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**EU Competition Policy, Vertical Restraints,
and Innovation: An Analysis
from an Evolutionary Perspective**

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EU Competition Policy, Vertical Restraints, and Innovation: An Analysis from an Evolutionary Perspective

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(version: September 2004)

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Abstract: The EU competition policy in regard to vertical restraints is mainly based upon neoclassical efficiency-oriented reasonings, leading to a neglect of the innovation dimension. This paper analyses to what extent evolutionary theories of competition and innovation economics can be used to derive additional, new criteria for the assessment of vertical restraints. It is shown that Neo-Schumpeterian and Hayekian approaches to competition and innovation economics as well as knowledge-based theories of the firm are capable to provide a basis for a different framework for analysing the impact of vertical agreements. Specific evolutionary arguments, such as subjective and local knowledge, the heterogeneity of knowledge bases of firms, communication and learning problems, and the complementarity of knowledge (systemic innovations) can be used for deriving additional, new assessment criteria for vertical restraints. The analysis is made against the background of the most recent reforms of EU competition rules in regard to vertical restraints. It also shows how evolutionary approaches to competition and innovation might be used for competition policy.

JEL-Classification: K 21, L 42, B 52

Keywords: European competition policy, vertical restraints, evolutionary economics, innovation economics.

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1. Introduction

In the last decade, the EU competition policy concerning vertical restraints (as e.g. exclusive and selective distribution, franchising agreements or resale price maintenance), has undergone a remarkable development. One can view it as part of a general reform of European competition policy, which is motivated by the need for a more economics-based approach to the assessment of competition issues. Regarding vertical restraints the EU Commission issued a general Block Exemption Regulation in 1999, in which the conditions for exempting vertical agreements from the prohibition of Art. 81 EC Treaty were defined. These rules are primarily based upon efficiency-oriented neoclassical arguments. Therefore, it came as a surprise that in the reform of the Block Exemption Regulation on vertical agreements in the motor vehicle industry (2002), one of the primary aims of the Commission was to stimulate innovation concerning the distribution of cars, which lead to rules that deviate considerably from the general efficiency-oriented rules of the general block exemption on vertical agreements.

Although innovation is generally accepted as one important aspect of effective competition in European competition policy, the impact of mergers or horizontal and vertical agreements on innovation is assessed only rarely, and in very specific cases. The Commission's "new approach" to apply more economic analysis somehow reinforces this development through its emphasis on welfare-economic neoclassical reasonings, whereas innovation and dynamic efficiency still play only a minor and widely neglected role.¹ To some extent, this is also a consequence of the general unclarified significance of innovation for competition policy. Although some attempts exist to take innovations into account in competition policy (as e.g. the discussion on R&D-cooperations, the "innovation market analysis" in US antitrust policy, or the interface to intellectual property rights), a systematic integration of the innovation dimension of competition into the application of competition laws has so far not taken place.² Similarly, arguments from evolutionary approaches of competition and innovation economics, which are specialized on the research of the emergence and diffusion of innovations in market competition, are not used as assessment criteria in competition policy. In this respect, a significant deficit can be diagnosed in the realm of competition policy.

In regard to vertical restraints, this paper shows that it is necessary and possible to enrich the theoretical basis of competition policy by drawing on evolutionary theories of competition and innovation economics.³ The focus of our analysis is not a critique of neoclassical reasonings on vertical restraints. Rather, it is a thorough investigation, whether and how evolutionary approaches can be used to derive additional, new arguments and criteria for the competition assessment of vertical restraints. Three groups of evolutionary approaches are applied: (1) Neo-Schumpeterian approaches to competition and innovation economics, (2) Hayekian (or Austrian) market process theories, and (3) knowledge-based theories of the firm.

¹ See, for example, the new guidelines of the EU Commission for the assessment of horizontal mergers. For a broad review of EU competition policy concerning innovation issues, see Temple Lang (1997).

² For some literature dealing with the role of innovation in competition policy in various respects, see, e.g., Jorde/Teece (1991), Glader (2001), Encaoua/Hollander (2002), and Davis (2003).

³ Our general stance is similar to Ellig and Lin (2001). See also Jorde and Teece (1991), Teece (1992) and Pleatsikas and Teece (2001) in particular as regards to the issues of assessing market power in industries characterized by rapid technological change and of analysing agreements among competitors designed to promote innovation.

Firstly, an evolutionary perspective on market processes over vertically linked markets is developed, which consists of several intertwined variation-selection-processes. Secondly, a number of specific evolutionary arguments as e.g. the subjectivity of knowledge, local knowledge, the significance of heterogeneity and variety, problems of communication and learning, and the specific consequences of complementarities and systemic innovations, are elaborated, which might lead to a different assessment of vertical restraints in regard to competition and innovation. The EU competition rules on vertical restraints serves as an example for these analyses. Although our research is still in its infancy, we can show that from an evolutionary perspective new arguments and criteria can be developed, both for justifying vertical restraints under certain conditions and for explaining why vertical restraints can hamper competition, particularly regarding competition as a process of experimentation.

This paper is structured as follows. In section 2 we briefly survey the current EU competition assessment of vertical restraints. Section 3 develops a different theoretical perspective for the analysis of vertical restraints from an evolutionary perspective. The main analysis takes place in section 4, in which we investigate in detail, which specific evolutionary arguments can be developed and applied to the assessment of particular kinds of vertical restraints. In section 5, specific regulation problems for vertical restraints are identified from the evolutionary perspective. Some conclusions are presented in section 6.

2. Vertical Restraints under EC Competition Law

2.1 The EC Legal Framework for Vertical Agreements

The relevant legal rule for the assessment of vertical restraints is Article 81(1) EC Treaty prohibiting agreements that restrict competition, whereas Article 81(3) sets out exceptions, if certain conditions are fulfilled. In particular, the agreement must contribute to improving the production or distribution of goods or to promoting technical or economic progress, and it should not enable the firms to eliminate competition concerning a substantial part of the products concerned. For alleviating the handling of exemptions, the Commission issues so-called Block Exemption Regulations, each of them exempting a class of similar agreements whose pro-competitive benefits are considered to outweigh their anticompetitive effects. Agreements infringing Article 81(1) but falling outside of Block Exemptions are nevertheless valid and fully enforceable without a prior decision by a competition authority, if they fulfil the requirements set forth in Article 81(3). In the 1990s, the Commission started an in-depth review of EU competition policy concerning vertical restraints, which supported a more economics-based approach, and ended with the provision of a new framework for the assessment of vertical restraints, consisting of the general Block Exemption Regulation No 2790/1999 and accompanying Guidelines.⁴ The new block exemption provisions apply in principle to all vertical restraints - with the important exception of vertical agreements in the motor vehicle sector.⁵

⁴ Commission Regulation of 22 December 1999, OJ L 33/21, 29.12.1999; for the results of the review see Green Paper on Vertical Restraints in Community Competition Policy, COM(96) 721 final, adopted by the Commission on 22. 1.1997.

⁵ Commission Regulation No 1400/2002 (OJ L 203/30, 01.08.2002).

