

Bartalevich, Dzmitry

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DO ECONOMIC THEORIES INFORM POLICY? ANALYSIS OF THE INFLUENCE OF THE CHICAGO SCHOOL ON EUROPEAN UNION COMPETITION POLICY

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Dzmitry Bartalevich

DO ECONOMIC THEORIES INFORM POLICY?

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Doctoral School of Organisation and Management Studies

PhD Series 34.2017

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Do economic theories inform policy?
Analysis of the influence of the Chicago School on European Union competition policy

Dzmitry Bartalevich

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Björn Lundqvist

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Dzmitry Bartalevich

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Abstract

Adopting the (institutionalist) premise that ideas and the economic theories within which they are embedded influence policy, the dissertation investigates the influence of the Chicago School of antitrust analysis on the competition policy of the European Union (EU). The dissertation encapsulates three articles. The first article employs qualitative content analysis to assess whether and the extent to which the European Commission incorporates Chicago School theory into EU competition policy. It does so on the basis of current Commission Guidelines, Notices, and Block Exemption Regulations that address EU antitrust rules and EU merger control. The second article is exploratory; it narrows the focus on EU merger control and employs descriptive network analysis to investigate the overall composition of mergers cleared by the Commission during the period 2004–2015 and attempts to reinforce the results of the analysis in the first article. The third article expands on the findings of the first and second articles and employs inferential network analysis with exponential random graph models to analyze, on the basis of Commission merger cases cleared during the period 2004–2015, whether the Harvard School, the Freiburg School, and considerations for Single Market integration underpin EU merger control, in addition to the influence of the Chicago School. The analysis presented in the articles suggests that the Chicago School has exerted considerable influence over EU competition policy. The findings further indicate that there is a strong presence of financial institutions among merger and acquisition transactions with an EU dimension in EU merger control. Finally, the findings show that the Commission appears to have a particular approach to EU competition policy that, despite being influenced by the Chicago School, cannot be explained entirely by it.

Remarks

The following article has been reproduced and included in the dissertation with permission from the publisher: Bartalevich, D. (2016). The Influence of the Chicago School on the Commission's Guidelines, Notices, and Block Exemption Regulations in EU Competition Policy. *JCMS: Journal of Common Market Studies*, 54(2), pp. 267–283.

Resumé

Med udgangspunkt fra den institutionsteoretiske forudsætning at ideer og økonomiske teorier påvirker politik, undersøger afhandlingen indflydelsen af den økonomiske Chicago Skole på EU's konkurrencepolitik. Afhandlingen omfatter tre artikler. Den første artikel anvender kvalitativ indholdsanalyse for at undersøge om Europa-Kommissionen inkorporerer Chicago Skole-teorien i EU's konkurrencepolitik. Undersøgelsen udføres på grundlag af gældende retningslinjer, meddelelser, og gruppefritagelsesforordninger fra Europa-Kommissionen der omhandler EU's kartelregler og fusionskontrol. Den anden artikel underbygger resultaterne af analysen i den første artikel gennem en indsnævring af fokus på EU's fusionskontrol og anvender beskrivende netværksanalyse til at undersøge sammensætningen af fusioner, som Kommissionen har godkendt i perioden 2004–2015. Den tredje artikel udvider analyserne i første og anden artikel. I artiklen anvendes inferentiell netværksanalyse med eksponentielle tilfældige graf modeller til at analyserer fusioner godkendt af Europa-Kommissionen i perioden 2004–2015, med henblik på at undersøge, udover indflydelsen fra Chicago Skolen, om Harvard Skolen, Freiburg Skolen, og politiske overvejelser angående integrationen af det indre marked understøtter EU's fusionskontrol. Analyserne i artiklerne påviser at Chicago Skolen har haft stor indflydelse på EU's konkurrencepolitik. Dog viser resultaterne også at der er en stærk tilstedeværelse af finansielle institutioner blandt fusioner og overtagelser med en EU-dimension i EU's fusionskontrol. Det samlede resultat er derfor at Europa-Kommissionen har en særlig tilgang til EU's konkurrencepolitik, som på trods af at være påvirket af Chicago Skolen, kan ikke fuldstændigt forklares af den.

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1. Introduction

Competition (antitrust) law and policy is a system of regulation that is central to the functioning of the economy and the preservation of marketplace competition.¹ Competition policy is designed to protect free markets and the process of competition, contribute to the efficient use of resources, and eliminate harmful, anticompetitive behavior by firms toward other businesses and consumers, examples of which include collusive, monopolistic, and predatory conduct. If businesses conspire to fix prices or divide markets, merge to monopoly, or grow in unfair ways to become significantly dominant and infringe competition in their relevant sectors, prices become higher, the quality of the products declines, innovation may be stifled, and the selection of goods in terms of product quantity, quality, and variety becomes limited, which altogether leads to a decline in total welfare. Competition policy is thus established to prevent such abuses.

Competition policy is not limited to the pursuit of economic objectives. Competition policy may guide the pursuit of goals as diverse as, for example, R&D, technological progress, political stability, and economic integration, which makes it a central tool for structuring economic and political relationships and a major source of influence for many types of private and public economic decisions (Gerber, 2003, p. 1). Additionally, competition policy affects the means of organizing society, the distribution of wealth, social equity, and consumer welfare. In a broader sense, it also preserves the values of classical liberalism from which it emerged, such as freedom from exploitation, the rule of law, justice, and economic freedom.

In competition policy, much of what appears to be objective empirical analysis is frequently shaped by economic theories (Page, 1991). The theories that comprise a set of ideas about what constitutes optimal competition policy and what works best for the economy shape and inform competition policy (Atkinson & Audretsch, 2011; Gerber, 2003; Hovenkamp, 1985; Kovacic, 2007; Montalban, Ramírez-Pérez, & Smith, 2011; Pitofsky, 2008). There are many profound issues that are approached differently depending on which economic theory or school of competition analysis underpins the approach. While most theories concur that blunt anticompetitive practices such as abuse of dominance and collusion are antithetical to competition and the competitive process, the theories may disagree on more delicate issues such as what the fundamental objectives of competition policy should be, whether monopolies are inherently self-destructive and should be left to the market to be broken up in due time, whether the accumulation of productive capacity and concentration should be vigorously prevented, whether small- and medium-sized enterprises (SMEs) should be given any preferential treatment, or whether efficiency should be the ultimate objective of competition policy. This is but a small fraction of the issues that are debated and discussed in context of various economic theories and schools of competition analysis. Thus, to understand the ‘soul of antitrust’ (Jones & Sufrin, 2014, p. 20), the objectives of competition policy, the principles under which it works, the processes and actors it protects, and the wider context of competition rules, it is essential to understand the theories that inform, influence, or even shape it.

In the architecture of the European Union (EU), competition policy is an important policy area that exists to prevent anticompetitive practices, maintain fair competition, facilitate EU Single Market integration, maximize welfare, and promote efficiencies generated by firms, among other important aims. It is acknowledged that EU competition policy has been influenced by different schools of competition analysis and economic theories. Research on the influence of economic theories on EU competition policy almost entirely consists of research on the influence of the Freiburg School (ordoliberalism) (Böhm, 1937, 1966, 2010; Eucken, 1977, 2013) on EU

¹ In this article, the terms ‘antitrust’ and ‘competition’ are often used interchangeably. However, it is important to note that in the context of European Union (EU) competition policy, in this article the term ‘competition’ is preferred over ‘antitrust’ to avoid confusion with ‘antitrust rules’ – rules within the meaning of Articles 101 and 102 TFEU, which exclude rules on merger control. In the context of Chicago School theory and United States antitrust law, the term ‘antitrust’ is preferred (the term includes rules on merger control). Further, in this article, the terms ‘competition law’ and ‘competition policy’ are used synonymously despite the slight difference between them in that competition law is the means by which competition policy is implemented in respect of firms operating in the marketplace (Jones & Sufrin, 2014, p. 1). Because the difference is minor and does not distort the analysis and results, in this article, the term ‘EU competition policy’ is used interchangeably with ‘EU competition law’, although the former term is used more frequently.

competition policy (Blanke, 2012; Buxbaum, 2005; Gerber, 1994, 2003; Giocoli, 2009; Gormsen, 2007; Marsden & Gormsen, 2010; G. Monti, 2002; Möschel, 1989; Parret, 2010; Pera, 2008; Riziotis, 2008; Vallindas, 2006; Wigger & Nölke, 2007; Zimmer, 2012). Although the Freiburg School is overwhelmingly cited as the major and most important ideational contributor to EU competition policy, there is emerging research that disproves the notion that ordoliberalism has influenced EU competition policy (Akman, 2009; Akman & Kassim, 2010; Karagiannis, 2013) or that maintains that ordoliberalism has been largely, if not completely, replaced by the effects-based approach and efficiency-enhancing rationale in recent years (Buch-Hansen & Wigger, 2010, 2011). In that context, research appears to overlook a very important potential other source of influence on EU competition policy – the Chicago School of antitrust analysis (Bork, 1954, 1993; Easterbrook, 1981a, 1981b, 1983, 1984a, 1984b, 1986, 1999, 2000; Landes & Posner, 1981; Posner, 1974, 1979a, 1979b, 1981, 1998, 2001, 2005).

The Chicago School remains one of the most influential schools of antitrust analysis and economic theories (Pitofsky, 2008). In contrast to the substantial research on the influence of the Chicago School on US antitrust law (Crane, 2009; Ellig, 1992; Fox, 1986; Kitch, 1983; Kovacic, 2007; Pitofsky, 2008; Van Cayseele & Van den Bergh, 2000), little research appears to have been conducted on the influence of the Chicago School on EU competition policy. This dissertation attempts to address this research gap.

To investigate the influence of the Chicago School on EU competition policy, this dissertation adopts the core premise that economic theories and the ideas embedded in them influence policy, which is adopted from institutionalism (Adler, 1992, 2013; Adler & Haas, 1992; Goldstein & Keohane, 1993; P. M. Haas, 1989, 2001; Hall, 1989, 1993, 1997; Mahoney & Thelen, 2009; McNamara, 1998; Sikink, 1991).

The overarching research objective of this dissertation is as follows:

- Investigate whether Chicago School theory exerts influence over EU competition policy and analyze the extent of such influence.

To address the overarching research objective, it is broken down into the following more precise research objectives:

- Investigate whether the European Commission (the Commission) incorporates Chicago School theory into its approach to EU competition policy and analyze the extent of the incorporation of the theory.
- Analyze the incorporation of Chicago School theory into EU competition policy with a particular focus on Commission merger control.

The dissertation encapsulates three single-author articles: the first article, entitled, ‘The influence of the Chicago School on the Commission’s Guidelines, Notices, and Block Exemption Regulations in EU competition policy’; the second article, entitled, ‘European Commission merger control under Council Regulation No. 139/2004: Mapping the most expansive acquirers in merger and acquisition transactions in 2004–2015’; and the third article, entitled, ‘Chicago, Harvard, Freiburg, or considerations for Single Market integration? Analysis of theoretical and ideational insights underpinning the European Commission’s merger control with exponential random graph models’.²

The first article investigates whether and the extent to which the Commission incorporates Chicago School theory into EU competition policy (Bartalevich, 2016). Employing qualitative content analysis, the article analyzes current Commission Guidelines, Notices, and Block Exemption Regulations (BERs) that cover the most important areas of EU competition policy: antitrust rules and merger control. The second article is exploratory; it narrows the focus on EU merger control. Employing descriptive network analysis, the article investigates the overall composition of mergers cleared by the Commission under the current European Union Merger Regulation (EUMR) during the period 2004–2015 and reflects on the results of the analysis in terms of the impact of the Chicago School on EU merger control. The third article continues with the focus on EU merger control under the

² For convenience, these articles are henceforth referred to as the ‘first article’, ‘second article’, and ‘third article’, respectively.

current EUMR. The article investigates whether theoretical and ideational insights from several schools of competition analysis and economic theories underpin EU merger control. In addition to the Chicago School, the article includes the Harvard School, the Freiburg School, and considerations for Single Market integration in the analysis. Employing inferential network analysis, the article analyzes Commission merger cases cleared under the current EUMR during the period 2004–2015 in an attempt to reveal whether the four theoretic and ideational insights underpin EU merger control.

By applying these different methods to the analysis of the core areas of EU competition policy and investigating the influence of the Chicago School, the three articles address the overarching research objective of this dissertation in a more comprehensive manner.

This dissertation is structured into two parts. Part I is the framing article that contains an overarching description of the research project. Part I outlines the theoretical motivations, the objects of study (i.e., the case), and the research design. It is structured as follows: Section 2 discusses the influence of schools of competition analysis and economic theories on EU competition policy and introduces the major (institutionalist) theories that focus on the study of the influence of ideas on policy; Section 3 provides an overview of the objects of study (i.e., the case) of the dissertation, namely EU competition policy and the Chicago School; Section 3.1 presents the history of EU competition policy, introduces the relevant institutions in EU competition policy, and outlines the structure of EU competition rules; Section 3.2 provides a comprehensive account of the Chicago School. Section 4 presents the research design of the dissertation and the data and methods used in the three articles. Part I is concluded with Section 5 – a final discussion of the research and findings. Part II presents the three articles.

2. Theoretical motivations

2.1 *The influence of economic theories and schools of competition analysis on EU competition policy*³

This section presents the relevant economic theories and schools of competition analysis in the context of EU competition policy, including the Chicago School, the Post- and Neo-Chicago Schools, the Freiburg School, the Harvard School, and the Austrian School.

Competition law and policy are essential for the preservation and functioning of competitive markets. Competition law seeks to produce the greatest benefits to society, in the form of economic welfare, and prompts the wiser use of scarce resources by promoting fair competition among businesses. It is meant to uphold the foundations of democracy and liberty, preserve economic freedom, and preclude the creation of excessive economic power (Jones & Sufrin, 2014, pp. 4-19).

In the architecture of the EU, competition policy is a core policy area and an important component of EU-wide economic policy. EU competition policy exists to achieve the following major objectives:

- Prevent restriction, distortion, or elimination of competition and outlaw anticompetitive practices;
 - achieve and maintain a competitive process among undertakings (in general, promoting technical or economic progress);
 - facilitate EU Single Market integration and achieve and maintain a free and dynamic Single Market;
 - maximize economic welfare and consumer welfare (in terms of low prices, high-quality products, innovation, or a wider selection of goods in terms of product quantity, quality, and variety);⁴ and
 - promote efficiencies generated by firms.
- (Commission, 2004a, 2004b, 2008b, 2009, 2010; Jones & Sufrin, 2014, pp. 4-19; G. Monti, 2002).

In competition policy, much of what appears to be objective empirical analysis is, in fact, deeply shaped by economic theories (Page, 1991). Ideas about what constitutes optimal competition policy and what works best

³ For convenience, this article refers to ‘the European (Economic) Community’ and ‘the European Union’ as ‘the EU’.

⁴ Consumers include all direct and indirect users of products or services, including producers, wholesalers, retailers, and final consumers (natural persons) (Commission, 2004a, para 84).

for the economy are not independent thoughts applied anew to each new situation; rather, such ideas constitute coherent world views or theories, which, in turn, profoundly shape and inform policy (Atkinson & Audretsch, 2011; Montalban et al., 2011). It is thus apparent that understanding the role of economic theories behind policies becomes pertinent and central to understanding these policies, which means that to understand the ways in which various schools of competition analysis and economic theories influence competition and antitrust law is to understand the ‘soul of antitrust’ (Jones & Sufrin, 2014, p. 20).

EU competition policy has been influenced and structured by different schools of competition analysis and economic theories. Although which schools of competition analysis and economic theories have exerted the most considerable influence is often contested, the potentially significant contributors are the Freiburg School (ordoliberalism), the Harvard School (including the structure–conduct–performance paradigm), the Chicago School (including the Post- and Neo-Chicago Schools), and the Austrian School (Jones & Sufrin, 2014, pp. 21–34). In addition to the above schools of competition analysis and economic theories, EU competition policy has been accommodated and influenced by the objective of Single Market integration (M. Monti, 2010; Wigger & Nölke, 2007). Further, United States antitrust policy has considerably influenced EU competition policy in a number of areas (Bartalevich, 2013; Kovacic, 2009). It is also established that behavioral economics has yet not exerted influence on EU competition policy, but it is predicted to gradually start influencing it by contributing a number of useful insights and tools to the analysis of firms’ strategic behavior (Stucke, 2007, 2014).

It appears important to single out and provide an overview of the important schools of competition analysis and economic theories in antitrust and discuss their relevance to the study of EU competition policy.

The Chicago School (Bork, 1954, 1993; Easterbrook, 1981a, 1981b, 1983, 1984a, 1984b, 1986, 1999, 2000; Landes & Posner, 1981; Posner, 1974, 1979a, 1979b, 1981, 1998, 2001, 2005) is one of the most influential schools of antitrust analysis and economic theories. The Chicago School emerged in the 1950s and 1960s at the University of Chicago and reached its widest influence in the 1970s and 1980s in United States antitrust policy. The Chicago School is pro-market and anti-interventionist. It is based on neoclassical price theory and the market efficiency model. In contrast to the substantial research on the influence of the Chicago School on US antitrust law (Crane, 2009; Ellig, 1992; Fox, 1986; Kitch, 1983; Kovacic, 2007; Pitofsky, 2008; Van Cayseele & Van den Bergh, 2000), little, if any, research appears to have been conducted on the influence of the Chicago School on EU competition policy. Because the Chicago School is given a comprehensive account in Section 3.2, it is not further discussed in detail in this section.

It is important to discuss the Post- and Neo-Chicago Schools in conjunction with the Chicago School. The Post-Chicago School (or ‘new industrial economics’) embraced the core assumptions and premises of the Chicago School and refined some of them by incorporating selected insights from game theory, raising rivals’ costs (RRC) theory, and transaction cost economics (Jacobs, 1995, pp. 240–250; Jones & Sufrin, 2014, pp. 28–32). The Post-Chicago School has had at best fragmented and limited influence on EU competition policy, where some of the traces of its influence can be found in the analysis of the strategic conduct of firms, namely in the treatment of tying, exclusive dealing, predatory pricing, and vertical foreclosure (Wright, 2012, pp. 249–250). The Neo-Chicago School is a school of competition analysis that is used to describe the adherents to the Chicago School who accept the basic premises of the Chicago School and accept critiques of it (Crane, 2009). Neo-Chicago has failed to exert influence on EU competition policy (yet), but it has offered several insights and theoretical perspectives on the strategic behavior of firms, which includes the treatment of exclusive dealing and tying (Padilla & Evans, 2005).

The Freiburg School (Böhm, 1937, 1966, 2010; Eucken, 1977, 2013) is traditionally identified as one of the – if not the single – most significant contributors to EU competition policy. The Freiburg School agreed with the earlier conceptions of liberalism by considering a competitive economic system necessary for a prosperous, free, and equitable society (Giocoli, 2009, p. 23). The Freiburg School occupied the central position in post-war economic and competition policy in the Federal Republic of Germany and acted as the main proponent for including core competition law provisions in the Treaty of Rome (now Articles 101 and 102 of the Treaty on the

Functioning of the European Union) (Gerber, 1994, p. 73).⁵ At the core of Freiburg School theory are two fundamental concepts or ‘orders’: the ‘transaction economy’, where economic conduct is organized through private decision-making, and the ‘centrally administered economy’, where economic activity is administered according to criteria external to the economic system (Gerber, 2003, p. 243).⁶ Ordoliberals believe that economic competition that is enshrined in and guarded by law is the chief element of the transaction economy. A high level of economic competition can be achieved through government enforcement of economic principles translated into normative terms and legal provisions enshrined in the ‘economic constitution’ and through avoiding unnecessary state interventions (Gerber, 2003, p. 245).

In the economic domain, the Freiburg School maintains that the market should not be merely left to itself to enhance social welfare but that conditions should be created for the market to function such that it provides equal opportunities for participation to (small- and medium-sized) enterprises and eliminates concentrations of economic resources, including monopolies, and collusion (Gerber, 1994, pp. 50-52; 2003, p. 240).⁷ The Freiburg School is also concerned about the preservation of rivalry and the competitive process (Marsden & Gormsen, 2010). In the political domain, ordoliberals consider it their utmost priority to create a strong state, albeit one constrained by the ‘economic constitution’, which maintains the conditions for competition through the ‘economic constitution’ and sustains pressures from private economic powers. Because the Freiburg School is not just a school of competition analysis or economic theory but an entire political and economic philosophy (Jones & Sufrin, 2014, p. 33), it offers a broad political and economic framework for the functioning of EU competition policy rather than sophisticated tools for a competitive assessment of firm behavior. In this regard, it may be difficult to compare it to the Chicago or Harvard Schools.

The Harvard School originated in the United States in the 1930s. It is rooted in the structuralist tradition based on a strong commitment to Cournot oligopoly theory, which regarded markets as anticompetitive whenever they deviated from basic competitive conditions (Hovenkamp, 2005, pp. 35-38). Harvard School economists were among the most important contributors to the structure–conduct–performance paradigm, which held that a given market structure determined certain types of conduct and that this in turn determined performance. In the late 1970s, the Harvard School (Areeda, 1983a, 1983b, 1983c, 1987; Areeda & Turner, 1979; Areeda & Turner, 1975; Hovenkamp, 1996; Turner, 1958, 1969, 1982, 1987, 1990) underwent significant transformation. It departed significantly from the previous view that anticompetitive conduct was a necessary condition of structure and introduced new insights into antitrust, including the analysis of entry barriers, introducing tests for predatory pricing, relaxing merger standards, and rejecting the claims that vertical integration was inherently anticompetitive. The most drastic disagreements between the Harvard School and the Chicago School can be summarized in the following (simplified) points:

- The Harvard School includes a more diverse set of goals beyond efficiency, including a fair income distribution, the promotion of SMEs, competitiveness, the economic integration of regions, low unemployment,

⁵ The central position of the Freiburg School was achieved as a result of the US military government’s policy to establish an economic regime that minimized economic planning and busted cartels, which the Freiburg School endorsed. Another reason for the centrality of the Freiburg School is that ordoliberals were among the few qualified Germans who had not been previously associated with National Socialism.

⁶ According to the Freiburg School, a political authority makes a constitutional choice between these two orders and configures the legal framework and conducts policies to support the functioning and maintenance of a chosen order. Any state intervention is believed to hamper economic activities within the transaction economy, and the lack thereof hampers economic activities within the centrally administered economy.

⁷ A firm or a group of firms that has the power to hinder the performance of competitors or has power over price is structurally inconsistent with the standard of complete competition and distorts the competitive order; hence, monopolies were to be prohibited according to the Freiburg School. When a firm has achieved its monopolistic position not through tacit agreement but through winning a competitive battle and acquiring the power to discourage attempts to compete with it, for instance through innovation, or when a firm has developed into a natural monopoly, the decisions would be more complicated. The distinction between the following two standards of competition was to be made: performance competition was consistent with the competitive model because a firm had improved its profit by means of performance improvement, lowering prices, and innovation, whereas impediment competition was harmful because a firm had achieved its position by means of impeding its rivals’ capacity to perform, thus, interfering with the competitive process (Gerber, 2003, p. 253).

the promotion of key industries, the protection of local jobs, and sustainable development (Budzinski, 2008, p. 299);

- the Harvard School maintains that antitrust analysis should countenance noneconomic goals;
- the Harvard School's approach to mergers is structural – it places much greater emphasis on market structure and views high concentration as a prerequisite to anticompetitive activity;
- the Harvard School is less permissive in its treatment of vertical restraints, and there are instances in which the Harvard School proposed that vertical restraints should be per se illegal;
- the Harvard School considers entry barriers, not efficiency considerations, the most relevant parameter in assessing abuse of monopoly power; and
- the Harvard School does not consider that monopolies should not be allowed based on efficiencies alone (Areeda, 1983a, 1983b, 1983c, 1987; Areeda & Turner, 1979; Areeda & Turner, 1975; Hovenkamp, 1996; Turner, 1958, 1969, 1982, 1987, 1990).

Some research indicates that the Harvard School influenced EU competition policy in the area of EU merger control, where it offered insights on the definition of the relevant geographic market (Vallindas, 2006).

The Austrian School (Hayek, 1948, 1999, 2001, 2012; Von Mises, 1960; Von Mises & Greaves, 1949) is a school of economic thought that is based on methodological individualism.⁸ Despite the Austrian School's major influence on mainstream economics, including theories on marginal utility, opportunity cost, and time preference, it appears not to have had a direct influence on antitrust analysis and EU competition law in particular – although Friedrich Hayek, one of the important adherents to the Austrian School, contributed to the intellectual foundations of Chicago School theory (Coase, 1993; Jones & Sufrin, 2014, p. 32). A closer analysis of Austrian School theory demonstrates that it has not focused on antitrust issues, definitely not to the extent that it has focused on economics, and it is difficult to trace its influence on EU competition policy.

