpretation implies that the dominance criterion holds for a subset of the situations where the SLC criterion holds.

There is an on-going debate as to whether the European merger control should abandon the dominance test and instead adopt the SLC test. Under the second interpretation, this would result in a stricter merger control. However, I would argue that as concerns EU competition law practice, the first interpretation is more accurate, although I have argued elsewhere that *Swedish* courts have, in practice, applied a double standard, i.e., both the dominance test and the SLC test (Bergman, 2002b).

2.2. The Swedish competition law

For almost all purposes, the Swedish competition law can be seen as a blue copy of the EU competition rules. It was enacted on July 1, 1993, replacing an older and weaker competition law. The Swedish competition law is enforced by the Swedish Competition Authority and by Swedish courts and is applicable when the Swedish market is affected.[17] For the EU competition rules to be applicable, it is a requisite that the infringement "may affect trade between member states". However, this criterion is often fulfilled even for practices confined to a single member state (Korah, 1997, pp. 58-60). Since July 1, 2001 Articles 81 and 82 of the EU Treaty can be applied directly by the Swedish Competition Authority and Swedish courts. Hence, certain behaviour may, in many instances, be challenged under two legislations by Swedish authorities as well as the European Commission. Merger control is an exception in this respect. According to the one-stop-shop principle, there are criteria that ensure that a merger cannot be subject to both national and community law. Large mergers of firms with significant activities in two or more countries are controlled by EU Regulation 4064/89, while mergers between relatively small firms and between firms with two thirds of their turnover within the same country are subject to national law. Mergers between small firms with significant activities in several countries may, how-

[17] The explicit reference to the Swedish market was deleted in a revision of the law, enacted on July 1, 1998. However, the principle that the law is applicable for practices with an effect on the Swedish market remains unchanged. See Carlsson et al. (1999, pp. 460).

ever, be subject to several national legislations. Mergers between firms with a combined turnover below certain thresholds are subject to no control at all; in Sweden, the turnover threshold is 4 billion kronor, or slightly more than 400 million euro.

2.3. Typologies of abuse

The above discussion suggests prohibition against abuse of dominance to be likely to be the most important aspect of the competition laws in deregulated markets. The market structure after a deregulation is typically one where one or several new competitors are challenging an incumbent firm dominating the market. There exists a clear temptation for the incumbent to preserve its strong position by means that are abusive under the competition rules.

Because of the asymmetry between the firms, there appears to be less scope for horizontal agreements violating the rules—e.g., classical cartels.[18] Similarly, the merger control appears to be likely to deter incumbent firms from even attempting to acquire firms within the same market. An exception would be if the incumbent were the only potential buyer of a failing firm, as was the case when SAS acquired Braathens AS, its only competitor in the Norwegian domestic aviation market.[19]

Due to the importance of the prohibition against abuse in deregulated markets, a deeper analysis of the concept can be useful. As mentioned above, Article 82 of the EU Treaty provides four examples of what may constitute an abuse: imposing unfair prices or trading conditions, limiting production, markets or technical development, discrimination between trading partners and tying of unrelated products.

Many different types of behaviour have been classified as falling under the first two of these four general headings, while the latter two are usually seen as distinct categories. The following classification is taken from Carlsson et al. (1999):

- *Imposing unfair prices or trading conditions*: excessively high prices, predatory prices (pricing below costs) and exclusionary pricing above costs.

[18] The prohibition against anti-competitive agreements has been used to create competition in the transition between the old and new Swedish competition law. Certain types of cooperation between firms were permitted under the older legislation, but have been found to be incompatible with the new and stricter rules.
[19] Case A2001-21, October 10, 2001, the Norwegian Competition Authority.

- *Limiting production, markets or technical development*: Refusal to deliver, fidelity rebates, exclusive delivery agreements and several types of vertical restraints.[20]

The above classification takes the legal origin of the prohibitions as its point of departure. Another classification would instead focus on how this particular behaviour relates to the firm's presumed objective: maximising profits.

Some types of firm behaviour are such that they immediately increase profits; one example is an increase in prices. Behaviour of this type could be called exploitative abuse, if it comes into conflict with the competition rules.

In other instances, however, a firm may take actions reducing its current profitability, because it believes that this will increase its *future* profit. Some of these actions are perfectly legitimate, e.g., investments, while others, such as predatory pricing, are anti-competitive. This latter type of behaviour is effective because it hurts competitors; once the competitors have been eliminated or sufficiently weakened, the firm can raise its prices or take other actions that increase its profit. The immediate objective of this type of actions is hence to exclude competitors from the market.

The exclusion can sometimes be accomplished through actions with a direct negative effect on its competitors. Such behaviour can be called exclusionary abuse; an example is refusal to trade. In other instances, the exclusion can be accomplished through actions in relation to the customers, with only an indirect negative effect on competitors. Again, predatory pricing is an example. The immediate effect of the latter type of action is to lock customers in with the dominant firm. Hence, this might be called "captivating" abuse.

