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**HORIZONTAL RESTRAINTS-
RESEARCH AND DEVELOPMENT
AGREEMENTS
IN A LEGAL AND ECONOMIC PERSPECTIVE**

Master Thesis

Research Programme
Innovation Markets
- Biotechnology

Supervisor
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Competition Law, Spring 1999

**"Jag tror inte ett korn på det ordentligt tillskurna, det statiskt beskurna.
Jag tror bara på det dynamiskt organiserade, det levande."**

Harry Martinsson, Resor utan mål, 1932

Summary

My primary conclusion relates to the necessity of a policy of Methodological Relativism in antitrust policy in so far as it concerns horizontal restraints. Modern industrial organisation theory and competition policy investigations have clearly stressed the impossibility of generalised results and truths concerning the competitive effects of different kinds of restraints. Different markets show different inherent features, varying over time and place, implying different problems and varieties of problems at the analysis.

In R&D-related horizontal agreements, an analytical framework is needed, that may promote dynamic efficiencies through innovation without permitting the growth of a market power strong enough to impede technological progress. In such a model the result should be determined after different inputs of e.g.:

- Market structure: areas, actors, products, barriers to entry, potential competitors, regulations, market failures,
- Characteristics of, and intensity in, research and innovation in the markets,
- Ancillary restraints connected to the R&D-agreement.

All these having effects on the markets of current products, innovation and future goods.

Since the total benefit to society varies markedly with the type of market and the type of constraint, antitrust policy ought to develop models to ensure the promotion of dynamic innovative efficiencies even at the price of relatively smaller losses in static price competition.

However well developed the models of relevant criteria for assessing efficiencies and anticompetitive dangers will be, there is one obstacle making antitrust intervention a hazardous activity - uncertainty. All actors on the market are exposed to uncertainty, forcing them to make decisions on a basis of relatively incomplete information. But the one institution capable of handling such uncertainty is the market. Empirically a majority of the mergers will, if analysed ex post, be regarded as failures even though there ex ante was a unanimous consent of the likely efficiency gains. Still the market will continue to establish new businesses carrying new kinds of goods, services, management, and continue the grouping, regrouping, searching and researching for the optimal structure - an endless trial and error process in the quest for efficient conduct and structure.

However, the markets have their imperfections. It is in these instances that public intervention might be called for, under the constraint that the public measures in themselves do not produce even greater inefficiencies. The practical result ought to be a limited and focused antitrust policy, which by eliminating major market imperfections, aims at providing a market sufficiently well functioning to be able to monitor its actors. A possible framework for such a policy is drafted at the end of this paper.

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1 Introduction

1.1 Presentation of Subject

As economic insights are developed, the political agenda shifts, new business practices evolve and the debate on appropriate governmental and public policies is given fuel, including calls for broadened debate on competition policy. Vertical restraints have been revisited, and many interesting facts were highlighted which are expected to result in changes in European policy. Even though horizontal restraints are not considered to provide the same degree of socially beneficial results as the vertical ones, it is still recognised that they do need to be closely examined in order to evaluate the appropriateness of current policies.

R&D is a very important aspects of the future welfare and competitiveness of Europe. Innovation is generally recognised as the number one reason for welfare improvement and Europe has lately been lagging behind Japan and US in the modern R&D intense industries, thus losing many jobs. Innovation is the key to welfare and may very well be the key to competition within markets. The latter is important for antitrust execution; innovation may be the key to competition, not necessarily the other way around.

The world economy is experiencing extensive changes in its structure. Great emphasis is attached to services and high-technology combined with a fast developing globalisation. There is thus much to indicate that innovation ought to move to the centre of antitrust analysis. But how should this be done? Are new tools necessary?

1.2 Purpose & Method

In the first part of the presentation I will summarise the economic foundations of competition policy by notions such as economic efficiency, market failures and regulatory failure. Different policy approaches are presented and recent insights and developments in the treatment of agreements and practices with potentially anti-competitive effects will be examined. This is to provide the reader with the relevant ground tools.

The second part of the thesis will be devoted to R&D cooperation, which with its dynamic features is especially interesting but probably also especially demanding for lawyers, economists and politicians. In this field the political objectives behind European policy will be presented, the relevant economic features will be explored and the current rules and legal practices will be described as support for my closing analysis. The task is to provide regulatory tools to identify agreements with negative net-effects to society while allowing cooperation where benefits prevail. My analysis joins together legal and economic aspects in order to find out the content of adequate standards and evaluate the appropriateness of current

legal treatment. I will thus try to emphasise the correlations between and differences in legal policies, economic insights and political interests in order to draw descriptive and normative conclusions. Due to the limitations in the length of this thesis, the political analysis will be kept very short and will largely be restricted to conclusions derived from the economic outcomes.

There are many important aspects of R&D, which call for coherent and focused public policy in fields outside the inner core of, but closely related to, antitrust. Intellectual property rights system such as patent, license, and copyright systems, tax policies and public subsidies are important features in completing the picture of R&D. These aspects, however fall outside the scope of this thesis.

The presentation is mainly intended to stimulate the discussion among non-economists. Consequently, to make the economic implications comprehensive, these chapters have been allowed to grow at the expense of the legal presentation.

Sources regarding the economic foundations are mainly books and articles by American and some European analysts, in most cases published in American economic journals, where the debate is most vivid. Concerning European law and judicial treatment the commentaries are generally by European scholars.

Some of the articles from American journals downloaded from online libraries via Lexis®-Nexis® do not contain page numbers why I in these cases, where possible, have made my references to relating footnotes in the text.

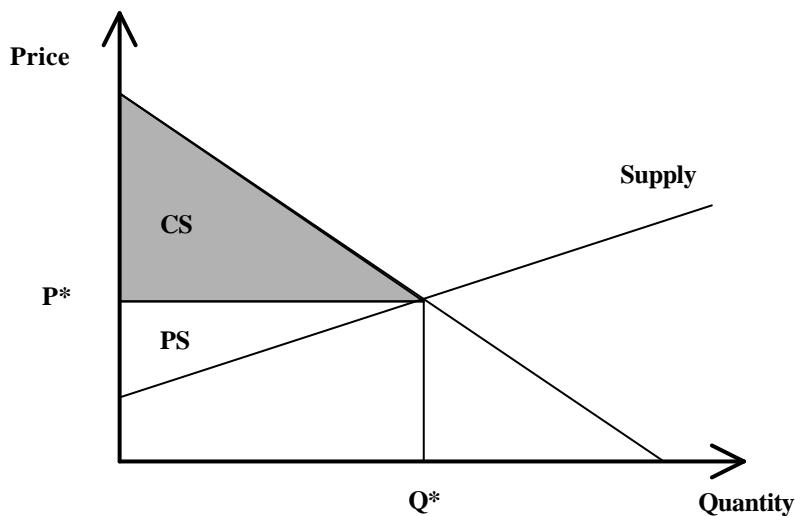
I. Antitrust Background

2 The Economics of Antitrust

2.1 Economic Efficiency & Market Failures

2.1.1 Static Efficiency

Static (allocative) efficiency is the state, at a specific time and with a given production technology, when resources in society are utilised in an optimal way. In a market the sum of the consumer surplus (CS) and the producer surplus (PS) represents this societal maximisation. The consumer surplus equals the difference between the willingness to pay (the demand curve) and the actual price they pay (P^*). This means that some consumers would have bought the products even at a higher price than the market price and the consumer surplus is this joint "overwillingness" to pay. The area between the price and the supply curve represents the producer surplus. Some producers are able to sell products at a price below the market price. The aggregated surplus from selling those units at the market price makes the producers' surplus. Equilibrium is reached, by the market forces, when the cost of producing the last unit equals the marginal willingness to pay for this unit, i.e. the intersection of the demand and the supply curves. At any other price and output, there would be a discrepancy between supply and demand, which in turn would have a negative effect on the joint surplus of producers and consumers.



There are however a number of assumptions that must be fulfilled for this equilibrium to hold.¹ Consumers must be perfectly informed about the products, prices etc. and act rationally using this information to maximise their preferences

¹ See Viscusi, Vernon, Harrington Jr., *Economics of regulation and antitrust*, 1995, p.73, and Gellhorn & Kovacic, *Antitrust Law and Economics*, 4 ed., 1994, p.52 ff.

given their budget constraints. Also the producers must have perfect information and thus maximise their profits using perfect production functions that rule out increasing returns if they were to change scale or technology. No individual, neither producer nor consumer, is strong enough to exercise market power, i.e. to influence price and output by his or her own behaviour. Hence all actors on the market are price takers. This typically takes many independent buyers and sellers whose individual transactions are relatively small compared to the total quantity traded on the market. Finally, no externalities exist.

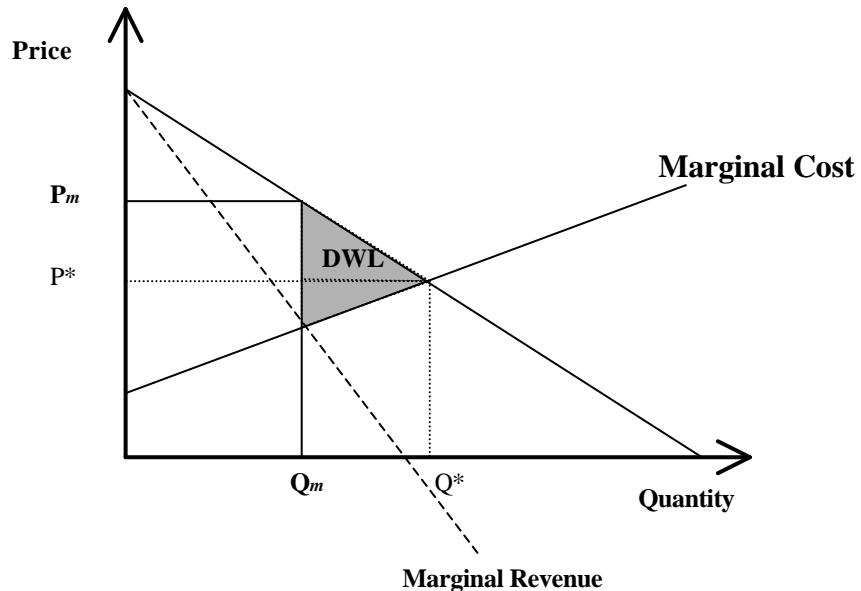
In these assumptions lies the scope of Market Failures.² Suppose a producer is in a position to influence terms of trade on the market and therefore chooses to reduce the output and raise the price. Such behaviour is an exercise of Market Power, most typical for monopolised markets. Similar results may be found in markets with very dominant actors and in oligopolies with participants colluding in cartels. Another market failure, to some extent present in all markets, is Incomplete Information. Consumers are generally not perfectly informed about all relevant products, qualities and prices in order to compare and evaluate them to adequately act in accordance with their preferences. Producers are generally not perfectly informed about demand and production processes and may not distinguish between consumers with varying preferences. Consequently consumers do not maximise their utility and producers may produce inefficiently low or high outputs and qualities at misperceived prices.

Externalities are actions of either producers or consumers, production or consumption, that has an indirect effect on another such activity but which is not reflected in the market price. Examples may be costs of pollution to society or nuisance to neighbours. These imposed benefits, or more often costs, are thus born by others, making the producer choose an inefficient output and price. Finally, a Public Good is a good of which the consumption by a consumer does not exclude consumption by others. A classical example is national defence, which cannot only be provided for to the person paying and simultaneously not provided to his neighbour. Another example may be information, which once produced, can be spread at almost no cost to a wide circle of consumers. Since the producers tend not to receive full compensation for this type of goods, markets undersupply, which is why governmental action through supplying the good or giving incentives for private production may sometimes solve the problem.

As an illustration, the above-described state of efficiency should be compared to a monopoly situation. In this case the producer on the market is no longer a price taker but can control the price since the customers have no other producer from whom to buy. The only constraints of the monopolist are the demand curve and his marginal cost curve. Given these curves the monopolist will maximise the profits at price above, and an output below, the competitive optimum ($P_m, Q_m \leftrightarrow$

² See Pindyck & Rubinfeld, *Microeconomics*, 1998, pp. 611 ff.

P^*, Q^*). The result is redistribution since the producer surplus is expanded (the area between Marginal Cost and P_m) and the consumer surplus is reduced (the area between Demand and P_m). But there is an additional effect. The reduction in Consumer Surplus is larger than the gain in Producer Surplus. The reason is a social loss to society, a so-called Deadweight Loss (D.W.L - the shaded triangle), resulting from the lost gains when trade is reduced.



2.1.2 Dynamic Efficiency

During the last few decades, the importance of dynamic efficiency has been increasingly highlighted in the industrial economy. Dynamism implies change. Continuous changes and improvements of products and production processes will enhance quality, lower costs and follow constantly changing consumer preferences, thus leading to a more efficient use of resources.

To motivate market participants to engage in such innovative activity, proper incentives must be given. In relation to this it is argued that large market shares and temporary market power may be the results of successful management and innovation, making the company the most efficient on the market. What would have been considered excessive or supracompetitive profits in the model of perfect competition, may instead be regarded as the reward of success, a pay-off important to provide sufficient incentives to take innovative risks in the first place. Furthermore, some indications show that concentrated markets may be necessary to obtain innovative leaps, since these industries involve so great risks that to handle these risks it is argued that large financial resources and the invulnerability of a large market share are necessary. On the other hand, a dynamic development also creates pressure on actors with market power, since a monopolist cannot afford to lag behind in the innovative and cost pressuring process. If not in the forefront in the evolution, the position will soon be lost. This implies that monitoring competition to keep the actors incentives up is also necessary in the dynamic setting.

There is thus a confrontation and an interrelation between static and dynamic efficiency implying that a trade-off between the two variables must be done. To perform this analysis, features such as potential competition, uncertainty, entrepreneurship, innovation, barriers to entry and functioning capital markets are important.

The dynamic (innovative) efficiencies have been shown to carry great potential to increase social welfare, a potential often much greater than having allocative efficiencies obtained by preventing output limitations by saving static efficiency.³ Short-term static inefficiencies are often outweighed by long term dynamic progress. If the market reduces GNP 10% below the competitive level but simultaneously allows growth at an annual rate of 3.5% rather than 2.5% the compound effects of the higher growth would cause the monopolised economy to surpass the competitive economy in under eleven years. Allocative efficiency losses at the considerably lower levels typically suggested by empirical studies are correspondingly less significant.⁴ Studies have shown allocative inefficiency on markets generally to vary between 0.5 and 2 %.⁵

Put in a real life example, the impact on social welfare becomes apparent. Between 1955 and 1970, the output (productivity) per labour hour in the US increased at an average of 2,54% per year. Between 1970 and 1985 the rate dropped to 1,17% per year. Had the former rate of increased productivity continued and assuming the same number of labour hours to be employed, the GNP in the business sector would have been 22,7% higher in 1985 than it actually was. In money this corresponds to \$771 billion.⁶

As seen, considerations of dynamic efficiency make the analysis more complicated than the static view and to decide which market structure best promotes efficient outcomes becomes very difficult. In addition, it follows that assessment of innovation efficiency requires a difficult comparison between actual and hypothetical events.⁷ This makes the measurability of such efficiencies very hard. The dichotomy between static and dynamic efficiency was early characterised by the legendary Judge Learned Hand as he recognised that the long-run interest of consumers may differ from their desire for “an immediate fall

³ Brodley, “The economics of antitrust: Efficiency, Consumer Welfare, and Technological Progress, 62 *New York University Law Review*, p. 1026 ff.

⁴ OECD Working Papers, Application of Competition Policy to High Technology Markets, 1997, p. 9.

⁵ Scherer & Ross, *Industrial Market Structure and Economic Performance*, 1990, p.667.

⁶ Scherer, “Antitrust, Efficiency, and Progress”, 62 *New York University Law Review*, 1987, p. 1001.

⁷ Brodley, “The Economic Goals of Antitrust: Efficiency, Consumer Welfare, and Technological Progress”, 62 *New York University Law Review*, 1987, p. 1029.

in prices.⁸ A more recent summarisation concluded: “What is needed for rapid technical progress is a subtle blend of competition and monopoly, with more emphasis on the former than the latter, and with the role of monopolistic elements diminishing when rich technological opportunities exist.”⁹

The importance of dynamic efficiency is well recognised, above all in the U.S., and underlies serious contemporary antitrust analysis.

2.2 Regulatory failure

2.2.1 Introduction

When intervening in markets it is very important to recognise the problems inherent in governmental market regulation. Where these are not taken into account, there is a large risk of a replacement of the possible market failure in question with a regulatory failure. The latter is often even more detrimental to social welfare, not least since it often remains during a long period of time. Through the use of tools such as incomplete and asymmetric information, principal-agent models and rent seeking, this field of economics has over the last few decades been able to highlight and answer some essential questions on how and why the results of regulation may deviate both from what would be socially beneficial and from its original aims. An important factor is the possibility and probability of various interest groups influencing regulations and practices.¹⁰

2.2.2 Uncertainty

No one has complete information, least of all the regulatory authorities. Lack of information or misperceived information generally lead to inaccurate or imprecise conclusions and decisions. These erroneous decisions are a natural part of all activity, but will be penalised by market forces on a functioning market. If these decisions are made through public regulation, i.e. legislation, judgements or other public decisions, they will typically have very negative results and last through an extensive period of time, since there is no automatic monitoring of inefficient regulation.

2.2.3 Asymmetric information

Regulators will have secondary information since the authorities are external observers. They are therefore forced to seek information by various means, frequently from the market participants they are monitoring. Since the better-informed regulated firms want to diminish their problems they will describe the situation in the way that suits them best. Asymmetry in information may lead to

⁸ Brodley, “Proof of Efficiencies in Mergers and Joint Ventures” *64 Antitrust Law Journal*, 1996, footnote 30 with reference to case United States v. Corn Prods. Refining Co., 234 F. 964 (S.D.N.Y. 1916)

⁹ Sherer & Ross, *Industrial Market Structure and Economic Performance*, 3 ed., 1990, p. 660.

¹⁰ Generally on these problems see Tirole, *The Internal Organization of Government*, 1994 pp. 1 – 29 and Stigler, “The Theory of economic regulation”, *Bell Journal of Economics and Management Science*, 1971, pp. 3 – 21.

decisions favouring some particular market participant or group of participants, but at the price of an overall loss to society.

2.2.4 Principal – agent problems

The authorities are not staffed with unselfish, altruistic personnel whose only objective is to maximise social welfare. There will undoubtedly appear situations where the personally rational conduct of the officials diverges from the public interest. The officials may want to develop personal reputation, establish good relations with the regulated industries, expand their bureaucracy etc. First of all there may be diverging interests between the general public and their agent, the government. Secondly, there may be clashes of interest between the government acting as a principal and its bureaucracy. In both cases the agent will have more complete and specific information, and by withholding or suppressing certain information he may escape detailed monitoring by the principal.¹¹ In addition, monitoring is expensive, especially as many of the questions handled are very complex. Such expenses may be unpopular with the public and regarded as a waste of tax money.

The resulting divergences in objectives will cause discrepancies between the public desire, the original intention of the rules and policies and the actual conduct of the authorities. The survival of a politician is dependent on being re-elected. In order to earn the necessary support of the voters, he must act in a way that fits his public image. This may include avoiding taking politically sensitive decisions, focusing on short-term benefits and obeying the wishes of influential interest groups. At the level of the officials, the concerns are likely more the attainment of an “easy life”, professional reputation and future career opportunities.

2.2.5 Rent-seeking

Through their regulation and decisions, the regulating authorities will be using scarce resources in pure redistribution. Different groups in society will benefit at the expense of others.¹² These monopoly rents will be ”up for grabs” by the market participants. Actors will be in a bidding race to obtain these rents, through the use of lobbying, bribing¹³ and other costly operations. Empirical evidence show that parties potentially benefiting from regulation are prepared to invest up

¹¹Another example of information asymmetry.

¹²These dead-weight losses are to be added to the losses inherent in imprecise or redistributive regulation, as shown by the monopoly-graph under section 2.2.1. See Ryssdal, “Fase III: Konkurranselovens Håndhevelse” in Munthe, P., Ryssdal, A. C. S & Undrum, S. (Eds.) *Marked, konkurranse og politikk - Festskrift til Egil Bakke*, 1995, pp. 233, 239 with reference to Tollison, R.D. “Is the Theory of Rent-Seeking Here to Stay?” in Rowley, C.K. (Ed.) *Democracy and Public Choice, Essays in Honor of Gordon Tullock*, Oxford, 1987, pp. 143 – 157. Dead-weight losses to be added to the losses inherent in imprecise or redistributive regulation, as shown by the monopoly-graph under section 2.2.1.

¹³In the non-judicial sense of the term, incorporating all kinds of actions beneficial to the attainment of positive treatment from the officials.

to the expected gain to obtain these benefits. Since such investments are unproductive and socially wasteful they create dead-weight losses.

2.3 Policy approaches

2.3.1 Classical approaches

The above dichotomy between static and dynamic approaches is apparent in all economic literature concerning competition. For Adam Smith, competition was a rivalrous dynamic process.¹⁴ Free trade was emphasised, since competition will lead the self-interested rivals to fight to be in high favour with the consumers, a conduct simultaneously favourable to social welfare. This is the famous concept of the “invisible hand”. The policy was however supplemented by a concern about preventing collusion, abuses and erection of barriers to entry, which could necessitate some governmental protection.¹⁵

These early theories were later refined mathematically but in gaining methodological sophistication, they lost some of their explanatory elegance.¹⁶ With the price theory's static view not considering what drives the market but only the result - the goal stressed at the turn of the century was to attain societal maximisation through equilibrium. The detrimental effects of monopolies were highlighted. As this equilibrium is in reality never reached because markets are heterogeneous, buyers and sellers too few and uninformed etc. competition theory turned its attention during the ensuing decades to actual intermediate forms appearing on the market, now stressing the likelihood that members of oligopolies will, since they are dependent on the price and terms of the other participants, find it more profitable to keep prices high than to battle each other.¹⁷

2.3.2 The Harvard School

The Harvard School approach was the first policy approach with considerable political impact. Build upon the *structure-conduct-performance* paradigm, a chain of dependence, it emphasises that the basic structure of the market, such as concentration rates, barriers to entry and degrees of integration, decides the conduct of the participants, for example pricing, inter-firm cooperation and investments, which in turn will be decisive for the outcome. With such a perspective, the focus is no longer on the individual market participant, but on whole industries or branches.