Research on the influence of economic theories on EU competition policy is almost entirely composed of research on the influence of the Freiburg School on EU competition policy. The overwhelming attention in the literature to ordoliberalism is understandable because legal scholarship seems to largely agree that the Freiburg School has exerted substantial influence over EU competition policy (Blanke, 2012; Buxbaum, 2005; Cseres, 2005; Gerber, 1994, 2003; Giocoli, 2009; Gormsen, 2007; Marsden & Gormsen, 2010; G. Monti, 2002; Möschel, 1989; Parret, 2010; Pera, 2008; Riziotis, 2008; Vallindas, 2006; Wigger & Nölke, 2007; Zimmer, 2012). Despite that the Freiburg School is overwhelmingly cited as the major and most important ideational contributor to EU competition policy, there is emerging research that disproves that ordoliberalism has influenced EU competition policy (Akman, 2009; Akman & Kassim, 2010; Karagiannis, 2013) or that maintains that ordoliberalism has been replaced by the effects-based approach and efficiency-enhancing rationale in recent years (Buch-Hansen & Wigger, 2010, 2011). By contrast, the Post- and Neo-Chicago, Harvard, and Austrian Schools appear to have had very limited influence on EU competition policy. Additionally, because the Chicago School has considerably influenced US antitrust, and US antitrust has in turn influenced EU competition policy, it is important to look beyond the Freiburg School and investigate the influence of other schools of competition analysis and economic theories on EU competition policy – in this particular case, that of the Chicago School. Hence, it appears pertinent to identify the Chicago School as a potential additional important and influential school of competition analysis and economic theory and to analyze its influence on EU competition policy.

2.2 The influence of ideas on policy

This section introduces the concepts of 'ideas', 'influence', and 'policy' and maps the approaches to the influence of ideas on policy within the institutionalist domain.

To investigate the influence of the Chicago School on EU competition policy, it is important to first conceptualize and then operationalize Chicago School theory.⁹ To conceptualize Chicago School theory, the

⁸ Carl Menger is the forefather of the Austrian School (Hicks & Weber, 1973).

⁹ The operationalization is conducted further below and in the first article in the dissertation.

concept of ‘ideas’ is particularly useful. Chicago School theory is first and foremost a complex economic theory and a school of competition law and economics that comprises a vast and complex set of ideas. Therefore, it is essential to understand the theory as a constellation, set, or cluster of ideas. Before commencing the analysis, it is necessary to define ideas and examine the relevant literature on the influence of ideas on policy. To do so, this section turns to the institutionalist literature for the following reasons: First, institutionalism occupies the central place in the debate on the study of ideas. Second, institutionalism may arguably be the only domain in the public policy, political science, and legal studies literature that has advocated that ideas are important phenomena that are able to exert independent influence over policy. For that matter, the institutionalist literature may provide some necessary insights.

As a point of departure, it is important to define the following concepts: ‘ideas’, ‘influence’, and ‘policy’. First, the concept of ‘ideas’ is defined, with specific reference to economic ideas, as follows: ‘Ideas’ are causal or normative assumptions that specify scenarios, plans, or models of desirable policy processes or outcomes and the ramifications of their adoption and implementation and their ramifications for and impact on the wider economic – and sometimes political and societal – domains. The definition is adopted from the institutionalist literature (Adler, 1992, 2013; Adler & Haas, 1992; Béland & Cox, 2010; Blyth, 1997, 2001, 2002a, 2002b, 2003; Goldstein & Keohane, 1993; P. M. Haas, 1989, 2001; Hall, 1989, 1993, 1997; Hay, 1999, 2004a, 2004b, 2004c, 2006, 2011; Hay & Wincott, 1998; Mahoney & Thelen, 2009; March & Olsen, 1983; McNamara, 1998; C. Parsons, 2016, p. 450; Schmidt, 2002a, 2002b, 2008, 2010; Schmidt & Radaelli, 2004; Sikkink, 1991). Although the focus of the institutionalist literature is on the overarching concept of ideas – which comprises economic theories – the focus of the analysis in this dissertation is on economic ideas and ideas that are relevant to economic policy because in the case of the Chicago School, it is predominantly economic ideas or, to be precise, a set of economic ideas that comprise Chicago School theory. A set of economic ideas is closely related, but not entirely synonymous, with the concept of ‘program’ in the institutionalist literature.¹⁰

Second, the concept of ‘influence’ is defined. The following definition of this concept is adopted: Influence is the ability of individual or collective actors to, independent of the use of power or coercion, produce to an appreciable extent an intentional or unintentional effect on other actors and their decisions. This definition is based on Parsons’ widely cited analysis of the concept of ‘influence’ (T. Parsons, 1963). With relevance to the research objective of the dissertation, ‘influence’ can be further unpacked as an instance of an appreciable (and most probably unintentional) effect produced by the academics and practitioners who developed the Chicago School law and economics program (in other words, Chicago School theory) on EU competition policy.

Finally, the concept of ‘policy’ is defined with specific reference to EU competition policy. The EU competition policy system consists of two elements: EU competition policy and the related policy enforcement. The EU competition policy system is a combination of a set of rules that govern substantive issues and the enforcement-related issues that include administrative structures and processes through which the rules are implemented (e.g., competence allocation and procedures) (Kovacic, 2009, p. 21). EU competition policy – with the exclusion of the enforcement elements – is thus defined as a set of legal instruments that govern substantive issues.¹¹

The next step is to locate the theories that are widely regarded to be highly relevant for EU studies. The major theories that dominate the EU studies domain are the theories of EU integration with origins in international relations theory: neofunctionalism (E. B. Haas, 1956; Nye, 1970), liberal intergovernmentalism (Moravcsik, 1993, 1994), and supranationalism (Sweet & Sandholtz, 1997, 1998). These broad theoretical approaches attempt to

¹⁰ According to Campbell (2004), who developed one of the most sophisticated typologies of ideas in the institutionalist literature, programs are roadmaps that provide instructions for individual and collective policy actors to determine what approaches to policy issues are expected to lead them to particular outcomes. Campbell subdivided ideas into four types: policy paradigms, public sentiments, programs, and frames. Policy paradigms are associated with economic paradigms in the historical institutionalist literature (Hall, 1989, 1993, 1997), which refers to clusters of beliefs about policy issues and ideas for addressing them. Public sentiments are associated with public perceptions of policy issues. Frames are associated with the discursive institutionalist literature (Schmidt, 2002a, 2008) and are ideological perspectives that are employed by policy actors through discourse to convince the public and the rest of the actors of the saliency of particular sets of ideas.

¹¹ Please note that policy enforcement issues and decisions of the Courts are not included in the analysis (see Bartalevich, 2016).

explain the scope, substance, form, and dynamics of EU integration by focusing on the integration of policy areas and sectors, the transfer of national competencies to the supranational level, and EU enlargement (Schimmelfennig & Rittberger, 2006). Liberal intergovernmentalism views national governments as the most important actors, which determine the scope, substance, and form of integration through complex intergovernmental constellations of preferences defined through constant negotiations between the national governments. In contrast to liberal intergovernmentalism, supranationalism views EU integration as a dynamic, self-reinforcing process that is set in motion exclusively by transnational and supranational actors as a result of complex social and institutional changes, which means that the process of integration transcends the control of the national governments. Neofunctionalism emphasizes that EU integration occurs due to the pressure from 'spillover' mechanisms (of the widening and deepening) of economic integration spreading from one sector to another.

It is clear that these theoretical approaches offer useful insights for finding explanations and articulating outcomes regarding the progress (or lack thereof) of EU integration across EU policy areas,¹² in the allocation of competencies between national and supranational actors and in territorial integration. However, these three theoretical approaches appear to be less suitable for the study of the influence of the Chicago School on EU competition policy. The object of study of these theoretical approaches is the EU as a macro-constellation of policy areas, Member States, and national and supranational competencies, whereas in the case of the influence of the Chicago School on EU competition policy, the object of study is a single policy area. Further, because the object of study in this dissertation is the influence of Chicago School theory on EU competition policy, these theoretical approaches would have been better suited to the study of the influence of EU integration on EU competition policy or vice versa and understanding the broader context within which EU competition policy operates.¹³ It is therefore pertinent to turn to a more specialist literature on the role and influence of ideas on policy.

Contemporary literature on the study of the influence of ideas on policy is located predominantly in the institutionalist tradition. The institutionalist literature attempts to assess whether and the extent to which ideas influence policy and the ways in which ideas can explain policy.¹⁴ Institutionalism emerged as a result of attempts to search for a theoretical and conceptual base to supplement or displace rational choice theory.

Rational choice theory is predicated on the assumption that, among other comparable options, individuals rationally choose the option that yields them the greatest utility. Rational choice theory limits the explanation of policy as a direct effect of individual or collective actors promoting their individual preferences and optimizing their own situation under a given set of constraints. This theory displaced the relationship of ideas with policy. Institutionalists criticized the theory for neglecting the ideational side, for being unable to treat ideas as capable of significantly impacting actual policy aside from other factors and conditions that influence it (C. Parsons, 2016, p. 449), and, in general, for treating ideas as unexplained phenomena, 'noise', or residuals in explaining policy (Goldstein & Keohane, 1993; Jacobsen, 1995, p. 289). Another important, widely acknowledged limitation of the theory is that it oversimplifies the complex nature of human behavior (Tversky & Kahneman, 1973, 1985, 1992): Individual preferences are assumed to contain self-interest, on the one hand, and causal relationships, on the other, which means that self-interested actors' decisions reduce to those that maximize their utility by means of developing and following a complex causal pathway, a decision tree that leads them to specific, predictable outcomes.

In the critical appraisal of the rational choice theory, institutionalists have argued that ideas exert independent influence over policy (Adler & Haas, 1992; Goldstein & Keohane, 1993; Hall, 1989, 1993, 1997; McNamara, 1998; Sikkink, 1991; Wendt, 1999). Altogether, there are four core theoretical approaches to the study of ideas and their influence on policy that are important to outline: historical institutionalism, rationalist

¹² However, the conceptual and analytical framework advanced by these theoretical approaches is sometimes criticized for being outdated for the purpose of explaining contemporary EU integration processes (see Kjaer, 2010, pp. 3-7).

¹³ The influence of the Single Market integration rationale on EU merger control is briefly examined in the dissertation.

¹⁴ There are similar theoretical traditions that attempt to include ideas in the study of policy. For example, historical materialists argue that ideas are powerful yet not tractable (Cox, 1981, 1983; Gill, 1993, 1998). Together with Bourdieusan theorists, historical materialists refuse to methodologically distinguish ideas from other conditions that relate to actual policy (C. Parsons, 2016, p. 451).

institutionalism, new and discursive institutionalism, and the epistemic communities approach. These approaches are located in the institutionalist tradition.¹⁵ It is important to map these predominant and most influential theoretical approaches to the study of ideas to understand their premises, their research objects, and, desirably, their research design and methodology, to determine whether and the extent to which institutionalism is relevant for implementing the research objective of this dissertation.

Historical institutionalism has sought to highlight the important role of ideas in policy (Hall, 1989, 1993, 1997; McNamara, 1998; Sikkink, 1991) and rapidly gained attention in the public policy domain. In terms of the philosophy of social science tradition, it is located in constructivism. Hall (1989, 1993, 1997) focuses on economic ideas as deliberate schemes initiated by the main actors – elites – that attempt to attract supporters with shared beliefs, values, and interests. Ideas are viewed as tangible and concrete entities that can become easily understood by those actors that share the same beliefs, values, and interests. According to the theory, as elites start to agree on a particular set of ideas, beliefs, values, and interests gradually start to become locked in and institutionalized into policy paradigms.¹⁶

The rationalist institutionalist tradition is positioned in the international relations and public policy domains and grounded in the constructivist tradition. Rationalist institutionalism, pioneered by Goldstein and Keohane (1993), seeks to find a middle ground between rational choice theory and historical institutionalism in explaining the influence of ideas on policy. The foundation of the theory is that ideas, which are never neutral or objective projects, become transposed into a political or economic domain as models that serve the purpose of making policymakers' choices easier and more consistent. According to the theory, as in historical institutionalism, elites are the main actors and serve their own needs through ideas. Rationalist institutionalism claims that ideas start to exert influence over policy when causal beliefs derived from the authority of elites start to provide causal roadmaps for other policy actors, when they become the means for cooperation and consensus, and when they become embedded in administrative institutions. It is important to highlight that the influence of ideas on policy is not the main object of study; rather, the main concern and object of study is the influence of ideas on institutional stability.

New and discursive institutionalism (Blyth, 2002a, 2002b; Hay, 2004b; Mahoney & Thelen, 2009; March & Olsen, 1983; Schmidt, 2002a) is located mainly in the domain of international political economy and international relations and is strongly rooted in the constructivist and interpretivist traditions.¹⁷ The new and discursive institutionalist tradition emerged as an attempt to reintroduce the ideational argument to debates on importance of ideas in policy yet departed significantly from the traditions of historical and rationalist institutionalism in that institutionalists relied on vast arguments from the philosophy of social science (Béland & Cox, 2010; C. Parsons, 2016, p. 450): For example, Blyth focuses on philosophical arguments over what should come first – ideas or actors' interests (Blyth, 1997, 2001, 2002a, 2002b, 2003);¹⁸ Hay argues for the relevance of

¹⁵ The summary of these approaches is presented in Table 1 in the Appendix.

¹⁶ Policy paradigms are based on the original idea of scientific paradigms introduced by Kuhn (Kuhn, 1970; Kuhn & Hawkins, 1963). In the institutionalist literature, policy paradigms are generally defined as sets of structured beliefs and assumptions about policy problems and instruments that are able to address them. Once an idea is locked in a paradigm, it is unlikely to change due to institutional inertia. The replacement of one cluster of ideas by another is only possible when one policy paradigm is replaced by another – the policy paradigm shift. The paradigms become gradually locked into policy where more actors share the common understanding of the paradigms and the context and situations in which they are best applicable. It is not sufficient for actors to share common beliefs, values, and interests that underpin the economic ideas that these represent, for ideas to become adopted, locked in a paradigm, and subsequently gain force; it is also necessary that the economic ideas are in agreement with the existing administrative institutions and institutional arrangements. The theory stresses the necessity of agreement between ideas and the needs of elites and treats socio-political forces and processes as the most significant determinants of the selection of particular ideas in favor of other ideas. It is thus not the ideas' intrinsic force, logic, and viability that are important for the survival of the idea but rather the issue of whether it serves to reconcile the interests of elites active in the institutions such that they may form a coalition capable of enacting it (Jacobsen, 1995, p. 294).

¹⁷ In some instances, rhetorical analysis of ideational influence is included in this approach (Billig, 1991, 1993, 2003).

¹⁸ Blyth attempts to conceptualize the relationship among ideas, actors' interests', and institutions, where ideas are the basic building blocks that shape actors' interests and preferences and institutions. In his critique of rational choice theory, as well as rationalist and historical institutionalism, he bemoans the failure of these approaches to address the relationship between ideas and institutional stability. Blyth concludes that the correct premise should be that ideas come first, and that ideas are the main determinants of institutional stability, whereas actors' interests are unimportant or marginally important when they are treated in conjunction with ideas.

philosophy of social science issues for researching ideas and the power they exert (Hay, 1999, 2004a, 2004b, 2004c, 2006, 2011; Hay & Wincott, 1998);¹⁹ and Schmidt examines the substantive content of ideas and the interactive processes of discourse (Schmidt, 2002a, 2002b, 2008, 2010; Schmidt & Radaelli, 2004).²⁰

Finally, the ‘epistemic communities’ approach to the study of the influence of ideas on policy, which is grounded in the international relations tradition and is positioned in the constructivist tradition, was pioneered by Haas and Adler (Adler, 1992, 2013; Adler & Haas, 1992; P. M. Haas, 1989, 2001). The approach underlines the importance of the political and cultural structures that are at the core of the institutional framework in which actors can contextualize and interpret their self-interests and implement their ideas.²¹ The institutional framework thus provides the actors with self-awareness of their interests and helps actors to define, interpret, and structure them and through them shape policy. The approach focuses more on experts than on ideas. It is normative in favor of epistemic communities and is suggestive of the neutrality and objectivity of ideas, provided that they are carefully crafted by the epistemic communities.

To summarize, the institutionalist literature shares three important characteristics. First, the core theoretical premise is that ideas exert independent influence on policy. Second, the approaches focus on the study (and critique) of elites and interactions of ideas with elites and power, where elites are assumed to have their self-interests materialized and structured as ideas to trigger the influence of ideas on policy.²² Third, the study of the influence of ideas on policy is frequently, and surprisingly, displaced in favor of a focus on the study of institutional and policy change and institutional stability.

On the basis of this review, one may conclude that the institutionalist literature can offer some useful insights into the study of the influence of ideas, namely, the premise that ideas influence policy, which is adopted in this dissertation. However, because this dissertation focuses on the influence of economic theories (and ideas embedded within them) as manifested in competition provisions (rules) and merger cases – instead of the institutionalist tradition’s focus on the study of elites, power, institutional and policy change, and institutional stability – the framework, research design, and methods of institutionalism for the execution of analysis are unlikely to be sufficient for addressing the research objective and thus cannot be directly adopted from institutionalism. Moreover, institutionalist literature does not provide elaborate suggestions of methodological tools for empirical data analysis that need to be employed in studying the influence of ideas (rather, it provides abundant theoretical and conceptual suggestions), whereas empirical data analysis is critical for addressing the

¹⁹ The discussion is strongly positioned in the analyses of the suitability of various ontological and epistemological issues as analytical perspectives. Hay’s philosophical discussions of ideas are parsed with analyses of the strengths and weaknesses of constructivism, historical institutionalism, and critical realism in the philosophy of social science, with a particular focus on the discussion of the material and the ideational.

²⁰ Schmidt maintains that discourse has the power to overcome institutional obstacles to policy change. Institutional and policy change are the main concerns of analyses in which ideas are the main object of explanation of the changes. (By institutions, Schmidt means structures and constructs, not organizations.) The approach to studying change through ideas and discursive interaction should be dynamic. Change is brought about by ideas as opposed to, for example, the historical institutionalist position that paradigm shift should be triggered by external shocks.

²¹ Epistemic communities are networks of knowledge-based experts who share common beliefs, values, and interests and are thereby able to construct a common reality (Ruggie, 1975).

²² The actors’ – in other words, elites’ – self-interests and ideas as treated as inseparable entities. Institutionalists fuse ideas and interests in that ideas are always interconnected with actors’ interests that are not necessarily motivated by ideas, yet ideas and self-interests are always tied together. Institutional theorists have argued that actors rarely read clear interests directly from their objective environment but rather interpret their interests through subjective prisms. This premise gives rise to questions of whether ideas are embedded in institutions. Because ideational theorists overwhelmingly argue that actors’ interests need to be fused with ideas for the ideas to have power, the approach that some of them take is to isolate the actors’ interests from the actual actions that actors perform as a result of pressures from the structural and institutional context. That is, they isolate actors from the context and attempt to focus on the actors per se. A related point regards debates about what comes first – ideas or actors’ interests – and whether ideas determine interests from a pool of ideas through some selection mechanisms or whether ideas come after the range of acceptable alternatives determined by the context has been given to the actors and adopted by them through selection mechanisms. Ideas in the debates have not gone far beyond actors’ interests.

research objective of this dissertation.²³ In sum, institutionalism can serve as an overall starting point and frame, but it needs to be complemented with more suitable methodological tools. Therefore, to be able to execute an analysis that pursues the research objective, it appears to be necessary to develop a suitable research design. Section 4.2 provides a more comprehensive account of the research design and methods employed in this dissertation.

3. Case overview

3.1 EU competition policy

This section provides a concise overview of EU competition policy, including a brief review of the important milestones in the history of EU competition policy, the structure of EU competition policy institutions, and the structure of core EU competition provisions (rules).

In 1957, in the Treaty of Rome, the Commission established the legal provisions for competition policy in the European Communities (EU competition policy).²⁴ The competition provisions of the 1951 Treaty of Paris founding the European Coal and Steel Community (ECSC) served as a point of reference in drafting the competition provisions in the Treaty of Rome. While competition was one of the indirect objectives of the Treaty, it was an important and necessary instrument. The competition provisions in the Treaty of Rome concerned anticompetitive practices (Article 85), dominance (Article 86), and state aid. Previously, some countries in Europe had in place different and established antitrust traditions and objectives, such as the UK, while some countries lacked competition policies. In contrast to the European Communities, the United States had already established an antitrust regime in 1890 with the Sherman Act.

EU competition law was introduced to achieve one of the most important aims of the European Community – the establishment of the Single Market. EU competition policy has become a model competition regime for the Member States. Further, it has been established to perform a dual and sometimes conflicting function of protection against anticompetitive restraints and enhancing efficiency, on the one hand, and achieving the objective of creating and unifying the common European market (referred to as ‘the Common Market’ and in the contemporary setting ‘the Single Market’), on the other. Competition provisions were adopted following negotiations between the German team, which was heavily influenced by ordoliberalism, and the French team, which adopted a purely administrative approach to competition policy, with other countries choosing either of the two positions (Gerber, 2003). The indecision among the founding Member States (with the exception of Germany and France) in taking their own positions in the negotiations is explained by their lack of experience in antitrust and their treatment of competition policy as something marginal and unimportant.

In the sixty years after the Treaty of Rome, EU competition policy has undergone significant changes. In 1962, the Council of the European Union (the Council) adopted Council Regulation 17/1962 – the first regulation that governed the application and enforcement of EU competition law, which conferred power on the Commission to apply and enforce EU competition rules (Council, 1962). The institutional framework for implementing Articles 85 and 86 of the Treaty of Rome was designed such that it heavily relied on the initiatives and decisions

²³ A notable exception is Hay, who offered some generic suggestions for ontological, epistemological, and methodological tools for doing empirical work (Hay, 2011). On a related matter, it is possible to identify that the institutionalist literature tends to widely employ (overtly or covertly) various techniques from qualitative content analysis, including rhetorical analysis, narrative analysis, discourse analysis, interpretative analysis, and normative analysis (Krippendorff, 2012, pp. 22-23; Neuendorf, 2002, pp. 2-9). Rhetorical analysis is suitable for reconstructing manifest characteristics of text, including the messages’ form, metaphors, argumentation structure, and choices, with the emphasis on how the message is presented, not on what is presented in the message (Krippendorff, 2012, p. 22; Neuendorf, 2002, p. 5). Narrative analysis is primarily suited for reconstructing the composition of the narrative, where the object of interest is not text and the message as such but rather actors as carriers of the message. Discourse analysis is used for analyzing manifest language and word usage to establish topics and central themes in texts, where significant flexibility in interpretation of language and word usage is allowed (Krippendorff, 2012, p. 22; Neuendorf, 2002, pp. 5-6). Interpretive analysis is suitable for the observation of messages in texts and applying analytical categories to them; interpretive content analysis is generally more methodologically challenging and more empirical than other content analysis tools. Normative analysis is suitable for proscriptive purposes (Neuendorf, 2002, pp. 6-8).

²⁴ For convenience, this article refers to ‘European (Economic) Community competition policy’ as ‘EU competition policy’.

of the Commission. The Commission has become the central actor in the application and enforcement of competition provisions in Articles 85 and 86 and all related investigatory activities: Once the Commission commenced investigations under the Articles, the competition authorities of the Member States had to cease their activities. Council Regulation 17/1962 secured a high degree of autonomy for the Commission's administrative unit responsible for competition – Directorate General IV (DG IV). The notification procedure was introduced to assure that undertakings notify the Commission of agreements that may violate Article 85(1). Most important, in 1965, the Commission was granted even broader powers by the Council to pass block exemption legislation (Article 85(3)) without the approval of the Council.

In the mid-1960s, the authority over judicial review in competition-related matters by the European Court of Justice was firmly established. Because of the presence of competition-related activities in Article 3 of the Treaty of Rome, the European Court of Justice was induced to begin to view competition as essential for the functioning of the Common Market. The European Court of Justice defined its role in the competition policy system in context of the broader process of defining its role within the EU as a major vehicle of integration. However, it focused more on broad principles and values rather than limiting itself to ruling on the facts of individual cases (Gerber, 2003, p. 352). The integration imperative through competition created a cooperative relationship between the European Court of Justice and the Commission, at least until the mid-1970s when the European Court of Justice started to regularly annul Commission actions on grounds of the Commission's insufficient evidence on the economic impact of alleged violation by undertakings of Articles 85 and 86.

The competition law system began to change drastically in the mid-1980s. The Commission established competition principles, primarily through the process of adjudication, where the European Court of Justice used formal criteria for evaluation conduct. As cases became more complex and started to require more sophisticated economic analysis, the Commission could not rely on the interpretations by the European Court of Justice as much as it had previously. Therefore, the Commission turned to legislation to directly establish competition principles rather than establishing them through adjudication, thereby significantly changing the operation of the system.