Using this classification, some typical forms of abusive behaviour can be classified as follows:

- *Exploitative abuse*: Excessively high prices, tying and discrimination to increase revenues.
- *Exclusionary abuse*: Refusal to trade with rivals, discrimination of rivals in order to eliminate or weaken them.

[20] Normally, illegal vertical restraints are challenged under Article 81, as this does not require that dominance can be shown.

- *Captivating abuse*: Predatory pricing, exclusionary pricing above costs, fidelity rebates, exclusive delivery agreements, tying in order to eliminate or weaken rivals.

From the competition authorities' perspectives, actions against exploitative abuse do not resolve the problem that competition is poor, but they limit the extent to which market power can be exploited. In practice, few cases handled by the authorities fall into this category.[21]

More often, the authorities react against abuses that hurt smaller competing firms, under the reasonable assumption that the presence and vitality of competitors will eventually benefit consumers. In most cases, the actions taken by the authorities *shelter* the current competitive situation from deteriorating and protect the current competitors from being eliminated. This is achieved by the authorities prohibiting certain practices that are exclusionary or "captivating", e.g., predatory prices. Sometimes the authorities can require that a firm takes a certain action, however. For example, they can require that it sells goods or services to a downstream competitor at "undiscriminatory" prices. In this way, the competition rules can be used to *create* competition.

Naturally, there is no sharp distinction between the protection and creation of competition. Prohibiting dominant firms from taking predatory actions gives potential rivals stronger incentives to enter the market; hence, competition may be created by measures sheltering competition.

2.4. The essential facilities doctrine

The distinction between creating and protecting competition appears to be important in some contexts. For example, there appears to be a fundamental difference between, e.g., the requirement that Telia allows its competitors to use its telecom network at non-discriminatory (cost based) prices and the prohibitions against dominant firms' use of fidelity rebates. In exceptional circumstances, it will be abusive for an incumbent firm with a dominant position *not* to enter a direct

[21] An exception is perhaps the strict attitude towards absolute territorial protection, i.e., against vertical restraints that give a dealer absolute monopoly over a geographical area. For exclusive agreements to be allowed, a minimum requirement is that passive sales into and out of the territory are allowed. This type of behaviour is typically challenged under Article 81, however.

agreement with a rival, or offer too poor conditions in such agreements.

The basis for the requirement that a dominant firm gives rivalling firms access to its own production resources, by selling services to them, is the so-called essential facilities doctrine. This doctrine specifies the conditions that must hold for such an obligation to exist. Simply put, this obligation applies when there exists a critical bottleneck stage of the type illustrated in Figure 1 above. In American antitrust, where the doctrine originates, four criteria for applying the doctrine have been expressed:[22]

- The facility must be controlled by a monopolist
- Competing firms must lack a realistic ability to reproduce the facility
- Competing firms must be denied access to the facility
- It must be possible to provide access to the facility.

In addition, access to the facility must be necessary for a firm wishing to compete in a related market. The European Commission has defined an essential facility as "a facility or infrastructure, without access to which competitors cannot provide services to their customers".[23] From the Commission's decision, it is clear that if a firm, or a group of firms, controlling an essential facility refuses its competitors access to this facility, or only allows access under discriminatory conditions, then this refusal violates Article 82.

In the European doctrine, three criteria corresponding to the four American criteria have been identified (see Glasl, 1994; and Ritter et al., 1991):

- The facility, an infrastructure or an infrastructure in combination with services, must be complementary to an economic activity in a related, but separate, market
- Competing firms must lack a realistic ability to duplicate the facility
- Access to the facility must be necessary in order to compete in the related market

To a large extent, the two sets of criteria coincide. In practice, the courts and the competition authorities on the two continents seem to

[22] *MCI Communications Corp. v. AT&T,* 708 F. 2d 1081, 1132 (7th Cir.), *cert.den'd*, 464 US 891 (1983).
[23] *Sealink/B&I-Holyhead*, Commission Decision IV/34.174, [1992] CNKR 255.

have used additional criteria, not explicitly formulated in the doctrine or the court cases. For example, the doctrine appears to be more readily applied when the monopoly position has been attained because of luck, coincidence or political interference, notably because of a previous position as a legally sanctioned monopoly or a de facto government monopoly. From a normative point of view, this is a reasonable stance. The application of the doctrine increases competition in the short run. However, it also appropriates wealth from the dominant firm and consequently, its application tends to reduce investments in the long run. Therefore, the doctrine should only be applied when such a measure improves efficiency *from an ex ante perspective*, i.e., when efficient investments would not be deterred by the investing firm knowing that the doctrine will be applied later on (see Bergman, 2001, which also includes extensive references; and Laffont and Tirole, 2000, Ch. 4).

Not surprisingly, the essential facilities doctrine is controversial. The firms required to provide access may experience a substantial loss of profits. Their legal representatives, as well as academic economists, point to the negative long-run effects on investment incentives. Because of these legitimate concerns, competition authorities and courts are relatively reluctant to apply the doctrine.[24]

3. Competition policy in deregulated industries

To a large extent, competition policy in regulated and deregulated network industries can be seen as a policy of bottleneck control. The government can influence the functioning of such markets in several ways; it can enact direct regulation, it can exercise control through ownership of (part of) the industry and it can influence the degree of horizontal and vertical integration within the industry.