¹⁴ Smith, *An inquiry into the nature and cause of the wealth of the nations*, 1904.

¹⁵ Van den Bergh, *The Economic Analysis of Competition Law*, 1995, p. 10, with reference to Cox & Hübener, “Einführung in die Wettbewerbstheorie und –politik, in Cox, Jensen & Markert, *Handbuch der Wettbewerbs*, 1981, pp. 10f.

¹⁶ Van den Bergh, *The Economic Analysis of Competition Law*, 1995, p. 9.

¹⁷ Van den Bergh, *The Economic Analysis of Competition Law*, 1995, p.23, with reference to Robinson, *The Economics of Imperfect Competition*, 1964, Sraffa, “The Laws of Returns under Competitive Conditions, 36 *The Economic Journal*, 1926, pp. 535 – 550, Chamberlin, *The Theory of Monopolistic Competition*, 1933.

The approach relies strongly on statistical evidence such as rates of return, market shares and price-cost margins, correlation between concentration on the one hand and profitability and collusion on the other. Empirical research claims to show that profits are excessive in industries which are dominated by the top eight or less firms in it. In its developed form, the goal of competition policy is not to achieve perfect but workable competition in which also non-economic goals are recognised, such as full employment and fair distribution.¹⁸ The market is to be analysed by evaluation of the different characteristics of each stage in the dependence chain.¹⁹

The Harvard School approach had great impact on US policy makers from the late 50's to the mid 70's and has still left many footprints. Also based on it is the approach of the European Union, rigidly objecting to market characteristics and certain practices assumed to perform badly.

2.3.3 The Chicago School

The structure-conduct-performance paradigm is reversed in what later came to be called the Chicago School.²⁰ It is held that conduct and performance determine market structure, not the other way around. The approach is a reappraisal of price-theory, and uses micro-economic theory to create economic theory, not merely to explain empirical statistics.²¹ The static approach of the Harvard school was replaced by the dynamic suggestion that the rational conduct of a firm, inherent in profit maximisation, will be competitive and may make markets correct their own failures. Since the objective of the authorities is limited to productive and allocative efficiency, such maximisation should not be hampered. Hence, competition policy should only proscribe inefficient conduct.

The empirical studies on which the Harvard School relies were later shown to be rather vague – the correlation between profits and concentration is not strong in the long run. When using more sophisticated tools they have occasionally even been proven wrong.²² Furthermore, even if such correlation could be shown, it ignored the question of the origin of concentration and profit rate. In the Chicago view, concentration usually is the result of superior efficiency. The winners on the markets are the most efficient firms, which thus grow more rapidly, get larger market shares and make high profits. Concentration is not a problem, it is only monopoly or cartelisation i.e. collusive price increases and output restrictions that should be a concern.²³

¹⁸ Clark, "Toward a Concept of Workable Competition", *30 American Economic Review*, 1940, pp. 241 – 256.

¹⁹ For an extensive list of criteria at the different levels, see Scherer & Ross, *Industrial Market Structure and Economic Performance*, 1990, p. 5.

²⁰ Bork, *The Antitrust Paradox: A Policy in War with itself*, 1978. This frequently quoted work offers a comprehensive overview of the Chicago school doctrine.

²¹ Van den Bergh, *The Economic Analysis of Competition Law*, 1995, p. 38.

²² Lepage, *La nouvelle économie industrielle*, 1989, pp. 192 – 200.

²³ Van den Bergh, *The Economic Analysis of Competition Law*, 1995, p. 47.

In the new line of thought, it was claimed that many restrictive practices, such as exclusive distribution and resale price maintenance, could be efficient answers to market failures, e.g. free-riding. In the Chicago approach vertical restraints are presumed to be competitive improvements of distribution and hardly ever anticompetitive. Recent theories of industrial organisation further enforce this more nuanced view of vertical and horizontal restraints, implying that integration only is problematic where the market structure in the specific case would support strategic behaviour.²⁴

2.3.4 The Austrian School

The economists belonging to the Austrian school recognise the market as driven by its participants, the entrepreneurs. The profit-seeking activities of the entrepreneurs, exploiting the differences in price, quality, technology etc. keep the market forces rolling and developing. Thus, the focus is far from an equilibrium state in perfect conditions where no entrepreneurial profits exist, but on the very dynamic incentive mechanism of not yet exploited gains of trade asking to be exploited. Entrepreneurial profits are truly residuals, and further, there is an open-endedness to the situation, a prospect of unquantifiable profits, motivating the entrepreneur and making it impossible to ascertain the amount of return that is adequate to elicit a given level of entrepreneurial activity. Therefore not even persistently high profits can be taken as a sign of monopoly.²⁵

A unifying thread in the Austrian tradition is subjectivism combined with the view that relative uncertainty is the unifying feature of all market participants. "It is in a consciously subjectivist mode of analysis...in which the possibility is taken seriously that agents may be seeking to maximise within erroneously perceived frameworks, that scope for entrepreneurship can easily come to be recognised."²⁶ Competition is a continuing market process in which entrepreneurs strive to outperform the others. A race with many finish lines. Hence, interventions by authorities, trying to force the markets into features objectively perceived as being more efficient, are by their very nature based on imperfect information deemed to fail. Such intervention will distort the market process which otherwise would be the natural arbiter.

2.3.5 Transaction Cost approach

Based on the ideas of Coase²⁷ and further developed by Williamson, the transaction cost approach considers the choice between buying on the market

²⁴ See Williamson, "Antitrust Policy" in *The new Palgrave – A directory of Economics*.

1987, Tirole, *The Theory of Industrial Organisation*, 1988, Viscusi, Vernon & Harrington Jr., *Economics of regulation and antitrust*, 2 ed., 1995.

²⁵ Elling, "Industrial Organisation", in Boettke (Ed.) *The Elgar Companion to Austrian Economics*, 1994, pp. 244 – 248.

²⁶ Kirzner, "Entrepreneurship", in Boettke (Ed.) *The Elgar Companion to Austrian Economics*, 1994, p.110.

²⁷ Coase, "The Nature of the Firm", *Economia*, nr 4, 1936, pp. 386 ff.

and producing within a firm as alternatives. In this view the firm is no longer a production function but a governance structure.²⁸ The choice involves different kinds of transaction costs (search, negotiation, enforcement etc.) and the rational actor chooses the alternative that minimises these costs. Such features as uncertainty, frequency and asset specificity in the transaction will be determinant for the relative costs involved.²⁹

The implications for antitrust policy consist in letting the actors choose the form of transaction and organisation that they regard as the most efficient. Concentrations and restrictive clauses in long-term contracts may be appropriate instruments for realising savings in transaction costs and in preventing free-riders. If total welfare effects are to be measured, a trade-off between these savings and the losses created by restrictions in competition must be carried out.

2.3.6 Theory of Contestable Markets

Market participants may not only be disciplined by actual competitors operating in the markets, but also by potential competitors. If there are rents to be gained from entering the market, entrepreneurs will do so. When potential actors are likely, there is no reason to worry about high concentration or high fixed costs limiting the number of participants. In a market with perfect contestability, where potential competitors will hit-and-run as soon as market power is exercised, prices equal marginal costs. This however presupposes no disadvantages for new firms vis-à-vis already established firms; no sunk costs (all costs of entering the market are fully recoverable if the firm wishes to exit again), no regulatory requirements of establishment or other trade barriers, and a time lag of entry which is shorter than the price adjustment lag of the existing firms.³⁰ These assumptions are of course hardly ever completely fulfilled, which is why an evaluation of potential competition often has to be done through an analysis of present barriers to entry.

2.3.7 Game theory

The interplay between contestants on the market and also between contestants and potential competitors may be analysed in a game theory perspective. By acting strategically, taking first moves, undertaking to commit investments etc. a firm may discourage and distort competition in its environment. First mover advantages, raising rivals costs, entry deterring strategies etc, are inherent in assessing the possibilities and probabilities of entry.³¹ Since these features are handled within game theory, it may thus be used in the assessment of market entry.

²⁸ Williamson, "Antitrust Policy" in *The new Palgrave – A directory of Economics*. 1987.

²⁹ This can explain why a company chooses to buy some services but in other cases will create a department within the firm. Compare e.g. the supply of breakfast buns with the supply of a specific gear box to Volvo.

³⁰ See Viscusi, Vernon, Harrington Jr., *Economics of regulation and antitrust*, 1995, p. 162.

³¹ OECD Working Papers, *Application of Competition Policy to High Technology Markets*, 1997, p. 8.

The theoretical foundations of game theory have however "led many economists to reject the simplistic Chicago view of the world (based on perfect information) that price cuts are always natural responses to cost and demand shocks or to increased competitive pressure."³²

Game theoretical insights have developed substantially in the last decade and are the subject of increasing interest in the field of economics. It will probably have great impact on the understanding of market participants' behaviour and thus become an integral part of the analysis thereof. However, the models are still considered too sensitive to alterations in the assumptions to draw regulatory conclusions at this stage.

³² Tirole, *The Theory of Industrial Organization*, 1989, p. 380.

3 Restrictive Agreements and Practices

3.1 Vertical Restraints

3.1.1 Inherent economic problems

Vertical restraints concern restrictive practices between market participants on different levels in the distribution chain from production to sale. Even if the collaborating parties do not act at the same level, their cooperation may carry anticompetitive effects. Manufacturers, wholesalers and retailers may, for example, be interested in the assignment of exclusive retailing rights for the former's products. Such exclusivity could foreclose other retailers willing to sell the product in question and thus diminish intra-brand competition. If a retailing contract stipulates that the retailer may sell no competing brands or products, inter-brand competition may be harmed as other suppliers may be foreclosed and in-store competition between different brands may as a result be distorted.³³ Price agreements, such as minimum or maximum prices may distort competition by withdrawing the price instrument as a competitive tool. It may also facilitate secret cartel behaviour or other collusive action between the retailers, as pricing grounds at least partly become common and the transparency of price is increased.

On the other hand, vertical restraints also carry generally recognised positive effects. They can be the rational, efficient answer to a number of market imperfections and, as such, enhance efficiency. If an actor cannot appropriate the benefits of an investment or effort, other actors may free-ride, causing a disincentive to undertaking the investment in the first place. Some kind of exclusive distribution or resale price maintenance may then be a helpful remedy in securing the position of the performing party.³⁴ For example, if a retailer must invest significantly in marketing a new product or in offering pre-sale services,³⁵ he is likely to demand some protection from competition by other retailers not making similar investments.³⁶ Such pre-sale investments are highly important on a market like Europe, due to different market conditions as well as cultural and linguistic differences and may imply the necessity of national distributors well acquainted with the characteristics of their specific market.³⁷ A territorial restraint

³³ Peepenkorn, "The Economics of Verticals", *Competition Policy Newsletter*, 2, 1998, p. 12f.

³⁴ Van den Bergh, *The Economic Analysis of Competition Law*, 1995, p. 76; Peepenkorn, "The Economics of Verticals", *Competition Policy Newsletter*, 2, 1998, p. 15. Commission, *Communication from the Commission on the application of the Commission competition rules to vertical restraints*, p. 17.

³⁵ E.g. keeping personnel and goods available to the consumers for demonstration and information.

³⁶ For example so called Outlet-stores.

³⁷ Van den Bergh, "Modern Industrial Organisation and European Competition Law", 2 E.C.L.R., 1996, p. 76.

may thus act as a simultaneously integrating and efficiency-enhancing tool, and would not necessarily deserve too fierce a treatment.

3.1.2 Recent Policy review

The group exemptions were adopted mainly to reduce a workload too large for the Commission to monitor as a mass of notifications were being filed, requesting clearance from Art 85(1) of the Treaty of Rome or an individual exemption under Art 85(3). However, they have not been entirely successful. The current policies are considered by many to be too rigid and back-dated, and more importantly the differences in treatment of different kinds of vertical restrictions, often working as substitutes to each other, has no valid economic explanation and are often explained by the impact of powerful pressure groups.³⁸ In addition, restraints used by actors without the possibility of exercising market power will presumably not carry any anticompetitive effects. Basing the treatment on the form of an agreement rather than on an analysis of the effects of an agreement, they often act as strait jackets, further amplified when contracts are modified to qualify to the narrow exemptions.³⁹ In order to reduce the burden to the authorities of monitoring the vertical restraints and after criticism from concerned parties and a large number of economic commentators of the result of the current policies regarding vertical restraints, a review was initiated, cumulating in a Green Paper⁴⁰ discussing the different aspects of the problem and suggesting alternative ways of proceeding the work.

The most practical result, this far, is a proposal adopted by the Commission in October 1998 of a group exemption of vertical agreements relating to distribution.⁴¹ This will embrace all forms of distribution, giving them a coherent treatment in one Regulation, which is considered a great improvement.⁴² In addition, also services and intermediate goods will fall under the scope of the regulation. The exemption does however not include agency agreements.

The proposal includes blacklisted provisions which, when inserted into agreements exclude the application of the exemption.⁴³ These prohibited provisions are all concerned with intra brand competition such as fixed and minimum resale price maintenance, some restrictions on active or passive resale, combinations at the same level of distribution of selective and exclusive distribution with a prohibition on active sales etc.

³⁸ See e.g. Van den Bergh, "Modern Industrial Organisation and European Competition Law", 2 E.C.L.R., 1996, pp. 76f, 81.

³⁹ Korah, *Vertical Restraints in EC competition Law*, p.4.

⁴⁰ Green Paper on Vertical Restraints in EC Competition Policy, COM (96) 721 final, [1997] 4 C.M.L.R. 519.

⁴¹ Commission, *Communication from the Commission on the application of the Commission competition rules to vertical restraints*.

⁴² Korah, *Vertical Restraints in EC Competition Law*, p.11.

⁴³ Commission, *Communication from the Commission on the application of the Commission competition rules to vertical restraints*, pp. 28f.

When thus widening the exempting practise to include mixtures of products and restrictive vertical practises, the Commission holds it impossible to continue disregarding market shares as is the practise in the current group exemptions.⁴⁴ Instead the possibilities of a single-threshold or a dual-threshold system are discussed. The latter would consist of two different levels, a higher level of 40% under which fall vertical restraints perceived to lead to less serious restrictions on competition. Typically non-exclusive agreements but also exclusive distribution and purchasing as they do not directly harm inter-brand competition. The lower level, 20%, would apply to more serious restrictions like exclusive supply or customer allocation.⁴⁵

Due to the very broad interpretation of Art 85(1) many practices with positive net-effects are considered anticompetitive and thus need some form of exemption. If the group exemptions are narrowly defined and executed, the really interesting cases where the anticompetitive concerns may truly arise will have to be dealt with pursuant to the system of individual exemptions in Art 85(3). The individual exemption system, being time and resource consuming and carrying the other disadvantages of governmental interference in privately negotiated agreements, is not very commonly used which is why the borderlines in the group exemptions are of crucial importance. This further enforces the view that the success of a future policy will depend on the ability to provide a sufficiently wide and well-defined safe harbour to exclude a large majority of agreements from competition policy scrutiny.⁴⁶ The question remains whether the coming group exemption will radically change the inflexibility and the hostility towards new forms of trade that characterise the current group exemptions.⁴⁷ In addition, it will be based on the view that market shares alone may be used as a proxy for market power, even though the Commission recognises the shortcomings this concept.⁴⁸

However, the importance of up-dated economic arguments has gained terrain in the discussion and in the Commission's proposal. The future will tell where this development will lead.

⁴⁴ Commission, *Communication from the Commission on the application of the Commission competition rules to vertical restraints*, p. 23.

⁴⁵ Commission, *Communication from the Commission on the application of the Commission competition rules to vertical restraints*, p. 30.

⁴⁶ Peeperkorn, "The Economics of Verticals", *Competition Policy Newsletter*, 2, 1998, p.11.

⁴⁷ See Larsén, *Kvalitativa aspekter under konkurrensbegränsningskriteriet i Art. 85(1) EG*, 1996, p. 2.

⁴⁸ Commission, *Communication from the Commission on the application of the Commission competition rules to vertical restraints*, p. 21. Schroeder, "The Green Paper in Vertical Restraints: Beware of Market Share Thresholds" 7 E.C.L.R. pp.431 ff.

3.2 Horizontal Restraints

3.2.1 Inherent economic problems

Horizontal restraints are generally perceived to carry even greater negative consequences for competition since they involve actual or potential competitors joining together. As such, this kind of restraint “deprives the marketplace of the independent centres of decision-making that competition assumes and demand” which is why ”such merging of resources may well lead to efficiencies that benefit consumers, but their anticompetitive potential is sufficient to warrant scrutiny even in the absence of incipient monopoly”.⁴⁹ In addition to the effects of open cooperation it is necessary to take into account risks of collusion between the parties in other fields of business. A horizontal cooperation may remove rivals’ uncertainty or diminish incentives to deviate from a coordinated strategy.⁵⁰

Yet, even in these fields there are many situations where the competition and efficiency of the market could gain by cooperation. As long as current or potential competitors exist, the problem of concentrations seems small. Notable is the very vague proven correlation between market share and market power - too vague to draw general and normative conclusions.

Different kinds of horizontal restraints carry different potential anticompetitive effects. In the case of a merger, two actors are fully integrated into one, leaving the market one participant poorer. Joint ventures on the other hand could be recognised as an “in-between-form”, a mix of using the typical market contract and in-house production. The commitment in scope is often extensive and the time-span rather long compared to other contracts, but well short of a full integration. The antitrust analysis must take such differences into account as it effects the anticompetitive risks. Furthermore, once a merger is permitted, an entity is created, safe from further evaluation of the underlying specifics, by the authorities. The practice of a joint venture may be re-assessed if there appear new facts, and is usually exempted for limited period of time.

Turning to the potential efficiency gains, these may be of different kinds. Product efficiencies are gains achieved from producing goods at lower cost or of enhanced quality using existing technology. Innovation efficiencies are the cost saving or product enhancement gains from the innovation, development, or diffusion of new technology. The benefits may be scale and scope economies, network economies, transactional economies, information economies, which all should be recognised.⁵¹ Scale economies are achieved when collaborating firms

⁴⁹ Arquit, “The boundaries of horizontal restraints: facilitating practices and invitations to collude” *61 Antitrust Law Journal*, 1993, p.532 with reference to *Copperweld Corp v. Independence Tube Corp.*, 467 U.S. 752, 768-769.

⁵⁰ Arquit, “The boundaries of horizontal restraints: facilitating practices and invitations to collude” *61 Antitrust Law Journal*, 1993, p.535

⁵¹ Brodley, ”The Economic Goals of Antitrust: Efficiency, Consumer Welfare, and Technological Progress” *62 New York University Law Review*, p. 1020.

may lower their costs or expand production by merging activities and thus obtaining an efficient size. Hence, they are more likely to appear between smaller companies but may also justify arrangements between large companies moving into new markets. It has e.g. been estimated that the semiconductor industry has historically experienced a 30 % reduction in cost each time that it has doubled its production volume.⁵² Scale economies could also involve reducing consumer search costs.⁵³ In this context it should be mentioned that transparent and common pricing and discount systems may not only have anticompetitive effects but also facilitate consumer choice as the comparability of the different products and sellers is enhanced.⁵⁴

Economies of scope appear when it is efficient to broaden the line of production to multiple products. Network economies arise from beneficial effects of "network externalities". A typical example of such externality is the beneficial effect of new customers to a telephone system, making other customers better off.⁵⁵

Important also are transactional economies as different transactions carry different costs of planning, negotiation, enforcement etc. The choice of using the market or undertaking in-house production involves different costs that the rational actor seeks to minimise.

However, innovation efficiencies are perceived to provide the greatest potential enhancement of social wealth.⁵⁶ R&D is a very costly activity and in avoiding duplication of research efforts, using complementary knowledge and experience, sharing risks, and sharing results (dissemination), the expenses may be lowered, the innovative pace improved and product quality enhanced. In addition, such cooperation may be necessary for the innovative activity to be undertaken at all.

3.2.2 Future Policy review

Even though the work on the vertical restraints is not even finished, the debate is now partially widened to include practises of horizontal character. These restraints have traditionally been treated quite harshly. A review is now initiated by the Commission, indicating that some of the arguments put forward on vertical restraints may be applicable to horizontal restraints as well.⁵⁷ Perhaps most importantly, if economic insights are taken more seriously they might in the future prevail over market interventions of a political origin.

⁵² Kattan, "Antitrust analysis of Technology Joint Ventures: allocative efficiency and the rewards of innovation", *61 Antitrust Law Journal*, 1993, text to footnote 12.

⁵³ Arquit & Kattan, "Efficiency considerations and horizontal restraints", *Antitrust Bulletin*, 1991, text following footnote 15.

⁵⁴ Arquit, "The boundaries of horizontal restraints: facilitating practices and invitations to collude" *61 Antitrust Law Journal*, 1993.

⁵⁵ Brodley, "Proof of Efficiencies in Mergers and Joint Ventures", *64 Antitrust Law Journal*, footnote 16, with reference to Evans, D. S. & Schmalensee, "A Guide to Antitrust Economics of Networks", *Antitrust*, 1996.

⁵⁶ Brodley, "Proof of Efficiencies in Mergers and Joint Ventures", *64 Antitrust Law Journal*, text to footnote 20.

⁵⁷ *Twenty-seventh Report on Competition Policy*, 1997, p.29.

There is a broad agreement that “production efficiencies” or cost savings resulting from economies of scale and scope, reduced transport costs etc that “permit firms to produce more output or better quality output from the same amount of input” are recognisable under the EC law. Less well-recognised in present policies are dynamic efficiencies, such as improvements of product quality, product mix or service quality. These do benefit consumers no less than productive efficiencies but are harder to measure, thus making the trade-off difficult.⁵⁸ To develop methods for credible trade-off conduct, including these kinds of efficiencies remains a very delicate but necessary task for the future. This is especially important for technological progress industries driven by product and process innovation, where the application of a static equilibrium model may be harmful.⁵⁹

There is an ongoing considerable dialogue among antitrust scholars, above all in the US, on the proper scope of an efficiency defence concerning horizontal restraints. Particularly vigorous is the debate concerning merger analysis.⁶⁰ As we will see, other types of horizontal restraints may carry even greater but at the same time more hard to measure efficiencies. The debate therefore ought to be widened to include these cases as well.