In 1989, Council Regulation 4064/89 – the European Community Merger Regulation (ECMR) – introduced merger control into EU competition policy (Council, 1989). ECMR represents the single most important addition to EU competition policy since the Treaty of Rome. The authority of the Commission was enhanced: It became the central authority responsible for clearing and prohibiting mergers with an EU dimension that affected vast product and geographic markets both within and outside the EU. In the same year, the Court of the First Instance – now the General Court – was founded to ease the burden of cases imposed upon the European Court of Justice and to review some of the latter's decisions. These two Courts began to be collectively referred to as 'the Courts'. The task of the Courts was to ensure that the Commission observed the law and remained within the bounds of its competencies.

Other significant changes occurred in the 1990s and the 2000s. In the 1990s, the Commission enacted a rigorous cartel-busting regime influenced by the US antitrust regime. Further, in the late 1990s, the Courts signaled to the Commission through several landmark (merger) cases (*Airtours*, *Schneider Electric*, *Impala*, and *Tetra Laval*) that the Commission should provide more accurate evidence to support its decisions. The application and enforcement of EU competition law functioned well until the 1990s, when it became certain that the EU economy had grown significantly, firm behavior became more complex, and the backlog of notifications increased.

In the 2000s and early 2010s, the Commission introduced reforms as part of the modernization package with the objective of introducing changes to the interpretation and enforcement of competition provisions. In terms of the interpretation of competition provisions, the Commission introduced efficiency considerations and 'a more economic approach' (effects-based approach) to the analysis of anticompetitive behavior to make EU competition law more compatible with contemporary economic thinking (Röller & Stehmann, 2006). The Commission introduced a more economic approach into provisions falling under Articles 101 and Article 102 of the Treaty on the Functioning of the European Union (including Guidelines on Horizontal Cooperation Agreements (Commission, 2011), Guidelines on Vertical Restraints (Commission, 2010), and Guidance on the Commission's Enforcement Priorities in Applying Article 102 (Commission, 2009)), and merger control (Horizontal (Commission, 2004b) and Non-Horizontal (Commission, 2008b) Merger Guidelines). Further, the

Commission started to shift from an emphasis on the objective of Single Market integration to the active promotion of efficiency (Buch-Hansen & Wigger, 2010; Vives, 2009, p. 1) and consumer welfare (Jones & Sufrin, 2014, pp. 41-46). In terms of the enforcement of competition provisions, the Commission actively started to encourage private antitrust enforcement. Further, in 2003, Council Regulation 1/2003 replaced Council Regulation 17/1962, which represented a fundamental change in how EU competition law is applied and enforced (Council, 2003). Among the most important changes were the establishment of the European Competition Network (ECN), a network composed of the Commission and the national competition authorities (NCAs) with the purpose of decentralizing the implementation and enforcement of competition rules. NCAs and national courts in the Member States became responsible for the enforcement of Articles 101 and 102 of the Treaty on the Functioning of the European Union.²⁵

In sum, since its inception in 1957, EU competition policy has matured to keep pace with the changes in political, societal, and economic processes. Businesses have become highly internationalized, thus creating a huge impetus for the competition authorities to redesign the system and add or change competition rules.

Having provided a brief glimpse into the history of EU competition policy, it is important at this stage to describe the current institutions relevant to EU competition policy. The next paragraphs present the contemporary EU institutions: the Commission, the Courts, and the Council.

The Commission is the body responsible for the enforcement of the rules in the Treaties of the EU. The Treaty on European Union (TEU) and the Treaty on the Functioning of the European Union (TFEU) are the primary Treaties of the EU.²⁶ (The discussion of the Articles in the TFEU relevant for competition policy will follow below.) The Commission is composed of the Commissioners, who are responsible for various sectors and policy areas in the EU, including EU competition policy. As mentioned previously, the Commission plays the central role in enforcing the competition rules. The Commission is divided into Directorates General – smaller administrative units within the Commission. The Directorate General for Competition (DG Comp) is the Directorate currently responsible for EU competition policy.

The Court of Justice of the European Union, which is composed of the European Court of Justice and the General Court – together referred to as ‘the Courts’, is the body responsible for interpreting the law established in the Treaties of the EU and in secondary legislation and ensuring that the law is observed. The Courts may also review the acts and decisions adopted by the EU institutions, including the Commission’s competition decisions.

The Council, which is composed of representatives of the Member States, although being the most powerful of the EU political institutions, does not play a significant role in EU competition policy on a day-to-day basis: In 1962, the Council conferred power on the Commission to apply and enforce EU competition rules, to adopt BERs, and to enforce Council Regulation 139/2004 – the EUMR (Jones & Sufrin, 2014, p. 101).

Having described the EU institutions relevant to the context of EU competition policy, this section unfolds the structure of EU competition policy in terms of the core EU competition rules. According to Article 3(1)(b) TFEU, ‘the establishing of the competition rules necessary for the functioning of the internal market’ is an area of exclusive competence of the EU (Commission, 2008a). Articles 101–106 TFEU outline the competition rules that are applicable to undertakings (firms). Articles 107–109 TFEU describe state aid rules. Merger control is not covered by the TFEU; instead, it is provided for by the EUMR. The core areas of EU competition law are EU antitrust, provided for by Articles 101 and 102 TFEU, and EU merger control, provided for by the EUMR.²⁷ In addition to the Articles and the EUMR, an important source of competition rules are the Commission Notices, Guidelines, and BERs, where the Commission provides explanations of how it addresses certain practices and instructs the undertakings on how the competition rules are applied in practice (Jones & Sufrin, 2014, pp. 115-116, 118-119).

²⁵ For convenience, this article uses the current version of the Treaty and numbering of its Articles.

²⁶ The TEU establishes the EU, establishes its objectives, presents the competencies of the EU and the Member States, and provides for the EU institutions and for the Common Defense and Security Policy. The TFEU contains more detailed provisions and the rules of substantive law.

²⁷ State aid is excluded from the analysis in this dissertation (see Bartalevich, 2016).

The following paragraphs will present the details of the core EU competition policy rules: antitrust rules, which encapsulate practices within the meaning of Article 101 TFEU (various anticompetitive practices, horizontal cooperation agreements, and vertical restraints) and Article 102 TFEU (dominance), and merger control.

The objective of Article 101 TFEU is to prohibit certain anticompetitive practices and to protect competition in the market as a means of enhancing consumer welfare and ensuring an efficient allocation of resources throughout the EU (Commission, 2004a, para 13). Article 101(1) TFEU prohibits agreements, decisions, or concerted practices that restrict competition. Article 101(3) TFEU becomes relevant when an agreement is deemed to be anticompetitive within the meaning of Article 101(1) TFEU. There are two broad categories of restraints that Article 101 TFEU is applicable to: horizontal cooperation agreements and vertical restraints.

Horizontal cooperation agreements are agreements entered into between independent undertakings that are actual or potential competitors in the same relevant product and geographic market. Horizontal cooperation agreements may bring about both pro- and anticompetitive effects, and therefore, the Commission strives to develop a balanced assessment of this type of agreement with a view to ensuring that effective competition is maintained. Horizontal cooperation agreements can lead to substantial economic benefits, particularly when the agreements combine complementary activities, skills, or assets, and can save costs, share risks, increase investments, increase innovation, pool know-how, and enhance product quality and variety (Commission, 2011, para 2). However, horizontal cooperation agreements may lead to competition problems such as when the parties to the agreement agree to fix prices or output, or share markets or when the agreement enables the parties to maintain, achieve, or increase market power, thereby increasing prices, reducing output, or otherwise negatively affecting product quality or variety or innovation (Commission, 2011, para 3, 34).

Vertical restraints are restrictions in agreements between undertakings or individuals at different levels of the production and distribution chain. Vertical restraints might have positive or negative effects. Vertical restraints are generally less harmful than horizontal restraints and may provide substantial scope for efficiencies, especially in the absence of market power (Commission, 2010, para 6, 99). There is a significant difference between these two types of restraints in that exclusionary conduct costs more to vertical restraints. The exercise of market power by an undertaking in a horizontal relationship between competitors that produce substitutable goods or services may be beneficial to the combination's competitors, which may provide an incentive for competitors to induce one another to behave anticompetitively. In the case of vertical restraints, an undertaking has to compensate for the costs it imposes on its dealers and other customers; hence, the undertaking cannot generate a net benefit through such an arrangement. For most vertical restraints, negative effects can arise if there is insufficient competition at one or more levels of trade, that is, if there is some degree of market power at the level of the supplier or the buyer or both.

Restrictions within the meaning of Article 101(1) TFEU may be assessed on the basis of positive economic effects under Article 101(3) TFEU if the undertakings concerned in such a case decide to invoke the benefit of the exception rule under Article 101(3) TFEU by providing proof of positive economic effects. The prohibition of agreements falling under Article 101(1) TFEU may be declared inapplicable when the agreements contribute 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, provided that such agreements do not impose restrictions on and do not afford the undertakings the possibility of eliminating competition on a substantial part of the product in question (Commission, 2012). The requirement for an exemption from prohibition under Article 101(3) TFEU is that horizontal cooperation agreements or vertical restraints that are restrictive within the meaning of Article 101(1) TFEU should fulfill four cumulative efficiency conditions (Commission, 2011, para 49). When the procompetitive effects of the agreements outweigh their anticompetitive effects, the agreements are considered on balance procompetitive, i.e., procompetitive in terms of their net effect (Commission, 2004a, para 33).

Article 102 TFEU prohibits the abuse of a dominant position within the internal market or in a substantial part of it by one or more undertakings (Commission, 2012). The purpose of Article 102 TFEU is to ensure that markets function properly, consumers are able to benefit from effective competition through lower prices, better quality and a wider choice of new and improved goods and services, and an effective competitive process is

protected (Commission, 2009, para 5-6). It is not illegal for an undertaking to be in a dominant position, but Article 102 TFEU means that undertakings have a special responsibility not to allow their conduct to impair competition in the market (Commission, 2009, para 1).

Finally, this section turns to merger control. Mergers are business transactions that may increase the competitiveness of industry, improve the conditions for growth, and raise the standards of living in the EU (Commission, 2004b, para 76). The Commission assesses, pursuant to Article 2(2) and (3) of the EUMR whether a concentration would significantly impede effective competition. The Commission prevents mergers that would be likely to deprive consumers of certain benefits such as low prices, high-quality products, a wide selection of goods, and innovation. The ability of parties to a merger to profitably increase prices, reduce output, the choice or quality of goods and services, diminish innovation, or otherwise negatively influence the parameters of competition is considered to constitute an increase in market power (Commission, 2004b, para 8; 2008b, para 10). The creation or strengthening of a dominant position held by a single company as a result of a merger is the most common basis for finding that a concentration would result in a significant impediment to effective competition (Commission, 2004b, para 4).

Mergers may be horizontal or non-horizontal, which means that the parties to a merger may be actual and potential competitors in the same relevant market or in different relevant markets. Horizontal mergers are mergers in which the undertakings concerned are actual or potential competitors in the same relevant market. Non-horizontal mergers are mergers that occur between two or more undertakings that are active in different relevant markets. These are, in practice, mergers between companies that operate in closely related markets. A characteristic of most non-horizontal mergers is that the activities of the companies involved are complementary, which may generally produce significant efficiencies. There are two types of non-horizontal mergers: vertical mergers and conglomerate mergers. Vertical mergers are mergers between companies that operate at different levels of the supply chain, for example, where the manufacturer (the ‘upstream firm’) merges with one of its distributors (the ‘downstream firm’). Conglomerate mergers are mergers between companies that are in a relationship that is neither horizontal (i.e., competitors in the same relevant market) nor vertical.

Unlike horizontal mergers, non-horizontal mergers do not entail the loss of direct competition between the merging companies in the same relevant market, and in the majority of circumstances, such mergers will not lead to any competition problems (Commission, 2008b, para 12). However, there are circumstances in which non-horizontal mergers may significantly impede effective competition, in particular as a result of the creation or strengthening of a dominant position that is achieved through the ability and incentive to compete on the part of the merging companies and their competitors in ways that cause harm to consumers (Commission, 2008b, para 15).

Table 1 provides a summary of the structure of core EU competition policy rules.

Table 1. The structure of core EU competition policy rules (Excluding state aid).

Area	Main core sources of rules	Application
Antitrust	Article 101 TFEU, Commission Guidelines, Notices, and Block Exemption Regulations	Anticompetitive practices, horizontal cooperation agreements, vertical restraints
	Article 102 TFEU, Commission Guidelines and Notices	Dominance
Merger control	EUMR, Commission Guidelines and Notices	Horizontal mergers, non-horizontal (vertical and conglomerate) mergers

3.2 *The Chicago School*

This section presents the Chicago School and its approach to antitrust.²⁸ It briefly outlines the historical context of the emergence and development of the Chicago School and introduces the core elements of Chicago School theory, including the neoclassical market efficiency model, productive and allocative efficiency, and market concentration. This section further presents other relevant elements of Chicago School theory, though not strictly in the antitrust domain, such as government intervention, income distribution, and negative externalities, to present a broader picture of the Chicago School.

The Chicago School is one of the most influential schools of antitrust analysis and economic theories. Of all policy areas, the Chicago School has exerted its strongest impact on competition and antitrust (Pitofsky, 2008). Aaron Director, George Stigler, and Ronald Coase were the founders of research program of Chicago School law and economics. Richard Posner, Robert Bork, and Frank Easterbrook were the major and most influential contributors to Chicago School law and economics. Other scholars of Chicago School law and economics included Walter Blum, Edmund Kitch, William Landes, Dennis Carlton, Richard Epstein, Daniel Fischel, Douglas Baird, and Alan Sykes (Van Overtveldt, 2007).

The purpose of the earlier work of Chicago School scholars such as Aaron Director, George Stigler, and Ronald Coase was to promote the idea that the market is superior to the political allocation of resources and any form of governmental intervention. The work had a distinct flavor of pro-market political philosophy and critique of government interventions. The later works, however, combined theory with empirics and political economy with scientific application of economic analysis.

The antitrust policy of the United States in the 1950s and the 1960s addressed a number of very diverse goals, from the defense of small businesses and wealth redistribution, to ensuring public accountability for monopolies and cartels. The antitrust regime at that time employed aggressive enforcement policies to outlaw vertical and horizontal mergers, bust cartels, eliminate price-fixing, break up excessively concentrated industries and monopolies, outlaw tying arrangements and bundling, and protect small businesses from exclusionary practices and other types of anticompetitive behavior. The Supreme Court at the time – the Warren Court – was characterized by decisions that are difficult to defend today in terms of logic, rationale, and methodology of assessment. The enforcement program nearly completely disregarded business' claims of efficiency. *Per se* rules were introduced to outlaw behavior that rarely harmed consumers or produced anticompetitive effects. Litigators correctly believed that they could persuade judges to penalize firms by citing firms' size and profitability, regardless of efficiency criteria.

Examining the law through the prism of neoclassical price theory became the next milestone of the research program of Chicago School law and economics as a result of skepticism and dissatisfaction about the Warren Court rulings and the antitrust regime in general. The purpose was to demonstrate the absence of a coherent economic basis behind the decisions and to ridicule and delegitimize judicial and governmental interference in the functioning of the market (Priest, 2010). The later works of the Chicago School were at the forefront of a campaign to significantly reduce the remit of antitrust authorities and eliminate political dimensions of antitrust. They were dismissive of the Supreme Court's analysis.

Although skeptical of government intervention, the Chicago School affiliates never advocated abandoning antitrust law. By the early 1980s, they had managed to convince judges, lawyers, and other economists that the concern of competition policy and its coherent objective should be maximizing economic efficiency. The burden of proof was shifted to the state, meaning that the latter should demonstrate inefficiencies instead of pressuring firms to demonstrate efficiencies. The structure–conduct–performance paradigm was dropped in favor of Richard

²⁸ The purpose of the section is to provide a solid (and comprehensive) overview rather than exhaustive coverage of the Chicago School's history and ideas. Operationalization of Chicago School theory is to be found further below in the dissertation.

Posner and Robert Bork's approaches, owing to the theory's many extra-economic criteria, to be accounted for and hold up in courts.

Chicago School antitrust policy is frequently criticized for benefitting large industries, vertically integrated firms, and certain consumers as opposed to small businesses, less-efficient firms, and other consumers (Hovenkamp, 1985). It is argued that the Chicago School's contention is to secure private freedom of action for firms and to delimit the scope and content of antitrust laws and the power of government to intervene, whereas the maximization of efficiency and welfare is second to that contention (Fox, 1986, pp. 1715-1719). Some of the criticisms have been rebuffed. For example, Richard Posner finds these arguments unfounded and contends instead that Chicago School antitrust analysis does not favor small business over large businesses but, at the same time, does not restrict the freedom of action of large businesses (Posner, 2001, pp. 23-28).

3.2.1 The neoclassical market efficiency model

Chicago School scholars advocate an economic, pro-market, and anti-interventionist approach to antitrust based on neoclassical price theory and the neoclassical market efficiency model.

The neoclassical market efficiency model utilized by the Chicago School offered a greater ability to differentiate between efficient and inefficient policies than did earlier economic models.

The purpose of the model is to enable policymakers to calculate the costs or effectiveness of a particular policy and, in general, to facilitate policy choices based on efficiency considerations. The reality to which a firm should adapt is determined by demand and the costs of meeting that demand, provided that such demand is lawful. The firms that better adapt to demand than rival firms tend to expand, whereas the failed competitors exit the market. There is no ultimate level of efficiency; rather, there is an aggregate of ultimate efficiency that some firms achieve, which can be assessed by comparing it to the results of their rivals. Further, the model assumes that that policy-makers, courts, and enforcement agencies place high weight on efficiency concerns if the relevant economic model is able to identify efficient policies in the real world and if the distinction between the efficient solution to a policy problem and the alternative solutions is clear. Ultimately, because market players and other relevant actors directly influence economic activity, they should be able to understand the economic consequences of their actions and take them into account when making their decisions (Coase, 1960). The reverse applies where the relevant economic model does not offer an unambiguous explanation of efficiency. In that case, distributive and political concerns are likely to be weighted more heavily (Bork, 1993, pp. 112, 118), and the state can selectively aid or damage a vast number of industries (Stigler, 1988). In sum, the neoclassical market efficiency model is designed to facilitate proper policy-making and decision-making processes by antitrust authorities such that market forces are able to operate freely and the available resources in a society are utilized as efficiently as possible for the sake of increasing total welfare.

The Chicago market efficiency model is predicated on the assumption that, among other comparable options, firms rationally choose the option that yields them the greatest utility and maximizes their profit, the most efficient option available (Becker, 2007, pp. 25-26; Easterbrook, 1986, p. 1709). The presumption of efficiency no longer holds where individuals have plans with wide-ranging consequences. Neither does it hold where policy-makers pursue intervention to maximize their own utility that that of those who grant them power and resources. It is assumed that if individuals choose to act in a certain way, this should be the rational utility-maximizing choice. Thus, the exercise of wide-ranging powers by another party to transform the utility-maximization process hinders efficiency and impedes the consequences of a rational choice. Unconscious intentions and strategies and a lack of intervention by those who presume to be able to improve on efficiency are the most crucial prerequisites of efficiency. The same pertains to business enterprises. If a firm selects a certain course of action, this course of action should most likely be efficient and should not be interfered with by the state, unless the firm is involved in activities that prevent or restrict other market players' ability to autonomously determine their course of action (Davies, 2010).

Starting from that premise, price theory can be used to predict the competitive effects of a business transaction (Posner, 2005, p. 231). Consumer choice will be the most efficient in all instances in which there is no impediment to the utility-maximization process. In general, the exercise of wide-ranging powers by another party

to transform the utility-maximization process is considered to hinder efficiency and impede the consequences of rational choice.

There are three significant shortcomings of the model. The first purported weakness of the model is that it is based on the static neoclassical price theory, which may be incapable of addressing the various problems of industrial organization: for example, to predict business firm behavior in the real world or to identify some forms of strategic behavior (Hovenkamp, 1985). It places excessive emphasis on long-term effects, whereas short-term considerations are also important for business planning. Arguably, however, an economic model that includes the above considerations should be far more complex than the model inspired by neoclassical price theory and, thus, more ambiguous, more difficult to interpret, and more likely to include non-economic content. The Chicago School successfully utilized the model to be able to offer unambiguous solutions to such problems as product differentiation and economies of scale, whereas earlier models offered complicated and even controversial solutions. Thus, simplicity is arguably the greatest virtue of the neoclassical model despite the criticism that it attracts. Moreover, the simplicity of the models is not to be confused with simple models of competition that the Chicago School denounces. Antitrust needs workable models and tests that properly handle small- and large-scale changes to generate good predictions, which the neoclassical market efficiency model offers. Furthermore, despite the static nature of the model, the Chicago School is committed to both static and dynamic models depending on the economic phenomena in question (Easterbrook, 1986).

Another important weakness of the model is its inapplicability to the 'new economy'. The movement from the physical goods market to the information technologies market alters antitrust, whereas the Chicago School has been reluctant to alter the model to adjust it to the new reality. The Chicago School only maintains that the same per se rule based on ordinary effects should be applied to information technology cartels, i.e., the same rule as applicable to cartels in physical goods markets (Easterbrook, 2000, p. 17). According to the Chicago School, the economy is responding increasingly quickly to any elevation in price, and the closer such responses become to price increases, the less important the rule of law becomes. Furthermore, when transactions are costless, the rule of law is considered not to matter (Coase, 1960). Further, because the information technology market has a global scope and because fewer governmental barriers impede entry into information markets than impede markets in physical goods, the Chicago School considers it questionable whether antitrust law can have much positive effect. Thus, any practice that survives long enough to be the subject of full-fledged litigation must be efficient; otherwise, there would have been a rapid response from the market (Easterbrook, 2000, pp. 2-3, 17).

Finally, another shortcoming of the model is that the Chicago School does not view economy and society as separable, which means that Chicago School economists may consider the market as economic as, for instance, the state, and assume that individuals make rational choices to maximize utility and efficiency and that unconscious intentions and strategies may be more rational than conscious ones (Davies, 2010).

3.2.2 Productive and allocative efficiency

From an economic perspective, legislation in a market economy should introduce rules to make efficient and welfare-enhancing activities attractive and make inefficient and welfare-reducing activities less attractive.

Chicago School antitrust policy is predicated on the assumption that net economic efficiency should be enforced and inefficiency should be penalized. The Chicago School market efficiency model is loosely based on Pareto efficiency (because Pareto optimality requires such strict requirements on efficiency-based policy-making that the conditions can be hardly ever met in reality) and, more firmly, on Kaldor-Hicks efficiency (Posner, 1998, pp. 13-15). The model also employs the concept of net allocative efficiency (total social welfare maximization), whereby the total gains from the policy experienced by the producers or consumers who gain should outweigh the total losses experienced by the producers or consumers who lose.

In general, efficiency should be conceptualized as including transaction costs, namely the costs associated with market exchanges, contracts, legal resolutions, and state interventions. Efficiency need not be achieved exclusively through competitive behavior. Certain types of anticompetitive behavior might be efficient just as certain types of competitive behavior can be inefficient; for example, antitrust should distinguish efficient exclusion, which must be acceptable, from improper exclusion by means of market exclusion (exclusionary practices, fencing out, abuse, predation, coercion, foreclosure, unfair competition, barriers to entry, etc.) (Bork,

1993, pp. 136-137). Thus, efficiency should be estimated to the largest possible extent based on careful empirical analysis rather than on normative categorization.

For that reason, the Chicago School is cautious in its approach to complex practices in that such practices may add efficiencies despite being anticompetitive. Antitrust law has the potential to injure the economy by misunderstanding and subsequently condemning complex practices. If a beneficial practice is erroneously condemned (false positive, type I judicial error), the benefits may be lost, whereas if a deleterious practice is permitted (false negative, type II judicial error), the welfare loss decreases over time because of the correcting nature of a competitive market (in the long run) and the self-destructive nature of genuinely anticompetitive conduct. Hence, the central purpose of antitrust should be to speed up the correcting process by means of the rule of reason (known as the ‘effects-based approach’ in the EU) and not to impede competition by means of a per se rule (Easterbrook, 1984a, pp. 2-3, 10, 21, 39; 2000, p. 8). Furthermore, antitrust should not intervene in doubtful cases in which the deadweight loss and efficiency gains are not equally balanced – the odds are equal that the conduct is either beneficial or detrimental – because there is no economic sense in spending resources to do as much harm as good and because restriction of output may be less harmful than antitrust rules that inhibit efficiency (Bork, 1993, p. 133).