Six main models have been used for bottleneck control, three of which can be seen as government control models and three as ownership structures that facilitate bottleneck control (Bergman, 2002a). The three control models are regulation of consumer prices, access regulation and government ownership (or hierarchy) control. The three ownership structures are vertical separation, horizontal separation and infrastructural clubs. The alternative to these models is that the industry is allowed to integrate vertically and horizontally and that

[24] See Bergman (2000) for a critical discussion of an attempt by the EC Court to codify this concern.

the government exerts no control, neither through regulation, nor through ownership control.[25]

3.1. Regulation and control

Price regulation

Price regulation is perhaps the most typical traditional model for bottleneck control. In Sweden, it has been used in the airline and the taxi industries, as well as in banking (interest rate regulation) and for electric utilities. In the US, it was the predominant model for controlling market power before deregulation; it was used in, e.g., the airline industry, for electric utilities, in the telecom and rail industries, and it is still being used in the taxi industry (Bergman, 2002a).

There are two main versions of price regulation: cost plus and price caps (Armstrong et al., 1994). Under cost plus, the firm's cost are compensated—which naturally gives weak incentives for cost control. Rate-of-return regulation is a special form of cost plus regulation. The capital costs are, typically, the cost component that is most difficult to measure. Under rate-of-return regulation, an upper limit is set for the allowed return on capital. As long as the return is higher than the capital cost, this gives rise to the Averch-Johnson effect: the firm will over-invest in order to increase its capital base (Averch and Johnson, 1962).

Under price caps, an upper price limit is set, either for each individual product or for a basket of products. Such regulation gives the firm strong incentives to control costs, but it increases its risk. The increased risk must be compensated by raising the price; the optimal regulation can then be seen as a trade-off between risk allocation and incentives for cost control (Laffont and Tirole, 1993).

Access regulation

Access regulation concentrates regulation to the bottleneck stage under the assumption that if several firms are given access to the bottleneck, there will be effective competition in the other, potentially competitive, stages. This model has several advantages: it minimises the extent of the regulation and maximises the extent of competition. It also reduces the informational problem, both since the regulator

[25] Government ownership can be seen as an ownership model. In this article, the view is taken that government ownership is primarily a model of control, however.

only needs to estimate the costs in one production stage and since it will often be able to rely on the competitors' knowledge of the industry when dealing with the firm controlling the bottleneck.

There are some disadvantages with access regulation, however. The firm controlling the bottleneck will often have incentives to favour its own operations in the competitive stages. This can be achieved by inflating costs in the non-competitive stage, for example by re-allocating costs from the competitive stages to the bottleneck stage, or by reducing the quality of bottleneck services (infrastructural services) provided to the rivals. The latter possibility, in particular, necessitates a multi-dimensional regulation: a large number of quality aspects may need to be regulated, which makes the informational problem more severe (Laffont and Tirole, 1993, Ch. 4).

Furthermore, price regulation of infrastructural services highlights the risk of regulation distorting the incentives for investments. Too strict regulations may result in the dominant network owner not investing, since much of the benefits will accrue to its rivals. At the same time, the rivals will have weak incentives to invest if the access regulation makes it favourable for them to rely on the dominant firm's infrastructure (Laffont and Tirole, 1993, Ch. 1.9; Laffont and Tirole, 2000, pp. 137-139).

The public utility model

Public ownership of the whole or much of the network industry is the traditional European and Swedish model for controlling market power in industries with bottlenecks. In Sweden, it has been used in most network industries, banking being the exception. The public utility can be vertically integrated to include both the bottleneck stage and the potentially competitive stages, as is the case with Posten and Telia, and as was the case with SJ (rail) and Vattenfall (electricity). It can also be confined to the bottleneck stage, as has always been the case with the Civil Aviation Authority, and as is the case with Banverket (railway tracks) and Svenska Kraftnät (high-voltage electricity gridlines).

In public utilities, the central government can prevent market power from being exerted through its direct ownership control. Direct ownership also gives government flexibility to respond to changes within the industry, e.g., new technology or drastic changes in relative prices. The main disadvantage is that state ownership, in par-

ticular when combined with a monopoly position, does not give strong incentives for cost control.[26]

3.2. Ownership structures

Vertical separation

Vertical separation has increasingly been advocated as a means of achieving efficiency in deregulation (OECD, 2001). As has already been mentioned, vertical separation has been used for SJ and Vattenfall, and has always been the norm for the Civil Aviation Authority. This method has also been used in other countries, e.g., for the former US telecom monopoly, AT&T, and for British Rail.

Vertical separation does not in itself address the problem to which control over the bottleneck gives rise. However, it makes it easier to use other methods for controlling market power, notably access regulation and government ownership.