2.2 The Current EC Policy on Vertical Restraints: the Assessment Criteria

The Commission's new economic approach to vertical restraints focuses on the assessment of the effects of vertical restraints on the market with the aim of enhancing consumer welfare and creating an efficient allocation of resources. An additional important aim is market integration. On the whole, the Commission supports the view that most vertical restraints imply positive effects on efficiency, which must be balanced against any anti-competitive effects of such vertical restraints (Art 81 as a structured "rule of reason").

The underlying theoretical basis of this new economic approach to vertical restraints has been largely influenced by neoclassical, efficiency-oriented reasonings, stemming in particular from the Chicago School tradition (Telser, 1960; Posner, 1976), transaction costs and incomplete contracts economics (Williamson, 1979; Grossmann and Hart, 1986) as well as modern game-theoretic industrial organization theory (Tirole, 1988). These influences have contributed to correct the former much less positive assessment of vertical restraints and has led to a considerable liberalization in the interpretation of the rules for exempting vertical agreements. On the whole, it can be acknowledged that the Commission has now based its analysis and criteria on the recent neoclassical economic reasonings on vertical restraints.⁶ In the following section, the most important arguments of the Commission for balancing pro- and anticompetitive effects of vertical restraints are presented.

Vertical restraints can be employed to reduce transaction costs or to achieve other efficiencies between firms at different levels of the production and distribution chain. In the Guidelines on Vertical Restraints, the Commission gives an overview of some possible justifications for vertical restraints. They comprise the solution of free-rider problems, for example when one distributor tries to benefit from the sales efforts of another distributor. Vertical restraints, like exclusive distribution, can help to solve the potential problem of under-investment. Hold-up problems may also cause under-investment, e.g. when a component manufacturer does not commit the necessary client-specific investments in equipment. A possible solution may be an obligation not to purchase the component from third parties ("single branding") for a period of time. In the recent Guidelines on the application of Article 81(3) (OJ C 101, 27.04.2004, pp. 97-118), the Commission highlights a broad range of efficiency gains from horizontal and vertical agreements, which allow firms to perform a particular task at lower cost or with higher added value for consumers ("qualitative efficiency").

Nevertheless, vertical restraints can also lead to anti-competitive effects. The Commission identifies four types of negative anti-competitive effects, which may result from vertical restraints: foreclosure by raising barriers to entry, reduction of inter-brand competition (including facilitation of collusion, both explicit and tacit), reduction of intra-brand competition, and creation of obstacles to market integration. In the Commission's view, however, these negative effects can only emerge, if the undertakings hold a certain degree of market power. The main reason is that the profits of the vertical structure resulting from an efficiency-enhancing vertical restraint are more likely to benefit consumers in the form of reduced prices or better quality, if strong competition from other suppliers of goods exists. If, however, the vertical structure holds a sufficient degree of market power, it will tend to absorb those efficiency gains in the form of extra profits.

⁶ See, for example, Rey/Caballero (1996), OECD (1994), Dobson and Waterson (1996), and Motta (2004: 302-410).

This shows that competition analysis of vertical restraints under Article 81 is mostly centred on the demonstration of efficiencies and on the ascertainment of possible indicators of market power, such as the market position of the supplier and of competitors, and the presence of entry barriers. Accordingly, at the heart of Block Exemption Regulation No 2790/1999 we find the presumption that, in the absence of market power, the procompetitive (efficiency) gains of vertical restraints outweigh any anticompetitive effects. In particular, the above mentioned regulation creates a "safe harbour" for vertical restraints undergone by suppliers whose market share does not exceed 30%. Below this market share, vertical agreements are always exempted. Only a small number of vertical restraints, such as resale price maintenance, certain forms of market partitioning by territory or by customer, and restrictions of active or passive sales to end users by members of a selective distribution network⁷ are seen as having nearly always anticompetitive effects ("hardcore restrictions") and are, therefore, generally prohibited ("per se rule").

2.3 Vertical Agreements in the Motor Vehicle Sector: Discovering the Innovation Dimension?

Shortly after the EU Commission had finalized its general analytical framework for the assessment of vertical restrictions, a critical review of the competition policy for the motor vehicle sector took place, which led to a new sector-specific Block Exemption Regulation (No 1400/2002). What perhaps is most remarkable about this newer policy is the fact that here specific competition rules on vertical restraints appeared necessary in order to remedy the lack of competition among distribution formats in the motor vehicle retail sector. In fact, almost every car manufacturer in the EU employed the same distribution system, namely qualitative selective distribution combined with exclusive territories and innovation at the retail level was practically switched off.⁸ One of the main aims of the EU Commission was, therefore, to stimulate innovation on the motor vehicle retail market, and the rules on vertical restraints in this industry were crafted to a large extent in accordance with this aim (Vezzoso, 2004).⁹

The competition rules for vertical restraints in the motor vehicle sector are significantly more restrictive than the general rules for vertical restraints. Thus, the range of permissible vertical restraints is considerably limited, independently from the parties' market share. For instance, selective distribution cannot be cumulated with exclusive territories, which implies that the car manufacturers have to choose between these two retail forms. Moreover, retailers cannot be obliged to provide repair and maintenance services to the cars they sell, but they can delegate these services to independent, approved repairers. This is supported by the obligation of the manufacturers to supply necessary technical information, diagnostic equipment and tools, and training to independent repairers. Additionally, there are provisions for

⁷ Other vertical restrictions that are excluded from the coverage of the Block Exemption Regulation are non-compete obligations, the duration of which is indefinite or exceeds five years.

⁸ This emerged from special surveys conducted by the EU Commission and other national competition authorities, in particular in the UK.

⁹ Another aim referred to the problem of large differences of car prices between different member states.

safeguarding retailers' economic independence from the manufacturer.¹⁰ Finally, the maintenance of an independent market for spare parts is supported by specific rules.

The interesting implication of this reform is that in the motor vehicle sector the Commission pursues a strategy of supporting a greater vertical dis-integration in the vertical chain in order to stimulate more innovations in the retail format, and more competition in the vertical chain generally. As a consequence, the efficiency considerations usually linked to the existence of vertical restraints have been held less relevant. Since it cannot be argued that the specific conditions in the motor vehicle industry differ so much from other industries that so different specific rules are necessary, the question arises, whether the general theoretical approach of the Commission with its focus on efficiency considerations can adequately deal with innovation issues. It is true that in this general theoretical approach the impact of vertical restraints on the process by which innovations (of retail formats) emerge and diffuse is not taken into account. The sector-specific rules of the Commission aiming at promoting innovations of retail formats in the motor-vehicle industry, however, are only adhoc-rules, which are not derived from an integrated theoretical framework about the impact of vertical restraints on innovation.

3. The Different Perspective of Evolutionary and Innovation Economics on Vertical Relations

3.1 Overview

Since evolutionary economics, dynamic theories of competition, and innovation economics can provide important insights into the functioning of competition as an innovation process, the question arises, what arguments can be contributed by those approaches for the competition assessment of vertical restraints. We would like to pose the question for the impact of vertical restraints on competition and innovation in both ways:

- (1) To what extent can evolutionary economics provide additional arguments, why vertical restraints might be necessary for solving specific problems, and therefore can have positive effects on competition and innovation?
- (2) Can evolutionary economics provide arguments, why vertical restraints might have anti-competitive effects, in particular, lead to negative effects on innovation processes?