Although efficiency cannot be considered the sole measure of total social welfare (Easterbrook, 1984b, p. 138), it is arguably the ultimate objective of antitrust, and competition is an intermediate objective that will often be close enough to the ultimate objective (Posner, 2001, pp. 19, 23). The Chicago School differentiates between two types of efficiency: productive efficiency and allocative efficiency. Productive efficiency is the ratio between the inputs and outputs of a firm. Net allocative efficiency is welfare maximization. Productive efficiency is symmetrical with allocative efficiency and is not coterminous with competitive effectiveness, profitability, or productive efficiency. The problem with efficiency is that it is a multifaceted concept that is very difficult to measure in the real world. For antitrust purposes, it is thus useless to study the efficiency of the firm by studying the efficiencies of its production and its profitability because the important denominator is overall consumer (i.e., total) welfare (Bork, 1993, pp. 105-106). Efficiency is thus a concept that enforces the efficient allocation of resources and condemns the harm of resource misallocation (allocation inefficiency or deadweight loss).

Productive efficiency and allocative efficiency compose the overall efficiency paradigm that determines total welfare. Hence, productive efficiency and allocative efficiency are the sole concern of antitrust, and their existence and respective amounts need to be properly estimated but not quantified: efficiency, deadweight loss, and restriction of output cannot, for various reasons, be passably accurately quantified by economic analysis and thus should be dropped (Bork, 1993, pp. 123, 125-129).²⁹ In sum, the Chicago School suggests that the existence of allocative inefficiency (deadweight loss) and productive efficiency and their respective amounts should be approached analytically and necessarily considered in a properly investigated antitrust case.

There is no reliable theory of the ways in which firms maximize productive efficiency; however, neoclassical price theory can identify detrimental activities that interfere with allocative efficiency – that are directed toward output restriction – leading to the inference by elimination that all other activity should either be efficiency-maximizing or neutral with respect to their impact on consumer welfare and thus should be held lawful and not be subject to regulatory intervention, as opposed to output restriction (Bork, 1993, pp. 116, 122). Hence, the Chicago School advocates a method of antitrust analysis based on the identification of practices that are directed toward output restriction and improving net allocative efficiency without impairing productive efficiency so greatly as to produce either no gain or a net loss in consumer (i.e., total) welfare (Bork, 1993, p. 91).

3.2.3 Market concentration

²⁹ According to the Chicago School, antitrust should avoid any performance tests, efficiency tests, or standards that require the measurement or quantification of efficiency, deadweight losses, or restriction of output because, among other reasons, it is not possible to know exactly where the demand curve and the marginal cost curve intersect, the demand curve is dynamic in nature, firms may have several products and operate in distinct product and geographic markets, and the most important efficiencies may be arbitrarily excluded from consideration, as there is no comprehensive way to measure and quantify efficiency (Bork, 1993, pp. 117, 123-129).

The Chicago School does not consider high market concentration to undermine competition, or at least not to the extent that was presumed by pre-1970s theoretical models.³⁰ Both monopolies and oligopolies are considered highly acceptable provided that two broad criteria are met. First, efficiency outweighs output restriction and increases total welfare (Bork, 1993, pp. 98, 178-179). Second, monopolistic or oligopolistic firms do not carry out exclusionary practices (Posner, 2001, pp. 93, 194-195).

According to the Chicago School, monopolistic practices should not be viewed as necessarily anticompetitive and inefficient. When the firm has grown to its monopoly size, its efficiency must outweigh its output restriction; otherwise, entry would erode its position, which means that such a firm achieves a monopolistic position by superior efficiency. Thus, the Chicago School maintains that monopolies as self-correcting and the judicial process should aid them in the process of self-correction. Such an efficiency-based monopoly has monopoly power only within a limited range of the superiority of its efficiency: If prices are driven higher, entry should occur. The belief in the self-correction of monopolies stems from the fact that a monopolist's high profits attract new entry into the market, with the result that the monopolist's position is gradually eroded (Hovenkamp, 1985). This belief suggests that efficiency-based monopolies should never be broken up. Another consideration against breaking up monopolies is that economic forces that had led the firm to a monopolistic position would still be operative and some of the new firms are expected to approach that size once more, and these firms would have every incentive to restrict their output to evade the penalties (Bork, 1993, p. 197).

In regard to oligopolies, the Chicago School holds that oligopolistic firms do not lead to significant output restrictions because firm sizes reflect comparative efficiencies. Firms of equal or greater efficiency are free to enter and grow anytime a restriction of output takes place (Bork, 1993, p. 196). Thus, dissolving any oligopolistic firm that grew to its present size would trigger a substantial welfare loss.

3.2.4 Government intervention, income distribution, and negative externalities

According to the Chicago School, economic freedom is an indispensable means toward the achievement of political freedom (Friedman, 2002, pp. 7-21). It follows that economic freedom is a precondition of political and total freedom. Economic freedom should thus be enforced through a detailed regulatory framework. The state possesses the exclusive right to coerce. Coercive government action should be determined by a permanent legal framework that enables individuals to plan their activity with a degree of confidence (Hayek, 1999, p. 222). The need for government to coerce arises because the government should provide a means to modify the rules where necessary and to enforce compliance with the rules. Because markets fail, the government should be equipped with certain regulatory functions. The basic requisite of an effective economic system is the maintenance and enforcement of law and order that guarantees the existence of private enterprise and voluntary transaction such that consumers and sellers are protected from any coercion, including collusive agreements that prevent voluntary exchanges (Friedman, 2002, pp. 14, 20-22). According to the Chicago School, the costs and benefits of state action should be compared to those of market solutions before the state is empowered to act where markets fail. To ensure that the probability of state failure is minimized, adequate rules need to be established.

Freedom of economic activity does not mean that there should be no government action. The notion of laissez-faire and non-intervention does not provide an adequate criterion for distinguishing what is admissible in a market economy. Rather, the freedom of economic activity means that the exercise of the coercive power of government should not be allowed in cases in which such an intervention exemplifies a means of achieving some specific purpose rather than regular enforcement of the law. As long as government intervention is compatible with the law, it should be examined in each specific instance on the grounds of expediency and compatibility with a functioning market, which means that the volume of government activity is not as relevant as the character of such activity and the particular content of the rules (Hayek, 1999, pp. 220-233). The Chicago School is cautious of the hazards coming from having an inappropriate regulatory framework in place. Regulations may be designed and operated primarily for the benefit of industry, which means that the problem of regulation is the problem of

³⁰ However, very high market concentration is not considered acceptable (Stigler, 1988, p. 221).

detecting attempts by industry to use the state for alien purposes such as direct subsidy of money, control over entry by new rivals, policies that affect substitutes and complements, and price discrimination, among other anticompetitive strategies (Stigler, 1988, pp. 209-213).

In antitrust, according to the Chicago School, government intervention should be tolerated in exceptional circumstances. Antitrust establishes a framework for the functioning of competitive markets and economy (Easterbrook, 1984a). It can either enhance or jeopardize their efficient functioning. For antitrust law to enhance the efficiency of the market and economy, the state should not actively redistribute wealth and should generally decrease government intervention in the market process. This means that the optimal antitrust policy should have as little government intervention as possible and only in cases in which market players employ practices that impede competition and foreclose more efficient firms from market entry, i.e., where there is blatant anticompetitive conduct such as collusion (e.g., naked price-fixing or market division). The burden of proof should be placed on the state, meaning that it should demonstrate inefficiencies instead of pressuring firms to demonstrate efficiencies. Any special advantages, including subsidies, which government awards to its own enterprise should be made available to competing private enterprises (Hayek, 1999, p. 224).

Regarding income distribution, the Chicago School is based on the ordinalist perspective on the measurement of utility across individuals, namely on the premise that who receives wealth should be irrelevant for policy purposes (Friedman, 2002, pp. 161-176). The ordinalist perspective holds that distributive justice is not pursued and, instead, commutative justice should be pursued. Wealth and net efficiency are thus considered distinct from welfare distribution. Income distribution effects should be excluded from the analysis of an allegedly anticompetitive activity, and it should be sufficient to note that the shift in the income distribution does not lessen total welfare (Bork, 1993, pp. 110-112). According to the Chicago School, the state should not actively redistribute wealth and should generally decrease government intervention in the market process. Efficiency goals and distributional goals should be segregated from one another such that the policy of maximizing efficiency is pursued without taking distributional concerns into account unless other policies are also based on efficiency. Although this may not be a realistic scenario: The policy of maximizing efficiency cannot be pursued without taking distributional concerns into account, unless other policies are also based on efficiency.³¹

Finally, it is important to discuss negative externalities. According to the Chicago School, there are areas that cannot be addressed through the market at all or only at so great a cost that the use of political channels may be preferable (Friedman, 2002, p. 25). Social costs in the form of negative externalities belong to one of these areas. Negative externalities can be a result of both private and governmental activity, which can equally impede the economy. Private market players may disregard certain health or safety standards and increase negative externalities in myriad ways. The government, too, may facilitate an increase in negative externalities by intervening excessively in the economic system, which may lead to the protection of those responsible for negative externalities and granting them immunity from liability for damage (Coase, 1960, p. 27).

Economic activity creates social costs in the form of negative externalities that are not taken into account in the price mechanism and hence should be reflected in a specialized legislative framework (Bork, 1993, pp. 114-115).³² The Chicago School considers that negative externalities are sufficiently important to justify government intervention but the intervention should be objectively necessary.³³ According to the Chicago School, because the

³¹ It is important to note that the perspective of the Chicago School is not similar to that of the United States with respect to the distribution of wealth. Maximizing economic efficiency is not the main objective of antitrust law in the United States, whereas preventing unfair transfers of wealth from purchasers by firms with market power – although not explicitly stated – is (Kirkwood & Lande, 2008).

³² However, negative externalities should not be taken into consideration by antitrust (Bork, 1993, pp. 114-115). In EU competition policy, the Commission recognizes that it is the task of public authorities and not the undertakings to take steps to exclude products that it regards as dangerous or inferior to its own product. For example, exclusionary conduct may be considered objectively necessary for health or safety reasons; however, proof of whether such conduct is necessary is normally the task of public authorities, which establish and enforce public health and safety standards (Commission, 2009, para 29).

³³ According to Chicago School economists, corporations should not have any other obligations besides those that serve the interest and maximize the profits of their stockholders and members as long as they engage in open and free competition. Corporate social responsibility thus should not be imposed on firms unless there is no corporate tax where some justification is indeed applicable. As long as there is corporate tax, there is no justification for permitting deductions for the sake of social responsibility; otherwise, the individualistic nature of society may be undermined and shifted toward the corporate state (Friedman, 2002, pp. 133-136, 174).

decisions to intervene will not necessarily always be those that increase efficiency, some regulations may be enforced in some cases where they are inappropriate. In various cases, governmental intervention is not able to achieve better results than leaving the problem of negative externalities to be solved by the market. Intervention may cause changes that produce more harm than the original inefficiency caused by negative externalities. According to the Chicago School, the most desirable approach is for the government to intervene in cases in which negative externalities are present on the condition that the proposed intervention costs less than non-intervention (Friedman, 2002, pp. 30-32).³⁴ In line with the general Chicago School approach to economic and non-economic activities, this approach accounts for the total effect whereby the costs of governmental regulation and the gains that would accrue from intervention should be weighed against the costs of solving the problem through inaction and the gains that would accrue from it (for example, using an opportunity cost approach to compare a given combination of factors and a total product yielded with alternative business or social arrangements) (Coase, 1960).

4. Research design, data, and methods

4.1 Research design

This section outlines the research design employed in this dissertation and provides an overview of the articles and their aims and methods. The section provides only a brief overview; Section 4.2 provides further details on and discussion of the data and methods.

The research design developed for and employed in the analysis of the influence of the Chicago School on EU competition policy comprises a combination of two overarching approaches in social science research – a qualitative and a quantitative (not to be confused with mixed methods research). In the case study literature, these two major approaches are frequently referred to as ‘small-N’ and ‘large-N’, respectively (Beach & Pedersen, 2013; George & Bennett, 2005; Gerring, 2006, 2011; Goertz & Mahoney, 2012). However, the labels ‘qualitative’ and ‘quantitative’ are conceptually more precise and therefore better suited to the case study of the influence of the Chicago School on EU competition policy in that it is a (single case) study that employs both qualitative and quantitative methods. To explain how these approaches are tailored to and employed in the analysis, it is necessary to first provide an overview of the articles, each of which apply different methods.

This dissertation encapsulates three articles. In the first article, a qualitative approach is used, whereas in the second and third articles, a quantitative approach is used. The first article analyzes whether and the extent to which the Commission incorporates Chicago School theory into EU competition policy (Bartalevich, 2016). The analysis is conducted on the basis of current Commission Guidelines, Notices, and BERs in which the Commission presents the analytical approach used in its appraisal of business practices. The data cover both antitrust rules (anticompetitive practices within the meaning of Articles 101 and 102 TFEU, including horizontal cooperation agreements, vertical restraints, and dominance) and merger control. The main method employed in this article is interpretative content analysis of legal texts.

The second article narrows the focus on EU merger control. The aim of the article is exploratory, that is, to investigate the overall composition of mergers cleared by the Commission under the current EUMR during the period 2004–2015 and reflect on the results of the analysis in terms of the impact of the Chicago School on EU merger control. The main method employed in this article is descriptive network analysis.

The third article continues with the focus on EU merger control under the current EUMR. The article investigates whether theoretical and ideational insights from several schools of competition analysis and economic theories underpin EU merger control. In addition to the Chicago School, the article includes the Harvard School, the Freiburg School, and considerations for Single Market integration in the analysis. The aim of

³⁴ One of the important reasons for the failure to develop a theory adequate to address the problem of negative externalities stems from the faulty concept of a factor of production: A factor of production should be viewed as a right to perform a circumscribed list of actions – as opposed to a physical entity acquired for utilization; then, it becomes easier to understand that a negative externality is also a factor of production (Coase, 1960, pp. 43-44).

the article is to analyze Commission merger cases cleared under the current EUMR during the period 2004–2015 and reveal whether these four theoretic and ideational insights underpin EU merger control. The main method employed in this article is inferential network analysis.

Table 2 summarizes the research design employed in this dissertation.

Table 2. Research design.

Dissertation component	Overarching approach	Data	Method	Object of study		
				The Chicago School	EU competition policy	Antitrust Merger control
First article	Qualitative	Commission Guidelines, Notices, and BERs	Interpretive content analysis	+	+	+
Second article	Quantitative	Merger cases under the EUMR	Descriptive network analysis	+	–	+
Third article	Quantitative	Merger cases under the EUMR	Inferential network analysis	+	–	+

4.2 Data and methods

This section introduces the data and methods used in the articles in this dissertation. As noted in the previous section, this dissertation encapsulates three articles. The first article is intended to determine whether the Commission incorporates Chicago School theory into EU competition policy. The analysis is conducted on the basis of the Commission Guidelines, Notices, and BERs.³⁵ These documents are central to the analysis of how competition rules are enforced and applied in practice (Jones & Sufrin, 2014, pp. 115-116, 118-119). The important substantive competition provisions presented in Articles 101 and 102 TFEU are also included in the analysis.³⁶ The legal text contained in the documents is treated as data (Krippendorff, 2012, pp. 35-37). Interpretive content analysis of legal text is the core method employed in the first article.³⁷ The selection of the method is explained further below.

Researchers of the ideational input in EU competition policy (Blanke, 2012; Gerber, 1994, 2003; Marsden & Gormsen, 2010; G. Monti, 2002; Möschel, 1989; Parret, 2010; Pera, 2008; Riziotis, 2008; Vallindas, 2006; Zimmer, 2012), the majority of whom belong to legal scholarship, employ (overtly or covertly) an array of methods under the umbrella term ‘legal dogmatic’, which includes normative, realist, argumentative, and critical legal dogmatics (Aarnio, 1977; Alexy, 2000; Hesselink, 2009; Llewellyn, 1940; Peczenik, 1969; Vaquero, 2013). Political science, international relations, and international political economy scholarship on the ideational input in EU competition policy (Karagiannis, 2013; Wigger, 2012; Wigger & Nölke, 2007) and, in general, researchers of the ideational influence on policy (Adler & Haas, 1992; Goldstein & Keohane, 1993; Hall, 1989, 1993, 1997; McNamara, 1998; Sikkink, 1991; Wendt, 1999), tend to widely employ (overtly or covertly) similar techniques to those employed by legal scholarship. These techniques originate from qualitative content analysis and include rhetorical analysis, narrative analysis, discourse analysis, and interpretative analysis (Krippendorff, 2012, pp. 22-23; Neuendorf, 2002, pp. 2-9). Because rhetorical analysis places greater emphasis on how the message is presented, not on what is presented, and narrative analysis not on the text and message but rather on actors as carriers of the message, these techniques are not applicable to the case given the current research question. Normative analysis is also not suitable in that it is used for proscriptive purposes. Discourse analysis is more

³⁵ The full list of documents can be found in the References section of the article (see Bartalevich, 2016, p. 280).

³⁶ Please note that policy enforcement issues and decisions of the Courts are not included in the analysis (see Bartalevich, 2016).

³⁷ Content analysis is a research technique for making replicable and valid inferences from texts to the contexts of their use (Krippendorff, 2012, pp. 22-31).

suitable for the analysis of central themes and topics in text, whereas the objective of the first article is to investigate the text through the lens of the analytical categories that are selected a priori. Therefore, interpretive analysis appears to be more suitable than the other techniques (Neuendorf, 2002, pp. 6-7).

It is also possible to apply quantitative content analysis, including hand-coded and dictionary-assisted techniques (Laver & Garry, 2000), supervised techniques (*Wordfish*, *Wordscores*, sentiment analysis, support vector machines, random forests and other techniques) (Boswell, 2002; Hu & Liu, 2004; Klüver, 2009; Laver, Benoit, & Garry, 2003), and unsupervised techniques (topic models and other techniques) (Blei & Lafferty, 2007). However, quantitative content analysis uses words, not sentences or paragraphs, as units of analysis, for which the complexity of the legal text in the Commission documents poses a significant methodological challenge. Using hand-coded techniques is a possible solution to that problem, yet it would require significant resources in terms of the employment of human coders for coding the text and ensuring intercoder reliability. Therefore, interpretive content analysis appears to be a better fit.

In the second and third articles, EU merger control under the current EUMR is analyzed. The second article investigates the overall composition of mergers cleared by the Commission under the EUMR (during the period 2004–2015) and reflects on the results of the analysis in terms of the impact of the Chicago School on EU merger control. The aim of this article is to investigate whether the findings of the first article are echoed in the findings of the second article. The third article includes the Harvard and Freiburg Schools, and considerations for Single Market integration, in the analysis in addition to considering the Chicago School. The objective is to reveal whether the four theoretic and ideational insights inform and guide the Commission in decisions on merger cases under the current EUMR (during the period 2004–2015). The Chicago School was supplemented with the three other perspectives to conduct a more comprehensive analysis of EU merger control.

The focus is narrowed to EU merger control for two reasons. First, the decision to focus on EU merger control is based on its significance within EU competition policy and as a legal regime that concerns billions of euros, powerful firms, and major markets (Thatcher, 2014, p. 443). Second, the decision was further motivated by the constraint posed by the vast number of cases falling within the meaning of Articles 101 and 102 TFEU (EU antitrust rules). The inclusion of both antitrust cases (cases within the meaning of Articles 101 and 102 TFEU) and EU merger cases in the analysis would be optimal, yet time limitations constrain the research process. For that matter, the decision is taken to investigate one major area of EU competition policy – EU merger control – in a more comprehensive manner, rather than to include both EU antitrust rules and EU merger control while analyzing a small (or substantially smaller) number of selected cases (which is the only feasible option in this case) instead of the complete set of data.

In contrast to the first article, where the data comprise hundreds of pages of legal text, the data on mergers are more extensive and cannot be as easily analyzed in a qualitative manner. Here, note that legal scholars tend to apply judicial review and interpret case law by employing qualitative methods; it is likely that analyzing a few cases may be unrepresentative of the complete case law. For that reason, a quantitative approach is selected for analysis.

The data on merger cases under the current EUMR that were cleared between January 20, 2004 (the date when the EUMR was adopted), and July 1, 2015 (the date until when the data were collected), were acquired from Bureau van Dijk (BvD), a major publisher of business intelligence information.³⁸ The BvD data were matched, where available, with the official data published by the Commission.³⁹ The choice of the data source is explained in detail in the second and third articles.

Quantitative research on EU merger control is largely grounded in analyses of the econometric parameters employed by the Commission in competitive assessments of mergers, mostly in Phase II investigations (Aktas, Bodt, & Roll, 2007; Bergman, Jakobsson, & Razo, 2005; Duso, Gugler, & Szücs, 2013; Duso, Gugler, & Yurtoglu, 2011; Duso, Neven, & Röller, 2007; Neven & Röller, 2005). The research provides an impressive evaluation of the Commission's treatment of mergers, notwithstanding that it often fails to include Phase I investigations despite that they constitute the majority of cases (over 90%). Additionally, there is a conceptual

³⁸ <http://www.bvdinfo.com>

³⁹ <http://ec.europa.eu/competition>

(and methodological) challenge to employing these methods because they fail to treat mergers as interdependent observations. It is clear that acquirers tend to acquire multiple targets, meaning that the observations are not independent, and from that perspective, network analysis may be better suited and more applicable than ordinary econometric analysis for analyzing merger and acquisition transactions (Chon, Choi, Barnett, Danowski, & Joo, 2003; Danowski & Choi, 1998; Knoke, 2001, pp. 110-117).⁴⁰

Network analysis (Borgatti, Everett, & Johnson, 2013; Carrington, Scott, & Wasserman, 2005; Emirbayer & Goodwin, 1994; Knoke & Kuklinski, 1982; Scott, 2012; Wasserman & Faust, 1994) is the core method employed in the second and third articles. The choice of network analysis is guided by a consideration regarding the conceptualization of the data. The consideration is addressed by employing a network analytic framework that is able to offer a conceptualization of ties between pairs of individual units that may take the form of any relationship between the units, including business transactions (Wasserman & Faust, 1994, pp. 4-10). Hence, the network analytic framework is able to offer a conceptualization of merger and acquisition transactions in the form of business transactions flowing from acquirer units to target units: When an acquiring firm acquires a target firm, the edge receives a value of '1'.

In the second article, descriptive network analysis is used. The purpose is to provide an overview of mergers that occur under the EUMR in the relevant time period and attempt to contextualize the findings within the results of the analysis in the first article. In the third article, inferential network analysis with exponential random graph models (ERGMs) is used. The application of ERGMs in network analysis (Krivitsky, 2012; Lusher, Koskinen, & Robins, 2013; Robins, Pattison, Kalish, & Lusher, 2007; Robins, Snijders, Wang, Handcock, & Pattison, 2007; Wasserman & Pattison, 1996) is well suited because it is tailored for the analysis of the local configurations of edges between pairs of vertices in the context of structural properties of the complete (network) data structure. Thus, the approach makes it possible to treat the observations of single mergers as interdependent with other relevant observations of transactions and to more comprehensively analyze the actions taken by acquirer units to acquire target units through mergers by incorporating similar or related transactions into the analysis of the complete (network) data. The purpose of the method is, again, to contextualize more firmly and reinforce the findings within the results obtained from the first article.

5. Conclusion

It is evident that the Chicago School has exerted considerable influence over EU competition policy, which is largely based upon the findings presented in the first article. The overall findings confirm that economic theories and ideas embedded in them can influence policy and may do so extensively. The theoretical premise that ideas influence policy (adopted from institutionalism) has proven to be well suited. The findings further indicate that the Commission appears to have a particular approach to EU competition policy that cannot be entirely explained by the Chicago School, which is especially evident in the findings of the third article. The objective of Single Market integration appears to be another influential source of ideational input in EU competition policy. Another interesting finding is that EU merger control has been heavily impacted by financialization, which is evident in the findings of the second article.

A relevant question remains as to why the Commission – although having been influenced by Chicago School theory – has been selective in employing it. A helpful explanation of the Commission's selective utilization of Chicago School theory is obtained by understanding the principles that define EU competition rules – the overarching EU competition policy objectives. After all, objectives define the role and purpose of competition policy in a jurisdiction according to broader economic and social policy decisions. In turn, the justification of the objectives of competition policy demands referral to a specific economic theory or school of competition analysis that guides the formation of competition rules, the institutional design of competition procedures, and policy enforcement (Budzinski, 2008). Therefore, objectives are prior to economic theories.

⁴⁰ A more comprehensive explanation of the choice of the methods can be found in the second and third articles.

Altogether, there are four major objectives of EU competition policy that have been relevant to a varying degree over the course of sixty years: facilitating Single Market integration, promoting efficiency, promoting consumer welfare, and protecting the competitive process (Commission, 2004a, 2004b, 2008b, 2009, 2010; Jones & Sufrin, 2014, pp. 4-19; G. Monti, 2002). However, in several instances, these four objectives have proven to work poorly in concert and can cancel out one another's positive effects. It is thus important to understand the interplay of the objectives in terms of the presence or absence of tensions between them. Understanding the tensions between and tradeoffs of pursuing these often contradictory objectives and striking the right balance in designing and applying competition rules appears to remain a paramount challenge for the Commission, especially in cases regarding efficiency vis-à-vis the other three objectives.