Access regulation is easier to implement over a vertically separated bottleneck owner for at least two reasons. The costs of the regulated firm accrue only in the bottleneck stage; hence, there is no need to make assumptions on how to allocate common costs. In addition, a firm (or public utility) with activities only in the bottleneck stage should have no reason to discriminate between different firms in the potentially competitive stages. This makes it more likely that regulation can be one-dimensional, i.e., that access regulation will not have to specify the *quality* of the service provided, as would often be the case under vertical integration.

Naturally, a disadvantage of vertical separation is that vertical synergies cannot be exploited.

Horizontal separation

Just as for vertical separation, the main advantage of horizontal separation is that it facilitates (price or access) regulation. Horizontal separation means that several firms will be active in the bottleneck stage, instead of just one, which increases the amount of information avail-

[26] For a theoretical analysis, see Laffont and Tirole (1993, ch. 17.1); for references to the empirical literature, see Liu (2001). Both the empirical and the theoretical literature suggests that private firms are, or can be expected to be, somewhat more efficient than state-owned firms.

able for the regulator. In particular, benchmarking between the firms becomes possible.

Vertical separation has been used in electricity distribution in Sweden and elsewhere. It has also been used, e.g., for local and regional telecom services in the US (the "Baby Bells") and for rail operation in the UK, Brazil and Mexico (Bergman, 2002a).

If there are large returns to scale, vertical separation comes at a cost. Sometimes, however, the horizontal returns to scale may be smaller than the vertical synergies. At least, it appears likely that the cost of splitting up a network infrastructure into several geographically separated parts is often smaller than the cost of duplicating the infrastructure.

In particular circumstances, horizontal separation can be expected to give firms incentives to negotiate reciprocal access at relatively low rates. If these incentives are sufficiently strong, access regulation may not be necessary (OECD, 2001).

Infrastructural clubs

The members of an infrastructural club are firms active in the competitive stage of a network industry, which jointly own the infrastructure. The model can be seen as an intermediate between vertical separation and vertical integration. Under favourable circumstances, infrastructural clubs are self-regulatory. The firms have an incentive to keep costs low and normally, they will have equal access to the infrastructure. In addition, vertical synergies can be exploited, at least to some extent.

However, although large firms will often be accepted in infrastructural clubs, small firms may face difficulties when seeking membership (see Katz and Shapiro, 1985, for an analysis). In addition, if the infrastructural club has a monopoly, it may be used to coordinate pricing in the competitive stage.[27] For these reasons, infrastructural clubs are most likely to function (without regulation) when there is more than one competing infrastructure. This requires that most of the returns to scale are exhausted at volumes less than total industry output, although they may be large at the level of an individual firm.

[27] E.g., by raising the price for infrastructural services to the monopoly level and then distributing the accruing profit between the club's members. Cf. the literature on patent pools.

Infrastructural clubs are common within the banking industry, in particular for payment systems, and are also used for the ticket reservation systems of the airlines (CRSs, computerized reservation system), taxi switches *et cetera*.

3.3. Effective competition policy

As indicated in the previous subsection, all six models have disadvantages. Yet, because of the bottleneck problem, some regulatory measures are required in network industries. There appears to exist a relatively strong consensus within the economics profession, based on theoretical arguments and at least some empirical evidence, that the measures employed before deregulation, i.e., price regulation or government ownership, are too far-reaching. These measures are likely not to provide optimal incentives for cost control and investment.

The structural measures that have been proposed—vertical and horizontal separation and infrastructural clubs—are normally not sufficient in themselves to resolve the bottleneck problem. That leaves access regulation, possibly in combination with structural measures, and government ownership of a vertically separated infrastructure, as candidate policy proposals for network industries.

Based on the somewhat subjective conclusion that government ownership of the bottleneck may often be preferable to private ownership of the same, two policy regimes remain that appear to be well suited for promoting efficiency in deregulated network industries.

Under the first regime, the government retains ownership control over the bottleneck stage (e.g., the national railway system), while the bottleneck stage is vertically separated from the other production stages (e.g., rail service operation) and competition is introduced in these stages. Under the second regime, vertical integration is retained, while a strict access regulation is introduced, and an independent regulatory authority is set up to enforce the access regulation (Bergman, 2002a).

The first regime has several advantages. The vertical separation is likely to eliminate the incentives of the owner of the infrastructure to discriminate between competing firms in the subsequent stages. In contrast, a vertically integrated firm will often tend to favour its own downstream operations. Government ownership of the bottleneck stage ensures a relatively large regulatory discretion over its uses, should unforeseen circumstances arise. It also reduces the incentives of the owner of the infrastructure to exploit its market power. In con-

trast, a private infrastructural monopoly would try to extract monopoly profits. It would also be more difficult to implement a tightening of the access conditions, since this would result in capital losses for private investors. A further advantage of the first regime is that government ownership, with its relatively weak incentives for cost control, is limited to the bottleneck stage only. This stage often accounts for a relatively small fraction of the industry's turnover.