We will proceed in two steps: In this section 3, the different general perspective on market processes over several market stages and vertical relationships is shown that emerges through the application of evolutionary theories on competition and innovation. In section 4, a number of particular evolutionary arguments are developed for the assessment of vertical restraints and are applied to specific kinds of vertical restraints.

¹⁰ For example, the dealers' ability is protected to transfer their rights and obligations to other dealers authorised to sell the same brand, and it is facilitated that dealers sell simultaneously different brands ("multi-branding").

3.2 Evolutionary Market and Innovation Processes over Vertically Linked Markets

3.2.1 Neo-Schumpeterian Innovation Economics and Hayekian Market Process Theories

The neoclassical analysis of competition in vertically linked markets is based upon traditional (mostly game-theoretic) microeconomic equilibrium theory. In contrast, we want to apply Neo-Schumpeterian and Austrian theories for developing an alternative theoretical framework. Neo-Schumpeterian competition and innovation economics encompasses dynamic theories of competition (see e.g. Clark 1961, Heuss 1965, Kerber 1994) and modern evolutionary innovation economics (see e.g. Nelson/Winter 1982, Dosi 1988, Andersen 1994, Metcalfe 1998). Both are based upon basic ideas of Schumpeter. Important insights from this perspective are the endogeneity of technical progress, the wide scope of innovations (product, process, and organizational innovations), the importance of dynamic efficiency in comparison to (static) efficiency, the dynamic process character of competition (as an innovation-imitation-process), the heterogeneity of firms, and the possibility of analyzing market processes as evolutionary processes of variation and selection of products and technologies, using concepts from biological evolution theory. The latter implies the recognition of the importance of variety as necessary input for market processes of experimentation, leading to accumulation of knowledge and economic development.

Hayekian and Austrian evolutionary market process theories start from Hayek's insistence on the importance of the "knowledge problem" (Hayek 1945, 1948, 1978, Kirzner 1997), both on the level of individuals (and firms) and on the level of public policy. This also encompasses the subjectivity of knowledge (which implies a variety in the judgement of individuals thereby increasing heterogeneity), the widespread existence of specific local (and tacit) knowledge. Most influential was his claim that competition must be viewed as a "discovery procedure" (Hayek 1948, 1978), which has been connected to Popper's evolutionary theory of growth of knowledge. On this basis a number of contributions could emerge that stress and analyze the knowledge-generating character of competition and see market processes as an evolutionary process of experimentation (Streit and Wegner 1992, Loasby 1993, Harper 1996, Kerber 1997, Kerber and Saam 2001). From this perspective, competition can be seen as a process of trial and error, in which firms create and test conjectures or hypotheses about preferences, products, and technologies, and where the market provides a feedback mechanism, which of these hypotheses are superior and should be selected by imitation (market test).

3.2.2 Evolutionary Variation and Selection Processes in Vertically Linked Markets

Let us assume an industry with a number of firms, producing a consumer good, and, in the downstream market, retailers who buy these products and sell them to the consumers. This situation implies simultaneously three different horizontal competition processes, which are intertwined in a complex way. Each of them can be viewed as an experimental discovery processes and be described as a process of variation and selection (see in more detail Kerber 1989, 1991):

(1) The firms on the producer level compete with their products and product innovations. Due to the knowledge problems of the producers these products have to be interpreted as fallible hypotheses about the best way to fulfil the preferences of the consumers. Ultimately, the

consumers act as selectors who decide, which of these hypotheses are the relatively best ones with regard to their preferences. However, it should be noted that, first of all, the retailers select which items they include in their product assortment ("gatekeeper" position), and the consumers can choose only from those products, which are offered by the retailers. Therefore, we have a double, sequential selection process, first a preselection by the retailers, and on this basis, the final selection by the consumers. Although the retailers have incentives to select products the consumers want, one must keep in mind that retailers have limited knowledge about the preferences of the consumers, and, therefore, can make erroneous decisions.

(2) Furthermore, the retailers compete with their services for the consumers. This competition process is also a process of experimentation, in which the retailers search for the best combination of prices, range of products, location, style of the outlet, service to the customer etc. (Nyberg, 1998). While the producers experiment with new products, innovations are equally important on the level of retailing, leading to new distribution formats, as e.g. supermarkets or, recently, distribution via the internet. With regard to this process of variation in retailing, the consumers are the selectors and determine the outcome of this market test, leading to imitation and/or innovation activities by other retailers.

(3) The retailers, however, do not only compete with their services for the consumers, but they also offer more or less attractive distribution channels to the producers. The innovation of new distribution formats could lower the costs for producers to reach their target group of potential customers. Depending on the specific product, the retailers can be very heterogeneous as distribution channels from the perspective of the producers. Retailers, which are more attractive in this respect than others, will be able to bargain for better conditions, as e.g. higher rebates, and this kind of price differentiation will give these retailers a competitive advantage over their competitors. Therefore the retailers have incentives for innovative improvements of their performance as distribution channels. In this evolutionary competition process, the retailers are the generator of variations and the producers are the selectors.

In addition to these three horizontal competition processes, there are also processes of vertical competition between the firms on the production and retailing level, because retailers can take on functions, which were previously exercised by producers, such as the branding of products or advertising, or, vice versa, producers can fulfil classical functions of retailing, such as shelf replenishing. What activities are best fulfilled by producers or by retailers (division of labour between the different levels) is itself an object of innovative experimentation in competition processes - up to the possible extreme consequence of full vertical integration between both levels (see also Mahnke 2001). For example, by finding better ways of bundling the activities of firms - perhaps due to the discovering of new complementarities of resources - organizational innovations in vertical chains can occur. Those innovations can emerge independent from product and retail service innovations ("evolution of the *value chain structure*", see Jacobides, 2004: 40, italics in original)

This evolutionary theoretical framework implies that vertical relationships between producers and retailers are part of complex market processes, in which several competitive trial and error-processes take place at the same time and possibly influence each other, and in which the same firms are simultaneously suppliers that create and test new products or services (variation), and selectors of the products or services of the firms in upstream and downstream markets. Additionally, the quality of the selection decisions of the firms is itself part of their performance offered to others. Therefore, it seems the analysis of vertical restraints elaborated within the neoclassical equilibrium framework needs to be supplemented by evolutionary insights. The question is what the effects of vertical restraints are within this different

perspective of a complex evolutionary structure of experimental market processes over several vertically linked market stages, which is based upon Neo-Schumpeterian and Hayekian theories of competition and innovation economics.