Arguably, the most difficult tension to address is that between the objectives of promoting efficiency and Single Market integration. It may be unclear what the ultimate objective of EU competition rules was as envisaged by their drafters, yet it is evident that the concern for achieving the Common Market loomed large. This objective has been the central impetus for the existence of the EU. The whole purpose of having a Common Market was to expand the capacity of the European economy and businesses, to increase the scale and scope of production, and to enable European goods and services to rival those from third countries. It was obvious that the most straightforward route to achieving this was to unite the productive capacities and make regulation more uniform. However, it is false to assume that efficiency was not factored in on the road to achieving the Common Market, at least implicitly; indeed, it may be difficult to for the Common Market to function without considerations for the efficient organization of production and distribution.

The objective of Single Market integration has since dominated the implementation of competition rules. It clear that when the objectives of efficiency and Single Market integration are in conflict, the relevant question is which objective then comes at the expense of the other. Research indicates that the task of resolving such tension is inherently complex in cases falling under all the areas of EU competition policy: Article 101 TFEU (G. Monti, 2002), Article 102 TFEU (Marsden & Gormsen, 2010), and merger control (Thatcher, 2014). Indeed, agreements and transactions that could otherwise be viewed as efficiency enhancing could be and often are hampering the objective of Single Market integration. A clear example that testifies to this is that in a number of cases, vertical restraints constitute obstacles to cross-border trade and impair Single Market integration, yet the restraints are efficiency enhancing. However, the Commission frequently opts for pursuing the objective of Single Market integration at the expense of efficiency.

The two different objectives need to be pursued simultaneously; therefore, it is important for the Commission to design elaborate strategies for resolving the tensions between these two objectives. Although the Commission has not developed a well-functioning, macroeconomic mechanism to balance these objectives on a case-by-case basis to determine which should eventually bring about more procompetitive benefits, it has approached the tension in terms of necessary and sufficient conditions. The necessary condition is that the agreement or transaction in question does not hamper cross-border trade within the EU, whereas the sufficient condition is that the agreement or transaction in question does not impede competition, does not lead to a reduction in efficiency, and does not lead to consumer harm. It is unlikely that the Chicago, Post-Chicago, or Neo-Chicago Schools could offer their tools to resolve the tension, mostly because none of the schools has carefully considered the (regional) integrationist objectives in their respective theories (these schools generally only advance profound considerations for designing and implementing efficiency-maximizing antitrust rules). Unfortunately, it is evident that the Freiburg School does not seem to be able to do so either: Research indicates that the Freiburg School is currently unlikely to be equipped to withstand analysis under competition law principles based on efficiency (Venit, 2004).

Another instance of tension, which is however less profound than the tension discussed above, is that between the objective of promoting the competitive process (including maintaining and promoting rivalry between undertakings) – which originated from the Freiburg School in the European context, but is more commonly referred to and known as 'structuralism', to which the early Harvard School is the major contributor – and the objective of promoting efficiency. It is clear that certain practices may impair the competitive process but generate significant efficiencies. The Commission has successfully addressed this tension in at least one instance. For example, the Commission developed a mechanism to balance efficiencies – generated from agreements that restrict competition within the meaning of Article 101(1) TFEU – against the negative effects of the agreements.

Hence, if the agreements are restrictive within the meaning of Article 101(1) TFEU, the Commission may nevertheless clear the restrictive agreements on the basis of Article 101(3) TFEU provided that the agreements fulfill the (four cumulative) efficiency considerations. Merger control is another example that is particularly demanding for the Commission to strike a balance in designing rules that do not hamper the efficiency of domestic firms but do not impair the competitive process.

The third instance of tension is that between the objectives of promoting consumer welfare and promoting efficiency. Arguably, the objective of increasing consumer welfare and avoiding consumer harm coexists better with the aim of maximizing efficiency. However, it may also not be such a clear-cut case, at least in regard to competition rules within the meaning of Article 102 TFEU, according to which businesses cannot generally pursue a strategy of charging excessive prices because it leaves consumers worse off. However, businesses may be willing to charge consumers higher prices for various reasons, for example to compensate for their costly past R&D activities. The situation may directly hamper innovation and indirectly hamper efficiency. The Chicago School has addressed this by emphasizing the promotion of efficiencies that increase total welfare (and subsequently consumer welfare), where efficiency is more paramount vis-à-vis other aims.

In sum, it is evident that the selection and justification of the objectives of competition policy is tightly intertwined with economic theories or schools of competition analysis that have their own implicit or explicit objectives at play. Insights from economic theories provide a knowledge base for policy-makers' decisions about competition objectives and rules and help them make normative assessments of what market behavior is acceptable in the economy and society given traditions or specific circumstances. They also provide pathways for policy-makers to understand the consequences of taking a specific course in competition policy. The tensions between the objectives that follow are the direct result of employing multiple economic theories; the more profound the tensions, the more likely it is that the theories may be incompatible, which may render competition objectives and principles and methods for assessing market behavior dissonant. For that matter, it is important to further research whether the coexistence of the existing input of the Chicago School, the Freiburg School, elements from different other economic theories, and the Single Market integration rationale within EU competition policy can hamper the development and functioning of this complex and important policy area. However, in the event that it is possible to combine these different elements into one approach, such an approach (however unlikely it is to be designed) may attempt to embrace the diversity of different theories and design competition policy in a way that will boost the efficiency and competitiveness of the Single Market.

Another helpful explanation of the Commission's selective utilization of Chicago School theory is obtained by understanding the (historical) context of the theory. Competition laws widely reflect the societies that they are designed in, the societies' and their policy-makers' objectives and ideals, and the societies' particular stage of political, social, and economic development. The Freiburg School re-emerged in the post-war period when antitrust was almost completely new to Europe and the major concern of the six founding Member States was to bring down the trade barriers between the Member States to come closer to achieving the Common Market – largely to prevent another large-scale conflict between European countries but also to raise living standards and to enable the unified Member States to compete with third countries, most notably with the United States. To fulfill this task, a broad framework was needed that addressed and covered both the economic and societal, or public interest, criteria (the criteria which, as research suggests, still dominate EU competition policy) (Sullivan, 2005). By contrast, the Chicago School developed in the United States where the antitrust regime had already matured, minimized its political and social goals, and had already started to advocate the pursuit of good market performance in the strictly economic sense. In the course of time, one might expect the same development in EU competition policy. However, until the Commission terminates its commitment to multiple objectives that are not squarely within the competence of competition law, including considerations of employment, industrial policy, environmental policy, and the protection of SMEs, the Chicago (and Post- and Neo-Chicago) School cannot and probably will not be employed more extensively.

A likely upside of a more extensive application of Chicago School theory to EU competition policy could be achieving better concurrence with the US on antitrust issues. Harmonization and convergence between EU competition policy and US antitrust is necessary given the enormous economic and trade benefits resulting from it. However, over the last two decades, the Commission has been in conflict with the antitrust authorities in the US over a vast array of fines and blockings of agreements and transactions directed at US businesses. This may be

due to the different competition traditions and realities in the EU and the US. In any case, a first step could be to attempt to agree on the objectives of EU competition policy, however ill-defined they currently are, in terms of the hierarchy among them and a clear distinction between the intermediate and ultimate objectives. After all, Single Market integration is not as challenging to achieve as it was several decades ago, and hence, the priorities may need to be shifted.

The next step could be for the Commission to be more transparent about the ideational input in EU competition policy in terms of the economic theories and schools of competition analysis that it incorporates. It is a well-established fact that US antitrust law has been heavily driven by the Chicago School as much as the fact that the Freiburg Schools significantly informed the earlier development of EU competition policy. However, in terms of practical application, ordoliberalism is relatively outdated; it has offered a broad political and economic framework for the functioning of EU competition policy, but it has failed to provide sophisticated tools for a competitive assessment of firm behavior and hence to accommodate to the new challenges facing EU competition policy. In contrast, the Chicago School has offered the necessary tools and remains relevant for the ‘old economy’ and, in its modified Post-Chicago and Neo-Chicago versions, for the ‘new economy’. It may be possible that, if EU competition policy incorporates more insights from the Chicago, Post-Chicago, Neo-Chicago, and probably Harvard Schools, and, in time, also newer alternatives such as behavioral economics that are already slowly penetrating US antitrust law, there could be greater understanding between the Commission and the antitrust authorities in the US.

In sum, the choice of economic theories and schools of competition analysis behind EU competition rules remains somewhat opaque. The conclusions derived from this research call for greater transparency in what elements of economic theories and schools of competition analysis practitioners and competition authorities employ to better understand what they advocate and what desired result they want to achieve and to prevent incompatible theories from cancelling out the positive effects of well-intended competition rules. Thus, a step in the right direction is to identify and prioritize the intermediate and ultimate objectives of EU competition policy. The next step is to identify relevant economic theories that should be employed in the process.

EU competition policy is likely to be reconsidered within economic theories and schools of competition analysis in the future. A refined and modernized neoclassical approach, including the Chicago, Post-Chicago, Neo-Chicago, and Harvard Schools, in fusion with new perspectives from behavioral economics and bearing in mind the ultimate objectives of EU competition policy and the wider public interest criteria, would arguably be the best fit for the EU, which, however, is unlikely to ever be designed given both the subtle and fundamental differences between the models that these different theories and positions advance and, additionally, the at times contradicting objectives of EU competition policy. A caveat is that economic ideas and theories are fallible and subject to alternatives, and thus, it may on the contrary be best for the Commission to continue experimenting, ‘muddling through’, and finding ad-hoc solutions to the old and emerging issues in EU competition policy. However, the costs of failures resulting from such experimentation may be high.

On a final note, it is important to discuss another interesting finding. As indicated by the second article, acquirers in the banking sector account for the largest share of mergers cleared by the Commission during the period 2004–2015. These findings echo the increasing role of the financial sector, where mergers appear to proceed at an unparalleled scale, which is likely an indication of the aftermath of the influence of the Chicago School that aggressively reshaped the modern economics and regulatory philosophy in favor of the deregulation of the financial sector (Van Overtveldt, 2007, pp. 197-238) in combination with unreserved encouragement of mergers and leniency toward high concentration (Bork, 1993, p. 124; Posner, 1974, pp. 526-527; 2001, p. 228). The findings are also likely an indication of the influence of the Chicago School in that the Commission’s merger control is characterized by systematic clearance of mergers, especially, as it appears from the findings, in the financial sector.

Mergers employing productive capital are generally procompetitive because they pursue a long-term strategy to profit from economies of scale, control assets of other corporate units, expand market shares and obtain access to new markets; mergers employing financial capital are riskier because financial capital can become disassociated from production and may seek to exploit speculative arbitrages from the short-term buying and selling of businesses (Wigger, 2012, pp. 626-627). It is difficult to establish whether the overwhelming presence of financial institutions among merger and acquisition transactions with an EU dimension is a

profoundly positive or negative phenomenon, but there are most certainly things to be cautious about, including the increasing complexity and hazards of financial innovation and the subsequent tracing of the parties to a merger after clearance, the complexity of calculating concentration levels at the level of the ultimate owner, the creation of large financial institutions that may become ‘too big to fail’ over time, and the susceptibility of the Commission to pressure from large financial corporations to implement faster or simpler procedures for clearing mergers, among other considerations.

To conclude, it is important to note that the research conducted in this dissertation – although performed with diligence and to the best of the author’s knowledge and ability – has only scratched the surface of the potentially massive research program on the influence of economic theories and schools of competition analysis on EU competition policy. The various constraints and limitations in the form of time, resources, data access, and the author’s methodological training affected this dissertation’s present shape and form. It is clear, however, that more thorough research on the influence of economic theories on and their input in EU competition policy appears to be vital, including accessing and analyzing more specialized data and employing other, cutting-edge methods that are currently under development. Given the tremendous importance of EU competition policy, such research is highly warranted.

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Appendix: Major theoretical approaches to the study of the influence of ideas on policy

Table 1. Major theoretical approaches to the study of the influence of ideas on policy.

	Historical institutionalism	Rationalist institutionalism	New and discursive institutionalism	Epistemic communities
Predominant discipline	Public policy	International relations, public policy	International political economy, international relations	International relations
Philosophy of social science position	Constructivism	Fusion of rationalism and reflexivity	Constructivism, interpretivism	Constructivism
Main objects of study	Ideas (embedded in policy paradigms), actors (elites), institutions, policy change, ideational change	Ideas, actors (elites), institutional stability	Ideas, agency (elites), structure (institutional structure, ideational structure, context), policy change, ideational change	Actors (elites – epistemic communities)
Key references	(Hall, 1989, 1993, 1997; McNamara, 1998; Sikkink, 1991)	(Goldstein & Keohane, 1993)	(Blyth, 2002a, 2002b; Hay, 2004b; Mahoney & Thelen, 2009; March & Olsen, 1983; Schmidt, 2002a)	(Adler, 1992, 2013; Adler & Haas, 1992; P. M. Haas, 1989, 2001)

The Influence of the Chicago School on the Commission's Guidelines, Notices and Block Exemption Regulations in EU Competition Policy*

DZMITRY BARTALEVICH
Copenhagen Business School

Abstract

Antitrust rules are fundamentally informed and shaped by economic theories. Given the significance of EU competition policy for the European integration process, it is essential to disentangle the economic theories underlying EU competition law. There is abundant theoretical and empirical literature examining the influence of ordoliberalism on EC/EU competition policy. However, in recent years, ordoliberal principles appear to have been replaced by neoliberalism and efficiency-enhancing rationale in EU competition policy. This article puts forward the idea of clarifying whether the European Commission incorporates Chicago School theory into EU competition law provisions. The analysis is carried out on the basis of the European Commission's guidelines, notices and block exemption regulations. The analysis reveals that the Commission does, to a considerable extent, follow the Chicago School theory. The elements of the Chicago School theory hold strongest in vertical practices; they are somewhat weaker in horizontal practices and in unilateral exclusionary conduct.

Keywords: EU competition policy; European Commission; horizontal practices; unilateral exclusionary conduct; vertical practices

Introduction

Competition policy (antitrust)¹ is an underlying background condition of the functioning of competitive markets and the economy. Competition rules are related to the basic tenets of the economy and represent the legal framework of reference for the economic system.

In antitrust, much of what appears to be unbiased empirical analysis is in fact deeply shaped by beliefs about what policy works best for the economy and the society (Page, 1991) – whether it is a tool for stimulating demand-side growth and for keeping short-term prices low or, for example, a tool for boosting supply-side growth and for maximizing net allocative efficiency. Those beliefs reflect the basic tenets of economic theories.

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¹ EU competition policy is structured around four pillars. The first two are prohibition rules set out in the Treaty on the Functioning of the European Union (TFEU) that cover the antitrust area: agreements between two or more undertakings which restrict competition (Article 101 TFEU) and abuse of a dominant position by one or more undertakings (Article 102 TFEU). The third pillar is the merger regulation. The fourth pillar is state aid. In this article, 'antitrust' is used in the context of the Chicago School theory (US antitrust) and 'competition policy' is used in the context of EC/EU competition policy with reference to the first three pillars (that is, excluding state aid) and vertical agreements. For convenience, these two concepts are used interchangeably in the Introduction.

Disentangling the economic theories underlying the disparate views of antitrust is the key to unravelling the antitrust riddle (Vallindas, 2006). A theoretical economic framework is needed in order to understand the legal rules. It seems difficult to identify a single framework utilized by the European Commission: there is no clear connection to economic theory in EU competition law (Nicolaidis, 2000). There seems to be little consensus regarding the objectives of EU competition policy and the analytical tools and economic theories or antitrust doctrines that the Commission employs. It is unclear whether there is a single coherent goal of EU competition policy (Monti, 2002; Stuyck, 2005) or which welfare standards the Commission utilizes (Pera and Auricchio, 2005).

Ordoliberalism – the Freiburg School – offers useful insights. There is abundant theoretical and empirical literature examining its influence on EC/EU competition policy (Cseres, 2005; Gerber, 1994, 2003; Giocoli, 2009; Gormsen, 2007; Monti, 2002; Möschel, 1989; Parret, 2010; Pera, 2008; Riziotis, 2008; Rousseva, 2005; Schmitz, 2002; Venit, 2004; Wigger and Nölke, 2007). However, there is a growing body of literature disproving that ordoliberalism has ever influenced EC/EU competition policy (Akman and Kassim, 2010; Karagiannis, 2013). Furthermore, in recent years, ordoliberal principles appear to have been replaced by neoliberalism (Buch-Hansen and Wigger, 2010, 2011) and efficiency-enhancing rationale in EU competition policy (Riziotis, 2008).²

This article puts forward the idea of turning to Chicago School theory in order to clarify whether the European Commission – a supranational institution that enjoys far-reaching discretionary powers in EU competition policy (Damro, 2006, p. 868; Wigger and Nölke, 2007, p. 488) – incorporates the Chicago School theory into EU competition law provisions. The assessment is carried out on the basis of the Commission's input into competition law in the form of guidelines, notices and block exemption regulations (BERs), where the Commission presents the analytical approach used in its appraisal of business practices. The blunt rejection of the Chicago School's influence on EU competition policy (Giocoli, 2009; Vallindas, 2006) and the lack of a more careful analysis of the Commission's input in EU competition law from the perspective of the Chicago School in the literature are unjust for two main reasons. First, EU competition policy converges with US antitrust in a number of pillars (Bartalevich, 2013; Kovacic, 2009). Taking into consideration the most resounding victory of the Chicago School in US antitrust (Crane, 2009; Pera, 2008) and its continuing influence on US antitrust (Stucke, 2007), it is pertinent that the gap in literature is addressed. Second, if the Chicago School is understood as a specific component of neoliberalism (Van Horn and Mirowski, 2009), and considering the claims that EU competition policy is moving towards efficiency-enhancing rationale and neoliberalism (Buch-Hansen and Wigger, 2010, 2011), analysis of the Commission's input in EU competition law from the perspective of the Chicago School appears to be relevant.

² This article does not attempt to question the findings that ordoliberalism has exerted influence over EC/EU competition policy nor does it attempt to question the assertions that this policy area has been subject to a neoliberal transformation. Rather, the article mentions these findings and attempts to investigate potential other intellectual bones of EU competition policy – or, to be precise, of an important component of this policy area, namely the European Commission's input in EU competition law.

I. Objectives, Scope and Limitations

The purpose of the article is to investigate whether the Chicago School has penetrated the Commission's provisions in EU competition law. There are, however, some limitations to this analysis.

First, the focus of analysis in this article is exclusively on the Commission's input in competition law, namely the Commission's guidelines, notices and BERs. The analysis does not cover decisions of the European Court of Justice and the General Court. The scope of such research merits the attention of a separate scholarly work. There is no attempt to provide a critical assessment of EU competition policy as an entire policy area or of the Chicago School theory.

Second, the analysis does not relate to the causal mechanisms – industrial lobbying, policy convergence and actor preferences – triggering the changes in legislation. These factors are deemphasized and treated as exogenous because the scope of such research goes beyond the confines of a single article. However, the research design applied in this article does not in any way imply that the explanatory importance of those factors should be otherwise diminished.

Third, EU competition policy addresses two broad concepts: EU antitrust – rules on cartels, dominant positions and mergers preventing the anti-competitive behaviour of firms – and the regulation of state aid. This article focuses exclusively on the former, in that the regulation of state aid is too complex to analyse in a single article and because the Chicago School theory holds that state aid should not be a concern of antitrust law: there is little if any information on state aid in the original sources.

Fourth, the article presents a snapshot-like analysis. It does not provide a rigorous historical tracing of the development of the Commission's competition law provisions.

Fifth, the article analyses the rules in regard to the production industry (the 'old economy'). The new economy is not analysed in the article because Chicago School theory – like other older neoclassical antitrust theories – often ignores structural differences between industries and focuses on the short-term immediate impacts of a firm's actions on allocative efficiency rather than on productive and dynamic efficiency, which is essential for innovation. Hence, the earlier studies that are cited in this article would not have been able to account for the provisions concerning innovation, productivity growth and the new economy. For the same reason, industry-specific rules are not analysed in this article.

Sixth, competition policy goals and the concept of efficiency are not analysed in this article. There is an abundant literature dedicated to the analysis of EC/EU competition policy goals. Further, it is unclear whether there is a single coherent goal of EU competition policy. At the same time, the Chicago School theory is also inconsistent in regard to what the goals of antitrust should be. The maximization of net allocative efficiency is one of the most important goals (Easterbrook, 1981a, p. 716; Posner, 1979b, pp. 291–5; 2001, p. 23), but there are a number of other goals that often contradict this one. In sum, within the Chicago School, heterogeneous positions pertaining to antitrust goals, coupled with the indistinctness of the goals of EU competition policy, would lead to a fragmented, inconsistent or even contradictory analysis. The concept of efficiency is not analysed for the same reasons and because the Chicago School failed to produce a coherent theory of economic efficiency (Ellig, 1992, p. 877). Finally, the article presents analysis of the Commission's input into competition law as opposed to policy output and competition law enforcement. The article

attempts to go beyond the conventional parameters of analysis such as analysis of antitrust authorities' intervention/non-intervention, consumer/total welfare standard and allocative/productive/dynamic efficiency.

II. The Freiburg Ordoliberal School and the Chicago School

The Freiburg Ordoliberal School and the Chicago School are the two most influential legal and economic philosophies in EU competition control, frequently referred to as 'competing paradigms' (Wigger and Nölke, 2007, p. 490).

The Freiburg School

The Freiburg Ordoliberal School has exerted substantial influence over EC/EU competition policy since the 1960s. The ordoliberal approach is manifest in the Commission's practice to occasionally take into account matters that may be unrelated to the protection of competition per se, with the view to contributing to the economic policy of the EU in the wider socio-economic sense and to facilitating the project of market integration (Monti, 2002, pp. 1057–64). The approach is reflected in EU competition law in that the Commission may, for example, occasionally take the initiative to alleviate employment problems of certain sectors or regions, restructure 'sick' industries or provide small- and medium-sized enterprises with special protection (Wigger and Nölke, 2007, pp. 491–2).

The Chicago School

The Chicago School is a neoclassical school of economic thought associated with the work of the faculty at the University of Chicago, beginning in the 1950s and reaching its peak in the 1970s and 1980s (Posner, 1979a, pp. 925–6). Of all of the Chicago School law and economics fields (securities regulation, corporate law, contracts and property), the Chicago School's antitrust analysis enjoyed the most complete success (Crane, 2009, p. 1911).

The antitrust policy followed by the United States in the 1950s and the 1960s employed enforcement policies to outlaw vertical and horizontal mergers, bust cartels and eliminate price-fixing, break up excessively concentrated industries and monopolies and outlaw tying arrangements and bundling. The Supreme Court of the United States between 1953 and 1969 – the Warren Court – was characterized by unwise decisions that are difficult to defend today. Richard Posner and Robert Bork, the forefathers of the Chicago School of antitrust analysis and its most prominent and influential affiliates – in co-operation with Frank Easterbrook, Dennis Carlton, William Landes, Edmund Kitch, Alan Sykes and a number of other Chicago School economists (Coase, 1993, p. 253; Van Overtveldt, 2007, p. 287) – examined the antitrust law through the prism of the neoclassical price theory to change and, later, to shape the antitrust regime in the United States (Pitofsky, 2008, p. 4).

The central tenet of the Chicago School of antitrust analysis is a market efficiency model (Becker, 2007, pp. 25–6; Easterbrook, 1986, p. 1709; Posner, 2005, p. 231). The concept of efficiency³ – net allocative efficiency – was introduced into antitrust analysis to refer to a situation where the total gains experienced by the producers or consumers

³ The market efficiency model is loosely based on Pareto efficiency and more firmly on Kaldor–Hicks efficiency (Posner, 1998, pp. 13–15).

who gain outweigh the total losses experienced by the producers or consumers who lose. Maximization of net allocative efficiency was not considered the sole measure of welfare (Easterbrook, 1984b, p. 138), but it was considered close enough to the ultimate goal of antitrust law (Posner, 2001, pp. 19, 23). The tenets of the Chicago School had a particularly strong influence on the US antitrust system and have dominated US antitrust practices from the 1960s onwards.

III. The Framework

The US antitrust typology ensures the best possible coverage of the attributes of the Chicago School theory in that the Chicago School theory is built entirely upon this typology, thus making the assessment more comprehensive. Anti-competitive restraints are generally grouped into three categories in US antitrust: horizontal practices, unilateral exclusionary conduct and vertical restraints (Hovenkamp, 2005, pp. 21–2). The framework of this article is based on this categorization. In this article, the three categories are disentangled into a number of subcategories. Horizontal practices are subdivided into two subcategories: horizontal mergers and collusive agreements (horizontal price-fixing and market-sharing). Unilateral exclusionary conduct is subdivided into two subcategories: monopolies and dominance and predatory conduct. Vertical practices are subdivided into five subcategories: vertical agreements (general cases), vertical mergers, resale price maintenance, tying and bundling and price discrimination.