The main disadvantage of the first regime is that vertical synergies cannot be exploited. If these are strong, the second regime may be a good alternative. This latter regime, on the other hand, must deal with the difficulties associated with access regulation. Important among these is the bottleneck monopolist's incentive to favour its own operations in downstream markets, by inflating costs in the bottleneck stage and degrading the service quality for its competitors. Another disadvantage is that it is difficult to balance access conditions so that (short-run) competition in the downstream market is promoted, while not discouraging (long-run) competition and investment in the infrastructures market.

3.4. General and sector-specific regulation

Sector-specific regulation and competition law

The price and access regulations discussed above are part of the sector-specific regulation. In addition, there exists a general legislation that aims at limiting and controlling market power, notably the competition law.

The advantages of sector-specific regulation are that it can be adapted to the particularities of a given industry and can be enforced ex ante and relatively quickly. Under price regulation, the regulatory authorities can, for example, decide what prices the dominant firm can charge. Alternatively, under access regulation, the authorities can determine access charges and access conditions. Competition law, on the other hand, is often enforced ex post and its application will often require a court process.

The advantages of general legislation is that it can adapt to changing circumstances with more flexibility and that it can be applied in unpredicted situations. For example, a dominant firm subject to access regulation will often have innumerable possibilities to discriminate against its rivals when providing infrastructural services, by degrading quality or delaying service. In addition, the dominant firm can make it difficult for rivals to attract customers, by using fidelity

make it difficult for rivals to attract customers, by using fidelity rebates or tying schemes.

Regulatory authorities

For the sector-specific regulation to be enforced, specialized authorities are required. Similarly, the competition law is applied by a central authority. The application of sector-specific regulation requires continuous surveillance of the market and extensive knowledge of the industry at hand. This, in turn, requires a critical mass of regulators. Similarly, enforcement of the competition law requires surveillance and knowledge of a large number of industries, as well as specialized knowledge of competition law application. Potentially, there can be synergies between the two types of authorities.

There are several important considerations in regulatory design. To reduce regulatory risk, it is desirable that the rules are predictable. On the other hand, it is impossible to foresee all eventualities, which suggests that the regulatory authorities must have some discretion. The drawback is that discretion and power with a regulatory authority create a temptation of over-strict enforcement. In the short run, this may result in consumer benefits by reducing prices, for example by reducing the access charges below the long-run costs. On the other hand, too strict access rules will ruin the investment incentives, resulting in long-run inefficiencies.

An advantage of relying on general competition rules is that these are relatively stable. Although the legal practice evolves over time, there is less scope for drastic revisions of the legislation than is the case with sector-specific regulation.

Conclusion

Because of the differences between sector-specific legislation and general competition law, it seems that legislators are well advised to use both. Such a combination will give downstream entrants access to infrastructure at lower costs than would be the result, if one relied on competition law only. At the same time, competition law will limit the extent to which the incumbent can discriminate against the entrants in other dimensions, such as access quality. An important caveat is that sector-specific access regulation must not be made too strict, as this will ruin investment incentives.

4. Competition law in deregulated markets

4.1. Legal enforcement in Sweden's deregulated markets

Antitrust authorities devote a great deal of attention to newly regulated markets, suggesting that competition law plays a significant role as a complement to the sector-specific regulation. Table 1 shows the number of "important" competition law cases pertaining to a number of industries that have recently been deregulated in Sweden: the airline industry, banking and insurance, electricity, post, taxi, telecom and the rail industry. For comparison, the total number of important cases is provided and the fraction pertaining to the deregulated industries is calculated. In this context, important cases are defined as cases handled by the Swedish Competition Authority that are covered by the Authority's bulletin.[28]

Table 1. Important competition law cases in Sweden; cases related to deregulated markets and all cases

Time period	Number of cases		
	Deregulated markets	All markets	Percentage, deregulated-market cases of all cases
1994-95	22	73	30
1996-97	23	79	29
1998-99	15	55	27
2000-01	14	51	27

Note: Including the issues 1-3, 2002.
Source: From the bulletins of the Swedish Competition Authority.

The percentage of cases related to these industries can be compared to the industries' share of total value added in the private sector, which was approximately 11-12 per cent in 1999.[29] A similar picture emerges in Table 2, where important cases are defined as cases particularly mentioned in the Annual Reports of the Authority.

[28] For the years 1994-1999, cases are taken from *Konkurrens*, while for the years 2000-2001, they are taken from *KonkurrensNytt*. The date refers to the publication date, which is generally close to the decision date, rather than the date when the case was opened.
[29] Own calculations, based on National Accounts 1994-2000, Statistics Sweden, and the Swedish Competition Authority (2000b).

Table 2. Important competition law cases in Sweden; cases related to deregulated markets and all cases

Time period	Number of cases			
	Deregulated markets[a]	Abuse cases, dereg. markets	All markets	Percentage, deregulated-market cases of all cases
1993/94	1	1	11	9
1994/95	3[b]	2	10	30
1996	7	4	15	47
1997	6	1	18	33
1998	4	4	14	29
1999	3	3	11	27
2000	3	3	10	30
2001	3[c]	1	11	27

Notes: [a] The number within parentheses refers to cases concerning abuse of dominance. [b] One of the cases commented on in the 1994/95 Annual Report is the decision to seek fines from Swedish Post for certain abuse behaviour. In a decision commented on in the previous Annual Report, the Authority had ordered Swedish Post to terminate the same behaviour. [c] Excluding the merger case, Svenska Girot, which was also mentioned in the previous report.
Source: From the Annual Reports of the Swedish Competition Authority.