3.3 Knowledge-Based Theories of the Firm: another View on Vertical Restraints

Evolutionary approaches can also lead to a different view on vertical restraints, if we analyse them from the perspective of the theories of organization. Incentive theory (Tirole, 1988), incomplete contract theory (Grossmann and Hart, 1986), and transaction costs theory (Williamson, 1979) had a considerable and valuable influence on the competition assessment of vertical restraints, primarily by focusing on the problems of information asymmetry, ex-post non-verifiability of variables central to contracting, hold-up, and externalities. However, the above mentioned approaches have neglected knowledge-related issues like learning, communication and innovation (Foss, 1999; Nooteboom, 2002; Wuyts/ Colombo/ Dutta/ Nooteboom, 2004). According to the organization theories based on capabilities (Richardson, 1972; Silver, 1984; Langlois/Foss, 1998), resources (Penrose, 1959; Conner, 1991; Conner and Prahalad, 1996), dynamic capabilities (Teece/Pisano, 1994) and cognition (Nooteboom, 1997) firms exist and develop according to their idiosyncratic capabilities (skills, tacit knowledge). Therefore, the basic idea of these knowledge-based theories of the firm is that the most essential characteristic of the existence and the boundaries of firms should be found in the differential knowledge-bases of firms.

Firms are seen as taking advantage of complementarities among assets and are made idiosyncratic through their firm-specific knowledge. Accordingly, the literature analysing collaborations between firms under a learning and knowledge perspective focuses on the issues of similarity between competences and interdependency between activities – and the problems related to it. Many contributions stress the importance of multiple relations in order to get access to complementary knowledge-bases the firm does not possess ("cross-firm economy of learning", Nooteboom, 1992), but also the need for intensive co-operations and trust between partners in order to allow for the knowledge to be transmitted (Håkansson, 1989) - and not only to solve opportunism-induced transaction problems. Thanks to specific forms of collaboration transaction costs can not only be avoided or other incentive-related problems resolved, but novel opportunities, novel combinations of inputs or completely new products or services may also emerge (Powell/Koptut/Smith-Doerr, 1996; von Hippel, 1994). In particular, knowledge-based theories of the firm can help to understand the possible role of vertical agreements for the transfer of knowledge between firms and the development of innovations.

4. Evolutionary Arguments for Assessing Vertical Restraints

4.1 Subjectivism, Heterogeneity, and Local Knowledge

In neoclassical models of competition in vertically linked market stages the firms mostly have perfect knowledge and are homogeneous. From an evolutionary market process perspective, however, it has to be assumed that the firms on up- and downstream markets are usually heterogeneous and have subjective, fallible, local (and often even tacit) knowledge. Since there often is high uncertainty in regard to the future preferences of consumers and since subjective knowledge is largely influenced by one's own experience, the firms in up- and

downstream markets will have a considerable variety of assessments about the most promising business strategies on the producer and the retailing level. This also follows from the specific local or tacit knowledge of firms in the vertical chain, which is unknown to others, and often cannot even be communicated (Minkler, 1993). Therefore the Hayekian insight that "knowledge of the particular circumstances of time and space" is widely dispersed among individuals (Hayek 1945) is also true for the network of firms that cooperate within a vertical chain. Additionally, the more heterogeneous the knowledge bases are, the more differentiated the market offers for products and services are likely to be ("cognitive distance" as a key to diversity, Nooteboom, 1999). As a consequence, heterogeneity is also crucial in the relation between firms in the vertical chain, e.g. between firms on the producer and the retailing levels (Windsperger, 2002). Producers (with their products) are heterogeneous for retailers as well as retailers are heterogeneous for producers as distribution channels (Kerber, 1989).

The complexity of both the knowledge structure and of the heterogeneity of firms in vertical chains have not been sufficiently taken into account in neoclassical analyses of vertical restraints. What are, for example, the consequences of local knowledge of retailers for vertical restraints? It is realistic to assume that the demand conditions for products vary considerably throughout a country and that local or regional retailers have better knowledge about the preferences of their customers and the local market conditions. Vertical restraints that producers impose on the retailers of their products, and, therefore, restrict their discretionary scope for deciding freely on their own business strategies, imply that the retailers cannot fully utilize their local knowledge,¹¹ which might lead to an overall performance that is neither optimal for the producers and retailers nor for the consumers. This problem can emerge in regard to most kinds of vertical restraints, as, e.g., resale price maintenance or the sets of rules, which retailers have to accept in systems of exclusive or selective distribution. If it would be easy for the retailers to communicate the local knowledge to the producers, and for the producers to verify it, then this local knowledge could be utilized in the central decision-making process of the producer, and the above mentioned inefficiencies would be avoided. However, due to its often tacit and not communicable as well as mostly not verifiable character, most of local knowledge cannot be centralised, and is, therefore, lost for the decisions of the producers. To a large degree this problem resembles Hayek's thesis of the impossibility of the centralisation of knowledge in society, which he developed for showing the superiority of decentralised market systems compared to planned economies. His main point that the freedom of individuals in decentralised systems allows for a better utilisation of local knowledge is also relevant in vertical chains. Therefore, the problem of vertical restraints can also be seen from the perspective of the general discussion on the optimal degree of centralisation or decentralisation. Here it is also a well-accepted insight that more decentralised systems allow for a better utilisation of local knowledge.

What are the policy implications for the relevance of local knowledge of the firms in vertical chains? An obvious answer seems to be that as long as the producer recognizes the relevance of the retailer's local knowledge, the former might have incentives for not imposing so far-reaching restrictions on the latter's market performance. "Wise" producers might leave their

¹¹ This is also true for other capabilities and skills they possess. See also Denozza (1988) on the information the retailer would be able to acquire about consumers' needs and decision processes, and transfuse into its buying decisions, if the retailer would have sufficient freedom of experimentation as regards its relationship with the consumers.

retailers the necessary discretionary scope for utilizing their local knowledge.¹² However, it remains unclear whether producers really recognize the relevance of local knowledge, which might be controversial between producers and retailers, and whether the producers have undistorted incentives to include all effects on retailers and consumers in their decisions on the extent of the discretionary scope of retailers. Therefore, one can assume that in many cases a certain negative efficiency effect through vertical restraints might emerge due to an under-utilization of their local knowledge. Of course, in many cases, this negative effect can be over-compensated by positive efficiency effects through these vertical restraints, e.g. by the solving of free-riding or externality problems. Nevertheless, the decisive conclusion is that a comprehensive competition assessment of vertical restraints should also take into account this potential negative effect of vertical restraints due to the often great relevance of local knowledge in vertical chains.

An interesting conclusion from this argumentation is the strengthening of a somewhat old-fashioned principle in competition policy. Particularly in German competition law, but also for a long time in EU competition law, the protection of the freedom of the retailers (as the application of the more general tenet of entrepreneurial freedom) has been an important principle that influenced the assessment of vertical restraints.¹³ From a purely neoclassical efficiency perspective this principle seems to be legalistic and superfluous, but from an evolutionary perspective that emphasizes the relevance of subjective and local knowledge, the maintenance of decentralised decision-making might get an additional significance. In the next section we will see why this freedom may also be crucial for the workability of competition as a process of experimentation.