IV. Horizontal Practices

Horizontal Mergers

This subsection covers three aspects: the legal status of horizontal mergers (HMs), the relevant welfare standard and the assessment of HMs. With the exception of the relevant welfare standard, the Commission's logic appears to be largely in line with that of the Chicago School theory.

The Legal Status of HMs

HMs are concentrations where the concerned undertakings are actual or potential competitors on the same relevant market. The Chicago School theory holds that HMs should be neither disallowed per se nor allowed per se, because of their potential either to introduce cost savings in the form of productive and allocative efficiencies or to decrease consumer welfare, respectively (Bork, 1993, p. 124; Posner, 2001, p. 228). The prescription holds true for EU competition law. The Commission acknowledges that horizontal agreements – including HMs – may create efficiencies (Commission, 2004a, para 62). HMs are subject to a competitive assessment pursuant to Article 2(2) and (3) of Merger Regulation 139/2004 (Council, 2004). The creation or strengthening of a dominant position is a primary form of competitive harm. Held either by a single firm as a result of a merger (mergers to monopoly) or by a group of firms (collective dominance in an oligopolistic setting), dominance has been the most common basis for finding that a concentration would result in a significant impediment of effective competition (Commission, 2004b, para 4).

The Relevant Welfare Standard

The distinction between consumer welfare standard and total welfare standard is certainly relevant for mergers, but it is also relevant for other practices in that it illuminates the basic differences between the two standards underpinning the logic of EU competition law and the Chicago School thinking in terms of what the proper objective of antitrust law should be.

The objective of Article 101 TFEU is to protect competition on the market in order to enhance consumer welfare and to ensure an efficient allocation of resources throughout the Community for the benefit of consumers. The Commission directs its enforcement to ensure that markets function properly, that an effective competitive process (rather than competitors) is protected, that consumers benefit from the efficiency and productivity which result from effective competition and that competitors who deliver less to consumers in terms of price, choice, innovation or quality will leave the market (Commission, 2009, para 5–6).

The consumer welfare standard in EU competition law is different from the total welfare standard, which is regarded by the majority of the Chicago School economists – including Bork (1993, pp. 107–15), who mislabelled this concept as ‘consumer welfare’ (Orbach, 2011, p. 147) – to be the proper objective of antitrust. The Chicago School uses the concepts of total welfare and total surplus standard (Budzinski, 2008, p. 300). This means that the end goal is not the increase in output but rather the increase in income of both producers and consumers. Because the Chicago School economists argue that antitrust should protect the net maximization of welfare in a relevant market, antitrust laws should protect the maximization of both consumer and producer surplus, irrespective of the distribution of the surplus between these groups. In line with Chicago School thinking, the total surplus standard should be used in the antitrust methodology as opposed to the consumer surplus standard.

The difference between the total surplus standard and the consumer-oriented standards is substantial. Depending on which of these two types is applied, the outcome of a merger review can be significantly different. The consumer welfare standard is intended in the Commission’s horizontal merger guidelines (Pitofsky, 2007, pp. 1422–3) and in EU merger control (Neven and Röller, 2005, p. 847), which clearly runs counter to the Chicago School’s understanding of what the relevant standard should be.

The Assessment of HMs

In its assessment of the competitive effects of a merger, the Commission compares the competitive conditions that would result from the notified merger with the conditions that would have existed without the merger. In most cases, the competitive conditions existing at the time of the merger constitute the relevant effects of a merger (Commission, 2004b, para 9). This is in line with the Chicago School theory, which holds that mergers should be challenged on the market facts existing when the merger occurred (Bork, 1993, p. 223). At the same time, the Commission may take into account future changes to the market that can be reasonably predicted, which runs counter to the Chicago School logic (Carlton, 2010, p. 622).

The Chicago School’s treatment of HMs can be summed up by Bork’s rules based on allowable market shares that reflect a balance of efficiency and restriction of output (Bork, 1993, pp. 123–33). The 2004 Guidelines on the assessment of HMs are more

conclusive and less lenient than Bork's rules. The guidelines include more parameters besides market shares, such as concentration levels, anti-competitive effects resulting from the merger, buyer power, entry barriers and balancing efficiencies against anti-competitive effects (Commission, 2004b, para 14–88). The Commission's guidelines run counter to Bork's permissive recommendation not to disallow mergers that would concentrate a market into only two firms of roughly equal size – making up to 60 or 70 per cent of the market – or, in a fragmented market, shares up to 40 per cent (Bork, 1993, pp. 221–3).

The concentration level is measured using the Herfindahl–Hirschman Index (HHI) thresholds. The Commission is unlikely to identify horizontal competition concerns in a market with a post-merger HHI below 1000 (Commission, 2004b, para 16, 19). According to the horizontal merger guidelines, the Commission employs an analytical approach to assess HMs, which means that HHI indicators should not be viewed as rigid cutoffs. This is in line with the Chicago School's prescription to avoid potential misuse of HHI thresholds (Landes and Posner, 1981, p. 983; Ordover *et al.*, 1982, p. 1872) that should be based on empirical research that is specific to the industry in question and not on rigid normative standards (Carlton, 2010, pp. 636–7). In sum, the Commission's assessment of HMs closely emulates contemporary neoclassical economic thinking (Shapiro, 2010) and the Chicago School theory.

Collusive Agreements, Including Horizontal Price-Fixing and Market-Sharing

Article 101(1) TFEU prohibits agreements between two or more undertakings that may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the internal market. Specifically targeted are those agreements which fix prices; those which limit or control output, markets, technical development or investment; those which share markets; and those which apply dissimilar conditions to equivalent transactions with other trading parties (Commission, 2008a).

Price-fixing (PF) and market-sharing (MS) are restrictions of competition by object, which lead to reduction of output, misallocation of resources and reduction in consumer welfare (Commission, 2004a, para 21). These types of restrictions have such a high potential for negative effects that it is unnecessary to demonstrate any actual effects on the market for the purposes of applying Article 101(1). They are unlikely to qualify for an exemption under Article 101(3). For other types of non-hardcore practices, the Commission initiates thorough investigations of restrictions of competition by actual or potential effect. The negative effects – on prices, output, innovation or the variety or quality of goods and services on the relevant market – must be significant and appreciable. It is insufficient that the market shares of the parties to an agreement exceed the thresholds set out in the Commission's *de minimis* notice (Commission, 2001). Non-hardcore practices may qualify for an exemption under Article 101(3) TFEU, and the provisions of Article 101(1) TFEU may be declared inapplicable (Commission, 2008a). Undertakings must prove that the restrictive agreement benefits from a block exemption by fulfilling each of the four cumulative conditions in a relevant market within the actual context.⁴ The four conditions explicitly refer to

⁴ The agreement (1) must contribute to improving the production or distribution of goods or to promoting technical and economic progress; (2) should allow the consumers a fair share of the resulting benefit; (3) must not impose restrictions which are not indispensable to the attainment of the above objectives; and (4) does not afford the possibility of eliminating competition in regard to a substantial part of the products concerned (Commission, 2004a, para 32–116).

efficiency considerations. In principle, efficiencies (cost efficiencies and qualitative efficiencies) must outweigh anti-competitive effects based on balancing the claimed efficiencies against the anti-competitive effects (Commission, 2004a, para 48–96).

It appears from the Commission's treatment of cartels and other collusive agreements such as PF and MS that collusion and these types of agreements are viewed as intrinsically anti-competitive and are *de facto* banned *per se* – but not *de jure*. There is a right to apply for an exemption from prohibition under Article 101(3), but such practices are unlikely to qualify for an exemption.

The Chicago School treats collusive agreements such as PF and MS analytically. PF and MS should not be banned *per se*, because these practices may maximize efficiency in certain – but few – circumstances. These practices should rather be judged by standards applicable to horizontal merger rules. Naked restraint – where the primary goal of PF and MS is restraint of competition and restriction of output – should be illegal *per se* (Bork, 1993, pp. 263–79; Landes, 1983, p. 635). In contrast, ancillary PF and MS agreements – restraints that are subordinate to the implementation of a related non-restrictive transaction – have the capacity to create efficiencies (despite the elimination of competition) by integrating productive activities. These agreements should thus be evaluated on the basis of their capacity to add to the efficiencies and according to market power and intent (Bork, 1993, pp. 263–4, 278–9). Some Chicagoans are uncertain as to how to best treat PF because of the lack of analytical and evidentiary capacity of antitrust bodies (Posner, 2005, p. 241). At the same time, however, Posner admits that there may be potential gains from collusion (Posner, 2001, pp. 61–5). Thus, the law should not make collusive agreements *per se* illegal.

The Commission's treatment of collusion appears to be very similar in essence to that of the Chicago School theory. Naked restraint – where the primary goal of PF and MS is restraint and hence restriction of output – is prohibited, but not *per se* prohibited. It is blacklisted in BERs but there exists a right to apply for exemption from prohibition under Article 101(3), however unlikely it is that PF and MS may be exempted. Ancillary PF and MS agreements are investigated by the Commission.

V. Unilateral Exclusionary Conduct

Monopolies and Dominance

The Chicago School did not regard monopolistic behaviour as a serious problem. Its leniency may be attributed to two convictions within the Chicago School. First, inefficient monopolies are assumed to be bound to cease to exist in the long run (Easterbrook, 1984a, p. 32). Second, monopolies are not intrinsically anti-competitive and inefficient. Despite the fact that the reduction in output in a monopolistic context is much more significant than in a competitive context, such a reduction does not necessarily impose a loss on society. The reduction in output in the monopolized market frees up resources that will be put to use in other markets (Posner, 2001, p. 12). Further, some monopolies may be efficiency-based. Where the firm has grown to its monopoly size, its efficiency must outweigh its output restriction, otherwise entry would erode its position, which means that such a firm achieves a monopolistic position by superior efficiency (Bork, 1993, p. 196). Based on (predominantly) these and other convictions, the Chicago School theory

holds that monopolies should not be banned per se – at least, not just based on the criteria of their output restriction or market dominance.

Dominance – a broad concept which includes monopoly power – is defined by the Commission as a position of economic strength enjoyed by an undertaking, which enables it to behave to an appreciable extent independently of its competitors, customers and consumers; profitably increase prices above the competitive level; ignore competitive constraints due to their ineffectiveness; and enjoy market power over a significant period of time (Commission, 2009, para 10–11). The Commission is analytical in its assessment of dominance. It takes into consideration both market shares and barriers to expansion or entry. Thus, the concept of ‘abuse of dominance’ entails the presumption that dominance per se is not prohibited. The underlying economic reason is that sometimes, welfare-increasing business behaviour may lead to dominance. However, the concept also entails that those companies that enjoy a dominant position – irrespective of the way they have achieved this position – bear a special responsibility for preserving competition in their market.

The Commission’s treatment of monopolies is arguably not as lenient as the one prescribed by the Chicago School, but it is still largely in agreement with it. It is not illegal for an undertaking to be in a dominant position, and it is not banned per se. Only conduct which is directly exploitative of consumers is liable to infringe Article 102 TFEU.

Predatory Conduct

Predatory pricing (PP) is a monopolizing practice that requires the co-operation of a customer in order to be effective. The Chicago School theory holds that predation is reasonable only where a firm has achieved monopoly power or dominance (Easterbrook, 1981b, pp. 268–9). However, achieving a monopoly power through PP would require building a significant productive capacity before the actual predation in order to supply the market’s entire output. Hence, merely selling products below cost is a largely ineffective tactic to maintain a monopoly (Posner, 2001, pp. 209–10, 213–14). Thus, PP is most likely to delay rather than prevent the entry of new competitors. Hence, in addition to the fact that PP holds some positive social benefits, forbidding it is irrational, unless the following two exclusionary pricing strategies are specified in such a prohibition: first, selling below short-run marginal cost; second, selling below long-run marginal cost with the intent to exclude a competitor (Posner, 1974, pp. 516–21). Considering the significant costs of enforcement, the net welfare loss as a result of erroneous analyses and the reasons mentioned above, it follows that PP should not be prohibited.

The Commission investigates PP in the context of abusive exclusionary conduct by dominant undertakings (Article 102 TFEU). It considers predatory conduct unlikely to generate efficiencies. Nevertheless, provided that the objective necessity and efficiency conditions pertaining to the assessment of abusive exclusionary conduct by dominant undertakings are fulfilled (Commission, 2009, para 28–31), the Commission considers claims by a dominant undertaking that low pricing enables it to achieve economies of scale or efficiencies related to expanding the market (Commission, 2009, para 74). The Commission generally intervenes where there is evidence that a dominant undertaking engages in predatory conduct by deliberately incurring losses or foregoing profits in the short term (‘sacrifice’) so as to foreclose competitors with the aim of maintaining market power, thereby causing consumer harm.

The Commission's logic is in line with the Chicago School theory only in that the Commission shares the Chicago School's point that predation should not be banned per se, but rather should be thoroughly investigated in cases where a firm has achieved monopoly power. The Chicago School does not offer a theory that can apply to predatory conduct by undertakings that are in a non-dominant position. It is difficult to conclude whether the Commission employs the Chicago School logic and thinking in its treatment of predation.

VI. Vertical Practices

Vertical Agreements (General Cases)

A vertical agreement (VA) is an agreement or concerted practice entered into between two or more non-competing undertakings, each of which operates at a different level of the production or distribution chain (Commission, 2010a, article 1(1)(a); 2010b, para 27–8).

The Chicago School theory derives from the assumption that VAs constitute a form of co-operation similar to co-operation within a firm that almost never threatens competition; hence, VAs should not be a subject of serious concern for antitrust. Only a firm that has achieved a monopoly power is able to extend a monopoly from one market to another by means of vertical practices, although such an extension does not automatically mean that it is profitable to the firm or detrimental to consumers. Vertical practices may facilitate cartels, but there must be sufficient concentration and market power in order to do so. There are multiple possible economic reasons for engaging in vertical practices; conjecturing anti-competitive motives would be almost as difficult as determining actual or likely economic consequences (Posner, 2005, p. 241). Because of these difficulties and because of the possibility of prohibiting a potential efficiency-maximizing practice, it is not rational to ban vertical practices per se. VAs should be deemed lawful where the firm employing the agreement lacks market power and there are four effective rivals on the relevant market (Easterbrook, 2000, pp. 18–19), where firms use different methods of distribution, where the agreement increases output or where there is no link between antitrust injury and the firm's profit (Easterbrook, 1984a, pp. 19–39; 1984b, pp. 159–68).

The Commission assesses VAs against specific rules that vary depending on the type of vertical practice. However, the mere absence of market power does not guarantee the legality of a vertical arrangement. This is where the Commission is much less lenient than the Chicago School. When at least one of the parties to a VA has some degree of market power, the Commission considers it likely for appreciable anti-competitive effects to occur (Commission, 2010b, para 97). VAs entered into between non-competing undertakings where the market share held by the supplier and buyer does not exceed 30 per cent on the relevant market (Commission, 2010a, article 2(4), 3(1)), or, in some cases, 35 per cent (Commission, 2010a, article 7), qualify for exemption from prohibition under Article 101(3) TFEU. VAs between small- and medium-size undertakings and VAs entered into by non-competing undertakings whose individual market share on the relevant market does not exceed 15 per cent generally fall outside the scope of Article 101(1) TFEU.

On a more substantial level, the Commission follows the Chicago School theory in that it does not prohibit VAs *per se*. It recognizes that certain types of VAs are beneficial and that they can improve efficiency within a chain of production or distribution by facilitating better co-ordination between the participating undertakings (Commission, 2010a, para 6). It clearly follows from the Commission's provisions that VAs, together with horizontal agreements, are understood as having the capacity to create efficiencies (Commission, 2004a, para 62). Hence, VAs are not illegal *per se*, which is in line with the Chicago School theory.

Vertical Mergers

Vertical mergers (VMs) involve companies operating at different levels of the supply chain. For example, a manufacturer – the upstream firm – may decide to merge with one of its distributors – the downstream firm.

According to the Chicago School, VMs are created in order to pursue a more efficient method of co-ordination rather than to establish or increase a firm's power to restrict output. Hence, in the absence of a proven predatory power and purpose,⁵ the case for prohibiting VMs is untenable (Bork, 1993, pp. 226–31, 245; Posner, 1974, pp. 526–7; 2001, pp. 227–8).

Through its control of mergers, the Commission prevents mergers that can impede effective competition and harm consumers by significantly increasing the market power of firms. The Commission acknowledges that VMs are generally less likely to significantly impede effective competition than horizontal mergers. VMs may provide substantial scope for efficiencies as a result of the integration of complementary activities. VMs do not entail the loss of direct competition between the merging firms in the same relevant market. VMs generally pose no threat to effective competition unless the merged entity has a significant degree of market power, namely above 30 per cent. Even this, however, is still not a sufficient condition for competitive harm (Commission, 2008b, para 11–14, 23, 25, 27).

In its assessment, the Commission balances anti-competitive effects arising from the merger against the possible procompetitive effects stemming from substantiated efficiencies benefitting consumers (Commission, 2008b, para 21, 28). The Commission focuses on the effect of the merger on the customers to whom the merged entity and its competitors are selling rather than on the effect of the merger on the competitors: if a merger generates efficiency and at the same time harms the competitors, it normally does not give rise to competition concerns.

It is thus evident that the Commission shares the view of the Chicago School regarding VMs. In the absence of a proven anti-competitive foreclosure of actual or potential rivals to supplies, markets and customer base or the significant capacity of a vertically merged firm to coordinate efforts to raise prices, the Commission accepts the legality of VMs.

Resale Price Maintenance

Resale price maintenance (RPM) is a restriction of the resellers' ability to determine their sale price by establishing a fixed or minimum price level to be observed by the buyers. RPM is treated as a hardcore restriction and is *de facto* banned *per se* under EU

⁵ For example, where one of the parties to the merger has a monopoly or where the merger is made with an anti-competitive intent.

competition law, although the Commission acknowledges that certain restraints falling under Article 101(1) – including RPM – may not be caught by Article 101(1) when the restraint is objectively necessary for the existence of a restrictive intra-brand agreement (Commission, 2004a, para 18(2)). Undertakings are formally not precluded from pleading an efficiency defence under Article 101(3) in certain cases. An efficiency defence can, for example, be based on grounds of being helpful during the introductory period of expanding demand of the new product, provided that the market share of each parties does not exceed the 30 per cent threshold and provided that it does not amount to a minimum or fixed sale price as a result of pressure or incentives offered by one of the parties (Commission, 2010b, para 223–6). However, RPM is presumed to be unlikely to be able to fulfil the four cumulative conditions (efficiency considerations) of Article 101(3); hence, there is little if any leeway for the legality of RPM.

According to the Chicago School, RPM maximizes welfare and should be treated as a form of vertical integration, because firms imposing such restraints cannot intend to restrict output – except in rare cases of price discrimination – but rather attempt to maximize their efficiency (Bork, 1993, pp. 280–98; Posner, 1981, pp. 22–6). The Commission's understanding of RPM is therefore not in line with that of the Chicago School. RPM is *de facto* banned *per se* on grounds of RPM agreements restricting output and hampering competition, regardless of efficiency considerations.

Tying and Bundling

Tying refers to situations where customers who purchase one product – the tying product – are required also to purchase another distinct product – the tied product – from the same supplier or someone designated by the supplier. Bundling is analytically similar to tying: in bundling, the seller is paying the buyer to buy a product, whereas in tying the buyer is forced to buy the tied product in order to obtain the tying product.

According to the Chicago School, firms that tie or bundle products are usually participants in competitive industries. Tying may facilitate the introduction of new products by helping firms to capture more of the value of their innovations and to reduce the costs of business transactions (Easterbrook, 1984b, p. 146). Thus, tying arrangements and bundling should not be viewed as anti-competitive. Further, tying arrangements that are used to achieve economies of scale and efficient technological interdependence are valuable both to firms and to consumers (Bork, 1993, p. 381). There may be cases in which tie-ins are anti-competitive; however, it is not feasible to introduce a special tie-in theory, ban tie-ins (Posner, 2001, pp. 207, 235) or permit them (Posner, 1974, p. 514; 1979a, p. 936).

The Commission's treatment of tying and bundling is fully in line with the above reasoning. The Commission acknowledges both the procompetitive (Commission, 2009, para 49, 62; 2010b, para 218) and the anti-competitive effects of tying and bundling (Commission, 2010b, para 214). The Commission's logic is in essence in accordance with the Chicago School theory.

Price Discrimination

Price discrimination (PD) is the practice of selling the same product to different customers at different prices even though the sale cost is the same for all. PD is a stratagem used by a

monopolist to serve additional consumers and to reduce the misallocative effects of the monopoly (Posner, 1979a, p. 934).

The Chicago School interprets PD analytically and makes a difference between PD that is a symptom of cartelization and PD that is due to the market power of individual firms, namely unilateral monopoly power. According to Posner, the former should be a source of concern for law enforcement, whereas the latter should not (Posner, 2001, p. 81). Bork, however, contends that even the former should be of no concern, because there is only one advantage that may be obtained by a monopolist through PD: the ability to discriminate in price between different customers (Bork, 1954, p. 197). In general, Chicago School theory holds that it is not feasible to introduce a law that prohibits PD because of the difficulty of distinguishing between cost-based and purely discriminatory price differences and because the calculation of PD and of its effect on output is subject to rapid obsolescence (Bork, 1993, pp. 400–1). Hence, PD should be neither disallowed *per se* nor tolerated.

The Commission treats PD analytically and for the most part in line with Chicago School theory. In general, it is suspicious of this practice. For example, the Commission explicitly expresses its concern that vertical practices such as exclusive distribution, selective distribution and exclusive customer allocation trigger competition risks that may facilitate PD (Commission, 2010b, para 151, 168, 175). Moreover, it acknowledges the fact that PD may be a problem in a mature market. However, it also admits that PD may be less relevant in a market with growing demand, changing technologies and changing market positions (Commission, 2010b, para 158). The detrimental effect of PD is acknowledged in the case of dominant undertakings exercising such discrimination (Commission, 2004c, para 76). In sum, the Commission's stance towards PD is that it neither bans nor allows it, which is for the most part in line with Chicago School theory.

Conclusions

EU competition policy is a cornerstone of European market integration and the 'economic constitution' of the EU (Wilks, 2009, p. 282). Given its significance for the European integration process, it is essential to disentangle the economic theories underlying EU competition law. This article has sought to add to this challenge by uncovering whether the Commission incorporates the Chicago School theory into EU competition law provisions. The analysis was carried out on the basis of the Commission's guidelines, notices and BERs concerning the production industry (the 'old economy').

The analysis reveals that the Commission does, to a considerable extent, follow Chicago School theory. What remains unclear, however, is whether it does so reflexively and, if so, for which reasons. An important caveat is that the Chicago School took an active part in shaping antitrust as it is today; therefore, it may very well be that the Commission merely adopts commonsensical policies without necessarily being aware of the origin of many of the ideas.

The interesting question – about how the transmission of ideas of the Chicago School into the Commission's logic and thinking has taken place – remains to be explored. The sources of convergence between the Chicago School of antitrust analysis and the Commission's view of EU competition law may be similar to the two centripetal forces pressing EU competition policy and US antitrust together in their treatment of antitrust issues. These two forces are transnational communication between the EU and US competition

authorities (Bartalevich, 2013, pp. 278, 283, 286) and dissemination of knowledge through the world's (elite) graduate programmes in economics that employ a generally common intellectual framework (Kovacic, 2009, p. 332). However, this hypothesis remains purely speculative in nature and the question merits further investigation.

The elements of the Chicago School theory hold strongest in vertical practices; they are somewhat weaker in horizontal practices and in unilateral exclusionary conduct. It appears that instead of applying the Chicago School theory to all situations at all times, the Commission acts pragmatically and selectively in that it creates a set of practical guidelines that change depending on the context. There is likely never to be complete convergence between the Chicago School of antitrust analysis and the Commission's view of EU competition law – and for good reasons. One particular reason stands out: the Commission maintains its peculiar view of competition law so that it can further the ideal of the internal market and the economic union. The ultimate economic goal of the European Community articulated in Article 2 TEC was the wholesome and sustainable development of the economy and economic welfare within the single market. Competition policy was seen as an instrument with which to achieve the intermediary goal of the common market and to achieve the ultimate economic goal of the Community (Parret, 2010, pp. 342–3). Indeed, the Commission appears to be less concerned about maximizing net allocative efficiency – which clearly runs counter to Chicago School theory – and more concerned about the protection of the consumers and of the process of competition in the internal market (Blanke, 2012, pp. 374–6). A typical example among a number of others that illustrate this well would be the Commission's strict position towards the vertical restraints that pose obstacles to cross-border trade (Marsden and Gormsen, 2010, p. 914). In this sense, the Commission's antitrust philosophy appears to show flexibility despite being influenced by Chicago School theory.