The Swedish Competition Authority reports that, during the period July 1993 to June 1999, it had removed restrictions to competition by applying the Competition Law in 388 instances. About a quarter of these concerned the eight deregulated industries mentioned above. In 45 cases, the Authority had ordered the termination of an infringement of the law; almost half of these cases relates to the eight industries and more than a third relates to the post and telecom markets in particular (The Swedish Competition Authority, 2000, Ch. 3).

In Table 3, the 30 cases related to deregulated industries mentioned in the Authority's Annual Reports from 1993/94 to 2001 are tabulated according to firm/industry and type of infringement.

Table 3. Type of competition law case by industry/firm, important cases 1993/94 to 2001

Industry/firm	Type of case		
	Abuse of Dominance	Anticompetitive agreement/exemption/ negative clearance	Merger
Swedish Post	6		
Telia	4		
SAS	2	2	
Swedish Civil Aviation Auth.	1		
SJ	2		
Taxi	1	2	
Electricity	2	1	
Banking		4	1
Insurance	1	1	

Source: From the Annual Reports of the Swedish Competition Authority.

A relatively clear picture emerges. While the Competition Authority spent a large fraction of its resources on providing individual exemptions (or negative clearances) during the first years after the introduction of the new Competition Act, this type of cases has been of relatively small importance in the deregulated industries, except for the taxi and banking industries. During the first six years after the introduction of the new Competition Law, more than a third of all cases handled by the Authority were applications for exemptions or negative clearances (Swedish Competition Authority, 2000a, p. 43). In recent years, the Authority has used more resources in fighting cartels, and less on exemptions and negative clearances, but no cartel has been found in the deregulated markets.[30]

Almost a third of all cases handled by the Authority has been merger cases, but only one of the 30 cases in Tables 2 and 3 was a

[30] In one case, suspicions of a cartel between SAS and Skyways led the Authority to "dawn raid" the premises of these companies, but the case ended up as a negative clearance, where the cooperation between the two firms was accepted after some modifications. Cases No. 726/2000 and 768/2001. This case is not to be confused with the European Commission's finding of a cartel between SAS and the Danish airline Maersk.

merger case. The remaining third of the Authority's cases were cases initiated following a complaint from the public or cases initiated by the Authority itself. This category includes both anticompetitive agreements and abuses of dominance, as well as other more general complaints from the public concerning lack of or unfair competition. According to Table 3, two thirds of all cases in the deregulated markets concerned abuse of dominance.

In summary, the Competition Authority handled relatively numerous cases concerning abuse of dominance in deregulated markets, but relatively few merger cases. In the deregulated industries, there were relatively few applications for individual exemptions or negative clearances, except in the banking and taxi industries. All in all and relative to their weight in GDP, the deregulated industries appear to be overrepresented by a factor of three in the important cases handled by the Authority. There is no clear tendency for this fraction to fall over time. Although this finding does not directly address the question raised at the beginning of the article—whether sector-specific regulation can eventually be dismantled after deregulation—it does suggest that the competitive situation in a deregulated industry cannot be expected to reach a "normal" situation very quickly. Indirectly, this suggests that there *is* a need for sector-specific regulation beyond the first few years after deregulation.

4.2. Protecting and creating competition

Table 4 classifies the 19 cases of abuse from Table 3, according to the three categories defined in Chapter 2: exploitative abuse, "captivating" abuse and exclusionary abuse.

As can be seen, there were no cases of exploitative abuse. Most cases pertain to situations where an incumbent tries to weaken or eliminate an existing rival by taking a positive action. Only in three cases did the Competition Authority "order" the firm to enter a new agreement. These three cases were *Swedish Civil Aviation Authority* (cases No. 31/94, 241/94 and 311/94), *SAS/Nordic European* (case No. 1095/96) and *SJ/Dalatåg* (case No. 580/1998). In the first case, the Aviation Authority had to give competing ground handling operators access to terminal facilities. In the second case, SAS had to enter an interlining agreement with a new competitor on the domestic Stockholm-Östersund route. In the third case, SJ had to transport goods for a rival train operator on routes where the latter did not operate. A case not covered by the Annual Reports, but which deserves

mentioning, is *Telia's Access Fees* (case No. 107/1995). In its decision, the Competition Authority ordered Telia to reduce its access charges from SEK 0.35 to SEK 0.235.

Fourteen of the sixteen cases of "captivating" abuse fall into three main categories: fidelity rebates, exclusionary pricing above costs and exclusionary tying. Examples of fidelity rebates are *SAS/EuroBonus* (case No. 902/99) and, more typically, three cases involving Swedish Post (e.g., case No. 152/92, *Posten/Privpak*). In the first case, SAS was found to abuse its dominance when offering a frequent flyer program on competitive domestic routes. In the cases involving Swedish Post, the dominant postal operator gave customers rebates if they concentrated all or most of their purchases to it.