Current economic development in the markets influencing antitrust concerns should affect the new review of horizontal restraints just as they did the soon to be finished review of vertical restraints is. For vertical restraints, changed forms of distribution in combination with a fairly integrated European market made it possible to relax some of the bridles on them. In the field of horizontal restraints, globalisation of the markets, the increased importance of dynamic industries and an increased importance of flexible contractual cooperation as an alternative to mergers and in-house production, ought to be important aspects to be considered in the coming review.

⁵⁸ OECD, *Competition Policy and Efficiency Claims in Horizontal Cooperation Agreements*, p. 6.

⁵⁹ Ordover & Willing, “Antitrust of High-Technology Industries: Assessing Research Joint Ventures and Mergers”, *Journal of Law & Economics*, 1985, p.311.

⁶⁰ OECD Working Papers, Competition Policy and Efficiency Claims in Horizontal Cooperation Agreements, 1997, p. 44.

II. Research and Development

4 Political objectives

4.1 Inter-community integration

The relationship between the competition policy of the European Community and the Harvard School is demonstrated in the recognition of non-efficiency objectives as being part of the goals to be pursued. No exact definition as to the extent of these goals have yet been articulated but there are some features that have repeatedly been stressed by the authorities and which commentators have identified as recognised by the Community. These include the prevention of barriers to trade being erected by private agreements between undertakings, abuse of monopoly power, and state subsidies. The overall aim is to create the common market, a fully integrated European entity that the whole Treaty aims at.⁶¹ To preserve effective competition is a spur to the creation of this market.⁶² In addition to these more or less well-articulated goals there is a general notion of fairness⁶³, encouragement of small and medium sized enterprises and economic and social cohesion.⁶⁴

Of course, European companies joining together in cooperation to face world competition may help integrate the community. However, if such activity creates too much market power on the European market, it may have a negative effect on cross-border intra-community trade. It is politically preferred to have independent actors in several member states than centralised “European Champions”. Furthermore, there exist product markets geographically limited to Europe, thus making the competitive situation within Europe crucial.

The hierarchy of objectives can be described as:

1. Integration to a single market.
2. The right amount of competition for the Treaty’s requirements to be met and its aims attained taking into account the goal of ensuring consumers the continued benefits of the single market.
3. To maintain fairness in the marketplace, preserving equality of opportunity for all economic actors, special account of the position of small and medium sized firms and the interests of workers, users, and consumers.⁶⁵

⁶¹ Art 2 of the Treaty, Larsén, *Kvalitativa aspekter under konkurrensbegränsningskriteriet i Art. 85(1) EG*, 1996, p. 25.

⁶² Bellamy & Child, *Common Market Law of Competition*, 1993, § 1-071.

⁶³ Preamble to the Treaty establishing the European Community, paragraph 4: “Recognizing that the removal of existing obstacles calls for concerted action in order to guarantee steady expansion, balanced trade and fair competition”, and *Ninth Report on Competition Policy*, 1979, p. 9 - 11

⁶⁴ Bellamy & Child, *Common Market Law of Competition*, 1993, references to § 1-071.

⁶⁵ *Ninth Report on Competition Policy*, 1979, pp. 9 - 11

4.2 SME's

Small and Medium sized Enterprises have a distinguished place in the hearts and souls of European policy makers and analysts. Presumably many new jobs can be created in these very dynamic companies, prone to react to the shifting demands of the market. Of the jobs generated in the US economy between January 1990 and June 1994, 4000 companies listed on the NASDAQ market, which represent only a tiny fraction of the 10 million American companies, had created almost 16 per cent, or 500.000 jobs. Over the same period Americas largest companies, listed on the Fortune 500, eliminated some 850.000 jobs.⁶⁶

In Europe, two thirds of all employment is provided by companies with less than 250 employees. And the proportion is growing while large companies are declining.⁶⁷ Consequently it is believed, in accordance with the views of the European Commission's Competitiveness Advisory Group, that the state should encourage these companies, ensuring that small business will enjoy a climate and infrastructure in which they can establish themselves and pursue opportunities for growth.⁶⁸ An active role is required to remove barriers to business development and expansion. Among the examples given can be mentioned creating incentives for those with the potential to become flourishing entrepreneurs, simplifying and clarifying the regulatory framework and creating dynamic mechanisms to stimulate technology transfer to SMEs.

These are the updated thoughts of competitiveness experts. However, European competition law has existed for several decades and there might be reason to evaluate the appropriateness of these standards. How is the inherent place of the SMEs on the market best preserved? Big companies can be more efficient, especially in R&D and should thus not be denied to achieve economies by growth. But the SMEs would benefit from the removal of the relative advantages of large companies to manipulate and use complex and time-consuming public regulations. Moreover, by facilitating the efficient operation of the capital market by fostering the emergence of independent and objective sources of advice to help investors screen new projects which can also, through mentoring, strengthen the links between existing entrepreneurs and potential sources of finance.⁶⁹ The state could thus concentrate on providing equal opportunities for all types of companies and then let the market make the ultimate decision concerning optimal size.

⁶⁶ Jacquemin & Pench, (Eds.), *Europe Competing in the Global Economy*, 1997, p. 102.
NASDAQ - National Association of Securities Dealers Automatic Quotations.

⁶⁷ Jacquemin & Pench, (Eds.), *Europe Competing in the Global Economy*, 1997, p. 99.

⁶⁸ Jacquemin & Pench, (Eds.), *Europe Competing in the Global Economy*, 1997, p.71.

⁶⁹ Jacquemin & Pench, (Eds.), *Europe Competing in the Global Economy*, 1997, p. 102.

4.3 Welfare enhancement & European Competitiveness

Innovation and technological progress are the major reasons for economic development in the world. As demonstrated in 2.2.2, the welfare implications of dynamic change and improvements are tremendous. There is thus great political interest in promoting such progress. However, the Treaty is based on integration as the ground for European economic development, which is why these concerns may prevail over efficiencies in the individual case.

Europe has been lagging behind US and Japan in the last few decades. In the period between 1973 and 1983 16 million new jobs were created in the U.S. and nearly 5 million in Japan while 2 million were lost in the Common Market. All three regions have lost jobs in traditional old industries, but Europe seems unable to follow in the new high technology based industries that are likely to generate wealth for generations to come. European firms are both spending relatively less and are less productive in R&D than their competitors in those regions and have not been successful in getting into new high-tech industries.⁷⁰ They are especially feeble in comparison with American firms. Only 2 of the top 20 software firms are European. One reason put forward is that staid banks are overly suspicious and venture capitalists have no one to sell their investments to.⁷¹

Factors influencing economic performance are numerous and diverse. They necessitate coherent policy treatment at various levels. This is confirmed and developed in a typology of competitiveness created by the European Commission's Competitiveness Advisory Group, and presented in the introduction to one of their report publications.⁷² At all levels, macro, industry and enterprise level the respective efficiency of markets, networks and organisations must be backed up by sound public policies. These policies, including tax, financial regulation, corporate governance, labour markets, competition, trade etc are denoted efficiency-enhancing. The conclusion must be that these should have efficiency as their objective. Later, in the first report, it is concluded "we must be aware of the danger of shifting from investment- and innovation-driven growth to wealth-driven decline"⁷³. And that "competitiveness implies elements of productivity, efficiency, profitability".⁷⁴

⁷⁰ Korah, "Critical Comments on the Commission's Recent Decisions Exempting Joint Ventures to Exploit Research that Needs Further Development", *European Law Review*, 1987, p. 18, and Commission, *First Action Plan for Innovation in Europe*, COM (96) 589, Annex 2.3. Statistical tables.

⁷¹ Temple Lang, "European Community Antitrust Law: Innovation Markets and High Technology Industries" *Fordham International Law Journal*, 1997, p. 722.

⁷² Jacquemin & Pench, (Eds.), *Europe Competing in the Global Economy*, 1997, p. 12.

⁷³ Jacquemin & Pench, (Eds.), *Europe Competing in the Global Economy*, 1997, p. 49f.

⁷⁴ Jacquemin & Pench, (Eds.), *Europe Competing in the Global Economy*, 1997, p. 50.

In the fourteenth report on competition policy (1984) it is stated: “Competition has never been a matter of only quantities and prices for existing goods and services. Today, it relies increasingly on innovation, that is; the creation of new or improved products on the market stimulates competition within the common market, and helps to strengthen the ability of European industry to compete internationally. In both contexts, research and development (R&D) plays an essential role. In fact, R&D promotes and maintains dynamic competition, characterized by initiation and imitation and in doing so assures economic growth.”⁷⁵ Thus the dynamics and its inherent benefits are recognised and even made essential since the mid-eighties.

⁷⁵ *Fourteenth Report on Competition Policy*, 1984, point 28.

5 The Economics of R&D

5.1 Introduction

In order to maximise welfare the goal is to achieve efficient research; to maximise return while minimising cost; to realise economies of scale and scope and synergetic effects while escaping those market failures which could lead to too little incentive to invest R&D or behave efficiently. Given current levels of R&D investment the benefits exceed the costs, which is why society would benefit from more R&D.⁷⁶

There are many reasons why the R&D level may be lower than is socially desirable.⁷⁷ Lack of exclusive appropriation of resulting benefits and spillovers to competitors may make R&D investments benefit society as a whole more than the investing firm. In addition, uncertainty is a prevalent factor in R&D, which is why risk attitudes are very important. Capital market imperfections coupled with asymmetric information may lead to risk aversion.⁷⁸ R&D may have to be backed up by a coherent and sound public policy. If private costs can be kept down, spillovers can be lowered and the effects of the appropriability problem may be diminished by reducing public good effects and problems of asymmetric and incomplete information may be abated, all this by cooperation, then such conduct will be socially very desirable.

R&D joint ventures without restraints on product market typically both speed innovation and enhance product market competition if the primary R&D competition the venture candidates face is from others rather than from each other. But if the prospective joint venture parties have more to lose from falling behind each other, than falling behind the rest of the market, their collaboration may slow down the pace of innovation.

If they possess market power in the relevant product markets before the anticipated innovation - the threat should be assessed on the basis of both pre-innovation and post-innovation product lines.

Research activity produces an input, knowledge, which combined with more tangible inputs such as labour, capital and raw materials produce final goods. In this respect it constitutes an upstream research market, as opposed to the downstream market for goods and services that are produced using the technologies developed by the research activity.⁷⁹ Within the research market activities may involve basic research, refined research and product development. These sequential steps may be of importance to antitrust since the economic

⁷⁶ Landman, "The Economics of Future Goods Markets", *World Competition, Law and Economics Review*, 1998, p. 67.

⁷⁷ These are only mentioned here and will be further described below.

⁷⁸ Poyago-Theotoky, *Competition, Cooperation and Development – The Economics of Research Joint Ventures*. 1997, p.3.

⁷⁹ See Grossman & Shapiro, "Research Joint Ventures: An Antitrust Analysis" *Journal of Law, Economics and Organization*, 1986, p. 319.

rationale both for society and for the individual actors differ along the scale. E.g. potential spillovers are greatest for basic research and decrease as we move to more applied discoveries.⁸⁰

5.2 Social and Private Rates of Return

As with all investors the motive of the parents in undertaking the often very expensive R&D programs at all, is the expected return. The outcome of research and development activities can be interpreted as a piece of new information or knowledge. This is what makes this form of investment distinctive. Once this information is produced, that is discovered, there is no substantial cost in reproducing it. “The cost of finding new information is large but the cost of disseminating this information is relatively negligible; this constitutes an extreme form of scale economy.”⁸¹ As it is so costly to produce and so cheap to reproduce, it is also difficult to profit from.⁸² This is due to the features of public good inherent in knowledge production.⁸³ Since the investors are unable to appropriate all the gains from innovation, it follows that if the price they may charge is at a competitive level, as would be desirable from a social point of view, where price equals marginal cost, innovators will not be able to recover their costs. Hence there would be no incentive to engage in such activity.

A report on the social and private returns from innovation, containing the results from seventeen case studies, exemplified the divergence between the returns.⁸⁴ The analysis showed that the social rate of return is very high, the median estimated social rate of return was about 56 %. The median private rate of return was about 25 %. However, the returns varied greatly and it is important to keep the possibly diverse risks in mind. Nonetheless, in 30 % of the specific cases, the private rate of return was so low that no firm would have undertaken the investment even though, from society’s point of view, the investment was worthwhile. It should be kept in mind that this particular survey goes back to the early 70’s and that certain features in R&D intensive industries have changed considerably since. Therefore the numbers should be handled with caution. On the other hand, as the innovative pace since then has been accelerated, it would mean yet another difficulty for recouping research investments and the private rate of return nowadays may be even smaller.

⁸⁰ Grossman & Shapiro, “Research Joint Ventures: An Antitrust Analysis” *Journal of Law, Economics and Organization*, 1986, p. 319.

⁸¹ Poyago-Theotoky, *Competition, Cooperation and Development – The Economics of Research Joint Ventures*. 1997, p.1.

⁸² Poyago-Theotoky, *Competition, Cooperation and Development – The Economics of Research Joint Ventures*. 1997, p.1, with reference to Arrow, “Economic Welfare and the Allocation of Resources for Inventions” in Nelson, R. (ed), *The Rate and Direction of Inventive Activity*, Princeton, 1962.

⁸³ See 2.1.1. for explanation of Public Goods.

⁸⁴ Mansfield et al. “Social and Private Rates of Return from Industrial Innovations”, *The Quarterly Journal of Economics*, 1977, pp. 233 f.

It is hard to draw firm conclusions on what determines the gap in return from innovation. Theorists have however come up with some points.⁸⁵

- In a highly competitive environment the innovating firms are less able to appropriate a large portion of the social benefits than if they are in a secure monopoly situation or part of a tight oligopoly.⁸⁶ In addition, the easiness for competitors to “invent around” the innovators patent.
- The size of the investment. Large investments and innovations are likely to be imitated more quickly. Similarly, on the basis of a model stressing the indivisibility of information, it has been concluded that the inventor obtains more of the social benefit of moderately cost reducing inventions but not of more radical inventions.
- The character of the invention. Some say there is a higher degree of appropriability for product innovations than from mere changes in processes. But others think that it is easier to keep secret what process a company is using.

The above mentioned study confirmed that the gap between the rates of return tended to be greater for more important innovations and for innovation that could be imitated relatively cheaply by competitors.⁸⁷

5.3 Benefits of Cooperation

5.3.1 Ex ante incentives to invest in R&D.⁸⁸

Where one is dealing with intangibles such as ideas, information and knowledge, problems with assigning property rights are created. And even if intellectual property rights protect innovators, there will often be leaks, due to employee mobility, reverse engineering and security failure etc, which may result in competitors’ free riding, substantially reducing the returns to the innovating company. In addition, a large part of know-how is not possible or worthwhile assigning and enforcing property rights for, given current intellectual property right systems. Spillovers will strengthen the competitors and naturally negatively affect the incentives for research activity. Reverse engineering is cheaper than

⁸⁵ Mansfield et al., “Social and Private Rates of Return from Industrial Innovations”, *The Quarterly Journal of Economics*, 1977, pp. 235 f. with reference to: Matthews, “The Contribution of Science and Technology in Economic Development”, in Williams, B. (ed.) *Science and Technology in Economic Growth*, London, 1973, p. 14. Arrow, K. “Economic Welfare and the Allocation of Resources for Invention” in National Bureau of Economic Research, *The Rate of Direction of Inventive Activity*, Princeton University Press, 1962.

⁸⁶ The rational behind patents as an incentive scheme for innovation.

⁸⁷ Mansfield et al., “Social and Private Rates of Return from Industrial Innovations”, *The Quarterly Journal of Economics*, 1977, p. 237.

⁸⁸ Grossman & Shapiro, “Research Joint Ventures: An Antitrust Analysis” *Journal of Law, Economics and Organization*, 1986, p. 321. Katz, “An Analysis of Cooperative Research and Development”, *Rand Journal of Economics*, 1996, p.527. Kattan, “Antitrust analysis of Technology Joint Ventures: allocative efficiency and the rewards of innovation”, *61 Antitrust Law Journal*, 1993, pp. 937 ff.

innovation, which may cause rational rivals to wait for innovating competitors on whom to free ride. Approximately 60% of successful innovations in the chemical, drug, electronics, and machinery business are imitated within four years at a cost of 65% of the producing original innovation.⁸⁹

If however, competitors may jointly undertake such activity these fears may be reduced.

5.3.2 Economies of Joint Research.⁹⁰

The presence of synergies, or complementaries in technology and technique among the parties, when each party has its own special skills and experiences, will potentially produce a cross-fertilisation of ideas. Especially when the parties are active in different industries or niches successful combination of selected productive assets is possible.

A joint venture will also make it possible to exploit economies of scale in R&D and avoid wasteful duplication of effort. When the minimum efficient scale of R&D is large, it makes little sense for each downstream firm to perform similar research upstream. Pooling of research may result in more resources poured into particular large-scale projects.

In addition, difficulties in price discrimination⁹¹ make the inventor unable to appropriate the whole surplus e.g. from licensing, thus forcing him to sell at inefficiently low prices. Hence the innovative investments will not be at a socially optimal level. If innovation for future licensing is only conducted to a small extent, firms will have to duplicate R&D effort, which is much more expensive to society than distributing knowledge.

It is not easy to identify or measure the benefits of avoiding duplication. Even if the objective is similar, there may be a benefit in conducting various independent research programs since they are likely to follow different paths, which will yield various outcomes at different speed. On the other hand it might be better to have a joint team succeeding together than one single successful firm controlling all production, licensing etc.

Another economy to be added is risk sharing. Research usually demands great expenditure up-front. The revenues are uncertain and if realised at all, they will occur at the end of a long process. However, risk sharing may be regarded as a secondary benefit, resulting from imperfections in the capital market since, in a smooth capital market, investors would be able to diversify anyway. Nonetheless,

⁸⁹ Kattan, “Antitrust analysis of Technology Joint Ventures: allocative efficiency and the rewards of innovation”, *61 Antitrust Law Journal*, 1993, text to footnote 29.

⁹⁰ OECD, *Competition Policy and Joint Ventures*, 1996, pp. 19 f. Grossman & Shapiro, “Research Joint Ventures: An Antitrust Analysis” *Journal of Law, Economics and Organization*, 1986, p. 322 f. Katz, “An Analysis of Cooperative Research and Development”, *Rand Journal of Economics*, 1996, pp.527 f. Kattan, “Antitrust analysis of Technology Joint Ventures: allocative efficiency and the rewards of innovation”, *61 Antitrust Law Journal*, 1993, pp. 937 ff.

⁹¹ Price discrimination means to be able to charge the buyer equivalent to his willingness to pay. In practise it is very hard for the seller to identify this amount for every buyer and will therefore be forced to charge more or less identical price for all.

small and medium sized companies often have difficulties raising enough capital to enable them to pursue research activity on an individual level.

Finally, the joint venture may facilitate market entry when barriers obstruct domestic or international markets, above all in highly concentrated markets or those protected by trade and investment barriers against foreign competition. It may in the latter case be possible to circumvent such impediments to trade by associating with domestic firms.

5.3.3 Ex Post Dissemination.⁹²

Knowledge has, as we have seen, features of a Public Good. When dealing with R&D results, economic efficiency demands a widespread dissemination. But in the long run such diffusion will only be beneficial as long as the producers can capture enough of the resulting benefits to make innovation worthwhile. It may be very hard to sell information because the value is difficult to evaluate before it has been transferred from the seller to the buyer, and if it has been “loaned” to the buyer for evaluation it is very hard to recover. Thus, there is scope for opportunism and asymmetric information to reduce incentives and lead to an insufficient dissemination of information. Cooperation may avoid such opportunism and asymmetric information since it is easier to measure R&D inputs than it is to measure output before actually using the information. In this context a research and development joint venture might be seen as an ex ante licence agreement with a zero fee.

In sum: ‘Cooperative R&D can be seen as a means of simultaneously internalising the externalities created by significant R&D spillovers – hence improving the incentive problem, limiting wasteful duplication, and providing a more efficient sharing of information among firms.’⁹³

5.3.4 Transaction Cost Reductions⁹⁴

The Joint Venture is an alternative to integration within the firm on the one hand and a traditional market transaction on the other. It is thus a compromise between commitment and flexibility. In-house development or a full merger lead to rigid structures without easy mechanisms for switching research capability, strategy, partners etc. On the other hand, using the market may not allow for the long-term relationships that may be necessary in technology development. Frequent switching is both costly and inefficient and may further carry problems of moral

⁹² Jaquemin, “Goals and Means of European Antitrust Policy after 1992” in Demsets & Jaquemin, *Anti-trust Economics*, 1994, p. 38. Grossman & Shapiro, “Research Joint Ventures: An Antitrust Analysis” *Journal of Law, Economics and Organization*, 1986, p. 323. Katz, “An Analysis of Cooperative Research and Development”, *Rand Journal of Economics*, 1996, pp.528 f. Kattan, “Antitrust analysis of Technology Joint Ventures: allocative efficiency and the rewards of innovation”, *61 Antitrust Law Journal*, 1993, pp. 937 ff.

⁹³ Jaquemin, Alexis. “Goals and Means of European Antitrust Policy after 1992” in Demsets & Jaquemin, *Anti-trust Economics*, 1994, p. 39.

⁹⁴ Jaquemin, A. “Goals and Means of European Antitrust Policy after 1992” in Demsets & Jaquemin, *Anti-trust Economics*, 1994, p. 35. See also the chapter on Transaction Cost approach under 2.3.4.2.

hazard and adverse selection.⁹⁵ A cooperative research agreement may mediate these problems and provide for the optimal level of integration. Other problems might however appear: partner selection, defining well-balanced contributions, managerial problems, risk of competitor gaining relatively more and problems of confidentiality may create transaction costs of coordination and cooperation outweighing the benefits.