Correspondence:

Dzmitry Bartalevich
Copenhagen Business School
Department of Business and Politics
Porcelænshaven 1
2000 Frederiksberg
Denmark
email: db.dbp@cbs.dk

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European Commission merger control under Council Regulation No. 139/2004: Mapping the most expansive acquirers in merger and acquisition transactions in 2004–2015

Dzmitry Bartalevich

Abstract

In EU merger control, the European Commission is empowered by Council Regulation (EC) No. 139/2004 to regulate changes in market structure by deciding whether two or more firms may merge, combine, or consolidate their businesses into one. These decisions affect various market players, including major EU and non-EU businesses, as well as vast product and geographic markets. Offering a network perspective on the cleared merger and acquisition transactions in Phase I decisions under Article 6(1)(b) of Council Regulation (EC) No. 139/2004 (20 January 2004–01 July 2015), this article aims to investigate the overall composition of mergers and acquisitions in terms of their industry sectors and domiciles and identify the types of firms that acquire more targets than other firms (i.e., more expansive firms). The analysis is conducted by using data from the European Commission (601 transactions) and Bureau van Dijk (992 transactions).

Keywords

EU competition policy; EU merger control; European Commission; mergers and acquisitions; private equity firms; network analysis

1. Introduction

EU competition policy plays a significant role in shaping European market integration through the wide discretionary powers conferred on the European Commission (Cini & McGowan, 2008; Gerber, 2003). In merger control – one of the three core areas of EU competition policy – the Commission is empowered by Council Regulation (EC) No. 139/2004 (the European Union Merger Regulation – EUMR) to regulate changes in market structure by deciding whether two or more firms may merge, combine, or consolidate their businesses into one. These decisions affect various market players, including major EU and non-EU businesses, as well as vast product and geographic markets.

The European Commission's merger control under the EUMR has received considerable attention in the literature. Research on EU merger control has extensively focused on the various parameters employed by the Commission in competitive assessments of mergers (mostly Phase II decisions) (Bergman, Jakobsson, & Razo, 2005; Duso, Gugler, & Szücs, 2013; Pitofsky, 2007; Renckens, 2007; Witt, 2013), analysis of specific individual merger cases or industry sectors (Aigner, Budzinski, & Christiansen, 2006), merger enforcement (Budzinski, 2010), and the wider ideational component of the EUMR (Buch-Hansen & Wigger, 2011; Kassim & Wright, 2009; Vallindas, 2006; Wigger, 2012). However, few – if any – studies have investigated the overall composition of mergers and acquisitions (M&As) cleared (approved) by the Commission in terms of their attributes and identified the types of firms that acquire more targets than other firms (i.e., more expansive firms). The article seeks to address this research gap by offering a network perspective on the cleared M&A transactions under the EUMR in order to identify and map the most expansive acquirer firms and define their attributes (i.e., their industry sectors and domiciles).

The research objectives of this article are threefold. The first objective is (1) to identify and map the most expansive acquirers and their targets in M&A transactions¹ cleared by the European Commission for

¹ A concentration arises where two or more previously independent undertakings merge their businesses, where sole or joint control of an undertaking is acquired by another undertaking (acquisition) or undertakings (joint acquisition), and where a joint venture is created (Council, 2004, Article 3). Joint acquisitions and joint ventures are not included in the analysis.

the period from 20 January 2004 (i.e., the date when the EUMR was adopted) to 01 July 2015 (i.e., the date until when the data were collected); (2) to identify the industry sectors and domiciles of the most expansive acquirers; (3) to calculate outdegree centrality scores for the most expansive acquirers (to measure expansiveness); and (4) to report the findings. The second objective is to position the findings within the larger picture of M&A transactions occurring in the EU from 20 January 2004 to 01 July 2015 by analyzing data on acquirers' domiciles and industry sectors in a larger pool of data on M&A transactions provided by Bureau van Dijk (BvD), a major publisher of company and business intelligence information. The analysis is conducted by using data from the Commission (601 M&A transactions) and BvD (992 M&A transactions). The third objective is to reflect on the results of the analysis obtained through the first two objectives.

To address the research objectives, network analysis is employed to model the relational ties between acquirer firms and the corresponding target firms and to analyze the results (Wasserman & Faust, 1994). Analysis of individual cases in which M&A transactions were cleared is not covered in this article.

The key findings are that according to the data from the Commission and BvD, the most expansive acquirers are headquartered in the UK, Germany, the US, France, and the Netherlands and classified as belonging to one of 4 industry sectors: 'Banking', 'Other services', 'Machinery, equipment, furniture, and recycling', or 'Chemicals, rubber, plastics, and other non-metallic products'. Of the 84 most expansive acquirers, which altogether account for 601 acquisitions, CVC Capital Partners is the most expansive, and Advent International, the Carlyle Group, 3i Group, and PAI Partners follow as the next most expansive. Acquirers in 'Banking' compose 50 % of the most expansive acquirers according to the Commission data and 28 % of all acquirers according to the BvD data. Followed by financial services groups, investment banking groups, and banks, private equity (PE) firms represent a considerable majority in this sector.

The article contains 5 sections in addition to the Introduction and Conclusion. The section 'EU merger control' positions EU merger control within the three main areas of EU competition policy and provides an overview of the core rules and procedures under the EUMR. The 'Data and method' section explains the network method employed in the analysis, describes the data, and introduces the relevant tools and concepts from network analysis. The 'Findings' section presents the results of the analysis and outlines the most expansive acquirers and their attributes (i.e., domiciles and industry sectors). The section 'The larger picture of M&A transactions in the EU' presents the analysis of the larger pool of relevant data on M&A transactions in the EU acquired from BvD and positions the findings within this extra dataset. The 'Discussion' section unfolds two relevant points for reflection with regard to the form and content of merger control in the EU based on the analysis of the data from the Commission and BvD: the permissive merger control under the EUMR (the form) and the strong presence of PE firms in M&A transactions with an EU dimension (the content).

2. EU merger control

Merger control is one of the three core areas of EU competition policy: (1) EU antitrust, which covers (a) horizontal agreements, vertical agreements, and collusion (Article 101 TFEU) and (b) abuse of a dominant position (Article 102 TFEU); (2) merger regulation; and (3) regulation of state aids. A merger requires two or more firms to consolidate into a new entity with a new ownership and management structure, whereas an acquisition occurs when one firm takes over all of the operational management decisions of another. Since mergers are somewhat uncommon, the two terms have become conflated. Further, because the practical difference between the two terms is gradually being eroded, mergers and acquisitions are frequently referred to as 'M&A transactions' or 'M&As'. The Commission commonly refers to M&A transactions and concentrations as 'mergers' in its key publications: namely, 'horizontal mergers' (Commission, 2004b) and 'non-horizontal mergers' (Commission, 2008). This article uses the term 'M&A transactions' interchangeably with 'mergers'.

The purpose of merger control is to enable competition authorities to regulate changes in market structure by deciding whether two or more commercial firms may merge, combine, or consolidate their businesses into one. The rationale for most mergers is procompetitive, and most mergers have no adverse effects on competition (Kolasky, 2004, p. 38). Some M&As nevertheless create market power and thereby

reduce competition and welfare. Thus, the task of the Commission is to screen out the few anticompetitive mergers from the many procompetitive ones.

Mergers can be horizontal and non-horizontal. Horizontal mergers are concentrations where the concerned undertakings are actual or potential competitors on the same relevant market. Horizontal mergers that would likely harm consumers by increasing firms' market power, profitably increasing prices, reducing the output, choice or quality of goods and services, diminishing innovation, or otherwise negatively affecting competition are prohibited (Commission, 2004b, para 8). Horizontal mergers have the scope of generating efficiencies, and they are subject to a competitive assessment (Commission, 2004a, para 62).² Non-horizontal mergers entail two broad types of mergers: vertical and conglomerate. Vertical mergers involve companies operating at different levels of the supply chain, whereas conglomerate mergers occur between firms in a relationship that is neither horizontal nor vertical. Non-horizontal mergers pose no threat to effective competition unless the merged entity has a significant degree of market power and the entity impedes competition through coordinated or non-coordinated effects (Commission, 2008, para 18-19, 29-90).

The EUMR, adopted on 20 January 2004, is the current merger control regulation in the EU. The EUMR is supplemented by Council Regulation (EC) No. 802/2004 and the Commission's notices and guidelines, which provide guidance regarding the interpretation of the various provisions of the EUMR. The EUMR applies to concentrations with a Community dimension (an EU dimension). A concentration arises where two or more previously independent undertakings merge their businesses, where sole or joint control of an undertaking is acquired by another undertaking (acquisition) or undertakings (joint acquisition), and where a joint venture is created (Council, 2004, Article 3(1)). The Community dimension is imposed to allocate responsibility for concentrations between the Commission and the Member States, and it arises where the combined aggregate worldwide turnover of all the undertakings is more than 5,000 million Euro and where the aggregate Community-wide turnover of each of at least two of the undertakings is more than 250 million Euro, unless each of the undertakings concerned achieves more than two-thirds of its aggregate Community-wide turnover within the same Member State (Council, 2004, Article 1(2)).³ Concentrations without a Community dimension are assessed under the appropriate national legislation, whereas concentrations with a Community dimension are assessed by the Commission under the provisions of the EUMR. The Commission's decision under the provisions of the EUMR is decisive, and no other rule of national or EU competition law is generally applicable.

The Commission must be notified of all concentrations with a Community dimension. The concentration cannot proceed before such notification is given and before the Commission deems the concentration compatible with the common market. Upon notification, the Commission is obliged to assess, within a period of 25 working days, whether the concentration in question falls within the scope of the EUMR pursuant to Article 6(1)(a) (Council, 2004, Article 4(4)). If the concentration falls within the scope of the EUMR, the Commission assesses whether it raises serious doubts regarding its compatibility with the common market pursuant to Article 6(1)(b) and initiates a Phase I investigation. Approximately 90 % of mergers for which the Commission receives notification are addressed in Phase I proceedings (Jones & Sufrin, 2014, p. 1139). When the Commission finds that the concentration in question raises serious doubts regarding its compatibility with the common market, it initiates a Phase II investigation pursuant to Article 6(1)(c) of the EUMR. Only a very small number of the notified cases – approximately 3 to 4 % – are subjected to a Phase II investigation (Jones & Sufrin, 2014, p. 1139).

To conclude, Phase I proceedings often entail a brief screening aiming to assess the foreseeable impact of the merger in the light of the relevant factors and conditions, implying that only the relevant assessment parameters for horizontal and non-horizontal mergers are applicable. Not all the parameters may be relevant for a given case. Further, few cases actually make it to the detailed assessment against all the parameters under Phase I proceedings, and even fewer cases make it to Phase II proceedings.

² The following parameters are used in the competitive assessment: market share levels, concentration levels, possible anticompetitive effects resulting from the merger, countervailing buyer power, entry barriers, efficiencies, and status as a failing firm for one of the merging parties (Commission, 2004b, para 14-88).

³ However, if the proviso applies – if each of the undertakings concerned achieves more than two-thirds of its Community turnover within the same Member State – the Commission is normally not involved in the merger review. The purpose of the proviso is to exclude concentrations where the effects are felt primarily in one Member State.

3. Data and method

3.1 Network analysis

In this article, network analysis is used to map and visualize the most expansive acquirers and their targets in M&A transactions, to calculate centrality scores for the most expansive acquirers, and to report the findings.

The concept of a network refers to a set of actors and ties among them. Network analysis is a method employed to model these relations in order to depict the structure of a group (Wasserman & Faust, 1994, p. 9). The network perspective differs from that of standard social and behavioral sciences in that it focuses not on autonomous individual actors or their attributes but rather on the associations between various actors or between the actors' attributes, as well as on the relations between the actors or between the actors' attributes. In this article, actors are defined as the direct participants in an M&A transaction, namely, the acquirer firm and the target firm.

Actors are linked to one another by relational ties (Wasserman & Faust, 1994, p. 18). The defining feature of a tie is that it establishes a linkage between a pair of actors. In the context of M&A transactions, a relational tie between acquirer firms and target firms is established where an acquirer firm acquires a target firm and where the M&A transaction is cleared by the Commission under Article 6(1)(b) of the EUMR. In other words, the relation denotes the acquisition and ownership of a target firm by an acquirer firm.

Network methods are generally dichotomized into those that are descriptive versus those that are inferential. In this article, descriptive network analysis is used. Analysis of the network data is conducted by using the software program UCINET 6 (Borgatti, Everett, & Freeman, 2002), and the network data are visualized by using the *igraph* package (Csárdi & Nepusz, 2006) in the statistical computing environment R (R Development Core Team, 2014).

3.2 Data

The dataset is constructed on the basis of the data on M&A transactions published on the official website of the Commission.⁴ The dataset contains only the most expansive acquirers and their targets: given the high number of unique acquirers and the much higher number of unique targets, it is not practical to use a dataset covering all the M&A transactions. The most expansive acquirers are defined as firms that acquired at least 4 targets. It contains information on 601 M&A transactions, and the data cover the period from 20 January 2004 (i.e., the date when the EUMR was adopted) to 01 July 2015 (i.e., the date until when the data were collected). The period includes the cases decided upon under the EUMR, and it covers the M&A transactions according to the dates the M&A transactions were cleared and completed. Eighty-four acquirers, which acquired 601 targets, were identified. The data contain the Commission's clearance decisions (Council, 2004, Article 6(1)(b)(c)). However, the data exclude two types of M&A transactions.

According to Article 3 of the EUMR, a concentration arises where two or more previously independent undertakings merge their businesses, where sole or joint control of an undertaking is acquired by another undertaking (acquisition) or undertakings (joint acquisition), and where a joint venture is created (Council, 2004, Article 3). The following two types of M&A transactions within this definition of concentration are excluded from the dataset: joint acquisitions and joint ventures. In essence, these transactions are excluded to maintain the acquirer–target relation. There are, however, additional explanations justifying their exclusion.

In the case of joint acquisitions, it is difficult to determine the extent to which each of the acquirers owns the target (the share of each of the acquirers in the joint control), especially with regard to operationalizing the (strength of) ties between the two acquirers and between each of the acquirers and the target, considering that the network is a directed and a non-valued one.⁵ Moreover, one of the acquirers may own the other acquirer in the same M&A transaction. It is possible that a considerable number of potentially important ties between two acquirers and between acquirers and targets were omitted from the

⁴ <http://ec.europa.eu/competition>

⁵ A more comprehensive dataset could have been constructed to create an adjacency matrix with valued ties.

exclusion of this type of M&A transaction from analysis. The exclusion of these transactions also places limits on other useful features of network analysis, such as analysis of structural equivalence or block models. In sum, however, the inclusion of joint acquisitions could have posed difficulties for the operationalization of the (strength of) ties in a directed, non-valued adjacency matrix and for the computation of degree centrality measures.

A joint venture is a business arrangement in which two or more undertakings agree to develop a new entity and new assets for the purpose of accomplishing a specific task. Joint ventures are excluded from the dataset because there are no acquirers and targets in this type of M&A transaction, implying that the acquirer–target relation does not hold.

3.3 Adjacency matrix

Graphs are a common way of conceptualizing and visualizing networks. A graph (v, e) consists of a set of vertices v (also called ‘nodes’) and a set of edges e (also called ‘links’). The edges connect pairs of vertices. When two vertices (v_i, v_j) are joined by an edge, the vertices are called ‘adjacent’. In other words, a tie exists between vertices v_i and v_j . Graphs may be directed and undirected. In directed graphs, the edges have a direction, whereas in undirected graphs, the edges are unordered pairs (Borgatti, Everett, & Johnson, 2013, p. 12).

Adjacency matrices are another common way of conceptualizing networks. The adjacency matrix (sometimes called ‘the connection matrix’) of a graph is a matrix with rows and columns labeled by vertices (v_i, v_j) with a ‘1’ or ‘0’ positioned according to whether v_i and v_j are adjacent (connected). Rows and columns represent vertices, and an entry in row i and column j represents a tie from i to j . The direction goes from rows to columns.

The adjacency matrix used in the analysis was constructed on the basis of the dataset. The matrix contains ties between acquirers and targets. For example, when an acquiring firm (v_i) acquires a target firm (v_j) , the entry in the corresponding row i and the corresponding column j receives a ‘1’, which means that one tie – a directed edge between vertices v_i and v_j – exists between the acquirer (v_i) and the target (v_j) . The matrix contains within- and cross-country M&A transactions.

In terms of its properties, the adjacency matrix is rectangular – meaning that the horizontal and vertical dimensions are not the same – and non-symmetric.

3.4 Centrality

Centrality is a family of concepts that refer to node centrality in terms of the contribution a node makes to the structure of a network. In other words, centrality is a measurement of the structural importance of a node. Measures of centrality are calculated with respect to a single relation between the nodes in a network. The following three types of centrality measures are appropriate in a directed, non-valued network: degree centrality, β centrality, and k -reach centrality (Borgatti et al., 2013, pp. 175-178).

Degree centrality is a measure of centrality that captures the number of ties of a given type for each node (Freeman, 1979). A node’s degree can be calculated without considering information on the full network in which it is embedded. Degree centrality is the row and column sums in an adjacency matrix, where row sums are referred to as outdegree and column sums are referred to as indegree. In the adjacency matrix used in this article, rows represent acquirers, and columns represent targets. Outdegree thus indicates the number of outgoing ties, whereas indegree indicates the number of incoming ties. Degree centrality can be legitimately used even when the process of interest is not based on geodesic paths (Borgatti, 2005, p. 70). Thus, outdegree centrality is a measure of the expansiveness of acquirers in terms of the number of their targets. In this article, outdegree centrality is used as the measure of centrality to account for acquirers’ expansiveness. An important caveat is that the measure of outdegree centrality is not dependent on the deal values of M&A transactions; thus, expansive acquirers, in terms of the number of targets, may not necessarily be firms that acquired the most in terms of the value for which the targets were purchased.

B centrality and k -reach centrality are not considered well-suited for an analysis of the data used in this article for a number of reasons. B centrality is a centrality measure generated by two parameters, α and β ; the parameter β reflects the degree to which a node's status is a function of the statuses of the nodes to which it is connected (Bonacich, 1987). This centrality measure is able to reveal a node's importance by considering that of the nodes to which it is connected. K -reach centrality reveals how many nodes a given node can reach in k or fewer steps ('out' k -reach) and how many nodes can reach a given node in k or fewer steps ('in' k -reach) (Borgatti et al., 2013, p. 178). These two centrality measures are inappropriate for the data analysis in this article because acquirers are largely disconnected from other acquirers – the acquirers are connected only to their respective targets. Further, in the case of acquirers' domiciles and industry sectors, the use of these centrality measures would not make any practical sense because these two networks are artificially constructed. That is, ties between acquirers' and targets' domiciles and between their respective industry sectors are ties between the acquirers' and the targets' attributes, which are designated to reveal additional information about acquirers and their targets.

4. Findings

The most expansive acquirers are defined as firms that have acquired 4 or more targets. The minimum number of acquisitions is 4, and the maximum is 29. In all, there are 84 expansive acquirers with 601 targets. The rectangular matrix was transformed into a square matrix to compute degree centrality scores, and the outdegree centrality scores are normalized. Table 1 shows the domiciles, sectors, and normalized outdegree centrality scores of the 84 most expansive acquirers listed in descending order of outdegree centrality. The information on the industry sectors – including the categorization of industry sectors – and domiciles of the most expansive acquirer firms is retrieved from BvD.

Table 1. The 84 most expansive acquirers and their corresponding domiciles, sectors, and normalized outdegree centrality scores.

Acquirer	Sector	Domicile	Centrality
CVC Capital Partners	Banking	Luxembourg	1.190476
Advent International	Banking	United States	0.821018
The Carlyle Group	Banking	United States	0.779967
3i Group	Banking	United Kingdom	0.738916
PAI Partners	Banking	France	0.738916
Apollo Global Management		United States	0.656814
Apax Partners	Banking	United Kingdom	0.615764
Bain Capital	Banking	United States	0.615764
EQT Partners	Banking	Sweden	0.615764
Cinven	Banking	United Kingdom	0.574713
Nordic Capital	Banking	Channel Islands	
		(United Kingdom) ⁶	0.574713
Triton	Banking	Channel Islands	
		(United Kingdom)	0.574713
Bridgepoint Capital	Banking	United Kingdom	0.533662
KKR	Banking	United States	0.533662
The Blackstone Group	Banking	United States	0.45156
Ineos	Chemicals, rubber, plastics, and other non-metallic products	Switzerland	
			0.410509
Avnet	Wholesale and retail trade	United States	
			0.369458
Sun Capital Partners	Banking	United States	0.369458
Barclays	Banking	United Kingdom	0.328407
BC Partners	Banking	United Kingdom	0.328407
CD&R	Banking	United States	0.328407
Goldman Sachs	Banking	United States	0.328407
AXA	Banking	France	0.287356

⁶ The Channel Islands is a Crown dependency, which is not part of the UK or its overseas territories. In the table, however, the country affiliation is set to 'United Kingdom'.

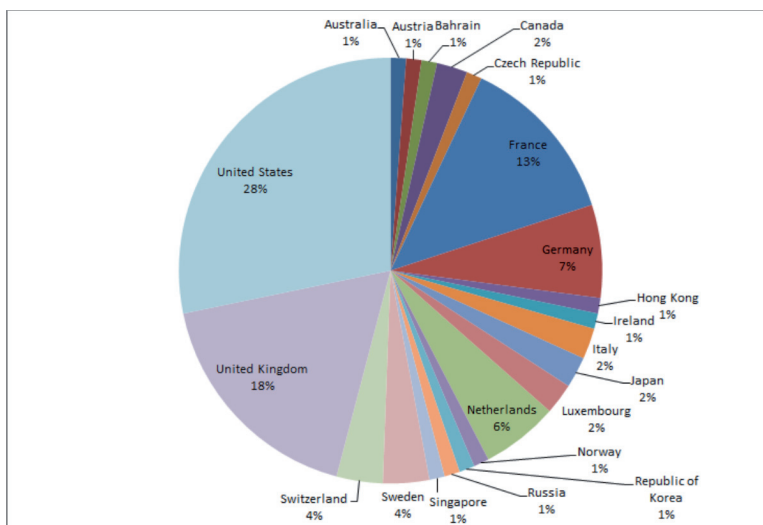
BNP Paribas	Banking	France	0.287356
Charterhouse Capital Partners	Banking	United Kingdom	0.287356
GE	Other services	United States	0.287356
Siemens	Machinery, equipment, furniture, and recycling	Germany	0.287356
Eni	Primary sector	Italy	0.246305
Gilde	Banking	Netherlands	0.246305
Industri Kapital (now IK Investment Partners)	Banking	United Kingdom	0.246305
LBO France	Banking	France	0.246305
Onex Corporation	Banking	Canada	0.246305
Platinum Equity	Banking	United States	0.246305
TPG Capital	Banking	United States	0.246305
Veolia	Other services	France	0.246305
Allianz	Banking	Germany	0.205255
Altor Equity Partners	Banking	Sweden	0.205255
Arrow Electronics	Machinery, equipment, furniture, and recycling	United States	0.205255
Aviva	Insurance	United Kingdom	0.205255
Berkshire Hathaway	Other services	United States	0.205255
Cargill	Food, beverages, and tobacco	United States	0.205255
Cerberus Capital Management	Banking	United States	0.205255
Crédit Agricole	Banking	France	0.205255
Deutsche Bank	Banking	Germany	0.205255
E.ON	Gas, water, and electricity	Germany	0.205255
Fiat	Machinery, equipment, furniture, and recycling	Italy	0.205255
GDF Suez (now Engie)	Gas, water, and electricity	France	0.205255
IBM	Other services	United States	0.205255
Oaktree Capital Management	Banking	United States	0.205255
Orkla Group	Other services	Norway	0.205255
Permira	Banking	United Kingdom	0.205255
Philips	Machinery, equipment, furniture, and recycling	Netherlands	0.205255
Vodafone	Post and telecommunications	United Kingdom	0.205255
ABN AMRO	Banking	Netherlands	0.164204
Adecco	Other services	Switzerland	0.164204
Alcoa	Metals and metal products	United States	0.164204
Alstom	Other services	France	0.164204
ArcelorMittal	Metals and metal products	Luxembourg	0.164204
Basell	Chemicals, rubber, plastics, and other non-metallic products	Germany/Netherlands	0.164204
Candover Investments	Banking	United Kingdom	0.164204
CRH	Construction	Ireland	0.164204
Deutsche Bahn	Transport	Germany	0.164204
EDF	Gas, water, and electricity	France	0.164204

EPH	Gas, water, and electricity	Czech Republic	0.164204
Ericsson	Machinery, equipment, furniture, and recycling	Sweden	0.164204
Faurecia	Machinery, equipment, furniture, and recycling	France	0.164204
Flextronics	Machinery, equipment, furniture, and recycling	Singapore	0.164204
General Motors	Machinery, equipment, furniture, and recycling	United States	0.164204
Investcorp	Banking	Bahrain	0.164204
Lion Capital	Banking	United Kingdom	0.164204
Lukoil	Primary sector	Russia	0.164204
Macquarie Group	Banking	Australia	0.164204
Magna International	Machinery, equipment, furniture, and recycling	Canada	0.164204
One Equity Partners	Banking	United States	0.164204
Petroplus	Chemicals, rubber, plastics, and other non-metallic products	Switzerland	0.164204
Procter & Gamble	Chemicals, rubber, plastics, and other non-metallic products	United States	0.164204
Samsung	Machinery, equipment, furniture, and recycling	Republic of Korea	0.164204
SHV Holdings	Other services	Netherlands	0.164204
Sony	Machinery, equipment, furniture, and recycling	Japan	0.164204
Strabag	Construction	Austria	0.164204
Toshiba	Machinery, equipment, furniture, and recycling	Japan	0.164204
TPV Technology	Machinery, equipment, furniture, and recycling	Hong Kong	0.164204
UTC	Machinery, equipment, furniture, and recycling	United States	0.164204
VINCI	Construction	France	0.164204

Almost one-third of the 84 most expansive acquirers – 28 % – are headquartered in the US, which is the only non-EU domicile with such a substantial percentage of the most expansive acquirers. Switzerland, with 4 %, is the second most expansive non-EU domicile after the US. The UK and France follow the US – with 18 % and 13 %, respectively. Germany, the Netherlands, Sweden, and Switzerland are the only domiciles in the 4–7 % range. The rest of the domiciles, each of which constitutes only 1–2 % of the total

number of the most expansive acquirers, are Australia, Austria, Bahrain, Canada, Czech Republic, Hong Kong, Ireland, Italy, Japan, Luxembourg, Norway, Republic of Korea, Russia, and Singapore. The pie chart in figure 1 shows the share of acquirers by domicile. Firms' domiciles may in some cases differ from the domiciles of these firms' ultimate global owners; however, this possibility does not undermine the research findings presented in this article.