4.2 Experimentation, Openness, and Variety

4.2.1 Vertical Restraints and Experimentation

Darwinian processes of growth of knowledge require variation, because without variety the selection processes cannot unfold its effect of identifying superior ("fitter") solutions and ensure their spreading through increased replication or imitation. Therefore, one of the most important results of evolutionary innovation economics is the relevance of a continuous production of variety. In section 3.2.2, it was shown that in vertically linked markets there are several intertwined competition processes that work as processes of experimentation with new hypotheses about products, services, distributions formats, complementarities between resources, etc., and their selection by firms or consumers on the other market side. From this perspective the generation of innovations and variety within the vertical chain is a necessary precondition for ensuring that the experimental character of market competition can work and leads to a process of accumulation of knowledge. What can be the effects of vertical restraints on this experimental character of competition?

First of all, we must emphasize that often vertical restraints are necessary for carrying out organizational innovations, i.e. new forms of organizing activities and transactions. These

¹² Windsperger (2002), for example, suggests in the context of franchise agreements, that the more important is the franchisee's outlet-specific know-how for the creation of residual income, the more residual rights are likely to be allocated to the franchisee.

¹³ The general normative background is that competition law should also protect the "freedom to compete" ("Wettbewerbsfreiheit"). This was particularly emphasized by the Freiburg School of Law and Economics (Ordoliberalism); see Möschel (1989).

organizational innovations can contribute to the reduction of transaction costs, the solution of incentive problems or can help organizing processes of learning and communication between vertically linked firms in upstream and downstream markets. Most of these organizational innovations require specific contractual arrangements, which might often involve some kinds of restrictions on the behaviour of at least one partner, qualifying them as vertical restraints. This implies that in order to generate knowledge about the efficacy of those organizational innovations, some experimentation with vertical restraints may also be necessary.

Nevertheless, we must also pose the opposite question, to what extent vertical restraints can hamper innovative activities. By definition, vertical restraints restrict the freedom of firms to act independently from others. Therefore, vertical restraints can have a substantial impact on the degree to which the heterogeneity of firms transforms into a variety of offers from which other agents can choose. For instance, in a qualitative selective distribution system, which imposes retailers to perform a bundle of predetermined post-sale services, distributors are prevented from generating their own hypotheses about appropriate distribution services (on the basis of their subjective knowledge and skills). Conversely, the banning of that vertical restriction would have possibly allowed retailers to develop a variety of alternative distribution services,¹⁴ thereby exploring a wider variety of hypotheses how to meet consumers' needs. Therefore, vertical restraints can restrict the freedom to experiment and can reduce the amount of variety that is being generated and tested in the market.

Theoretically this problem can be analysed as follows. If the firms on the two levels are entirely independent, i.e. there are no vertical restraints between producers and retailers, the firms on both levels can experiment and select independently from each other - on the basis of their own subjective knowledge. In the case of vertical integration as the extreme case of vertical restraints, in which two firms in the vertical chain merge, only one firm decides on all aspects of production and distribution. In this case, there is only one process of experimentation, in which vertically integrated firms test one large bundle of hypotheses, both on the optimal product and the optimal distribution. This has two consequences: On the one hand, the number of independent sources of innovation is considerably reduced in comparison with the vertically disintegrated case, leading to a lower level of variety. On the other hand, the quality of the selection of hypotheses can decrease, because the larger the bundles of hypotheses tested in the market by the firms, the less information is fed back from the market about the quality of particular hypotheses.¹⁵ It follows that firms are going to learn less about the quality of their hypotheses from the market test.¹⁶ Consequently, there might be a positive effect on the efficacy of competition as a discovery procedure, if there are two independent processes of experimentation on two different vertical levels, in which more but smaller bundles of hypotheses are tested, than if there are less but larger bundles of hypotheses as in the case of vertically integrated firms. To a lesser degree this is also true in the case of vertical restraints, in which the freedom to experiment is restricted only to a certain extent.

Therefore, vertical restraints can also reduce the positive effects of competition as a discovery procedure, thereby hampering processes of innovation and imitation in the vertical chain. Of

¹⁴ A similar conclusion was reached by the UK Competition Commission (2000).

¹⁵ Dosi and Nelson (1994) also point to the complexity of the unit of selection.

¹⁶ For an analysis of (1) the positive effects of a larger number of firms and (2) the negative effects of a larger bundle of hypotheses, which simultaneously are tested in the market, in regard to the knowledge-generating effect in horizontal competition as processes of experimentation, see Kerber and Saam (2001).

course, there are good arguments why vertical integration and vertical restraints might increase efficiency and even innovation (see section 4.4 for evolutionary arguments to that effect), but the contention is that such a positive effect for the knowledge-generating aspect of competition might exist, if through less vertical restraints the extent of the freedom to experiment and, therefore, the possibility for generating more variety increases.

This reasoning can also be related to the well-known discussion on inter-brand vs. intra-brand competition. From a Chicago-type perspective, a well-functioning inter-brand competition among producers can substitute intra-brand competition among retailers. In section 2, it was shown that the EC policy on vertical restraints largely subscribes to this conclusion, insofar as the EU Commission considers the protection of inter-brand competition much more important than the protection of intra-brand competition. As a consequence, the general presumption of the EC policy is that, in the absence of market power on the upstream market, the procompetitive gains of vertical restraints are considered to prevail over anticompetitive effects. However, from our evolutionary perspective a much more complex and differentiated picture unfolds: The elimination of intra-brand competition among retailers might lead to the loss of the positive knowledge effects from experimentation on the retailing level, even if there is sufficient inter-brand competition among the producers. Thus, an evolutionary analysis suggests that inter-brand competition cannot substitute entirely intra-brand competition. This negative effect of lacking intra-brand competition through certain kinds of vertical restraints will be aggravated, if we consider additionally the existence of heterogeneity and local knowledge on the retailing level (see section 4.1).

4.2.2 Market Entry, Ease of Exit, and Non-Compete Obligations

How is market experimentation influenced by the effects of vertical restraints upon the market entry conditions? The usual question is whether new firms are able to enter the market within a short time at a sufficient scale in order to eliminate or effectively restrict independent pricing of incumbents. Implicitly it is assumed that incumbents and entrants have the same knowledge. However, from an evolutionary perspective, we can assume heterogeneity of knowledge between incumbents and entrants, which can make entry easier or more difficult (Barney, 2001) than from a neoclassical perspective. Nevertheless, in any case, a particular problem might be that a potential entrant who wants to try out a new (and so far unknown) product needs to find retailers on the downstream market willing to distribute it. This can be difficult due to the high uncertainty about the market success of this new product. Therefore, a higher number of firms on the downstream market may be helpful for the innovator, given the substantial "dynamic transaction costs" of finding somebody willing to experiment with something new (Silver, 1984). Also the more heterogeneous the firms on the other market side are, the higher the probability is that some firm might be willing to try out the new offer. However, if a substantial part of retailers are already tied to other manufacturers, it can be very difficult for an entrant to find such partners. It follows that vertical restraints, particularly if they are wide-spread in the market, can seriously restrain the capacity of the system to endogenously generate innovations, because market entry and, thus, experimentation might be more difficult. The policy of the EU Commission to be more restrictive in the case of a vertical restraint being applied by most firms in the market can, therefore, be substantiated by these evolutionary considerations.¹⁷