5.4 Anticompetitive Dangers of Cooperation

5.4.1 Reduced competition in the research market.⁹⁶

(Dynamic inefficiency)

There is however also an incentive mechanism working in the opposite way. If the costs of one firm are lowered or current products are ameliorated, the profits of the other firms will fall. Hence, the effects of the resulting findings will constitute a negative pecuniary externality.⁹⁷ Consequently, there is a collective interest to lower the level of R&D conducted. If the parties are dominant in the relevant research sector the dynamic efficiency could be in danger. A joint venture could in these cases provide a way to collude and slow down the pace of innovation. In addition, in order to intimidate potential entrants, the parties may commit to excessive, wasteful research or building up excessive research structure. Such investments will signal a strong commitment and possibly deter market entry. There is an additional risk of X-inefficiencies if the parties together become so strong that they acquire strong market power.⁹⁸ Monopolists may not have incentives to run their businesses in an efficient competitive way, as they are not facing a monitoring competition. If they are able to charge supracompetitive prices and capture supracompetitive profits for current product and with current technology, the incentives to invest large amounts into new research developing replacing goods may be diminished.

Joint ventures also typically impose restraints on the participants' actions outside the venture, e.g. limiting the possibilities for the parents to compete with the venture.

⁹⁵ Moral Hazard – one party's incentive to draw benefits at the expense of the other in a contractual situation. Adverse selection – only those who by private information may benefit at the expense of the other party will sign a contract.

⁹⁶ Jaquemin, Alexis. "Goals and Means of European Antitrust Policy after 1992" in Demsets & Jaquemin, *Anti-trust Economics*, 1994, p. 41. Jaquemin, Alexis. "Goals and Means of European Antitrust Policy after 1992" in Demsets & Jaquemin, *Anti-trust Economics*, 1994, p. 38. Grossman & Shapiro, "Research Joint Ventures: An Antitrust Analysis" *Journal of Law, Economics and Organization*, 1986, p. 324 f. Katz, "An Analysis of Cooperative Research and Development", *Rand Journal of Economics*, 1996, pp. 529 f. Kattan, "Antitrust analysis of Technology Joint Ventures: allocative efficiency and the rewards of innovation", *61 Antitrust Law Journal*, 1993, pp. 937 ff.

⁹⁷ See 2.1.1. for explanation of Externality.

⁹⁸ Scherer, "Antitrust, Efficiency, and Progress" *New York University Law Review*, 1987, p. 999. The term X-inefficiencies stems from Harvey Leibenstein, "Allocative Efficiency vs. 'X-Efficiency'", *56 American Economic Review*, 1966 p. 392. Monopolists have less incentives to act at a competitive level.

If the number of independent research programs is reduced the resulting loss in diversity may have negative social effects. Duplication is not uniquely wasteful since slightly different objectives and paths of research will produce different results and may speed up discoveries.

Finally, problems of trust between the competitors forming a joint venture may prevent a well-functioning cooperation and transfer of technology between the parents, thus slowing down the process.

5.4.2 Reduced competition in the product markets.⁹⁹

(Present and future static inefficiency)

The possibilities of a cooperation growing to include other fields of activity are apparent. The venture then serves as conduits for coordinating market behaviour, exchanging competitively sensitive information, in markets outside the field of the venture, and possibly on markets where such conduct would not be permissible under antitrust rules. Such adverse spillover effects are facilitated when the collaborating firms are vertically integrated. Naturally, the risk is most acute when the market is concentrated and barriers to entry are substantial. It is thus not the research joint venture itself but the restraints added to it that may cause anticompetitive effects. These restraints may be express terms of ancillary nature in the joint venture agreement or may arise as more or less unspoken collusion between the parties during the cooperation. Ancillary restraints to the venture agreement typically may contain joint production and distribution, division of downstream markets, per-unit fees to the venture, mechanisms for side-payments and other measures for redistributing cartel revenues. Furthermore, when several firms jointly control important patents or other know-how, they may be reluctant to licence non-members. Fewer independent entities may lead to increased prices and limited use of technology.

Many of these anticompetitive effects may already appear on current product markets, since market power over current technology may be protected and cemented. If the parties control current patents, they will benefit from coordination. Such restrictions on existing patents could be built in into an agreement on future development e.g. through cross-licensing.¹⁰⁰ The concerns however apply a fortiori to the future product markets of the jointly innovated goods.

⁹⁹ Grossman & Shapiro, "Research Joint Ventures: An Antitrust Analysis" *Journal of Law, Economics and Organization*, 1986, p. 324 f. Kattan, "Antitrust analysis of Technology Joint Ventures: allocative efficiency and the rewards of innovation", *61 Antitrust Law Journal*, 1993, pp. 937 ff.

¹⁰⁰ Grossman & Shapiro, "Research Joint Ventures: An Antitrust Analysis" *Journal of Law, Economics and Organization*, 1986, p. 327.

5.5 The Trade-off

5.5.1 Trade-off Models¹⁰¹

O.E. Williamson's trade-off model for mergers is widely recognised. In maximising the surplus of both producers and consumers he showed that relatively modest gain in economies of five percent or less would be sufficient to offset price increase of ten or 20 percent. This model does not care where the benefits occur, only the total maximisation of producer and consumer welfare.

An alternative to using total surplus is consumer surplus standard to ensure that wealth is not transferred from consumers to producers. This would thus require a showing of much greater magnitude of efficiencies than would the total surplus standard.

A third possibility would be to regard the total welfare, thus including potential effects on other markets than the one relevant in the specific case.

From an economic point of view the third model seem to be the most appropriate one, however very hard to apply in real life. The model commonly used in practise instead seems to encompass the two first welfare standards. All efficiencies and anticompetitive effects to the producers and consumers in the specific case are taken into account but usually some significant pass-on to consumers is required.¹⁰²

5.5.2 The research market

When assessing and evaluating the competitive advantages and disadvantages connected to a certain agreement, the analysis must assess the state of the world in absence of the proposed cooperation. Hence the trade-off will have different results if depending on the variety and extent of such comparable research. If no similar research will be conducted absent the agreement, antitrust ought to be lenient and permissive. Even when such agreement include ancillary restraints, the net effect is likely to be positive, especially taken into account that several restrictions may be efficiency promoting themselves e.g. in preventing opportunism.¹⁰³

Once there are further alternative research sources the efficiency gains become less obvious. If there is one comparable program the efficiencies must come from economies of joint research or dissemination. Joining different parties with different knowledge and experiences may create valuable synergies. There will in the one-alternative-program case be no duplication savings or efficiencies in overcoming problems of appropriability. However since the returns to the individual firm participating in a joint program will be less than that of a single

¹⁰¹ OECD Working Papers, *Competition Policy and Efficiency Claims in Horizontal Cooperation Agreements*, pp. 6 ff.

¹⁰² Brodley, "Proof of Efficiencies in Mergers and Joint Ventures", *64 Antitrust Law Journal*, text after footnote 34.

¹⁰³ Grossman & Shapiro, "Research Joint Ventures: An antitrust Analysis", *Journal of Law, Economics and Organization*, 1986, p. 328.

successful firm, there might be a danger of a slow down in the innovative pace.¹⁰⁴ If the only change of permitting a venture is split costs and risks of a research that otherwise one of the parties would have pursued independently, it could be hard to see why it should be permitted.

When there, in absence of the proposed venture will be several other research patterns conducted, the primary benefit of a cooperation will be to avoid duplication.¹⁰⁵ Such benefits should not be underestimated. If the degree of overlapping in research between the parties is high, the cost savings are likely to be substantial. Yet, the venture might be a means of reducing the R&D effort, especially since there likely would be a race between the researching teams absent the venture. Collateral restraints should be carefully scrutinised and only allowed if preventing opportunism.¹⁰⁶ However, these concerns are limited by the fact that if the either party estimates it has more to gain from the likelihood of winning the innovative race than gaining from synergetic effects and reduced duplication, the venture is unlikely to occur.

5.5.3 The product markets

If the product markets are heterogeneous all effects of a cooperation in research will be positive on the product market, as the parties are not competitors on this market. The more homogenous the greater are the anticompetitive risks. However, if the cooperation concerns only a small proportion of market participants they will not be able to restrict the others.¹⁰⁷

The analysis of a joint venture differs from the analysis of a merger in its extension to examine the possibilities of adverse spillovers between the parents in markets outside the actual field of the venture. Such spillovers may be reduced, without the annulment of the joint venture, by procedural requirements prohibiting exchange of sensitive information or recordkeeping requirements for meetings of the venture participants.¹⁰⁸

5.6 Dynamic competitiveness & Market discipline

All merger control and control of horizontal restraints focus their analysis on whether the transaction will create, enhance, or facilitate the exercise of market power. If the risks of such exercise are not apparent and plausible, the conduct should be permitted. Today many different factors apart from price affect the competitive situation. Semi-traditional are quality and service but on many

¹⁰⁴ Grossman & Shapiro, "Research Joint Ventures: An antitrust Analysis", *Journal of Law, Economics and Organization*, 1986, p. 329 f.

¹⁰⁵ Grossman & Shapiro, "Research Joint Ventures: An antitrust Analysis", *Journal of Law, Economics and Organization*, 1986, p. 330.

¹⁰⁶ Grossman & Shapiro, "Research Joint Ventures: An antitrust Analysis", *Journal of Law, Economics and Organization*, 1986, p. 330.

¹⁰⁷ Katz, "An Analysis of Cooperative Research and Development" *Rand Journal of Economics*, 1996, p.538.

¹⁰⁸ Kattan, "Antitrust analysis of Technology Joint Ventures: allocative efficiency and the rewards of innovation", *61 Antitrust Law Journal*, 1993, pp. 937 ff.

markets innovation has become even more important. Keeping technological elbows sharp has become a crucial question at both big and small companies. Consumers will disregard out-dated products and innovation will thus force the participants to improve their products and production processes. With innovative production processes, firms will be able to cut costs and thus lower prices. Even the temporary monopolist must see to that he has the latest products and processes, probably the major reason why monopolists very rarely live very long. In addition, it has been empirically established in several studies over the last 40 years that the cases where industry is concentrated there is no significant or consistent relationship of intertemporal stability of relative profit rates.¹⁰⁹

The increasingly important high-technology industries naturally also constitute the most intriguing markets for R&D analysis. These research intense industries display the complexity and ambiguity inherent in fast, progressive and developing markets. There are thus many reasons for special antitrust interest in these markets, sometimes both diminishing old antitrust concerns and raising new ones.¹¹⁰ The speed of technological change leads to short product life cycles which may, because of the relatively short period of time in the sun for a dominant actor, diminish antitrust concerns or at least call for new criteria of assessing dominance. In a continuos restructuring of the markets, previously separated operations are becoming integrated and previously integrated are becoming separated, developments that often take unexpected turns. On the other hand it means important first mover advantages, which in turn may create a need for interim antitrust measures, due to the relative slowness in the antitrust machinery.

Authorities point at some evidence of innovation being better encouraged and carried out in competitive industries, even if they admit that cause and effect may be reversed. (Innovation spurring competition.) However, the evidence is inconclusive and as individual markets vary greatly it is impossible to draw any precise conclusions on the relationship between market structure and innovation. "In a realistic sense, the pace of technology is so great that even a 17 year patent life may not be realized, and it is very difficult to see how any company in the world market could ever monopolize any market..."¹¹¹

The answer to the question whether innovation should be promoted with a view to the maintenance of fierce competition is not as self-evident as one might

¹⁰⁹ Demsetz, "Economics as a Guide to Antitrust Regulation", *The Journal of Law and Economics*, p. 379, with reference e.g. to Stigler, *Capital and Rates of Return in Manufacturing Industries*, 1963.

¹¹⁰ Temple Lang, J. "European Community Antitrust Law: Innovation Markets and High Technology Industries" *Fordham International Law Journal*, 1997, p. 718ff, with an extensive list of characteristics and implications to antitrust.

¹¹¹ Dr E. Bruce Merrifield, Assistant Secretary for Productivity, Technology and Development cited in Ordover & Willing, "Antitrust of High-Technology Industries: Assessing Research Joint Ventures and Mergers", *Journal of Law & Economics*, 1985, p. 311.

expect. Already Schumpeter believed that market structure determines the rate of innovation. He did not, however, believe that more competition would lead to more innovation, on the contrary, that to engage in extensive innovation investments, the conditions of a monopolist was the most appropriate.¹¹² On the other hand Kenneth Arrow concludes that greater competition leads to greater innovation because of the greater incentive given to the actors due to higher profits and the possibility to keep abreast given to the one who innovates successfully.¹¹³ If Schumpeter is proven wrong and Arrow right, the authorities should encourage competition. To this date no one has been proven right, the evidence is inconclusive and markets vary greatly, hence no unambiguous general theory has emerged.¹¹⁴

5.7 The Enigma

“Partners who have achieved inventions want to control the processes and products, which embody the results of their collaboration, in order to recuperate jointly and as quickly as possible, their R&D investment. If prevented to do so and if benefits dissipated through intense market competition, the parties may be tempted to avoid R&D cooperation and to maintain wasteful competition in the pre-innovation market or to use their cooperation to limit unduly their R&D. If this is true, a regulation of R&D cooperation excluding any cooperation at the level of final markets could discourage or destabilize many valuable agreements. However, allowing an extension of cooperation in R&D to manufacturing and distribution encourages collusive behaviour that impedes competition. This is the dilemma faced by the European Antitrust Authorities.”¹¹⁵

¹¹² Schumpeter, *Capitalism, Socialism and Democracy*, 1950.

¹¹³ Landman, “The Economics of Future Goods Markets”, *World Competition, Law and Economics Review*, 1998, p. 69 with reference to Arrow, K. “Economic Welfare and the Allocation of Resources to Invention” in *The Rate and Direction of Inventive Activity*, Princeton University Press, 1962.

¹¹⁴ Landman, “The Economics of Future Goods Markets”, *World Competition, Law and Economics Review*, 1998, pp. 68f. OECD Working Papers, *Application of Competition Policy to High Technology Markets*, 1997, p. 7.

¹¹⁵ Jaquemin, Alexis. “Goals and Means of European Antitrust Policy after 1992” in Demsets & Jaquemin, *Anti-trust Economics*, 1994, p. 42.

6 Legislation and Practices

6.1 Introduction

All agreements, even an ordinary purchase agreement, have some kind of inherent anticompetitive effect as they bind parties to each other, in some way excluding other potential parties to the specific agreement. The more developed and extensive the agreement is, the larger these effects may be. The most far-reaching type of agreement is to merge companies into one entity. If the parties formerly acted in different markets and had at least potentially contractual relations, the former competitors of the two companies will after the merger have less potential contract partners. If the two companies were formerly competitors in the same market, the remaining competitors now have fewer competitors but probably face stronger competition. Perhaps even a market participant with market power is born through the merger.

A joint venture show features in-between an ordinary contract and a merger. Its duration is often rather long, and the activity often involves actual or potential competitors joining together to materialise efficiencies. The task of creating a system to categorise different joint ventures with an R&D dimension, each to be judged according to its specific features in a way that allow the distinction and weighing of the different effects, is not an easy one. The evolutionary European process may confirm these difficulties. I will not dwell on the old regulations and policies but stick to the current situation.

The base of all European antitrust, Art 85 of the EC Treaty, is the point of departure also in this case. In connection with this article a group exemption has been formed for Research and Development agreements, Commission Regulation No 418/85, providing exemption from Art 85 in accordance with Art 85(3) if certain conditions are fulfilled. In addition, so called full-function joint ventures are to be examined according to Commission Regulation No 4064/89, the Merger Regulation.

6.2 Art 85 (1), 85 (3)

6.2.1 Introduction

In its first paragraph, Art 85 prohibits all agreements between undertakings, decisions by associations and concerted practices, which may affect trade between Member States and have as their object or effect the prevention, restriction or distortion of competition within the common market. The form or means adopted by the undertakings is of lesser importance, the issue is whether the action will restrict competition.¹¹⁶ Agreements contrary to Art 85(1) are void

¹¹⁶ Bellamy & Child, *Common Market Law of Competition*, 1993, § 2-015,

according to Art 85(2); case law has established that this nullity only affects the aspects of the joint venture that are violative of Art 85(1).

Since the scope of the first article is such that it will also cover a large number of agreements and practices with socially beneficial effects, 85(3) offers the possibility of exemption from its effects when the conduct in question contributes to the improvement of production or distribution of goods or to the promotion of technical or economic progress.

All venturers must analyse a planned joint venture to find out whether it is consistent with EC Competition Law. If there is any doubt they must notify the venture to the Commission and request for an exemption, a negative clearance or an informal comfort letter.¹¹⁷

Since the article is inherently vague as to its borders and possible interpretations, its practical operation has been developed through cases, guiding notices, policy reports etc. Such development is necessary in order to provide some methodology for the executing authorities and to obtain some predictability for the concerned parties regarding the vast variety of agreements potentially falling under the scope of the article. Due to legal and dogmatic tradition, the authorities in their decisions and cases usually do not offer a very detailed exposition of the considerations and economic reasoning behind the outcomes. My analysis of the current judicial treatment will therefore have to depart from regulations, notices and reports where such views are summarised.

Within the scope of joint ventures the different features connected to various kinds of venture necessitate divergent actions from the authorities. The broader the substantive and temporal framework of the cooperation, the stronger it will influence the business policy of the parents in relation to each other and to third parties. Consequently, the Commission has recognised both in single decisions, annual Reports on Competition Policy and in guiding notices, a difference in attitude towards pure R&D joint ventures on the one hand, and the spectrum of increasingly market oriented ventures ending in joint sales on the other hand.¹¹⁸ This has been called a Hierarchy of Acceptability.¹¹⁹ If R&D collaboration is limited to the stage prior to industrial application, it may fall completely outside of Art 85(1) while more extended ventures will be treated more harshly and will generally have to be exempted pursuant to Art 85(3) if they are to be legal. Such exemptions should be based on an analysis of the overall economic balance of the

¹¹⁷ See Council Regulation 17/62 Implementing EEC Treaty Articles 85 & 86 and e.g. Grikscheit, "Are We Compatible? Current European Community Law on the Compatibility of Joint Ventures with the Common Market and Possibilities for Future Development" 92 *Michigan Law Review*, 1994, p. 969.

¹¹⁸ See Notice concerning the assessment of cooperative joint ventures pursuant to Article 85 of the EEC Treaty, especially point 3 and 5.

¹¹⁹ Bellamy & Child, *Common Market Law of Competition*, 1993, § 5-094 and Guterman, *Innovation and Competition Policy*, 1997, p. 343.

specific arrangement and call for an economically realistic approach in the assessment of any particular case.¹²⁰ Even though the treatment of the authorities towards pure R&D agreement is permissive, we must keep in mind that these agreements are rather rare. Usually the venturers wish to extend the collaboration to post-innovative stages. The Commission has also recognised that some kind of joint application of the results is a natural part of R&D activity.¹²¹ This may be part of a tendency to a more permissive view on R&D joint ventures including exploitation. Still, coverage of the whole spectra of different agreements and how these are treated is necessary in order to evaluate the position of R&D of today.

Any analysis of conformity will start with Art 85(1) in order to decide whether the features give rise to anticompetitive effects in the first place, and if so, the analysis is extended to include the possibility of exemption under Art 85(3), whether by individual decision or via the Block Exemption.

6.2.2 Application of Art 85(1)

Any appraisal of a joint venture under the competition rules focuses on the relation between the concerned enterprises and their effects on third parties. The examination aims at seeing whether the agreement will prevent, restrict, or distort competition between parents but also whether the joint venture is likely appreciably to affect the competitive position of third parties, especially with regard to supply and sales possibilities, i.e. foreclosing others from markets, outlets or sources.¹²² In addition, the analysis will include the possibility of spillovers or the existence of network effects having material effect on competition.¹²³

There are a number of issues recognised as fundamental in deciding whether restrictions of competition pursuant to Art 85(1) are likely.¹²⁴

1. The competition between the parents

This dimension is interesting in cases where the parties are actual or potential competitors. The assumption of potential competitive circumstances presupposes that each parent alone is in a position to fulfil the tasks assigned to the joint venture and that it does not forfeit its capabilities to do so by the creation of the joint venture.¹²⁵ This means that the joint venture may only have restrictive effects between the parents if, absent the venture, they were likely to engage in the activity independently.¹²⁶ The likelihood of such independent research and

¹²⁰ Notice concerning the assessment of cooperative joint ventures. Point 5, 18.

¹²¹ Regulation 418/85, Recital 7.

¹²² Notice concerning the assessment of cooperative joint ventures. Point 17.

¹²³ Guterman, *Innovation and Competition Policy*, 1997, p. 343

¹²⁴ Notice concerning the assessment of cooperative joint ventures. Point 18 – 31.

¹²⁵ Notice concerning the assessment of cooperative joint ventures. Point 18.

¹²⁶ 56/65 *Technique Manière v Maschinenbau Ulm* [1966] ECR 235, ECR 900, OJ 1990

1228/31 [1992] 4 CMLR 54. The latter concerning the development, manufacture and

development has been expressed as a function of the degree of activity that the parents have in the same or adjacent markets.¹²⁷

The Commission developed in its Thirteenth Report on Competition Policy, a number of elements for clarifying this relationship and more specifically the possibilities for the parents to perform tasks individually instead of together.¹²⁸

- Contribution to the joint venture

Does each parent company have sufficient financial resources to carry out the planned investment? Does each parent company have sufficient managerial qualifications to run the joint venture? Does each parent company have access to the necessary input products?

- Production of the joint venture

Does each parent know the production technique? Does each parent make the upstream or downstream products himself and have access to the necessary production facilities?

- Sales by the joint venture

Is actual or potential demand such as to enable each parent company to manufacture the product on its own? Does each parent company have access to the distribution channels needed to sell the product manufactured by the joint venture?

- Risk factors

Can each parent company on its own bear the technical and financial risks associated with the production operations of the joint venture?

- Access to the relevant market

What is the relevant geographic and product market? What are the barriers to entry into that market? Is each parent company capable of entering that market on its own? Can each parent overcome existing barriers within a reasonable time and without undue effort or cost?

The Commission has taken a broad view in finding that parents are potential competitors. Volkswagen and MAN were considered potential competitors in the market for intermediate weight lorries since they both were active in other markets of commercial vehicles.¹²⁹ In other cases sufficient financial and technical resources or the necessary technology to develop competing products made the parties potential competitors.¹³⁰ Even if the parties would not be able to maintain

distribution of a pan-European digital cellular mobile telephone system, the GSM. Even though all the major European mobile phone companies were involved the agreement was not considered constituting a restriction of competition due to the high costs, risks and need for qualified engineers. Noteworthy is the appraisal by the Commission of the relevant market being “characterised by narrowly limited demand”.