Examples of exclusionary pricing above costs are *Posten/CityMail* (case No. 682/95) and *Telia* ("surcharged off-net calls", case No. 587/96). In the former case, Swedish Post tried to introduce lower prices in those areas where it met competition. In the latter case, Telia wanted to surcharge calls originating in its own network but terminating in one of its rivals' networks (off-net calls).

Table 4. Types of abuse by category, important cases 1993-2001

	Cases per category *(sub-category)*
Exploitative abuse	0
Exclusionary abuse	3
Captivating abuse	16
of which predatory pricing	*1*
of which exclusionary pricing above costs	*4*
of which fidelity rebates	*6*
of which exclusionary tying	*4*
of which limiting of markets[a]	*1*

Note: [a] Case No. 925/1998, where Telia tried to exclude rivals by refusing to cooperate with firms that, in turn, cooperated with its rivals.

Examples of exclusionary tying are *Tekniska Verken* (case No. 533/1998) and *SPP* (cases No. 157/1999 and 203/2000). In the former, a local district-heating monopoly gave discounts to customers that also purchased electricity from it. In the latter case, a mutual insurance company refunded its customers for previous purchases in a non-competitive segment in such a way that they were given strong incentives to also purchase from the company in the competitive

segments. There is only one case of traditional predatory pricing. In *SJ/BK Tåg* (case No. 125/96), the former rail monopoly was found to tender bids below its costs in a rail service procurement.

5. Conclusions

Competition law has an important role to play in deregulated markets. However, at least in network industries, the competition rules alone, arguably, cannot resolve the bottleneck problem. Without checks on market power, control over the critical bottleneck stage could be used to achieve monopoly pricing in the industry. Competition law will only be capable of reducing prices somewhat below this level; hence, unless one is willing to accept prices near the monopoly level, further measures must be taken to curb the bottleneck monopolist's market power. This calls for sector-specific regulation and structural measures.

There are three main models of government control that can be used in bottleneck industries: (consumer) price regulation, access price regulation and government ownership. Deregulation is typically a process which shifts the focus from price regulation and government ownership to access regulation, although there are other possible scenarios. For example, the government can retain ownership of the bottleneck stage, while privatising and/or liberalising the other production stages.

Complementing the control models, three ownership structures have been suggested as methods for improving efficiency in deregulated markets. These are horizontal and vertical separation, respectively, and infrastructural clubs. Neither vertical, nor horizontal separation is a sufficient measure in itself. However, either method can make access regulation more efficient, by easing the regulatory authority's informational disadvantage. Infrastructural clubs, in contrast, have some prospect of providing a self-regulatory system, but there is also a risk that they can be used for excluding small firms from the bottleneck or achieving collusion in the potentially competitive production stages—unless they are controlled by access regulation.

Just like the ownership structure is a complementary policy tool to the sector-specific regulation (the access regulation), so is competition law. In fact, it is complementary in two senses. First, because of its generality, it applies to (almost) all sectors and it can be applied in situations and to behaviour that were not predicted when this legisla-

tion was drawn up. Second, while sector-specific regulation typically focuses on the issue of infrastructural access, competition law in deregulated markets focuses on preventing measures that hold the customers captive with the dominant (incumbent) firm.

Under the essential facilities doctrine, the competition rules can sometimes be used to force a dominant firm to provide access to bottleneck infrastructure. However, sector-specific regulation is much more effective in achieving such a goal, both because it can implement a stricter access regime and because it can be enforced ex ante, instead of ex post. The interconnection fees charged by Telia can illustrate the former point. In 1995, the Competition Authority could enforce that these fees be reduced to SEK 0.235, from the previous level of SEK 0.35, per single segment (case No. 107/95). Since then, the Telecom Act has given the Telecom Regulator (PTS) more power, which has enabled it to enforce successive reductions in the interconnection charges, down to a level as low as SEK 0.068.

There exists a close analogy between the essential facilities doctrine of the competition rules and the telecom regulation's requirement that operators with significant market power[31] provide network access (interconnection) at cost-based prices. Hultkrantz's (2002) analysis of the Swedish telecom regulation suggests that the telecom regulator has not shown the same reluctance in enforcing access as the competition authorities.

In practice, the main contribution of competition law on deregulated markets has been to prevent customer lock-in, rather than enforcing access. This is achieved by preventing "captivating" abuse, i.e., abusive measures that a dominant firm can employ to prevent small rivals from attracting the large firm's customers.