¹⁷ See Article 6 and especially 8 of Reg.2790/1999, under which the Commission is even entitled to remove the benefit of the Block Exemption Regulation, when parallel networks of

The basic insight that market experimentation with innovations requires enough firms on the other market side implies also a high degree of flexibility for switching transaction partners. This is relevant for the competition assessment of contractual clauses in vertical arrangements that limit the ease of exit from an ongoing relationship, make it difficult to engage in relationships with more than one partner at the same time, or oblige to refrain from competition for a certain period of time after terminating the contractual relationship (non-compete obligations). For instance, one may question if the assessment of vertical restraints should be biased in favour of vertical restraints because of relationship-specific investments (opportunism problem), which make termination much more difficult (see Guidelines on Vertical Restraints, para 119, pt.9). Also a more restrictive approach to so-called single-branding could be worth considering. A similar reasoning could apply to non-compete obligations. According to the general Block Exemption Regulation they are enforceable, if they do not exceed five years, although extraordinary efficiencies can justify even longer non-compete obligations. Concerns could be raised that this period might be too long, especially in highly dynamic sectors. Non-compete obligations or qualitative restrictions of the retailer's behaviour can also set restrictions or limits on vertical competition between producers and retailers. This can lead to an impediment for the experimental character of market competition in regard to the proper delineation of the different market stages. Although it is true that all of these clauses can help to solve particular efficiency problems (e.g. opportunism problems), one should realize that they also reduce the flexibility within vertical chains. From an evolutionary perspective, the flexibility of firms is crucial for the openness and the workability of experimentation processes in markets. Therefore, the competition assessment of vertical restraints should not only take into account their positive effects on static efficiency (as current EC competition rules do), but also potential negative effects on flexibility and innovation (dynamic efficiency).

4.2.3 The Reform of the EU Rules for the Motor Vehicle Industry: An Application of Evolutionary Arguments?

As we have seen above, the reform of the EU competition rules for the motor vehicle industry was motivated by the aim to promote innovation and diversity of offerings in the distribution of cars (see section 2.3; Block Exemption Regulation 1400/2002). Cars' retailing in the EU was characterized by an almost uniform employment of a system of selective distribution requiring each dealer to perform a certain amount of activities like promotion and repairing, and assigning to each dealer an exclusive territory. Independent retailers like supermarkets or internet operators did not fulfil the requirements to become an approved retailer, leading to a lack of competition among different distribution formats. The basic strategy of the reform can be described as supporting a kind of vertical dis-integration by requiring an unbundling of activities and strengthening the independence of dealers from the car manufacturers. One of the measures is that distributors can no longer be obliged to perform the car repair service themselves but can contract-out this specific function to approved operators.¹⁸ However, other specific rules also aim at a greater independence of the firms in the vertical chain, leading to a

vertical restraints cover more than 50% of a relevant market or impede access to the relevant market or competition therein.

¹⁸ Interestingly, though, this unbundling of activities was not allowed according to the previous Block Exemption Regulation for the motor vehicle sector, so that, the EU Commission is also amending its previous policy.

greater separation between car manufacturers, car dealers, repairers, as well as independent spare part suppliers.

From the results of our analysis in section 4.2.1, one can see that the Commission's newer policy approach might have positive effects on innovation. The retailers, for example, can now find out themselves, whether, in their specific case, outsourcing the repair services to an independent operator would be an efficient choice. The heterogeneity of retailers in regard to their knowledge and skills includes that they could be differently competent at performing this function. This could give rise to vertical rivalry between dealers and repairers, competing on the allocation of this specific task within the vertical chain. However, one can also see it as a general process of experimentation, whether both services should be provided by the same firm, e.g. due to some similarities of knowledge and skills, or better be offered by different firms due to the differences in the necessary knowledge bases. Another advantage of this unbundling is that entry barriers are lowered, because new firms need not offer simultaneously distribution and repair services.

The strengthening of dealers' independence might be a step to a long-term development, in which really independent dealers (perhaps in form of chains or by including cars into the assortment of other retailers) emerge that can develop their own innovative distribution formats and test them on the market. However, it is an open question, whether the reform of the Commission is sufficient to break up the traditional distribution structures in the motor vehicle industry.¹⁹ Moreover, it is not entirely clear, whether the overall effects of the reform are positive, because this kind of (regulatory forced) vertical dis-integration within the vertical chain can also lead to negative effects, provided that cars as highly complex products might need a network of closely co-operating partners, as also the Commission concedes. That this can also be a problem from the evolutionary perspective, will be shown in section 4.4.

4.3 Learning, Communication, and Innovation

Knowledge-based theories of the firm could provide additional views on the economic rationale of vertical arrangements, in particular focusing on the issues of learning and innovation. Vertical restraints might help firms deal with the "dynamic" transaction costs (Nooteboom, 1999) of learning by interaction (Lundvall, 1988) with other parties. A firm's knowledge can be very difficult to articulate (partly due to its tacit character) and transmit to other economic agents. For once the parties share enough knowledge, they will be able to understand each other ("syntax and grammar", Argyres, 1999). Because of their specialization in different knowledge domains (or because of acquired "mental models"), firms might have a limited ability to absorb and process information coming from outside. Organizational devices could represent a viable means of overcoming at least some of these difficulties. The provision of credible exclusivity commitments between firms can be crucial to establishing a climate supportive of a knowledge transfer - especially in regard to "know-how", which by its very nature is difficult to codify (Lundvall, 1996). This can even go beyond what would normally be necessary to cope with free-riding, hold-up problems or even knowledge spill-over risks.

¹⁹ For a much more detailed analysis of the reform of the EU competition rules in the motor vehicle industry from an evolutionary perspective, see Vezzoso (2004). For other critical reviews of this reform see, e.g. Buelens, 2003.

Considering the innovation potential of vertical arrangements could also provide interesting insights. Thanks to close arrangements with firms possessing complementary competences, changes in the category of thought and category structure can take place ("second-order learning", Bateson, 1972), thus enabling firms to innovate and grow in the long run. An additional, important insight is that, by taking part in various forms of interaction, the firm may gain access to new cognitive frames, and, thus, avoid being stuck in routine behaviour (Mytelka, 1991). Reducing cognitive distance through the establishment of a close relationship between the firms can improve the possibility of exploring new resource combinations, because in particular it could become less difficult to convince the other party to try out something new.²⁰ Conversely, it can be argued that a certain amount of communication costs could be necessary under the viewpoint of evolutionary competition. In fact, it is through the establishment of the "optimal cognitive distance" that relationships-endogenous innovations can arise (not too close, for a higher novelty value of partner's knowledge, but also not too distant, for the improvement of mutual understanding, Wuyts/Colombo/Dutta/Nooteboom, 2004).