¹²⁷ Guterman, *Innovation and Competition Policy*, 1997, p.348.

¹²⁸ *Thirteenth Report on Competition Policy*, 1983, point 55. The questions have later been reconfirmed and developed in the Notice concerning the assessment of cooperative joint ventures, point 19.

¹²⁹ VW/MAN, OJ 1983 L376/11 [1984] 1 CMLR 621.

¹³⁰ *Clima-Chappée*, OJ 1969 L 195/1 [1970] CMLR D7. KEWA, OJ 1976 L51/15 [1976] 2 CMLR D15.

a production level high enough to be efficient, and thus were not very likely to commence such activity, according to the Commission they could recoup their development costs in other ways, such as sub-licensing or manufacturing for third parties.¹³¹ In addition, the Commission has found that parties possessing resources and expertise to extend their product lines to include the joint venture products were potential competitors, even though evidence showed that, but for the joint venture one party would have withdrawn from the market and the product probably would not have been developed.¹³²

However in Elopak/Metal Box-Odin¹³³, “neither party could in the short term enter the market alone, as such entry would require a know-how of the other party’s technology which could not be developed without significant and time-consuming investment”, hence they were not considered competitors.

Even if joint ventures between non-competitors in principle do not fall within Art 85(1), it can still apply to agreements between non-competitors if it nonetheless entails the likelihood of restriction or distortion of competition. Examples could occur where parties jointly develop intermediate products for application in different products on different markets. These agreements may simultaneously foreclose third parties competitive opportunities, create risks of spillover or network effects. This will especially be the case if there does not remain room for a sufficient number of R&D centres or if a network of joint ventures is set up by one of the parents for the same product market with different partners, as competition between the joint ventures themselves may then be affected.¹³⁴

When the parties are considered competitors the analysis turns to the restrictions likely to follow from the arrangement. The non-independent exploitation of research results constitutes competitive restrictions according to Art 85 (1) where the venture includes application of the results and parties accept expressly or by implication. These restrictions may for example consist in committing to joint production or marketing, inability to grant licences to third parties and agreements to pay royalties where these are not justified by reference to unequal contribution to the venture. In principle the parties must be able to use the results of the joint work after the termination in accordance with the principle of equal access to the results.¹³⁵ Indeed, the Commission has conditioned an exemption on the parties having equal access to the results even when the contribution to the joint venture has been very unequal.¹³⁶ Cross royalties have been regarded as creating disincentives to compete with the other party.¹³⁷

¹³¹ *KSB/Goulds/Lowara/ITT*, OJ 1991 L19/25 [1992] 5 CMLR 55.

¹³² *Vaacum Interrupters (No.1)*, OJ 1977 L48/32 [1977] 1 CMLR D67. Guterman, *Innovation and Competition Policy*, 1997, pp. 349, 377.

¹³³ *Elopak/MetalBox-Odin*, OJ 1990 L209/15 [1991] 4 CMLR 832.

¹³⁴ Notice concerning the assessment of cooperative joint ventures, point 33,

¹³⁵ Bellamy & Child, *Common Market Law of Competition*, 1993, § 5-101.

¹³⁶ *De Laval/Stork*, OJ 1977 L215/11, [1977] 2 CMLR D69.

¹³⁷ *Beecham/Parke-Davis*, OJ 1979 L70/11, [1979] 2 CMLR 157.

Another possible effect to take into account is the existence of “spillovers”. When parties are collaborating in one field, this cooperation may facilitate joint conducts and reduced competition also in other fields of operation. The risk is particularly high when the parties remain active in the same market as the joint venture, or are competitors in upstream or downstream markets to the joint venture’s market. It must not necessarily involve active collusion but may be due to a passive lessening of the competitive tension between the parties.¹³⁸ Spillovers are especially important to the analysis of R&D cooperations. Collaboration in one field must not lead to a wide-range technical collaboration nor must the joint R&D lead to a diminished level of downstream competition with respect to production and sales.¹³⁹

The more the markets are overlapping, the greater are the opportunities and the stronger the inducements for market sharing.¹⁴⁰ Parties have been forced to abandon downstream activities to be exempted, due to such spillover risks.¹⁴¹

2. Competition between the parent companies and the joint venture.¹⁴²

The competitive relationship between the parties and the joint venture of course largely depends on the structure of the agreement. The formation of the venture may be sufficient for the Commission to conclude the non-existence of competition between the parents and the venture.¹⁴³ Potential risks occur when the joint venture is active in up- or down-stream or adjacent markets to the parents. The more extensive the venture functions are, the more significant appears the risk of detrimental effects of influences or collusive behaviour between the parents and the venture. Such anticompetitive behaviour is typically manifested in the division of geographical markets, product markets or customers. In such cases the participating undertakings reduce their activity to the role of potential competitors. If they remain active competitors, they will usually be tempted to reduce the intensity of competition by coordinating their business policy, especially as to prices and volume of production or sales, or by voluntarily restraining their efforts.

¹³⁸ Bellamy & Child, *Common Market Law of Competition*, 1993, § 5-041.

¹³⁹ Guterman, *Innovation and Competition Policy*, 1997, p. 354.

¹⁴⁰ Wano/Schwartzpulver, OJ 1978 L322/26 [1979] 1 CMLR 403

¹⁴¹ Montedison/Hercules, *Seventeenth Report on Competition Policy*, 1987, point 69.

¹⁴² Notice concerning the assessment of cooperative joint ventures, point 21, 22.

¹⁴³ Guterman, *Innovation and Competition Policy*, 1997, p. 351.

3. Effects of the joint venture on the position of third parties.¹⁴⁴

Again, the structural relationship and scope of the joint venture will be determinant for the ability of the parties to affect their environment. If the parents dominate the relevant market and leave it to the joint venture to handle their purchases or sales, the choice available to suppliers or customers may be seriously restricted. Such foreclosing effects of third parties may be further enforced by the grant of exclusive intellectual property licences to the joint venture by the parents.

Combined resources of the parties may give competitive advantages in foreclosing competitors¹⁴⁵ and so can economies of scale in combination with restrictive sub-licensing.¹⁴⁶ The Commission even recognised the possibility of third parties being “psychologically” deterred from competing with a joint venture of dominant firms.¹⁴⁷

4. Assessment of the appreciable effect on restrictions of competition.¹⁴⁸

Now that the potential effects have been identified, the question arises how to quantify them, in order to evaluate their importance. The Commission regards the following factors as the most important:

- the market shares of the parent companies and the joint venture, the structure of the relevant market and the degree of concentration in the sector concerned,
- the economic and financial strength of the parent companies, and any commercial or technical edge which they may have in comparison to their competitors,
- the market proximity of the activities carried out by the joint venture,
- whether the fields of activity of the parent companies and the joint venture are identical or interdependent,
- the scale and significance of the joint ventures’ activities in relation to those of its parents,
- the extent to which the arrangements between the firms concerned are restrictive,
- the extent to which market access by third parties is restricted.

The analysis will look at the relative market shares of the participants. If these are small the impact on competition may not be significant. In the notion of potential competition, the barriers to entry are of central importance. The Commission has here gone a few steps further than their colleagues in the U.S. when including plants and commercial networks as advantages of incumbent firms, although new firms could acquire them simply by making the same expenditures.¹⁴⁹

5. Networks of joint ventures¹⁵⁰

¹⁴⁴ Notice concerning the assessment of cooperative joint ventures, point 23 - 25

¹⁴⁵ *Eurosport*, OJ 1991 L63/32 [1991] 4 CMLR 228.

¹⁴⁶ *KSB/Goulds/Lowara/ITT*, OJ 1991 L19/25 [1992] 5 CMLR 55.

¹⁴⁷ *Eirpage*, OJ 1991 L306/22 [1991] 4 CMLR 233. Guterman, *Innovation and Competition Policy*, 1997, p. 352, footnote 117.

¹⁴⁸ Notice concerning the assessment of cooperative joint ventures, point 26

¹⁴⁹ Guterman, *Innovation and Competition Policy*, 1997, p.350.

¹⁵⁰ Notice concerning the assessment of cooperative joint ventures, point 27 – 31.

Clearly, if a joint venture in itself may act as a forum of collusive and restrictive behaviour, a network of such potentially anticompetitive arrangements will magnify the antitrust concern. As in the assessment of the single joint venture, the analysis will have to include the manner in which the network joint ventures and parents may affect each other and third parties.

The parents may set up several joint ventures active in the same product market but in different geographical markets. Such a development in particular could ultimately endanger the goal of the single European market.

6.2.3 Individual exemption pursuant to Art 85(3)

In order not to prevent agreements which are overall socially beneficial, on the ground that they may restrict competition in the relevant market, paragraph three provides a possibility of individual exemption for agreements, decisions and concerted practices that contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit. However, the arrangement must neither impose on the undertakings concerned restrictions which are not indispensable to the attainment of the objectives, nor afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question.

Of special interest for the analysis is the demand of benefits to third parties. It is not enough to show the existence of efficiencies; these must ultimately to some extent end up with the consumers.

A decisive factor is usually whether the contractual restriction on the parties' economic freedom is directly connected with the creation of the joint venture.¹⁵¹ Further, the restrictions on competition must be indispensable to the attainment of the economic benefits.¹⁵² Ideally, competition must be fully functioning at all times, which is why a substantial elimination of competition may never be accepted, however great the efficiencies may be.

In the WANO case¹⁵³ the venture was prohibited without questions of contribution of goods or the promotion of technical progress being considered since "the implementation of the agreements would afford the parties the possibility of eliminating competition in respect of a substantial part of the products in question in that the implementation of the agreements would result in the insulation of the United Kingdom market by precluding sales into the United Kingdom by suppliers other than WANO..."

The acceptance pursuant to Art 85(3) of restrictions on the parents or the joint venture depends above all on the type and aims of the cooperation. Agreements

¹⁵¹ Notice concerning the assessment of cooperative joint ventures, point 58.

¹⁵² Ibid. See e.g. *KSB/Goulds/Lowara/ITT*, OJ 1991 L19/25 [1992] 5 CMLR 55, *Olivetti/Canon*, OJ 1988 L52/51 [1989] 4 CMLR 940,

Continental/Michelin, OJ 1988 L305/33 [1989] 4 CMLR 920

¹⁵³ *WANO/Schwartzpulver* OJ 1978 L322/26 [1979] 1 CMLR 403.

that have as their main purpose the coordination of actual or potential competition between the participating undertakings will be given a negative assessment. This will apply particularly to features such as price fixing, output reduction and quotas on sales, market divisions and contractual restrictions on investments.¹⁵⁴

The analysis will weigh the potential benefits and the potential negative effects on competition. These benefits are judged objectively from the point of view of the Commission and not subjectively in the eyes of the parties, but the burden of proving that the conditions of the article are satisfied lies primarily upon the parties. Moreover, the Commission observes competition as the best supply of contract terms. Accordingly, it is generally incumbent upon the parties to show that the agreement confers positive benefits beyond those to be expected on the free market.¹⁵⁵ In the actual weighing procedure, the economic balance, the type and the extent of the respective advantages and risks can be assessed. If the parents are economically and financially powerful and have a high market-share, or will enforce an already existing concentration, their application for exemption will need a rigorous examination.¹⁵⁶

Recognised economic benefits are, for example, improvements in competitive structure – e.g. through facilitating entry by joining together or if one party otherwise would have abandoned the market. Joint actions open up new markets, expand sales in new territories or enlarge the supply range by new products. All these are contributions to dynamic competition, consolidating the internal market and strengthening the competitiveness of the relevant economic sector. Furthermore, cooperation may enable the parties to penetrate markets more speedy and efficiently. On the other hand, the rationalisation of production activities and distribution networks is rather a means of adapting supply to a shrinking or stagnant demand. It leads however to cost savings which, under effective competition, are usually passed on to customers as lower prices. Plans to reduce production capacity, however, lead mostly to price rises. Agreements of this latter type will be judged favourable only if they serve to overcome a structural crisis, to accelerate the removal of unprofitable production capacity from the market and thereby to reestablish competition in the medium term.¹⁵⁷

It is important that the parties are able to continue their business after the joint venture expires. In KEWA it was considered that the agreement "enables the parties rapidly to reach a position where they can reprocess on an industrial scale, while at the same time allowing them to retain interest in a new industry where conditions do not favour isolated efforts by individual firms; the parties are to

¹⁵⁴ Notice concerning the assessment of cooperative joint ventures, point 56.

¹⁵⁵ Bellamy & Child, *Common Market Law of Competition*, 1993, § 3-027, 3-028, with references e.g. to; Cases 56&58/64 *Consten & Grundig v. Commission* [1966] ECR 299 and *VBBB and VBBB v. Commission*, OJ 1982 L54/36 [1982] 2 CMLR 344.

¹⁵⁶ Notice concerning the assessment of cooperative joint ventures, point 57.

¹⁵⁷ Guterman, *Innovation and Competition Policy*, 1997, p. 357. Notice concerning the assessment of cooperative joint ventures, point 55.

continue joint research and development into the application on an industrial scale and in profitable conditions of the technical experience they have acquired in building and operating a pilot plant.”¹⁵⁸ The more technologically advanced the specific products are, the more permissive seems the antitrust treatment. Cooperation that facilitates or speeds up the introduction of important new technology will usually be treated leniently.¹⁵⁹

Even if the parties are big companies, when the joint venture is formed in order to combine complementary expertise and resources to overcome the substantial technical difficulties and financial risks associated with developing new advanced products, they will be treated favourably. Likewise if the creation of new industry capacity, for example, the construction and operation of new production facilities and enlargement of existing facilities, if the parties can demonstrate that the joint activities will avoid the construction of excess capacity and result in economies of scale, thereby permitting the parties to reduce unit costs and achieve greater profitability.¹⁶⁰ The creation of joint ventures for sales, usually with the object and effect of coordinating the sales policy of competing manufacturers, to close off price competition and restrict volumes, belongs to the category of classic horizontal cartels. Joint distribution of the contract products is viewed positively, however, where it is part of a global cooperation project which merits favourable treatment pursuant to Art 85(3) and for the success of which it is indispensable.¹⁶¹

Some cases are exempted after being amended to reduce the significance of the non-R&D elements. In *Asahi/St. Gobain*, exemption was granted, by analogy with Regulation 418/85, after the agreement on joint exploitation was amended to expire five years after commercial production commenced.¹⁶²

A distinction must be made between restrictions of competition which arise from the creation and operation of a joint venture, and additional agreements which would, on their own, also constitute restrictions of competition by limiting freedom of action in the market.¹⁶³ Such additional agreements, ancillary restraints, may be directly related to and necessary for the establishment and operation of the joint venture and cannot be dissociated from it without jeopardising its existence. In these cases they are assessed together with the joint venture. But if they are of subordinated importance and simply concluded at the same time as the joint venture creation without having those features, they are treated separately under the usual rules of competition. When assessing the “necessity” of the restriction, account is taken of the nature and the duration, subject-matter and geographical

¹⁵⁸ KEWA OJ 1976 L51/15 [1976] 2 CMLR D15.

¹⁵⁹ See e.g. *Seventh report on Competition Policy*, 1977, point 150. *Optical Fibres*, OJ 1986 L236/30, *Ford/Wolkswagen*, OJ 1993 L20/14 [1993] 5 CMLR 617, *KSB/Goulds/Lowara/ITT*, OJ 1991 L19/25 [1992] 5 CMLR 55

¹⁶⁰ Guterman, *Innovation and Competition Policy*, 1997, p. 358.

¹⁶¹ Notice concerning the assessment of cooperative joint ventures, point 60.

¹⁶² *Asahi/St. Gobain*, OJ 1994 L354/87.

¹⁶³ Notice concerning the assessment of cooperative joint ventures, point 65, 66.

field of application in relation to the joint venture. If a joint venture does not fall within the scope of Art 85(1), neither do ancillary restraints to the venture. Conversely, if a joint venture falls within the scope of Art 85(1), then so will any ancillary restrictions. Examples constituting such necessary restrictions are exclusive know-how licenses from the parties to the venture and non-exclusive grantbacks to the parties covering improvements to be used outside the field in which the joint venture is active.¹⁶⁴ Also the obligation not to sub-license any jointly developed technical information without the consent of the other parent companies and an equal share of the licensing fees obtained.¹⁶⁵

The most remarkable fact about the doctrine of ancillary restraints is the fact that it does not involve any trade-off between pro- and anticompetitive effects. The assessment of the main transaction will be determining for the “necessary” restriction considered.¹⁶⁶

If the joint venture is a full-function undertaking¹⁶⁷, the relationship of joint venture arrangement now requires a separate legal assessment.¹⁶⁸ Recently this kind of ventures has been transferred for consideration under the Merger Regulation.¹⁶⁹ According to Art 3(2) of the Regulation “The creation of a joint venture performing on a lasting basis all the functions of an autonomous entity shall constitute a concentration within the meaning of paragraph 1 (b).”

6.3 Group exemption 418/85 with amendments¹⁷⁰

6.3.1 Introduction

Through this regulation the Commission has granted a block exemption pursuant to Art 85(3) to certain research and development agreements between undertakings. The scope of the regulation however also includes agreements covering joint exploitation, since such exploitation is considered to be a natural consequence of joint research and development.¹⁷¹ As the Regulation is an important part of the Commission’s policy towards R&D, it is thought to embody the different aspects of such policy. This means that the basic concepts of the Regulation will effectively define the basis used in the grant of individual

¹⁶⁴ *Elopak/Metal Box-Odin*, OJ 1990 L209/15 [1991] 4 CMLR 832

¹⁶⁵ *ECR 900*, [1990] O.J. L228/31, [1992] 4 C.M.L.R. 54

¹⁶⁶ Guterman, *Innovation and Competition Policy*, 1997, p. 362.

¹⁶⁷ Notice concerning the assessment of cooperative joint ventures, point 64.

¹⁶⁸ Notice concerning the assessment of cooperative joint ventures, point 17.

¹⁶⁹ Concil Regulation (EEC) No 4064/89 OJ L 257, 21.9.1990, p.13 as last amended by Regulation (EC) No 1310/97 OJ L 180, 9.7.1997, p.1.

¹⁷⁰ Commission Regulation No 418/85 of 19 December on the application of Article 85(3) of the Treaty to categories of research and development agreements. Amended by Commission Regulation No 151/93 of 23 December 1992 amending Regulations No 417/85, No 2349/84 and 556/89 on the application of Article 85(3) of the Treaty to certain categories of specialization agreements, research and development agreements, patent licensing agreements and know-how licensing agreements.

¹⁷¹ Article 1(1) and Recital 7 of the Regulation.

exemptions in cases falling outside its scope.¹⁷² The Regulation ultimately seeks to maintain workable competition and to ensure that the technical progress from the R&D does not merely serve to produce monopoly profits.¹⁷³

Through the use of an opposition procedure, agreements that meet the basic conditions of the regulation and do not contain blacklisted provisions are automatically exempted if the Commission has not opposed within six months after the agreement being notified.¹⁷⁴

Art 1(2) provides definitions for key notions of the Regulation. Worth noticing is that included in the term research and development is “the acquisition of technical knowledge and the carrying out of theoretical analysis, systematic study of experimentation, including experimental production, technical testing of products or processes, the establishment of the necessary facilities and the obtaining of intellectual property rights for the results”. Also services are included in what is denoted as contract products. Exploitation of contract products means the manufacture of the contract products or the application of the contract processes, the assignment or licensing of intellectual property rights or the communication of know-how required for such manufacture or application. It should be noted that this definition does not include selling the products or mutual selling-licenses.

The choice of legal form for the cooperation is not important to the application of the Regulation. Art 1(3) consequently defines R&D or exploitation to be carried out jointly when:

- a) the work involved is:
 - carried out by a joint team, organization or undertaking,
 - jointly entrusted to a third party, or
 - allocated between the parties by way of specialization in research, development or production;
- b) the parties collaborate in any way in the assignment of the licensing of intellectual property rights or the communication of know-how to third parties.

Where the work is jointly entrusted to a third party, the latter is probably not a party to the joint venture. Consequently, this agreement is not exempted according to the Regulation, but if necessary examined under the general principles of Art 85 and, more specifically, in accordance with the notice on subcontracting.¹⁷⁵

¹⁷² Expressed e.g. in *Continental/Michelin* OJ 1988 L305/33 [1989] 4 CMLR 920.

¹⁷³ *Fifteenth Report on Competition Policy*, 1985, point 284.

¹⁷⁴ Art 7 treats the opposition procedure, Art 1 – 3 contain the basic conditions and Art 5 contains the black list.

¹⁷⁵ Commission's Notice on Subcontracting, O.J. 1978, C1/2.

Korah, *R&D and the EEC Competition Rules Regulation 418/85*, 1986, pp. 24f. Venit, "The Research and Development Block Exemption Regulation", *European Law Review*, 1985, p. 154.

For the exemption to be applicable there are certain conditions in Art 2 to be met. First of all, the joint R&D must be carried out “within the framework of a programme defining the objectives of the work and the field in which it is to be carried out.” It is rather easy to imagine the Commission being concerned that loosely defined horizontal arrangements could evolve from R&D to contain other fields of cooperation. Furthermore, any of the participants could otherwise simply slow down the pace of R&D since it knows it will have access to the results of its competitors and will have to share its own result with the others.¹⁷⁶

In order to realise many of the advantages of cooperation, such as avoiding duplication and increasing dissemination, all parties must have access to the results of the work. Where the agreement provides only for joint research and development, each party is free to exploit the results of the R&D and any pre-existing knowledge necessary therefor independently. This is important as it may, in the absence of joint exploitation, allow each party to licence the others’ background technology, as much as necessary to exploit the results independently.¹⁷⁷ It is also in accordance with the above-mentioned definition of exploitation in Art 1(2).¹⁷⁸

In addition, “the joint exploitation relates only to results which are protected by intellectual property rights or constitute know-how which substantially contributes to technical or economic progress and that the results are decisive for the manufacture of the contract products or the application of the contract processes.”¹⁷⁹ By such a demand, the scope of the exemption is narrowed to agreements where R&D is both the main objective and substantially contributes to technical or economic progress.¹⁸⁰ It is however not always easy, sometimes impossible, to determine whether the condition is met (or more correctly, *will* be met), *ex ante* when the agreement is negotiated.