Based on a survey of a number of competition law cases handled by the Swedish Competition Authority, three types of abuses of dominance have been particularly common in recently deregulated markets. First, fidelity rebates, i.e., rebate schemes awarding customers for concentrating all or most of their purchases to one single supplier. Second, exclusionary pricing above costs, such as price decreases targeted at market segments where recent entrants are gaining a foothold. Third, exclusionary tying (or leveraging), where a domi-

[31] Significant market power is a weaker requirement than dominance. It is typically satisfied for firms with a market share of at least 25 per cent. However, the concept is currently being revised by the EU Commission.

nant firm tries to leverage its monopoly or strong dominance in one market into a more competitive market or market segment.[32]

The different roles of sector-specific regulation and competition law in deregulated markets suggest that it is not necessarily true that the former can eventually be dismantled. In network industries, this is the case only if deregulation creates competition in the bottleneck stage, i.e., if multiple infrastructures are created. Such a development cannot be expected in all network industries, but it has occurred in the telecom industry, at least in the mobile telephone market. This evolution has not led the legislators to dismantle sector-specific legislation, however. On the contrary, the telecom access regulation has recently been tightened.

In fact, it appears that sector-specific regulation is not applied with consistent vigilance between industries. For example, the Swedish telecom regulation is much stricter in this respect than that of other network industries, e.g., banking and postal services (Bergman, 2002a). The situation appears to be similar at the EU level, which suggests the need for inter-industry comparisons of the regulatory framework.

References

Armstrong, M., Cowan, S. and Vickers, J. (1994), Regulatory Reform—Economic Analysis and British Experience, MIT Press, Cambridge, USA.

Averch, H. and Johnson, L. (1962), Behavior of the firm under regulatory constraints, American Economic Review 52, 1052-1069.

Bergman, L., Doyle, C., Gual, J., Hultkrantz, L., Neven, D., Röller, L.-H. and Waverman, L. (1998), Europe's Network Industries: Conflicting Priorities, CEPR London and SNS Stockholm.

Bergman, M. (2000), The Bronner Case—a turning point for the essential facilities doctrine, European Competition Law Review 21, 59-63.

Bergman, M. (2001), The role of the essential facilities doctrine, The Antitrust Bulletin 46, 403-434.

[32] Interestingly, when Kolosky at the US Department of Justice recently discussed differences between US and EU competition law practices, he identified fidelity rebates, monopoly leveraging, refusals to deal and predatory pricing as four of the most important areas where practices differ. Assuming that he also includes exclusionary pricing above costs in his predatory pricing category, these four areas cover 18 of the 19 cases in Table 4. (Speech given in Brussels, April 10, 2002, available at www.usdoj.gov/atr/public/speeches.)

Bergman, M. (2002a), Lärobok för regelnissar. En ESO-rapport om erfarenheterna av avregleringar, ESO, Ds 2002:21.

Bergman, M. (2002b), Potential competition: Theory, empirical evidence, and legal practice, Mimeo, The Swedish Competition Authority.

Carlsson, K., Söderlind, E. and Ulriksson, M. (1999), Konkurrenslagen. En kommentar, Norsteds förlag, Stockholm.

Economides, N. (1996), The economics of networks, International Journal of Industrial Organization 14, 673-699.

Glasl, D. (1994), The essential facilities doctrine in EC Anti-Trust Law: A contribution to the current debate, European Competition Law Review 6, 306-314.

Gonec, R., Mahler, M. and Nicoletti, G. (2000), The implementation and the effects of regulatory reform: Past experience and current Issues, OECD Working Paper 251, OECD.

Hultkrantz, L. (2002), Telecommunications liberalisation in Sweden: Is "intermediate" regulation viable?, Swedish Economic Policy Review, this issue.

Katz, M. and Shapiro, C. (1985), Network externalities, competition, and compatibility, American Economic Review 75, 424-440.

Korah, V. (1997), An Introduction to E.C. Competition Law and Practice, Hart Publishing, Oxford.

Laffont, J.-J. and Tirole, J. (1993), A Theory of Incentives in Procurement and Regulation, MIT Press, Cambridge, USA.

Laffont, J.-J. and Tirole, J. (2000), Competition in Telecommunications, MIT Press, Cambridge, USA.

Liu, Z. (2001), Efficiency and firm ownership: Some new evidence, Review of Industrial Organization 19, 483-498.

OECD (2001), Restructuring Public Utilities for Competition, OECD, Paris.

Ritter, L.W., Braun, W.D. and Rawlinson, F. (1991), EEC Competition Law. A Practitioner's Guide, Kluwer, Deventer, The Netherlands.

Spengler, J. (1950), Vertical integration and antitrust policy, Journal of Political Economy 58, 347-352.

Stennek, J. (1998), Samhällsekonomisk analys av förvärvskontroll, in SOU 1998:98, Konkurrenslagens regler om företagskoncentration, Appendix.

The Swedish Competition Authority (2000a), Konkurrensen i Sverige under 90-talet—problem och förslag, The Swedish Competition Authority, Stockholm.

The Swedish Competition Authority (2000b), Konkurrensen i Sverige under 90-talet—problem och förslag, Supplement, The Swedish Competition Authority, Stockholm.

Tirole, J. (1988), The Theory of Industrial Organization, MIT Press, Cambridge, USA.

Winston, C. (1993), Economic deregulation: Days of reckoning for microeconomists, Journal of Economic Literature 31, 1263-1289.

Withers, C. and Jephcott, M. (2001), Where to now for E.C. oligopoly control?, European Competition Law Review 22, 295-303.