Thus, from an evolutionary perspective, the competition assessment of vertical restraints should ideally comprise an inquiry about their effects on learning and communication processes. For example, detailed contingent contracts, which are efficient from the viewpoint of the transaction costs theory, could prove to yield negative effects on vertical collaborations in regard to learning and innovation, whereas close relationships not justified by asymmetry of information, hold-up risks, etc. could make sense under the viewpoint of fostering knowledge transfer (especially of the know-how type) and innovation. Therefore, a challenging task for competition policy could be to try to combine insights from the knowledge-based and the governance approaches, perhaps similarly to the analysis of networks (Williamson, 1999; Nooteboom and Gilsing, 2004).

4.4 Complementarity, Vertical Restraints, and Systemic Innovations

4.4.1 Complementarities and Vertical Restraints

The assumption that there may be complementarities between resources and activities is at the core of the resource-based theory of the firm, and it is also a well-known theme within the contract-based theory of the firm (Hart and Moore, 1990) Although production can be broken down into various stages in vertical chains, as long as complementarities exist, social interactions not mediated through the market can be justified.²¹ Thus, it may be necessary to qualitatively coordinate the production (e.g., choice of product characteristics) with the distribution of goods (Richardson 1972; Langlois/Robertson 1989). In this respect, the producer's intention to coordinate ex-ante his own activity with the distributor's activity can be explained by pointing not so much to problems styled in the double-marginalization-reasoning of neoclassical economics, but to the necessity of coping with interdependencies between activities.²² This is even more so if we consider the strategic role complementary assets play in the firms' pursuit of a sustainable competitive advantage (Teece/Pisano 1994).

²⁰ See Silver, 1984 and Langlois and Robertson, 1995 for this category of dynamic transaction costs – as "the costs of persuading, negotiating, co-ordinating and teaching outside suppliers".

²¹ Conversely, as long as interdependence is reduced, and therefore activities do not need to be coordinated ex-ante or internally (by way of hierarchy) markets can in principle emerge.

²² According to this theory, integration is needed when the activities to be coordinated are highly interdependent, see Langlois and Robertson (1989).

On the one hand, there may be "technical" interdependencies, as when one piece has to fit into a complex mechanism (e.g. a car). On the other hand, there is what has been defined a somewhat "tighter" form of complementarity, or closely complementary activities (Richardson 1972). This could be a type of interdependence between activities based on the fact that the competences and the knowledge-bases required to exercise them are similar to each other. In this respect, there can be a complementarity between distribution and repair in the sense that it is more effective (also cost-effective) for a single firm to perform both of them, because their use of the same type of competence might lead to important synergies. What could all this imply in regard to vertical arrangements? Firstly, this may offer an explanation for ex-ante qualitative coordination (e.g., selective qualitative distribution), which is more clearly focused on the important dimension of complementarities between competences. Secondly, it could shed some light on the strategic role of vertical arrangements insofar as they allow for the discovery²³ of complementarities (and synergies) between activities and competences on which firms will, eventually, base their competitive advantage.

4.4.2 Systemic Innovations, Vertical Leadership, and Vertical Restraints

Complementarities can also restrict a firm's ability to innovate independently, because a change in one component of a complex (technical) system may require that other components are also modified. In those cases, innovations would be "systemic", i.e., they can be realized only in conjunction with simultaneous innovations in complementary activities (i.e., related technologies).²⁴ Therefore, a coordination mechanism for the innovation processes in the vertical chain is required. Of course, the firms can make mutual adjustments between their innovations, but this might take a long time and requires high communication costs (Silver, 1984). Another option is that one firm (or a very small group of firms) can exercise the role of system leadership or vertical (innovation) leadership within the vertical chain. The leader's task would be to coordinate the innovative endeavours of all members of the vertical chain in order to ensure the compatibility among all different activities contributing to the overall performance. Still another possibility is that the vertical leader fulfils the task of designing the innovation of the overall performance alone and requires the other members of the vertical chain to adapt their activities accordingly. A further variant is that the vertical leader uses his control over the system's overall design configuration, to define clearly interfaces between the activities, which divide the whole chain in compatible modules. As long as the firms respect the common interfaces, they are able to innovate independently from each other (implying innovation competition), because they ensure the compatibility of the modules (and, therefore, solve the coordination problem).²⁵

Most of these options for the coordination of innovative activities in the case of "systemic" innovations may require some kind of vertical restraints, which can be seen as instruments by which the hub of a complex system can exercise its coordinating role. In this respect, vertical restraints can further be seen as supporting the emergence of (systemic) innovations. However, it should be noted that these vertical restraints, as in other cases seen above, reduce

²³ That synergies between resources are the object of a discovery process is also stressed by Mathews (2002).

²⁴ The more mutually dependent actors are within a channel, the more systemic innovations will tend to be. This can also be the case with distribution channels (Nyberg, 1998: 77).

²⁵ For the significance of modularity and interfaces in the theory of the firm, see Langlois (2002).

the positive effects of market experimentation within the vertical chain, because the coordinating effect of vertical restraints simultaneously limits the freedom of the firms to innovate independently. The emergence of a trade off can be suggested between the positive effects of vertical restraints through the coordination of innovations and their negative effects through less experimentation within the vertical chain. In fact, even if complementarities require the coordination of innovation activities and imply a milder or stronger exercise of vertical leadership, other members of the system are not necessarily prevented from innovating independently, e.g. within clearly specified interfaces. It would be a task for competition policy to search for appropriate solutions in cases in which this trade off is relevant.²⁶

A potentially interesting solution might be the modularization of activities, because this allows for dynamic competition with innovations at each individual stage of a vertical chain.²⁷ However, modularization is feasible only as long as the interfaces between the activities can be clearly specified (necessity of "interconnection knowledge"; Jacobides and Winter, 2003: 8).²⁸ Particularly, if new combinations of previously unrelated activities and competences are tried out as in phases of radical innovation, the exercise of more hierarchical forms of vertical leadership, and, therefore, more restrictive vertical restraints, could be justified from the perspective of competition policy. However, vertical restraints should not become the means by which the vertically leading firm tries to unduly abuse or perpetuate its power. For example, in very innovative environments, in which the interconnection knowledge is constantly under challenge, the control over the system's design configuration can become an essential precondition for the capacity of the firm to innovate its own activity.²⁹ Moreover, there can be substantial benefits (i.e. in terms of the appropriation of the network's rent) in exercising the role of the vertical innovation leader (Bresnahan, 1999). This can lead to fierce competition among system members as to acquiring the role of the vertical leader. Since this can be another example of effective vertical competition (here for fulfilling the functions of the vertical leader), competition policy should ensure that competition for vertical leadership remains possible, and should take measures in order to preserve the capacity of firms on the succumbing side of the market or market entrants (Bresnahan, 1999: 198) to challenge that supremacy of the vertically leading firm.

5. The Problem of Regulating Vertical Restraints from an Evolutionary Perspective

What specific problems can be identified for the regulation of vertical restraints from the perspective of evolutionary economics? Important acknowledgements are that due to the openness of market processes it is not possible to predict the outcome of competition as a "discovery procedure" (Hayek 1978). This is closely linked to the Hayekian problem that government agencies have fundamental knowledge problems concerning intervening

²⁶ To some extent this can also be the case in the motor vehicle industry.