Last, in order to ensure that each party is able to obtain the contract products and thus to compete in supply, “undertakings charged with manufacture by way of specialization in production are required to fulfil orders for supplies from all the parties”.¹⁸¹

6.3.2 Market Share Limitations – Art 3

With a view to maintaining competition, as required by Art 85 (3) and in accordance with indications in Recitals 8 - 10, Art 3 limits the scope of agreements to those typically incapable of eliminating competition. In order to

¹⁷⁶ See Korah, *R&D and the EEC Competition Rules Regulation 418/85*, 1986, p. 26 and White, “Research and Development Joint Ventures under EEC Competition Law”, *ICC*, 1985 p.681.

¹⁷⁷ White, “Research and Development Joint Ventures under EEC Competition Law”, *ICC*, 1985, p. 682 and Korah, *R&D and the EEC Competition Rules Regulation 418/85*, 1986, p. 27.

¹⁷⁸ Art 1(2) (d), Höög, Forsknings- och utvecklingsavtal under EG:s konkurrensregler, *SvJT*, p. 457.

¹⁷⁹ Art 2 (d)

¹⁸⁰ See also Recital 7.

¹⁸¹ Art 2 (f)

guarantee the possibility of several independent poles of research and thus to maintain the diversity of R&D, the contracting parties' combined production of the products capable of being improved or replaced by the contract products must not exceed 20 % in the common market or a substantial part thereof.¹⁸² Further, if the distribution of the products is carried out by one of the parties, a joint venture or a commonly designated third party the limit is reduced to 10 %.¹⁸³ If these market shares are exceeded the parties will have to seek individual exemption, in case their agreement infringes 85(1).¹⁸⁴

These limitations apply in cases where, and to the extent of, the parties are competing manufacturers, since here reduction in R&D competition can be expected. Hence, the competitive situation of the downstream market is used as an indication for competitive concerns at the innovation stage. As a consequence, if the product which the R&D relates to is completely new or is basic, the condition does not apply.¹⁸⁵ However, cooperation on key-patents, which in their extreme could monopolise the market, may according to some commentators require individual exemption pursuant to Art 85(3).¹⁸⁶ Such treatment seems in line with the statement in Art 10 d, which provides an opportunity for the Commission to withdraw the benefit of the Regulation in cases where the contract products are not subject to effective competition.

6.3.3 Duration limits - Art 3

Where the parties are not competing manufacturers of the products within the scope of the cooperation or if they are competing manufacturers with a market share below 20 %, the exemption shall apply for the duration of the research and development programme and, where the results are jointly exploited, for five years from the time the contract products are first put on the market within the common market.¹⁸⁷

According to the wording, pure R&D could be exempted infinitely. But since Recital 8 states that the Commission's concern is to ensure independent poles of R&D, it is not clear that a successful R&D cooperation, making the parents dominant on the market, can continue indefinitely.¹⁸⁸

After the R&D project time or alternatively the five year period, the exemption shall continue as long as the production of the contract products together with the parties' combined production of other products which are considered by users to be equivalent in view of their characteristics, price and intended use does not

¹⁸² Art 3 (2)

¹⁸³ Art 3a.

¹⁸⁴ According to Recital 2 joint ventures that does not include the stage of industrial application, generally do not fall within Art 85(1).

¹⁸⁵ Korah, *R&D and the EEC Competition Rules Regulation 418/85*, 1986, p. 34. White, "Research and Development Joint Ventures under EEC Competition Law", *ICC*, 1985, p. 685.

¹⁸⁶ Höög, Forsknings- och utvecklingsavtal under EG:s konkurrensregler, *SvJT*, p. 461.

¹⁸⁷ Art 3 (1)

¹⁸⁸ Korah, *R&D and the EEC Competition Rules Regulation 418/85*, 1986, p. 33

exceed 20% of the total market for such products.¹⁸⁹ At this stage it is the market of the contract product that is relevant, not the replaced or improved products. If the contract products are components in other products, it is the market share of the final products that counts.

6.3.4 The White List – Art 4

Article 4 lists some terms of agreement that may have restrictive effects on competition and thus generally would fall under Art 85(1) but are considered inherently beneficial to society within the framework of the R&D concept.¹⁹⁰

The article opens by clearing obligations not to carry out independently research and development in the field of, or in a field closely connected to the joint programme, during the execution of the venture.¹⁹¹ In addition, parties may accept not to enter into similar R&D agreements with third parties.¹⁹² If the parties could not limit the other parties' research in the field and thus may be unable to rely on the others' commitment to the joint programme, many of the positive economic aspects of cooperative R&D could be lost. These are the only white listed obligations relating to R&D, the following restraints cleared relate to the exploitation of the results. Agreements to purchase the contract products exclusively from a joint manufacture are exempted as are agreements not to manufacture contract products or apply contract processes in territories reserved for other parties.¹⁹³ Even though such territorial restrictions may have significant impact on competition, they are considered more easily acceptable than sales restriction. We should however keep in mind that for joint terms of exploitation the requirements in Art 2 about the significance of technical or economic progress must be met.

Exempted also are restrictions on the manufacturing of the contract products to one or more fields of application if the parties are not actual competitors as in Art 3.¹⁹⁴ Furthermore, territorial restrictions of active selling, marketing, establishing branches, maintaining distribution depot in other participants' territories, are exempted for a period of five years from commercial launch provided that users in the relevant area can obtain the products from other sources and the parties do not restrict parallel imports.¹⁹⁵ In addition, the parties may agree to grant one of the parties, a joint undertaking or third undertaking the exclusive right to distribute the contract products provided that this undertaking does not manufacture or distribute products which compete with the contract products.¹⁹⁶ If such right is given exclusively to joint undertakings or third undertakings, in the whole or a defined area of the common market, it is a provision that the users and intermediaries are also able to obtain the contract products from other suppliers

¹⁸⁹ Art 3 (3)

¹⁹⁰ See Recital 16.

¹⁹¹ Art 4 (1) a.

¹⁹² Art 4 (1) b.

¹⁹³ Art 4 (1) c, d.

¹⁹⁴ Art 4 (1) e.

¹⁹⁵ Art 4 (1) f.

¹⁹⁶ Art 4 (1) fa, fb.

and the exclusivity of the undertaking does not render it difficult for users and intermediaries to obtain the contract products.¹⁹⁷ As mentioned before, these distribution exemptions only apply when the parties' production of the products does not exceed 10 % of the market for all such products in the common market or a substantial part thereof.¹⁹⁸

Finally, the last exempted provisions mutual obligation to communicate experience or improvements to each other and to grant non-exclusive licences with respect to improvements and new applications.¹⁹⁹

6.3.5 Just in Case exemptions - Art 5

Art 5 provides us with a list of clauses that typically would fall outside the application of Art 85(1), and thus not have to be exempted but are none the less mentioned in the regulation to provide certainty to the parties and serve as guidance.²⁰⁰

Permitted is the inclusion of provisions to communicate technological knowledge required to carry out the research program or to exploit its results.²⁰¹ The use of this kind of knowledge may be limited to the scope of the joint program.²⁰² Obligations to maintain intellectual property rights and to take action against infringers are also allowed, and so is the obligation to maintain the confidentiality of know-how after the termination of the joint venture.²⁰³

If the parties have contributed unequally to the joint venture or have exploited the results unequally, such differences may be balanced by an obligation to pay royalties or to render services to the other parties.²⁰⁴ If a party receives royalties from third parties these may be shared with the other parties.²⁰⁵ Finally, parties may be obligated to supply minimum quantities of contract products and to observe minimum standards of quality.²⁰⁶

6.3.6 The Black list - Art 6

The Commission has also defined a list of clauses that may not appear in joint venture agreements if they are to be exempted according to the regulation. Consequently, if a blacklisted clause appears in an agreement, not only will the exemption not apply to that clause, it will not apply to the joint venture itself.²⁰⁷ These terms generally seek to protect the freedom of the parties to continue their

¹⁹⁷ Art 4 (1) fc.

¹⁹⁸ Art 3 a.

¹⁹⁹ Art 4 (1) g.

²⁰⁰ Recital 11, Art 5 (2) and Guterman, *Innovation and Competition Policy*, 1997, p. 298.

²⁰¹ Art 5 (1) a.

²⁰² Art 5 (1) b.

²⁰³ Art 5 (1) c, d, e.

²⁰⁴ Art 5 (1) f.

²⁰⁵ Art 5 (1) g.

²⁰⁶ Art 5 (1) h.

²⁰⁷ Korah, *R&D and the EEC Competition Rules Regulation 418/85*, 1986, p. 39. This further means that the opposition procedure of the Regulation will not be available.

independent business activity, thus to behave as active market participants. This list closely circumscribes the restrictions exempted in Art 4.²⁰⁸

The founders of the joint venture may not be restricted in their freedom to engage in R&D in separate fields of activity or, after the time of its completion, in the same field as the joint program.²⁰⁹ Further, parties may not be restricted within the Common Market from challenging the validity of intellectual property rights brought in by the parties to the joint venture after the completion of the R&D programme. Nor may the right to challenge property rights protecting the results of the R&D be limited after the completion of the cooperation (including joint exploitation).²¹⁰ There are thus some scope for situations where no-challenge clauses may be e contrario permitted, probably in order to make feasible contracts that allow the parties to trust each other's future conduct.²¹¹

Restrictions relating to manufacturing or selling quantities and each party's freedom to determine the prices of its sales of the contract products are also prohibited.²¹² The parties may not be restricted as to the customers they serve, except so far as it is required by field of use restriction.²¹³ Hindrance of active sale activities in territories within the Common Market reserved for other parties are forbidden after the initial five-year period. Forbidden from the start is for a party to be required to refuse "without any objectively justified reason" to meet orders from sources within their respective territories that wish to market the products in other territories within the Common Market.

Finally, the parties may not be prohibited from granting manufacturing licenses to third parties even though the exploitation of the results is not provided or does not take place by the parties.²¹⁴

6.3.7 Termination of Exemption – Art 7

The Commission may withdraw the benefits of the regulation if it finds a particular case exempted by the Regulation nevertheless have effects which are incompatible with the conditions in Art 85 (3). In particular where the agreement has substantial foreclosing effects to third parties in R&D or access of contract products or when the parties without any objectively valid reason do not exploit the results of the joint R&D. Similarly when there in the whole or a substantial part of the market lack effective competition to the contract products.

²⁰⁸ See Korah, *R&D and the EEC Competition Rules Regulation 418/85*, 1986, p. 39.

²⁰⁹ Art 6 a.

²¹⁰ Art 6 b.

²¹¹ See White, "Research and Development Joint Ventures under EEC Competition Law", *ICC*, 1985, p. 694.

²¹² Art 6 c.

²¹³ Art 6 d, Art 4 (1) c.

²¹⁴ Art 6 g.

7 Legal and Economic Analysis

7.1 Introduction

To assess and evaluate the practical economic outcome of the European rules and practices in a single case is to a large extent infeasible. The reason is the legalistic manner in which European Competition policy is executed. The legal rules, especially Art 85, are used as working manuals and followed in the traditional legal dogmatic way, where the fulfilment of the prerequisite leads to a prescribed legal consequence. The problem is that the fulfilment of the single prerequisite calls for an economic analysis, and the ultimate consequence depends on the relative weight resulting from these analyses. Even though the authorities theoretically recognise the necessity of basing their approach on economics, the character of judgements and decisions has remained legally dogmatic. The prerequisites are presented and the different factors effecting the fulfilment are demonstrated and commented on, but are not explicitly assessed. Since the economic analyses possibly conducted are not explicitly demonstrated, it is very hard to evaluate their appropriateness.²¹⁵ The analysis to be conducted here will therefore not depart from single decisions and cases, but from the regulations and practices as a whole.

My analysis will start with the regulatory framework, continue by discussing markets, market power, negative and positive effects and end by examining trade-off questions. Each section ends with a limited conclusion about its specific field, on which are based a series of suggested improvements presented at the end of the chapter.

7.2 Regulatory Framework

7.2.1 Per se prohibitions, Rules of Reason, and Intermediates

Due to the lack of precision in economic theory about the general relationship between the level of R&D and competition and about the relationship between R&D and innovation, a case by case or at least industry by industry approach seems inevitable.²¹⁶ When adding the differences in features between different markets and situations, clearly a per se approach or a presumptive rule will not suffice. To develop legal definitions of conducts and structural characteristics, which by their mere appearance result in a certain legal treatment, will not provide an economically well-founded policy. On the other hand, an open-ended Rule of Reason approach may not be satisfactory either. An unstructured Rule of Reason

²¹⁵ Herein lies an economic danger which will be discussed later. A similar conclusion is drawn as regards EC Merger Control in Neven, Nuttall & Seabright, *Merger in Daylight*, 1993, p. 6 "...the Commission's analyses are insufficiently transparent to allow third parties to tell with any confidence whether their judgement in individual cases has been sound."

²¹⁶ Temple Lang, "European Community Antitrust Law: Innovation Markets and High Technology Industries" *Fordham International Law Journal*, 1997, p. 764.

could lead to unfocused, protracted litigation that places the party with the burden of proof at a severe disadvantage. An alternative would be intermediate rules using a limited set of variables.²¹⁷

Among the legal commentators there appears to be an agreement that a rule of reason like the American model does not exist in Europe. This is in turn commonly believed resulting in a too narrow interpretation of Art 85(1) and that the competitive impact of contracts concerned has not been emphasised.²¹⁸ In addition, the amount of cases requiring exemption causes great administrative problems for the authorities and distortions for the parties. The solution has been the issuing of group exemptions to mitigate the authorities' workload.

As realised in the recent overhaul of the legislation covering vertical restraints, the specific, detailed monitoring of business conduct as controlled by several narrow group exemptions is not a genuinely prosperous one. First, the carefulness of the Commission in granting general exemptions makes the really interesting cases fall outside its scope anyway. Secondly, the provisions are by their nature very legalistic, in a way not optimal to cope with economic borderline questions. The resulting rules are very hard to interpret and do not provide sufficient legal certainty to the parties, why to be confident, the opposition procedure may have to be used, involving substantial work to the authorities.²¹⁹

For the cases of real importance to antitrust, an individual exemption has to be requested. To obtain such an exemption is very time consuming and costly to the parties. On average the parties must wait eighteen months before the Commission makes its decision.²²⁰ In the De Laval/Stork case it took six years, a rather long time perspective in an R&D environment.²²¹ Confidential information must be communicated and unwanted publicity may occur. Furthermore, when the authorities view an agreement, the making of changes may be a pre-condition to the grant of exemption, which may or will alter the bargaining power between the parties concerned.²²² A carefully negotiated contract, often very complex, where costs, benefits and risks are allocated between the parties according to their ability and power, risks being twisted to the benefit of one party and a

²¹⁷ Bradley, "Joint Ventures and Antitrust Policy", "Joint Ventures and Antitrust Policy", *Harvard Law Review*, 1981-82, p. 1523f.

²¹⁸ Larsén, *Kvalitativa aspekter under konkurrensbegränsningskriteriet i Art. 85(1) EG*, p. 43.

²¹⁹ An example of very hard-interpreted legal borderlines in Reg 418/85 is the exemption of restraints of closely connected fields of parallel R&D according to (4a) but the prohibition of limitations in unconnected fields. Where is the border of a connected research? See White, "Research and Development Joint Ventures under EEC Competition Law", *ICC*, 1985, p 689.

²²⁰ Pucket, "European Competition Law: Managing the "Chameleon" of Antitrust – Technology Joint Ventures", *19 Maryland Journal of International Law and Trade*, 1995, text to footnote 55.

²²¹ *De Laval/Stork*, OJ 1991 L19/25 [1992] 5 CMLR, p. 55.

²²² See e.g. Korah, *Vertical Restraints in EC competition Law*, 1998, p. 3.

corresponding disadvantage to the other party. This risk may intimidate enterprises to enter agreements that will require approval at the Commission.

The group exemptions thus tend to shape practices on the markets since, as noted, parties seek to avoid individual exemption and since they also serve as a model of interpretation in individual exemption cases. If the group exemptions are not economically updated, they will undoubtedly act as strait jackets to the European Markets.

The Commission claims that it cannot undertake a full-size economic analysis in every case,²²³ which of course is true if every economic transaction with potentially economic detrimental effects on cross-border trade is to be examined. If the group exemptions are to have any effect on the number of applications for clearance they must impose limits in market shares under which antitrust concerns are not recognised, thus working as an extension to the de minimis-rules. Alternatively they must make use of standardised terms of agreements, contract situations and contract partners to identify settings which are assumed to work in different economic ways. Such conduct would not be contrary to the tradition of the Community but is, as mentioned earlier, contrary to all relatively new theories of antitrust economics and industrial organisation.

A far more efficient solution, reducing both the workload of the Community Authorities and detrimental interference in the markets, would be to focus the attention of the Authorities on cases of actual or potential creation of such strong domination that a real-life risk of opportunistic behaviour is at hand.

It is considered difficult or even impossible to evaluate efficiencies which might offset the anticompetitive effects of an agreement since it implies estimates of demand elasticities, magnitudes and probabilities of cost savings, the welfare and consumer losses from increased market power and the expected rate of diffusion and time lag from innovation.²²⁴ Many commentators point to the inability of the enforcers to actually balance efficiencies against anticompetitive effects which is why such a trade-off should not be executed when not completely necessary. The authorities, it is said, lack information to make such estimates reliable, particularly *ex ante* the transaction.²²⁵ In addition, the parties often have the burden of establishing the existence and magnitude of the efficiencies, and they have better access to the relevant facts for the efficiency claim.²²⁶ The work plan of Art 85(1) is then likely to be blurred as any agreement is structured to achieve certain

²²³ Korah, *Vertical Restraints in EC competition Law*, 1998, p. 7.

²²⁴ Brodley, "Proof of Efficiencies in Mergers and Joint Ventures" *64 Antitrust Law Journal*, 1996, text to footnote 35.

²²⁵ Brodley, "Proof of Efficiencies in Mergers and Joint Ventures" *64 Antitrust Law Journal*, 1996, text to footnote 36.

²²⁶ OECD Working Papers, *Competition Policy and Efficiency Claims in Horizontal Cooperation Agreements*, 1997, p. 5.

allegedly procompetitive ends, hence these are likely to be prominent in the parties' presentations to the competition authorities.²²⁷

In the KSB case²²⁸ the Commission correctly concluded its inability to predict the exact future competitive effects of the joint venture but continued to exempt the venture for a period of six years despite its concerns of structural market changes due to foreclosure of third parties. However, in order to deal with this risk the Commission required the parties to provide periodic reports regarding the technological progress achieved and the structure of the market and market penetration. This is in my view an interesting procedure carrying great benefits but also subject to a number of caveats. It is clear that many, especially dynamic efficiencies, are almost impossible to measure *ex ante*. To allow an agreement under the condition that the situation will be reviewed in order to evaluate the benefits as they occur is a model which is to be preferred to more restrictive practices based on incomplete information. In that way the advantage of joint ventures as compared to mergers, has a decisive impact in the antitrust treatment. However there is some dirt in the ointment in this case. First, it is not merely the efficiencies that the Commission is concerned about; it is the market structure and penetration, i.e. the market share that has caught their interest. The Commission had found that cooperation was indispensable for the completion of the publicly beneficial R&D programme (even though KSB was the world's largest manufacturer in the field) due to the risks involved. If the risks of creating a market participant owning the specific technology in a foreclosing manner, are not more imminent, the cooperation probably only serves as the necessary incentive to the parties to engage in the business. Further, if the exemption, as in this case, is tied to a period of six years, there will be no chance of perpetuating a dominant position. To force the parties to periodically report on its businesses to the Commission in order to allow a continuous evaluation of market conditions seem to involve an over-optimistic belief in the monitoring ability of the Authorities as well as a waste of scarce resources both for the Commission and for the private parties.

The same arguments were used in KEWA²²⁹ where the Commission stated: "KEWA has and will probably retain for several years a very strong position in a substantial part of the Common Market. It should therefore be required to send the Commission each year copies of its balance sheets and profit and loss accounts; this will enable the Commission to ensure that KEWA is allowing users a fair share of the benefits resulting from the agreement." The message is clear: do not be too efficient - you may show too high profits. This is not a happy way of using *ex post* assessments.

²²⁷ OECD Working Papers, *Competition Policy and Efficiency Claims in Horizontal Cooperation Agreements*, 1997, p. 8.

²²⁸ OJ 1991 L19/25 [1992] 5 CMLR, p. 55.

²²⁹ KEWA, OJ 1976 L51/15 [1976] 2 CMLR D15.

7.2.2 Conclusion

What seems to be required is thus a modified Rule of Reason to which a group exemption for research and development agreements is added mostly as a de minimis-rule. The group exemption should, compared to present regulations, extend the scope of automatically exempted agreements and avoid conditioning terms of contract dependant of close legal interpretation. For the agreements not enjoying this automatic exemption, the policy should be flexible enough to quickly distinguish, after a truncated economic analysis, the cases of presumably net-beneficial nature, which should be exempted after an opposition procedure with strict time limits. Such a system would save antitrust resources for the, in reality relatively fewer, hard-core borderline cases where both potential benefits and anticompetitive dangers are imminent, demanding a full-blown economic analysis. In addition, the possibility of re-assessing the efficiencies *ex post*, could be used to identify those cooperations where the alleged efficiencies have failed to appear, or where collusion has substantially extended the anticompetitive concerns. It would furthermore satisfy the demand for methodological relativism both at the level of general analysis as well as at the safe-harbour de minimis level.

7.3 Defining relevant markets

7.3.1 Market limitations

Traditionally under European Competition Law the relevant market has been determined by two main parameters: products and geographical area. According to the practice of the Commission and the Court a product market would comprise the totality of products which, with respect to their characteristics were particularly suitable for satisfying constant need and only to a limited extent interchangeable with other products. The geographic market was defined as an area, sufficiently homogenous and limited by realistic economic alternatives available to buyers and sellers, where a dominant firm might be able to engage in abuses.²³⁰

The inherent vagueness in this method caused great uncertainty regarding the market definition and consequently regarding the firms' market shares. The practice was even considered deteriorating into "ad hoc gerrymandering to reach a predetermined outcome".²³¹

The Notice on market definition²³² has now launched the same method of defining relevant markets, as is used by the US authorities. The range of products and the area in which the parties market shares are to be assessed is determined by the consumers' reaction to a hypothetical small (5-10%) permanent relative price

²³⁰ See Van den Bergh, "Modern Industrial Organisation and European Competition Law", 2 *E.C.L.R.*, 1996, p. 82.