²⁷ This could also be the firm's interest, if it is true that "a firm is better off and can extract more value when the complementary markets in which it does not participate are more competitive" (Economides, 2001: 212).

²⁸ See Brusoni and Principe (2001) about the need for "tight cross-company interaction and conscious efforts on coordination at the knowledge and organizational levels" that goes with modular product architectures.

²⁹ This could raise the question if, for example, the other network's members right to access the vertical leader's own technical information could be an effective measure for limiting the latter's power.

successfully in market processes. Although most evolutionary economists would not deny that rules for safeguarding competition are necessary, they have considerable doubts whether competition authorities have the knowledge to assess the effects of particular market structures or business behaviours sufficiently for making correct decisions in single competition cases. Hayek and other evolutionary economists recommended that economic policy should primarily be made in the form of applying general rules ("rule of law") instead of attempting to intervene into the market on a case-by-case basis (Streit and Wegner, 1992).³⁰ In US antitrust policy these two different approaches are well-known as the application of "per se-rules", implying that certain behaviours are generally prohibited, versus "rule of reason", which means that in a particular case the advantages and disadvantages have to be balanced. From this evolutionary perspective the general tendency in European competition policy, and particularly in regard to vertical restraints, to extend the application of the "rule of reason" approach seems to be very problematic, because it presupposes an amount of knowledge of competition authorities and firms, which both will often not have. Therefore, the policy for regulating vertical restraints should primarily consist of general rules, and specific assessments in particular cases should at best be avoided.

A closely related problem from the perspective of evolutionary economics is that it is not really possible to know in advance whether certain kinds of vertical restraints, and particularly new vertical restraints due to organizational innovations, will lead to the expected efficiency benefits. Finding out which vertical restraints are connected with positive efficiency effects, requires itself an experimentation process. From an evolutionary point of view, the difficult problem emerges that, on one side, any regulation restricts the scope for experimentation with vertical restraints (which suggests deregulation), whereas, on the other side, vertical restraints can also hamper market experimentation (as shown in section 4.2). Only careful analyses of specific kinds of vertical restraints can solve this problem.

To what extent do the EU regulation of vertical restraints leave enough scope for experimentation with vertical agreements? In this regard, one important problem emerges: The EU Commission's interpretation of Article 81 requires that the firm invoking Article 81 (3) knows in advance that the vertical restraint will have a significant positive impact in the market. The recent Guidelines on the application of Article 81 (3) state that the firm must demonstrate that the procompetitive gains of vertical arrangements are objective and substantiated, so that they can be balanced against anticompetitive effects. In particular, the firm has to describe the nature, likelihood and magnitude of each claimed efficiency and to explain how and when each claimed efficiency would be achieved. This implies the risk that only well-known practices are considered efficient, whereas for still unknown (and really innovative) practices substantiated benefits could be very difficult to describe and explain.

In most cases, however, this is no real problem, because most vertical restraints fall within the scope of the general Block Exemption on vertical agreements, which is characterized by simple and clear rules. If the market shares of the firms are under 30%, all kinds of vertical restraints are exempted from the prohibition of Art. 81(1) - with the exception of the small number of clearly defined hard core restrictions, which are generally prohibited (per se-rule). Within this "safe harbour", the firms are also free to experiment with new and unknown types of vertical restraints, without having to substantiate the efficiency benefits ex-ante or ex-post.

³⁰ For general analyses of the knowledge problems of economic policy and how to deal with them, see the contributions in Pelikan and Wegner (2003), and Kerber (2004); see already very early in regard to competition policy with the conclusion to apply only per se-rules Hoppmann (1977).

Thus, from an evolutionary perspective, the reform of the policy in regard to vertical restraints in 1999 was a major progress compared to the former block exemptions.³¹ The much more differentiated old block exemptions did not define such simple rules in form of a market share criterion delineating a safe scope for experimentation, but prescribed in much more detail what kinds of vertical restraints under which conditions could be allowed and which were prohibited. This approach was vastly criticized as a strait jacket for vertical restraints, which (1) impeded the best tailoring of vertical restraints to specific transaction and cooperation problems, and (2) eliminated to a large extent the scope for experimentation with new vertical restraints. However, outside the scope of application of the group exemption the above-mentioned problem of the ex-ante substantiation of the efficiency benefits remains.

6. Conclusions

This paper analysed to what extent evolutionary theories of competition and innovation economics can be used to derive additional, new criteria for the assessment of vertical restraints. It was shown that Neo-Schumpeterian and Hayekian approaches to competition and innovation economics as well as knowledge-based theories of the firm are capable to provide a basis for a different framework for analyzing the impact of vertical agreements on market processes over several vertically linked markets. Specific evolutionary arguments, such as subjective and local knowledge, the heterogeneity of knowledge bases of firms, communication and learning problems, the complementarity of knowledge, and the specific problems of systemic innovations can contribute considerably to our understanding of the impact of vertical restraints. A particularly important argument concerns the freedom to experiment, because, as a precondition for variety, this freedom plays a crucial role for the workability of innovation-generating market processes in vertically linked markets. As well as experimentation with new vertical restraints can be necessary for organizational innovations, vertical restraints can also lead to an impediment of innovative experimentation, leading to a reduction of the extent of knowledge generation in competition.

The analysis was made against the background of the most recent reforms of EU competition rules in regard to vertical restraints. The analysis of vertical restraints from an evolutionary perspective is still too new and under-developed for being able to derive far-reaching conclusions for EU competition policy. However, we are able to draw some preliminary conclusions. Our results suggest that the innovation dimension should always be taken into account for assessing vertical restraints, and the elaborated evolutionary arguments and criteria should complement the so far dominating neoclassical ones. This might imply also well-known trade-offs between static and dynamic efficiencies, e.g., balancing negative effects through free-rider problems with positive effects through more experimentation. In this respect, the evolutionary perspective also lends some theoretical support to the new policy of the Commission in regard to vertical restraints in the motor vehicle sector by favouring a greater independence of the car dealers in order to stimulate innovation in distribution formats. Maintaining independence and flexibility in order to ensure the openness for experimentation is an important general conclusion for competition policy. However, the evolutionary perspective also emphasizes the knowledge problems of competition authorities

³¹ This does not preclude the criticism that it can be hardly substantiated by theoretical or empirical research, why the critical market share is determined as 30% (and not 25% or 40%), see also Boscheck (2000).

and courts, leading to the insight that competition policies should rely as much as possible on general rules instead of case-by-case assessments of the effects on competition.

In this paper we could only present an initial broad investigation, how evolutionary approaches might be used for assessing vertical restraints in competition policy. This innovative research should be deepened in several directions: The evolutionary arguments should be analysed in much more detail. There should be studies on the overall effects of particular kinds of vertical restraints. Particularly important is that an integrated framework of assessment criteria is developed, which encompasses both neoclassical and evolutionary arguments in regard to vertical restraints. Our research can also be seen as a contribution to the more general problem, how the innovation dimension can be integrated into competition policy in a more sufficient way. Insofar this study is part of a broader research project aiming at scrutinizing the usefulness of evolutionary approaches to competition and innovation economics for competition policy.

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