²³¹ Van den Bergh, "Modern Industrial Organisation and European Competition Law", 2 *E.C.L.R.*, 1996, p. 82.

²³² OJ C372/5 [1998] 4 C.M.L.R. 177.

increase by a hypothetical monopolist of the products and in the area where the parties are acting. If the consumers would switch to other products or areas to such extent that the price increase would be unprofitable, additional substitutes and areas are included in the relevant market. The procedure will continue until the products and area, which the hypothetical monopolist controls, is wide enough to make the price increase profitable.

This is an improvement, requested by many, which probably will reduce the arbitrary characteristics of the analysis in the past.

There will however remain difficulties defining relevant product markets and assessing market shares for presumptive joint venture parties. Especially when products are homogenous or the parties cooperating are active in several fields it will be troublesome to find out whether a specific percentage is exceeded. The phrase *in the common market or a substantial part thereof*²³³ is inherently imprecise. It will be interesting to see how the new approach is going to affect the interpretation of the geographical market. In the Michelin case²³⁴ the Court gave several reasons for holding that the Commission was not wrong to pick the Netherlands as a substantial part of the common market. "This treatment of the concept of the relevant market as merely a question of definition, leaving over the question whether the undertaking enjoys a dominant position there has drawbacks if it is translated to a regulation, which treats a market share of 20% as equivalent to market power."²³⁵ In addition, a company may have 30% of the market in one country, 5 % in other parts and an overall community share of 18%.²³⁶

To make solid definitions of relevant market for future new products will always be a very delicate matter. In addition, market delineation for R&D is more uncertain than defining product markets, since it must be evaluated on the basis of qualitative evidence of their likely future significance.²³⁷ When the results of research are easy to communicate the R&D market ought to be determined to be worldwide.

7.3.2 Applicable Markets

US antitrust methodology recognises innovation as a product of its own. Through Congressional action²³⁸ the innovation market concept set out in the 1995 Intellectual Property Guidelines, based on the 1992 Horizontal Merger Guidelines, is extended to cooperative arrangements short of full mergers. According to the American approach, market power in product markets is defined by a measurement whether the firm may raise the price of a good without causing a significant number of customers to buy other goods instead. Similarly,

²³³ Regulation 418/85, Art 3 (2) – the market share limitations of the Group exemption.

²³⁴ Michelin v. Commission [1983] ECR 3461 [1985] 1 C.M.L.R 282, ground 41.

²³⁵ Korah, *R&D and the EEC Competition Rules Regulation 418/85*, 1986, p. 35.

²³⁶ Guterman, *Innovation and Competition Policy*, 1997, p. 402.

²³⁷ Kattan, "Antitrust analysis of Technology Joint Ventures: allocative efficiency and the rewards of innovation", *61 Antitrust Law Journal*, 1993, pp. 937 ff.

²³⁸ 15 U.S.C. 4302.

market power in the innovation market is defined as a firm that may lower its R&D spending without causing other firms correspondingly to increase their R&D investments. In other words, one looks to see if a hypothetical monopolist may benefit from retarding the pace or limit the scope of R&D directed toward the envisaged product.²³⁹ Other factors, such as unique research capabilities of the relevant firms and how the transaction may improve innovation efficiencies, are also taken into account before determining market power in an innovation market.²⁴⁰ According to the Guidelines innovation markets are only to be used when it is not possible to use relevant markets for the specific goods concerned, e.g. in cases of development of brand new goods that do not yet exist. Moreover, they are to be delineated only when the capabilities to engage in the relevant research and development can be associated with specialised assets or characteristics of specific firms. When defined, innovation markets will include “all firms with the capability and incentive to undertake research and development closely substitutable for” that at issue, “even if they are not competitors in relevant markets for related goods”.²⁴¹

In Europe however, the approach does not include defining innovation as a specific market. Instead it recognises possible future developments as part of the goods or service market it is analysing.²⁴² The Commission considers, when there is specific evidence of competing lines of R&D, whether a merger or transaction is likely substantially to restrict competition in R&D.²⁴³

However the divergence in methodology perhaps does not carry great differences in practise, as the FTC’s²⁴⁴ underlying concern is also the effect on a goods market. The aim of the FTC is likewise to analyse the changes in ability or incentive to engage in innovation competition after the transaction.

The practice of the Commission is to grant more importance to competition in R&D only in cases where competition between the firms in question is driving research in the field and is directed specifically towards producing or improving the same product or process.²⁴⁵ Future product market analysis is, however, hard to apply in practice as is often impossible to compute a market share for new products due to the problems with establishing the correct market definition and assess the likely future success. Moreover, even when the market shares are ascertainable, legal limits will often be exceeded by the parties since the innovative

²³⁹ OECD Working Papers, *Application of Competition Policy to High Technology Markets*, 1997, p. 8.

²⁴⁰ Landman, “Innovation Markets in Europe”, *E.C.L.R.* 1998, p. 22.

²⁴¹ OECD Working Papers, *Application of Competition Policy to High Technology Markets*, 1997, p. 12

²⁴² Landman, “Innovation Markets in Europe”, *E.C.L.R.* 1998, p. 22.

²⁴³ Temple Lang, “European Community Antitrust Law: Innovation Markets and High Technology Industries” *Fordham International Law Journal*, 1997, p.760.

²⁴⁴ Federal Trade Commission.

²⁴⁵ Temple Lang, “European Community Antitrust Law: Innovation Markets and High Technology Industries” *Fordham International Law Journal*, 1997, p. 761.

nature of new products means that they have some initial advantage over any potential competitors.²⁴⁶

Another tendency when analysing competition in R&D as a means of assessing competition in future product market as compared to defining and analysing a specific innovation market seems to be that the Commission is not so focused on having independent research enterprises in every field.²⁴⁷ The Commission usually accepts a great dominance in research if the downstream competition in product application is guaranteed in some way or another e.g. through extensive licensing, free exploitation by all parties etc. It seems hard to draw any general conclusion which approach rends the most appropriate results. The European view could enable the parties to realise great economies of cooperation, above all in basic research. If the product market is competitive, research could be let free for the parties to achieve in what they reckon to be the most efficient manner.

There are some arguments for the distinction between the upstream research market and the downstream product market. As the characteristics of the different markets vary greatly, e.g. barriers to entry and hence the nature of actual and potential competition, it has been argued that it is essential to assess the conditions of competition in each market separately, even if the actor is vertically integrated, i.e. active in both up- and downstream markets.²⁴⁸ However, the analysis must include the interaction between the different markets as well, a fact that make the analysis of research cooperation especially demanding.

Another basic point is that historical market shares in a market characterised by rapid innovation may not be a good indicator for future market power. Existing market shares may shift rapidly among competitors as products are developed or improved and new entry may render high market shares insignificant in a relatively short period of time.²⁴⁹

However the question remains whether the Authorities should and are able to use an innovation market methodology. The question seems to divide legal and economic commentators.

Gilbert and Sunshine have suggested a market for innovation calling for a five-step methodology.²⁵⁰

- Identify overlapping R&D activities. All R&D spending probably do not concern the specific product. The competing R&D is what will allow the

²⁴⁶ Guterman, *Innovation and Competition Policy*, 1997, p. 394.

²⁴⁷ Temple Lang, "European Community Antitrust Law: Innovation Markets and High Technology Industries" *Fordham International Law Journal*, 1997, p. 761.

²⁴⁸ Grossman & Shapiro, "Research Joint Ventures: An antitrust Analysis", *Journal of Law, Economics and Organization*, 1986, p. 320.

²⁴⁹ Hay, G.A. "Innovations in Antitrust Enforcement" *64 Antitrust Law Journal*, 1995.

²⁵⁰ Landman, "The Economics of Future Goods Markets", *World Competition, Law and Economics Review*, 1998, p. 73 with reference to Gilbert and Sunshine, "Incorporating Dynamic Efficiency Concerns in Merger Analysis: The use of Innovation Markets." *63 Antitrust Law Journal*, p.569.

relevant firms to make the same product. Distinguish the use of same specific R&D assets.

- Identify alternative sources of R&D, potential competitors.
- Evaluate the competition from downstream products that other firms already are selling. Such competition will presumably put R&D pressure on a monopolist to invest.
- Assess the increase in concentration in R&D resulting from the venture.
- Assess R&D efficiencies.

Landman starts his argument against innovation markets with the fact that competition does not necessarily lead to innovation. Studies show no clear correlation and in some cases a high degree of competition leads to lower profit rates in combination with a greater risk of losses due to copying competitors etc, and will instead abate the flow of R&D investments. Secondly, R&D does not necessarily lead to innovation, and the Authorities are unable to identify whether firms invest wisely or not and hence cannot tell if a specific R&D effort will hurt or help the economy. Landman's conclusion is that the authorities should act to ensure that a firm does not monopolise a market that does not yet exist, but probably will exist. This will keep the competition but let the firms decide on R&D. He also concludes that the US authorities, even if they say they should find and regulate innovation markets, actually do nothing but identify and protect future product market. In doing so they act consistently with many of their critics' comment.²⁵¹

Also Hay and Rapp, according to whom traditional tools (particularly potential competition doctrine) are adequate, oppose the innovation market approach. The innovation market approach is at best superfluous and simply another arrow in the agencies' quiver to stop mergers on other grounds. At worst, it takes the focus off the real issue or takes a leap into the unknown.²⁵² Focusing on the R&D aspect may be misleading because, even though it is accepted that concentrated industries may carry higher prices, predictions about the effect of higher concentration on R&D effort or on innovative success are far more controversial.²⁵³ It should however be reminded that Hay and Rapp are commenting innovation market approach in merger cases, why their opinions on the application to joint ventures are unknown. A focus on future product markets seems more anxious when a permanent and complete integration is created.

One should also be careful to draw conclusions about the probable effects of today's agreements in the next-generation markets by reference to R&D spending

²⁵¹ Landman, "The Economics of Future Goods Markets", *World Competition, Law and Economics Review*, 1998, pp. 74 -85

²⁵² Brunell, "A Critical Appraisal of the 'Innovation Market' Approach", *64 Antitrust Law Journal*, 1995.

²⁵³ Hay, "Innovations in Antitrust Enforcement" *64 Antitrust Law Journal*, 1995, text to footnote 15, and Rapp, T. "The Misapplication of the Innovation Analysis Approach to Merger Analysis, *64 Antitrust Law Journal*, 1995.

and expertise. When, in an antitrust assessment focusing on competition in R&D itself and asking whether today's agreements allow the companies to slow down competition in a whole area of innovation or R&D, there is a danger of letting high R&D spending and innovative skill today becoming a large disadvantage for the company. Of course, large and successful R&D spending and skills do carry some limited disadvantages in competition perspective. But it would be irrational to penalise an activity as not being inherently desirable when it is crucially necessary in the sectors in question.²⁵⁴ Another reason not to focus primarily on R&D is that it is the Early Leaders, coming after the pioneers, who do best in new markets. It could therefore be unwise to base forecasts on future markets on pioneers' R&D.²⁵⁵

A possible failure of the American authorities to define and use an innovation market approach may origin in too much of the product market methodology being transferred onto innovation markets, why the specific features of the latter are not allowed full impact. Hay objects the method of associating given market share thresholds with a high likelihood of reduced competition and higher prices for a given product, to be carried over to an analysis of market shares of R&D inputs in an innovation market.²⁵⁶

There are some arguments supporting a sound innovation market approach: First, there could actually exist a genuine market for innovation, where innovation is bought and sold, being the final good. If such market exists or may exist it should by no means be ignored. Especially since otherwise only in-house R&D will be promoted and the opportunities for independent specialised innovation companies to exist may be diminished.

Secondly, if an innovation market is defined, the barriers to entry and other particular market features on this specific market may be identified, influencing the permissiveness of the venture, rather than barriers to entry on present and future product markets.

Thirdly, there seems to be at least as much uncertainty in assessing future market shares as defining innovation markets when the former must include an assessment of the likelihood of successful research. R&D outputs are very hard to estimate.

In sum, if an innovation market is to be defined, part of the analysis will have to focus on this specific question. A pitfall of the Commission's approach is to let present market shares influence too much of the analysis of the future. In my view, an innovation market analysis should be conducted where the relevant market is defined in correspondence to the product market analysis, by the hypothetical monopolist method. This analysis should however focus on preventing long-term

²⁵⁴ Temple Lang, "European Community Antitrust Law: Innovation Markets and High Technology Industries" *Fordham International Law Journal*, 1997, pp. 767 f.

²⁵⁵ Temple Lang, "European Community Antitrust Law: Innovation Markets and High Technology Industries" *Fordham International Law Journal*, 1997, p. 768.

²⁵⁶ Hay, "Innovations in Antitrust Enforcement" *64 Antitrust Law Journal*, 1995.

market power abuse by maintaining possibilities of potential competition in the innovation market. Consequently, it is not the task of the authorities to regulate the R&D in detail or requiring the presence of several active independent lines of research.²⁵⁷ The ultimate impact of the innovation market analysis in the overall analysis should depend on the degree and nature of product market restrictions in the agreement as a whole.

It should be kept in mind that the American approach does not ignore the product markets (both current and future) but these are analysed separately and later the interrelations are analysed. The use of an innovation market does not mean that the analysis does not have to extend to future downstream markets. The concern of future market power does include other features apart from the R&D advantage. Provisions should cover the exploitation of the results, the characteristics of relevant financial strength (to buy innovation) and distribution infrastructure (to quickly exploit bought innovation), which may be more important to parties than the R&D itself.

7.3.3 Conclusion

The new method of defining the extension of markets will reduce the arbitrary feature formerly experienced. It will in addition highlight the central concern of competition law - the possibility of exploiting market power. In order to obtain an analysis focused on the possibility of slowing down the pace of innovation, to recognise specific features differing between innovation and product markets and to take away the mere focus from the assessment of future market shares, an economically coherent policy would call for a pure innovation market analysis to be a distinguished part, included in the overall analysis. Agreements falling under the group exemption can still be defined by present market shares, being the only proxy the parties may reasonably be expected to assess. The objective of the group exemptions in the suggested framework is merely to create a safe harbour for agreements unlikely to slow down the innovative process. Cases exceeding these market shares are to be evaluated in the two-step rule of reason model incorporating innovation market analysis.

7.4 Anticompetitive Effects

7.4.1 Exploitation of Market Power

If becoming too dominant, a market participant might be able to influence the prevailing terms of contract the market. Traditionally the exploitation of such market power will consist in lowering output and raising prices, in order to capture some of the consumers' benefits of trade. In the R&D setting the main interest of the consumers is merely the rapid replacement or improvement of current products and the establishment of brand new products. Market power on current product markets is also relevant in this respect since it is likely to

²⁵⁷ Assessments of anticompetitive effects, efficiencies, and the trade-off between these will be dealt with below.

negatively influence the incentive to undertake such development or replacement of current products. However the mere exploitation of market power would consist in lowering output (pace) and raising prices on the innovation market and consecutive market applications.

The Commission consequently holds that competition and diversity in R&D must be maintained since an excessive concentration or R&D effort could reduce the number and range of new products and processes coming onto the market in future years. Joint R&D also tends to give rise to a general alignment of policies among the participants both as regards the subject matter of the R&D (i.e. the new products) but also in other fields (in particular existing competing products). Agreements extending to joint exploitation of the technology, whether by joint licensing or joint production, give the participants the opportunity of jointly controlling output of the product and are thus only appropriate for exemption where the participants do not enjoy market power.²⁵⁸

7.4.2 Market Power, Market Shares and Potential Competition

In the view of the Commission, in the absence of market power, many restrictions should generally be treated permissively. However, the view alters if market power exists, where no general presumption of legality can be made. “Therefore, it makes economic sense to use market-share thresholds to limit the application of a block-exemption regulation.”²⁵⁹

This is partly true as low market shares make market power impossible, since the impact of a single small firm on the terms of trade on the market will be negligible. High market shares, on the other hand, could make market power possible but do not presuppose such power. Consequently market shares may be used in a group exemption creating a safe-harbour to agreements without antitrust concern, but must be supplemented by other variables in the developed market power analysis. To be credible such analysis would have to consider variables such as barriers to entry, industrial structure and general pace in innovation, access to capital etc. Thus if used as a general indication the Commission’s statement in itself would seem to neglect large parts of modern industrial organisation theory, which stresses that market shares is a very poor general proxy for market power. This is partly recognised by the Commission, but as it would involve significant enforcement costs to undertake full analysis in every single case, the market share proxy is considered the only possible alternative as it also creates a link between a more economic approach and legal certainty.²⁶⁰

It seems the relative easiness of market share estimation and comparison has been the reason for the extensive role these have been given in the European Policy. Yet, small market participants and potential competitors may effectively discipline even a very dominant firm. The concept of potential competition is recognised in

²⁵⁸ White, “Research and Development Joint Ventures under EEC Competition Law”, *ICC, 1985*, 683. Recital 8 to Reg. 418/85.

²⁵⁹ Communication from the Commission, p.21.

²⁶⁰ Communication from the Commission, p.21 f.

European antitrust but is too vaguely developed. As markets become increasingly integrated and transparent, not only in Europe but also on a global level, the potential threat of possible entrants facing inefficient firms may be a decisive factor in their behaviour. Analysing the plausibility of entry by new competitors and expansion of current competitors, the barriers to entry and expansion must thus be assessed. In the Michelin case²⁶¹ the Court noted that the cross-elasticity of supply to the existence of a dominant position was a relevant factor in assessing the market, but ignored the fact that a factory for producing heavy tires could actually be built by competitors on the ground that it would take time.²⁶² It is correct that the time factor might be decisive, since the incumbent firm might change its behaviour as soon as rivals are investing to enter the market, thereby eliminating the profit of entry. Yet it is generally hard for a firm that has become inefficient, living on monopoly rents, to switch over and immediately act efficiently. In addition, in order to respond accurately the incumbent firm would be required to possess excessive production capacity in order to meet the increased demand at a competitive level. The existence of such excessive capacity could have a game theoretical deterrent effect signalling commitment of the incumbent firm to remain in the market. However, investments are no disadvantages particularly facing latecomers. In addition, they do not last eternally but need to be periodically renewed. Considering plants and networks as barriers has consequently been criticised since they do not confer upon the holder any power to engage in monopolistic pricing activities, nor do they present any material difficulties for firms interested in participating in the long-term market for innovation.²⁶³ Furthermore, a high speed of change could make collusion more difficult and dominance more temporary, simultaneously as the result of increased need for large R&D expenditures could mean an extra difficulty to entry. Thus, the industries where development occur with relatively little R&D expenditure, not being so interesting to antitrust, must be distinguished.²⁶⁴

The somewhat restrictive treatment of potential competition as a factor diminishing anticompetitive concerns is inconsistent with the tendency of regarding joint venture parties as potential competitors. Hopefully a new more realistic tendency is detected starting with Elopak/Metal Box-Odin.²⁶⁵

The provisions in Regulation 418/85 are rather focused on parties' independence on the future product market. Access to results by all the parties is emphasised in order to realise the benefits of increased dissemination and reduced duplication in R&D work, and the stimulation of new advances through exchange of complementary technical knowledge.²⁶⁶ They could thus be important remedies to

²⁶¹ *Michelin v. Commission*. 322/81, [1983] ECR 3461; [1985] 1 CMLR 282

²⁶² Guterman, *Innovation and Competition Policy*, 1997, p. 350.

²⁶³ Guterman, *Innovation and Competition Policy*, 1997, p. 350.

²⁶⁴ Temple Lang, "European Community Antitrust Law: Innovation Markets and High Technology Industries" *Fordham International Law Journal*, 1997, p. 764.

²⁶⁵ *Elopak/Metal Box-Odin*, OJ 1990 L209/15 [1991] 4 CMLR 832. See section 4.3.1.2.

²⁶⁶ Guterman, *Innovation and Competition Policy*, 1997, p. 396. See also Recital 4.

antitrust concerns in the specific case. However the conducts proscribed may also be effective remedies to market imperfections. If added to each other and applied on every contract they may deter from beneficial cooperation or produce nonoptimal contracts. The right to sublicense others background knowledge might however be a too tight strain-jacket, discouraging cooperation.²⁶⁷ In addition, if venture partners may not be prevented from challenging intellectual property rights, owners may hesitate bringing competitors into technology for which they are not completely sure patents or applications for patents are valid.²⁶⁸ From an economic point of view the permission in Art 4(1)(e) of restricting field of use of the R&D results and the prohibition of customer restrictions in Art 6(e) seem inconsistent, since they are alternative means of dividing product markets.

The Commission's opinion on post-innovative cooperation is not totally clear. In the Notice on joint ventures a positive view of pure R&D agreements is maintained. However in recital 7 to regulation 418/85, joint exploitation is seen as a natural part of joint R&D. The doctrine of ancillary restrictions also displays some questionable features. The decision on whether the main transaction has anticompetitive effects will be determinant for an additional restraint considered necessary. If the main transaction is considered as having anticompetitive effects and Community impact, the analysis will go on to regard the grounds for exemption. Again the different specifics are usually not considered and estimated individually, not even when assessing their indispensability.²⁶⁹

The Commission has “recently become enamored of the concept of ‘essential facility’ as indicative of dominance, defining an essential facility as “a facility or infrastructure without access to which competitors cannot provide services to their customers.”²⁷⁰ If a firm controls such facility it will negatively effect the possibility for others to enter. Still, the number of cases where such facility is determinant are probably rather few which is why the practical impact of the concept is likely to be limited. One could however think of cases in innovation industry where such possession e.g. specialists or key-patents might be decisive. The proposed innovation market methodology should not be very concerned with market shares of current market participants but rather with keeping the incentives up in the innovative process by preventing foreclosure of potential entrants.

7.4.3 Conclusion

The important concern for antitrust relating to R&D is keeping the incentives high for the performing parties, thus promoting progress. Market power in current product markets implies incentives to slow down pace in innovation. When

²⁶⁷ Korah, *R&D and the EEC Competition Rules Regulation 418/85*, 1986, p. 26 f.

²⁶⁸ Korah, *R&D and the EEC Competition Rules Regulation 418/85*, 1986, p. 52.

²⁶⁹ In *KSB/Goulds/Lowara/ITT*, OJ 1991 L19/25 [1992] 5 CMLR 55, only generally if the cooperation as such was needed to attain the benefits.

²⁷⁰ Dolmans M. “Restrictions on Innovation: An EU Antitrust Approach”, *66 Antitrust Law Journal*, 1998, pp. 455 ff. With reference to *B&I Line vs. Sealink Harbour*, [1992] 5 C.M.L.R 255.

assessing potential market power and the anticompetitive effects of an agreement, market share alone is a very poor proxy. Analysis has to be supplemented by many other factors effecting the possibility of market power abuse. In the part of the analysis concerned with pure innovation market analysis the main anticompetitive concern is whether the cooperation forecloses potential entrants. In all analysis of potential competition, important barriers to entry should be carefully assessed. Irrecoverable investments made by incumbent firms may act as a deterrent to potential entrants but should not be exaggerated in the long-run R&D perspective.

7.5 Efficiencies

7.5.1 Efficiency assessment

As discussed several times earlier, dynamic efficiencies are an inherent part of joint R&D efforts. As Brodley argues, antitrust policy should give priority to innovation and production efficiency, and the protection of consumer interests can be assured by preserving competitive processes over the long run.²⁷¹ The antitrust enforcement must therefore not merely focus on promoting allocative efficiency in the output markets. However, maximisation of dynamic efficiency implies efficient conduct of the firms. Since such conduct is best monitored through competition there must remain static efficiency, which is why the different efficiencies cannot be seen as counterparts but as interrelated variables.

Dynamic efficiencies in particular make heavy demands on antitrust execution. These are often impossible to foresee and assess ex ante, especially since they are the possible future outcome of activity characterised by large uncertainty. When assessing dynamic efficiency, as opposed to static efficiency – we move from the realm of reasonable prediction to the realm of speculation.²⁷² The same problems face merger analysis. Recent reviews of economic studies concluding that projections of merger efficiencies were “surprisingly and consistently inadequate”. Despite near-unanimous predictions of future profit, fully 60-80% of mergers was regarded as unsuccessful ex post.²⁷³ These difficulties could be mediated by ex post revaluation of time-limited joint venture approvals.

If cooperation will bring a new competitor or a new technology quickly onto the market or create a counterweight to an existing dominant enterprise, the Commission is often willing to accept a joint venture, rather than trying to force the parent companies to enter the market separately at some future date. It displays a short-term pragmatic preference for immediate concrete results rather

²⁷¹ Brodley, “The Economic Goals of Antitrust: Efficiency, Consumer Welfare, and Technological Progress”, 62 *New York University Law Review*, 1987, p. 1021.

²⁷² OECD Working Papers, *Competition Policy and Efficiency Claims in Horizontal Cooperation Agreements*, 1997, p. 8.

²⁷³ Brodley, “Proof of Efficiencies in Mergers and Joint Ventures” 64 *Antitrust Law Journal*, 1996, p. 577. With reference to Hartman, R.S. “The efficiency Effects of Electric Utility Mergers: Lessons from Statistical Cost Analysis, 17 *Energy Law Journal*, pp. 401, 413-415.

than less certain, long-term but potentially greater advantages. Such discount of future uncertain benefits is correct according to economic theory, but the Commission does not carry out any quantification of such matters.²⁷⁴ In addition, the gains of cooperation recognised by the Commission are to a large extent connected to integrating effects on the European market. In the Fifteenth Report on Competition Policy, cross-frontier R&D collaboration within the Community is seen as helping to open up national markets. The Community's poor performance in high technology is mainly due not to too low a level of expenditure on R&D, but rather to the low productivity of such expenditure which is itself due to the fragmentation of markets and supply. "International R&D collaboration can enlarge markets and supply for the products... incorporating the results of the joint research to a Community or even world scale."²⁷⁵ In addition it should be remembered that Art 85(3) demands the ultimate buyers a fair share of the benefits of cooperation. This condition ought to be interpreted rather flexibly as efficiencies should not be conditioned on an immediate and total pass-on of cost savings to consumers. "Production and innovation economies confer large social benefits even when not immediately passed on to consumers. They produce real resource savings with valuable spillovers into other markets, compounding social wealth, far exceeding the gains from allocative efficiencies."²⁷⁶ There is a potential risk of efficiencies to the firms being of subordinate importance in the assessment and forced integration having a hampering effect, the opposite of its original intention.

7.5.2 Conclusion

R&D analysis should emphasise possible long-term dynamic benefits. Through these efficiencies, Community integration will be attained on its own merits and consumer welfare will receive its inherent due via the market. Because of the difficulties in the ex ante assessment the authorities should reassess borderline cases after a period long enough to allow the realisation of efficiencies but short enough to permit monitoring and control.

7.6 Trade-offs

7.6.1 The Aim of the Trade-off

The Commission recognises that exemptions according to 85(3) are to be decided according to the overall economic balance. However in reality, the trade-off is not as well developed as appearances might suggest.

Similar to what Williamson calls a naïve trade-off model, a cost-benefit analysis reduced to two dimensional terms requires a number of qualifications such as timing, non-price competition, X-inefficiencies, response of firms, income

²⁷⁴ Temple Lang, "European Community Antitrust Law: Innovation Markets and High Technology Industries", *Fordham International Law Journal*, 1997, p. 758.

²⁷⁵ *Fifteenth Report on Competition Policy*, 1985, point 282.

²⁷⁶ Brodley, The Economic Goals of Antitrust: Efficiency, Consumer Welfare and Technological Progress" *62 New York University Law Review*, p.1037.

distribution effects, second-best considerations, inference and enforcement expenses, which will limit the operability of the analysis.²⁷⁷ Furthermore, due to the diverse nature of the conditions of Art 85(3), the execution cannot rely on a strict welfare analysis but will often require political compromise between conflicting and incommensurable values.²⁷⁸ As the European competition rules are designed to maintain “effective competition” this is an essential point, a decisive criterion. As a consequence there is no real possibility to justify a pure efficiency defence.²⁷⁹

Modern joint ventures frequently fall under the jurisdiction of more than one antitrust system, due to the extraterritoriality and impact of modern competition laws (read US and European Community competition law). Problems of simultaneously satisfying both systems arise.²⁸⁰ An advantage of creating an antitrust enforcement model purely based on economic criteria in its application, is the potential for being universally acceptable. More importantly, such outspoken economic analysis would demand explicit economic assessments in decisions and judgements, possible to evaluate on economic grounds by concerned parties and the occupational group of economists. A vivid debate, scrutinising the alleged economic effects of single European cases from an economically consequential point of view, would presumably spur improvements in execution. As European integration advances towards its completion, an evolution of the Competition law’s objective ought to be politically acceptable.

7.6.2 The Execution

The severe problems of foreseeing future market developments and estimating future efficiencies may lead to both over- and under-inclusive policy. Over-inclusive in blocking collaboration justifiable on efficiency grounds due to inability to predict future efficiencies and sometimes permitting unproductive collaboration out of fear of hampering efficient cooperation.²⁸¹ As anticompetitive concerns are most inherent in static efficiency analysis while benefits from R&D are most of all dynamic, and as economic theory and empirical evidence clearly stress the prevailing importance of dynamics, the practical conclusion ought to be that a under-inclusive policy is to be preferred if the choice has to be made. Especially if a model including ex post evaluation of promised efficiencies is chosen, the

²⁷⁷ Jaquemin, A. “Goals and Means of European Antitrust Policy after 1992” in Demsetz & Jaquemin, *Anti-trust Economics*, 1994, p. 33.

²⁷⁸ Jaquemin, A. “Goals and Means of European Antitrust Policy after 1992” in Demsetz & Jaquemin, *Anti-trust Economics*, 1994, p. 34.

²⁷⁹ OECD Working Papers, *Competition Policy and Efficiency Claims in Horizontal Cooperation Agreements*, 1997, p. 53 f.

²⁸⁰ Grikscheit, “Are We Compatible? Current European Community Law on the Compatibility of Joint Ventures with the Common Market and Possibilities for Future Development” 92 *Michigan Law Review*, 1994, p. 968.

²⁸¹ See Brodley, J.F. “Proof of Efficiencies in Mergers and Joint Ventures” 64 *Antitrust Law Journal*, 1996, p. 577. With reference to Hartman, R.S. “The efficiency Effects of Electric Utility Mergers: Lessons from Statistical Cost Analysis, 17 *Energy Law Journal*, pp. 401, 413-415.

authorities could permit themselves greater confidence in the estimations of the parties. If the alleged efficiencies are not realised but the anticompetitive concerns remain, the parties will be required to reconstruct or break up their cooperation. It would also induce firms *ex ante* to seek less restrictive alternatives.²⁸²

We should however remember the monitoring role of competitive product markets and keep our general preference for efficiency through the competitive process. As long as antitrust does not prevent innovators from attaining the scale necessary to appropriate enough of the benefits, antitrust can promote innovation by preventing market power. This would reconcile the potential conflict between static and dynamic efficiency in simultaneously promoting present static efficiency and future dynamic efficiency.²⁸³

Indeed some European cases imply that dynamic efficiencies are treated as decisive. In the BT/MCI case,²⁸⁴ a strategic alliance in the telecom area where British Telecom acquired 20% in MCI and created a joint venture in the field of value added services, received an individual exemption due to expected technical progress and the ongoing liberalisation process. The venture would offer new, more advanced global services more quickly than either could alone, and there was no risk of eliminating competition. In Optical Fibres²⁸⁵ a network of joint ventures were exempted, after substantial amendments in the structure of the ventures and the restrictive provisions thereto.²⁸⁶ The ventures would provide for a fast conversion into optical fibres technology, used mainly in telecommunications.

Some commentators consider many of the existing legal approaches inadequate as they treat symptoms, particular manifestations of abuse of market power, and not the fundamental problem.²⁸⁷ The problem on which they should be focused is the incentive distortions due to cooperation among independent firms through the creation of a common profit-centre. Thus, the key is to correct those distortions. According to Brodley this “proposes highly focused legal remedies that are facilitating and correcting rather than prohibitory or regulatory”.²⁸⁸ He continues to develop and propose a Presumptive, Incentive-modifying Approach.²⁸⁹ Such

²⁸² Brodley, ”The Economic Goals of Antitrust: Efficiency, Consumer Welfare and Technological Progress” 62 *New York University Law Review*, p.1050.

²⁸³ Kattan, ”Antitrust analysis of Technology Joint Ventures”, 61 *Antitrust Law Journal*, 1993, text to footnote 84.

²⁸⁴ *BT/MCI*, OJ 1994 L233/36 [1995] 5 CMLR 285.

²⁸⁵ *Optical Fibres*, OJ 1986 L236/30.

²⁸⁶ Brodley, ”Joint Ventures and Antitrust Policy”, *Harvard Law Review*, 1982, p.1524.

²⁸⁶ Brodley, ”Joint Ventures and Antitrust Policy”, *Harvard Law Review*, 1982, See Korah, ”Critical Comments on the Commission’s Recent Decisions Exempting Joint Ventures to Exploit Research that Needs Further Development”, *European Law Review*, 1987.

²⁸⁷ Brodley, ”Joint Ventures and Antitrust Policy”, *Harvard Law Review*, 1981-82, p.1524.

²⁸⁸ Brodley, ”Joint Ventures and Antitrust Policy”, *Harvard Law Review*, 1981-82, p.1524.

²⁸⁹ Brodley, ”Joint Ventures and Antitrust Policy”, *Harvard Law Review*, 1981-82, pp.1538 ff.

approach should openly seek to facilitate joint ventures because of their superior efficiency potential and social desirability, and when possible limit intervention to correcting distorted incentives that threaten competition. The analysis developed includes three steps:

- Facial Characteristics – ownership, competitive relationships, market power etc. Is there a presumptive risk?
- If such risk is at hand, it is up to parties of the joint venture to rebut this presumption.
- If the presumption is not rebutted, an appropriate corrective remedy will be chosen.

These remedies could very well be of the same nature as the constraints of time, scope and ancillary restrictions in the current Group exemption. However, since the market share condition of this exemption already rules out market power, they would be more useful in a rule of reason analysis for cases where risk of such abuse is present.

7.6.3 Market Power Abuse

Even if a dominant position emerges on a market, it can be monitored by Art 86. This is relevant to the implementation of art 85 as it is a remedy for market power accidentally “slipping through” the pre-domination net.

It is very important to note in the R&D context that lawful possession of an intellectual property right does not protect one from antitrust scrutinising of the authorities. If the position is abused by the conduct of the dominant enterprise, through the use of the IPR, Art 86 will be violated.²⁹⁰ In Magill²⁹¹ the Court declared the European Commission “under exceptional circumstances” under Art 86 had the power to impose compulsory copyright licenses and to require a firm to supply new customers. Not the exclusive intellectual property as such but the exercise of the right can “in exceptional circumstances” give rise to an abuse. The Court made it very clear that the absence of any justification was a crucial factor for its decision, but did not give an idea as to what justifications might exist. There is thus some scope of using art 86 to monitor proprietors of intellectual property rights.

7.6.4 Conclusions

The choice whether to approve a proposed cooperation ought to be decided by the trade-off between potential anticompetitive effects and presumed efficiencies. In R&D the inherent benefits are of a dynamic nature which is why static efficiency should be pursued only as far as it deters the parties from slowing down

²⁹⁰ Such abuse has been defined as present when a “dominant firm, without objective necessity, reserves ancillary activity which might be carried out by another undertaking on a neighbouring but separate market, with the possibility of eliminating all competition from such undertaking”. Dolmans, “Restrictions on Innovation: An EU Antitrust Approach”, 66 *Antitrust Law Journal*, 1998, pp. 455 ff.

²⁹¹ RTE and ITP v. Commission, Joined Cases C-241/91 & C242/91, [1995] E.C.R I-743, [1995] 4 C.M.L.R 718. See also Rosa Greaves, “Magill Est Arrivé ...RTE and ITP v. Commission of the European Communities, 16 E.C.L.R. 244 – 247 (1995).

the innovative process. Especially when including ex-post assessment of alleged efficiencies, the authorities may relax their concerns about static inefficiencies not being outweighed by long-term dynamic efficiencies.

8 Options for Change

8.1 Theory

In order to realise the true benefits of a market economy, where the singling out of the conduct most appropriate to the situation is taken care of by the market; we must limit antitrust concerns to cases of market characteristics making long-run monopolistic behaviour possible. These conclusions apply a fortiori to the R&D setting where neither the authorities, nor anybody else, are in a position to predict the future impact and outcome of the measures and transactions taken.

As most joint ventures eventually are exempted under European Competition Law, the major problem is not a restrictive practice as such. It is the cost and time lag of exemption, uncertainties and the risk of having the Commission altering the relative bargain power that forces the parties to form their agreements to fall under the group exemption or at least to adopt its principles.

If a larger proportion of agreements were considered legal, this is likely to create participants with larger market shares. However if greater emphasis is placed on supervising and monitoring concentrations thus created, the market may achieve the structure which the underlying cost structure demands without too much interference from antitrust authorities. Once these actors actually abuse their position, the authorities will be able to react.

Most importantly, such system would be able to let the social welfare enhancing innovative efficiencies prevail over allocative efficiencies but at the same time not permanently suppress interfirm rivalry.

This would imply an antitrust system with the prime objective of attaining economic efficiency, which also, while caring for consumers through their inherent role on the market, could be politically feasible to attain. The latter is especially true if incentives are given to seek the restrictions least harmful to consumers among reasonably available alternatives.²⁹²

²⁹² See Brodley, "The Economic Goals of Antitrust: Efficiency, Consumer Welfare, and Technological Progress", 62 *New York University Law Review*, 1987, p. 1036.

8.2 Practice

Group exemption applicable to agreements concluded by parties whose aggregated market share does not exceed 30 %.²⁹³ The application of the group exemption ought to be conditioned by a demand of a relative height and well defined objectives of the R&D activity to be conducted, in order to exclude pure price collaboration or market sharing. The automatic exemption should be limited to 5 years after the products where put on the market. After this period the application of the exemption is reassessed.

β

Agreements to which the group exemption is non-applicable are investigated through limited rule of reason, an opposition procedure with strict time limits, to evaluate the risk for long-term monopolistic behaviour. If such risk at hand, typically in cases where market shares are elevated in combination with substantial barriers to entry²⁹⁴, the third step is initiated. If not, an individual exemption is granted.

β

A full-blown economic analysis, taking into account hard measured dynamic efficiencies. Only if there is an apparent risk of long-term or permanent suppression of interfirm rivalry, or efficiency gains are found feeble, the conduct should be prohibited. The analysis should incorporate an innovation market investigation and may be combined with an ex post revaluation of alleged efficiencies.

The model bears a certain resemblance to present methodology where cases not exempted under the group exemption usually are treated by an informal procedure and where parties to individually exempted agreements may be requested to periodically report to the Commission. However, if a larger proportion receive automatic exemption and the remaining cases a formal treatment, the capacity of the authorities is better used, the public activity may be monitored and continuously improved and the legal certainty of the concerned parties is strengthened. Finally, contractual strait jackets on the parties as well as time and resource consuming procedure are substantially reduced.

²⁹³ Joint venture concerning brand new products will thus be exempted. Parents to such joint ventures generally have no incentive to slow down the innovative process. As the agreement is revalued 5 years after its practical application, now considering market shares in the products market, the parties are motivated to the least restrictive conduct possible.

²⁹⁴ Estimated in accordance with modern theory of industrial organisation.

Epilogue

Generally the Commission recognises the dynamic role of the market. The whole treaty is based on the idea of market economy – an economy in which it is mainly left to market forces to encourage the making of decisions on what, where, when and how products are produced and traded. In a market economy it is assumed that competition rather than state control, or private monopoly, most effectively provides greater efficiency, innovation and lower prices.²⁹⁵ Competition is thus upheld as an effective tool to force the participants to remain dynamic and behave efficiently. The practical conclusion drawn by the Commission as to their role is however the “paramount importance” of a continuing enforcement of the competition rules.²⁹⁶

I believe this conclusion shows in a nutshell the inherent difficulty of public regulation of competition policy in general and research and development in particular. In order to create a free market economy with deregulated markets free from monopolies or other impediments to trade, a comprehensive role is given the authorities to regulate, supervise and judge the actions and decisions of the participants in order to lead them in what is perceived as the right direction.

Indeed, sometimes the markets display imperfections that are possible for the authorities to abate. But how much such intervention is optimal? What if the authorities cannot exactly assess the efficiency of every transaction and even less foresee relevant future developments? We choose a market economy precisely on the ground that no one, and least of all the state, could solely control the market in a socially beneficial way. If the overall analysis does not include an assessment of the well-known and universally recognised detrimental effects of erroneous and excessive state intervention, what is the probability of ending up in an efficient situation? Further, we agreed on free, intra-community trade because of the very positive societal gains derived therefrom. If market integration is the goal and if a free, international trade based on market economy is (apart from being a goal in itself) the means of achieving this goal, how can the conclusion of the role of the authorities be the necessity of comprehensive state intervention? European antitrust of today merely focuses on one imperfection – market power. However, besides market power, exist other imperfections, as important or even more so. These are all interrelated in the way that when the efficiency, profit-maximising firm aims to defeat or at least limit the inefficient effects of, for example, externalities, the efficient conduct may at least potentially create some degree of market power. Hence, the authorities must focus on the origin of the inefficiency, define the problem of incomplete or asymmetric information, public good or externality and realise that when governmental action can no longer provide efficient remedy, the market will have to do so. In addition, if

²⁹⁵ Bellamy & Child, *Common Market Law of Competition*, 1993, § 1-075.

²⁹⁶ Twenty-first Report on Competition Policy, 1991, point 3.

governmental action focuses on the main problems and hence provides for a transparent, global market, where any company irrespective of size may prosper on freely moving capital and absence of public market regulation, the detrimental effects connected to various contractual restraints will be diminished as market participants will rarely be afforded the possibility of exercising market power.

The concern over market power must be limited to maintaining competition through very selective intervention when the market risks failing in an obvious way. Prevent the creation of monopolies, disallow pure output lowering and price fixing agreements but leave it to the market to determine the optimal size in the specific market. Provide the means for the market to discipline the actors, and do not rely on generalised market thresholds perceived as compromises to be adopted generally on broadly defined market categories.

Let us turn to the possibilities of such a development occurring. The basic foundations of European antitrust have not changed for the last 40 years. A reluctance to alter the rules and continuously develop the modus operandi can easily be detected. This is however not to neglect the substantive improvements that have been made, but to point to the slow rate at which the evolution has proceeded. I think this reluctance can in part be traced to the institutional setting in which the development is supposed to take place. In this connection, the potential divergence between word and action of the authorities must be kept in mind.

It has been pointed out²⁹⁷ that in the American example, every administration wants to innovate in some way, do something different than the previous administrations. Both at the FTC and DOJ²⁹⁸, officials have a tendency to create their own niches and personal themes with which they make a name. Furthermore, since a main channel for the officials to present the work of the administration is through speeches held on various occasions in different environments, they have an incentive to have something “new” to present to the audience.²⁹⁹ To say business as usual, will certainly not make it to the evening news. One can easily question whether this urge to put a personal mark on then current discussion and development is beneficial to the attainment of the public objectives of the authorities. On the other hand, it should be remembered that the basic structure and principles of antitrust enforcement have not changed dramatically in the last 25 years, suggesting a gap between what an administration says and actually does. Such divergence could be connected to the presence of information asymmetry as mentioned above.

In the European perspective, the problem is likely to be the opposite, since the administrations rarely undergo dramatic staff changes. This steady-state situation

²⁹⁷ Hay, “Innovations in Antitrust Enforcement”, *64 Antitrust Law Journal*, 1995, p. 7.

²⁹⁸ Department of Justice.

²⁹⁹ Hay exemplifies by referring to an issue of *FTC Watch* according to which the FTC and the DOJ in the period March 14 to April 25, 1995, had approximately 35 scheduled speeches.

presumably has a perpetuating effect on the models and methods accepted and adopted by the authorities. Since research in the economic fields upon which competition policies are based, has developed considerably the last decades, it would be detrimental if a conservative organisation would be unwilling to evaluate, and possibly improve, its work in the light of such findings.

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