Figure 1. Share of domiciles for the most expansive acquirers.

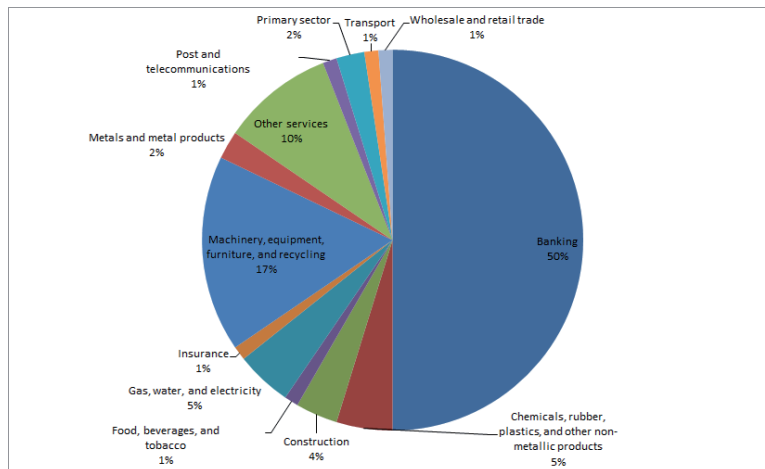


The categorization of industry sectors is adopted from BvD. The 19 categories are as follows: 'Banking',⁷ 'Chemicals, rubber, plastics, and other non-metallic products', 'Construction', 'Education and health', 'Food, beverages, and tobacco', 'Gas, water, and electricity', 'Hotels and restaurants', 'Insurance', 'Machinery, equipment, furniture, and recycling', 'Metals and metal products', 'Other services', 'Post and telecommunications', 'Primary sector', 'Public administration and defense', 'Publishing and printing', 'Textiles, leather, and apparel', 'Transport', 'Wholesale and retail trade', and 'Wood, cork, and paper'. Most of the category names are self-explanatory, except for 'Other services', which is a broad category that includes industry sectors that cannot be classified as any of the remaining 18 sectors.

Acquirers in the 'Banking' sector compose 50 % of the total number of the most expansive acquirers. PE firms, investment banking groups, and financial services groups are included in this (broadly defined) sector. Followed by financial services groups, investment banking groups, and banks, PE firms represent an unequivocal majority in this sector. PE firms somewhat inflate the results, as there would have been substantially fewer acquirers belonging to the 'Banking' sector if there were fewer or no PE firms in this category. The second most expansive industry sector, 'Machinery, equipment, furniture, and recycling', comprises 14 acquirers, which are responsible for 17 % of all the acquisitions by the most expansive acquirers. The 8 acquirers in the 'Other services' sector compose the third most expansive group and represent 10 % of the total number of the most expansive acquirers. 'Chemicals, rubber, plastics, and other non-metallic products' and 'Gas, water, and electricity' each have a share of 5 % of all the targets of the most expansive acquirers. 'Construction' accounts for 4 %. The remaining industry sectors – 'Food, beverages, and tobacco', 'Insurance', 'Metals and metal products', 'Post and telecommunications', 'Primary sector', 'Transport', and 'Wholesale and retail trade' – are in the 1–2 % range. The pie chart in figure 2 shows the share of the most expansive acquirers by industry sector.

Figure 2. Share of industry sectors for the most expansive acquirers.

⁷ According to BvD, PE firms and investment banking and financial services groups are included in the (broadly defined) 'Banks' sector. Henceforth, the category 'Banking' is used instead of 'Banks' for semantics in order to emphasize that PE firms and investment banking and financial services groups were placed in this category in addition to banks.

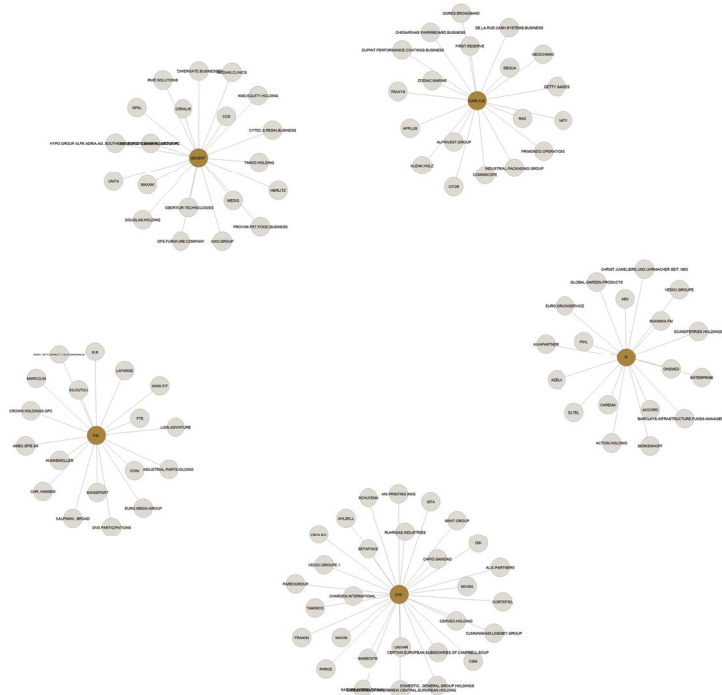


CVC Capital Partners is the most expansive acquirer, with 29 targets and an outdegree centrality of 1.19, and it is followed by Advent International, the Carlyle Group, 3i Group, and PAI Partners, which are in the 0.73–0.82 range in terms of outdegree centrality score. These are the top 5 acquirers, all of which are in ‘Banking’. Figure 3 visualizes these top 5 acquirers and their respective targets. Filled circles denote acquirers, and blank circles denote their targets. Arrow heads indicating direction were removed for clearer visualization; however, in all instances, a tie goes from acquirer (a filled circle) to targets (blank circles). For clearer visualization, the Fruchterman–Reingold algorithm was used.⁸

These 5 acquirers are followed by the acquirers with outdegree centrality scores in the 0.32–0.65 range: Apollo Global Management, Apax Partners, Bain Capital, EQT Partners, Cinven, Nordic Capital, Triton, Bridgepoint Capital, KKR, the Blackstone Group, Ineos, Avnet, Sun Capital Partners, Barclays, BC Partners, CD&R, and Goldman Sachs. All of these acquirers – except for Ineos and Avnet – are also in ‘Banking’. In general, ‘Banking’ is the most prevalent industry sector among the acquirers with outdegree centrality scores above 0.24, whereas ‘Machinery, equipment, furniture, and recycling’ is the most prevalent sector among acquirers with outdegree centrality scores below 0.17.

Figure 3. Top 5 acquirers and their targets.

⁸ The supplementary files to this article contain the dataset, the adjacency matrix, and network graphs of the 84 most expansive acquirers and their targets.



5. The larger picture of M&A transactions in the EU

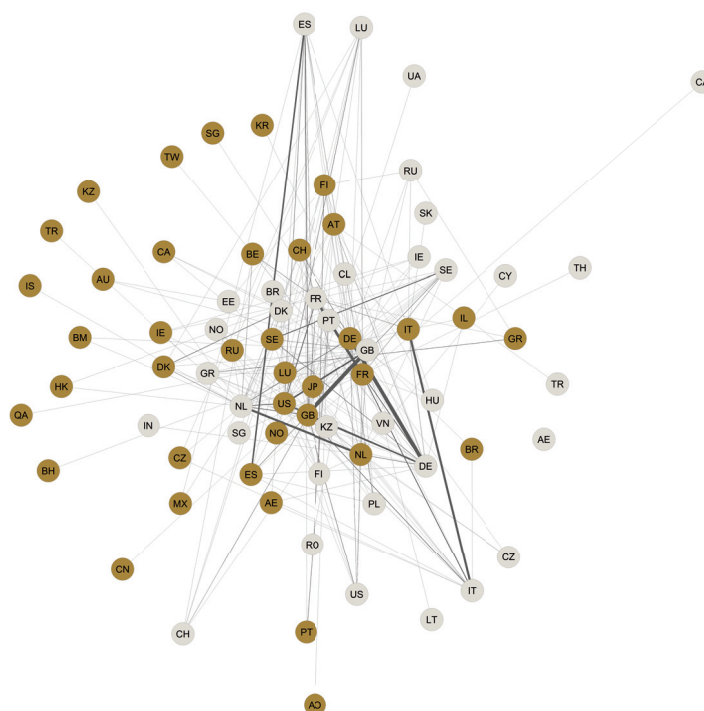
To position the findings presented in the previous section within the larger picture of M&A transactions in the EU during the timeframe from 20 January 2004 to 01 July 2015, it is pertinent to analyze the data on acquirers' domiciles and industry sectors in the largest possible pool of M&A transactions occurring during this timeframe. While it is not possible to export such data from the Commission's official website, BvD has information on acquirers' and targets' domiciles and industry sectors, as well as other useful information regarding M&A transactions.⁹ An important caveat is that the BvD database is not a specialized database on M&A transactions in the EU – the Commission's official website is arguably a more comprehensive source. Thus, there are limitations to the data presented below – most obviously, the accuracy and completeness of the data retrieved from BvD are not clear. BvD contains 992 M&A transactions in the relevant time period for which the transactions are confirmed and completed, the regulatory body is the Commission, the specified region is the EU, and the relevant deal type is either acquisition or institutional buy-out.

Two adjacency matrices were constructed on the basis of the data retrieved from BvD. The first contains ties between acquirers and targets according to their respective domiciles. The matrix contains both within- and cross-country M&A transactions. Rows represent the acquirers' domiciles, and columns represent the targets' domiciles. The matrix is transformed into a square matrix to compute degree centrality scores. Figure 4 is a (simplified) visualization of the matrix in the form of a network graph.¹⁰ For clearer visualization, the Fruchterman–Reingold algorithm was used. Filled circles denote acquirers' domiciles, whereas blank circles denote their targets' domiciles.

Figure 4. Network graph of acquirers and targets according to their respective domiciles.

⁹ <http://www.bvdinfo.com>

¹⁰ The matrix is visualized as an affiliation matrix.



According to the BvD data, acquirers headquartered in the following 20 countries are the most expansive in terms of their number of targets: the UK, Germany, the US, France, the Netherlands, Italy, Spain, Sweden, Belgium, Switzerland, Denmark, Japan, Austria, Luxembourg, Norway, Finland, Canada, Ireland, Russia, and Qatar. Table 2 shows these top 20 domiciles arranged according to their normalized outdegree centrality scores. According to both the BvD data and the data on the most expansive acquirers exported from the Commission’s website, the top 5 acquirers’ domiciles are the same (though they differ in their order according to outdegree centrality): the US, the UK, Germany, France, and the Netherlands. According to the Commission data, very few of the headquarters of the most expansive acquirers are located in Italy, and none of them are located in Spain; however, these domiciles are nonetheless among the domiciles with the most expansive acquirers according to the BvD data (Italy has a larger outdegree centrality score than Spain: 2.05 versus 1.45). Sweden has a high outdegree centrality score (1.39) among other expansive domiciles; however, Sweden’s share of the most expansive acquirers is much lower (4 %) than that of the other countries with the most expansive acquirers.

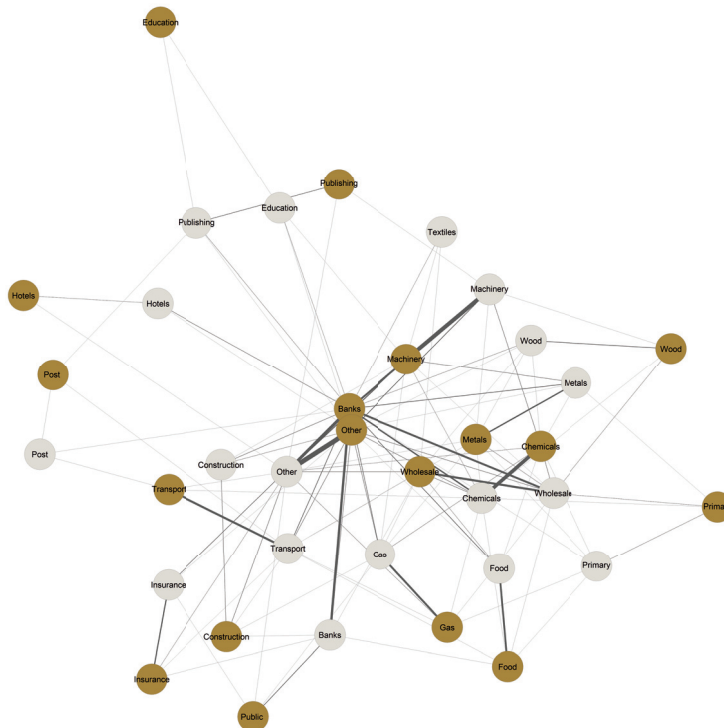
Table 2. Top 20 domiciles and the corresponding normalized outdegree centrality scores.

Domicile	Centrality
United Kingdom	7.900187
Germany	7.417639
United States	5.374419
France	4.362294
Netherlands	3.053369
Italy	2.058633
Spain	1.459894
Sweden	1.393895
Belgium	0.932688
Switzerland	0.839024
Denmark	0.547362
Japan	0.52602
Austria	0.483733
Luxembourg	0.471087
Norway	0.235543
Finland	0.232777
Canada	0.21104

Ireland	0.205508
Russia	0.162825
Qatar	0.131999

The second adjacency matrix that was constructed on the basis of the BvD data contains ties between acquirers and targets according to their respective industry sectors. Rows represent the acquirers' industry sectors, whereas columns represent the targets' industry sectors. Figure 5 presents a (simplified) visualization of the matrix in the form of a network graph.¹¹ Filled circles denote the acquirer firms' industry sectors, and blank circles denote the target firms' industry sectors. Isolates were removed. For clearer visualization, the Fruchterman–Reingold algorithm was used. Table 3 shows the normalized outdegree centrality scores of the industry sectors listed in descending order of outdegree centrality. The pie chart in figure 6 shows the share of acquirers by industry sector. The following 5 industry sectors have the highest outdegree centrality scores: 'Banking', 'Other services', 'Machinery, equipment, furniture, and recycling', 'Chemicals, rubber, plastics, and other non-metallic products', and 'Wholesale and retail trade'. Collectively, these 5 industry sectors account for roughly 82 % of all the acquisitions, with the majority of acquisitions occurring in 'Banking'. The outdegree centrality score for the 'Banking' sector is 17, which is substantially higher than that of the remaining sectors. A notable exception is 'Other services', which has an outdegree centrality score of 13.5. These two industry sectors are unequivocally the most expansive sectors. Together, they account for 50 % of all the acquisitions – 28 % and 22 % for 'Banking' and 'Other services', respectively – implying that acquirers from these two sectors acquired approximately half of the targets. 'Machinery, equipment, furniture, and recycling' and 'Chemicals, rubber, plastics, and other non-metallic products' rank third and fourth with 14 % and 11 %, respectively. 'Wholesale and retail trade', with 7 %, ranks fifth. According to both the BvD data and the data on the most expansive acquirers exported from the Commission's website, the 4 most expansive acquirers' industry sectors are the same (though they differ in their order according to outdegree centrality): 'Banking', 'Other services', 'Machinery, equipment, furniture, and recycling', and 'Chemicals, rubber, plastics, and other non-metallic products'. These 4 sectors are unequivocally the most expansive sectors.

Figure 5. Network graph of acquirers and targets according to their respective industry sectors.

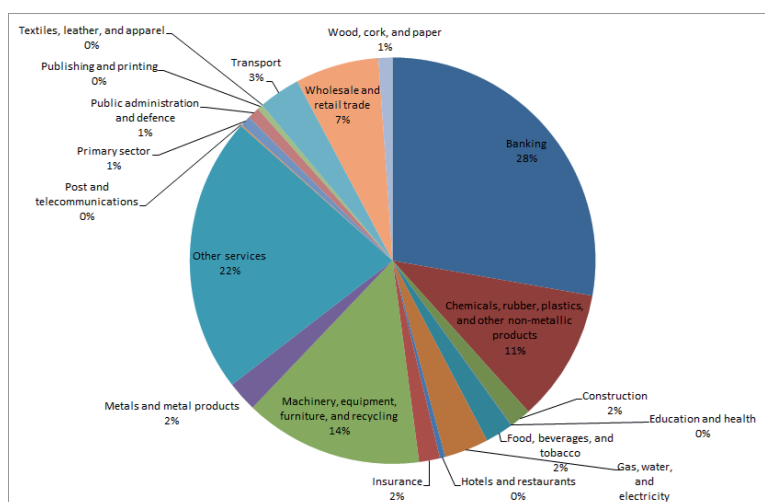


¹¹ The matrix is visualized as an affiliation matrix.

Table 3. Industry sectors and the corresponding normalized outdegree centrality scores.

Sector	Centrality
Banking	17.004
Other services	13.4807
Machinery, equipment, furniture, and recycling	8.708589
Chemicals, rubber, plastics, and other non-metallic products	6.470715
Wholesale and retail trade	4.080008
Gas, water, and electricity	2.165815
Transport	2.041457
Metals and metal products	1.481262
Food, beverages, and tobacco	1.372012
Construction	1.041358
Insurance	1.01637
Wood, cork, and paper	0.688621
Public administration and defence	0.588088
Primary sector	0.508476
Publishing and printing	0.270218
Hotels and restaurants	0.258015
Post and telecommunications	0.05753
Education and health	0.018596
Textiles, leather, and apparel	0

Figure 6. Share of acquirers by industry sector.



6. Discussion

The most expansive acquirers are headquartered in the UK, Germany, the US, France, and the Netherlands and classified into one of 4 industry sectors: ‘Banking’, ‘Other services’, ‘Machinery, equipment, furniture, and recycling’, and ‘Chemicals, rubber, plastics, and other non-metallic products’. Acquirers – the majority of which are in ‘Banking’ – headquartered in the US, in the three largest EU economies, and in the Netherlands make the greatest use of the EUMR in terms of both within- and cross-country acquisitions that are cleared by the Commission. The findings from this article offer two relevant points for reflection regarding the form and content of merger control in the EU: (1) the permissive merger control policy of the Commission under the EUMR (the form) and (2) the strong presence of PE firms in the M&A transactions with an EU dimension (the content).

6.1 The permissive merger control in the EU

In EU competition policy, the Commission has actively pursued a strategy of limiting state aid and liberalizing the transport sector, the public service sector (telecommunications, electricity, postal services, and gas), and the merger control regime (Hermann, 2007). The Commission's permissive stance toward M&A transactions under the EUMR is reflected in its attempts to enhance net welfare by encouraging mergers and clearing as many notified M&A transactions as possible, which is achieved by permitting transatlantic capital to expand and reducing the regulatory burden for transnational and transatlantic merger activity (Buch-Hansen & Wigger, 2010, 2011; Wigger, 2012; Wigger & Buch-Hansen, 2013, 2014).

Considering that the Commission pursues a policy of clearing the majority (90 %) of notified mergers after a relatively brief screening (Jones & Sufrin, 2014, p. 1139) and considering that it maintains that the rationale that most M&A transactions are procompetitive and that most of the transactions have no adverse effects on competition, the permissive EU merger control may be a symptom of the influence of the Chicago School on the Commission in EU competition policy (Bartalevich, 2016). The Chicago School, a neoclassical school of economic thought, developed one of the most authoritative antitrust theories in the 1970–1980s. The beneficiaries of Chicago School antitrust policy are considered to be large and efficient industries, vertically integrated firms, and consumers, as opposed to small businesses and less efficient firms (Posner, 2001, pp. 23-28). In merger control, Chicago School antitrust policy is permissive, holding that prohibiting horizontal (Bork, 1993, p. 124; Posner, 2001, p. 228) and non-horizontal mergers is untenable because it is difficult to determine whether the alleged significant lessening of competition occurs and, if it does, whether a net consumer detriment exists when efficiency gains are considered (Bork, 1993, pp. 226-231, 245, 248, 261; Posner, 1974, pp. 526-527; 2001, pp. 227-228). Further, even high market concentration is not considered an anticompetitive practice (Stigler, 1988, p. 221). Thus, systematic clearance of the notified mergers is considered much more feasible than prohibition.

The influence of the Chicago School suggests that the findings reflect the actual situation in the EU M&A transaction market: acquirers with the resources, strategic interest, and institutional capacity to acquire target firms and M&A transactions (of which the acquirers are part) without a resultant net consumer detriment outnumber those acquirers and M&A transactions with the opposite attributes. Such mergers would be systematically cleared. In other words, acquirers headquartered in the UK, Germany, the US, France, and the Netherlands and classified in the 'Banking', 'Other services', 'Machinery, equipment, furniture, and recycling', and 'Chemicals, rubber, plastics, and other non-metallic products' sectors are the most expansive acquirers because they have the resources, strategic interest, and institutional capacity to acquire target firms and because the M&A transactions through which those firms acquire target firms are regarded by the Commission as enhancing consumer welfare and not causing a net consumer detriment.

6.2 The strong presence of PE firms in the M&A transactions with an EU dimension

Acquirers in the 'Banking' sector compose 50 % of the total number of the most expansive acquirers according to the Commission data and 28 % of all the acquirers according to the BvD data for the relevant time period. Followed by financial services groups, investment banking groups, and banks, PE firms represent a considerable majority in this sector. PE firms inflate the results, as there would have been substantially fewer acquirers categorized as 'Banking' if there were fewer PE firms in this category. Hence, there would have been substantially fewer M&A transactions if the 'Banking' sector had been excluded from the dataset. There is therefore another point for reflection, namely, that PE firms appear to have a strong presence in M&A transactions with an EU dimension.

PE is a principal component of the alternative investment fund industry.¹² In the EU, PE is subject to a detailed regulatory framework (Ferran, 2011, p. 381). PE firms are formed by individuals or as an offshoot of a larger financial organization, such as a bank. PE firms are created to buy, own, and sell controlling positions in mature firms. PE firms launch one or more PE funds in which they invest a relatively small amount of their own capital, typically less than 5 % of the value of the fund, and the remainder of the fund is obtained from investors attracted by the prospect of high returns. Investors –

¹² PE firms differ from hedge funds and venture capital firms, although PE firms are often conflated with the latter two: hedge funds are investors that seek to profit from short-term speculative investments (many of which are not directed at company stock) but that typically do not acquire controlling ownership stakes, whereas venture capital firms invest in the early stages of the company life cycle, most often in high-tech firms (Thomsen, 2009, p. 99).

limited partners – consist of pension funds, banks, insurance companies, and high net worth individuals (Ferran, 2011, p. 381). PE firms pool capital without redemption rights from investors in funds, which are used to purchase a controlling interest in target firms.¹³ PE firms search for firms whose current share price may be low in comparison with their potential value and for private firms whose owners wish to sell their underperforming enterprises at a cheap price in comparison with their potential resale price. The capital gain from the resale of the target firm plus the dividend and other payout prior to resale is then shared between the investors and the owner-managers of the PE fund within the PE firm (Watt, 2008, p. 549).

For better or worse, acquirers in ‘Banking’ – most of which constitute PE firms – account for the largest share of M&A transactions cleared by the Commission in the relevant time period. For this reason, it is important to touch upon the possible impact of the PE business model.

There is a significant difference between PE-owned and non-PE-owned firms (i.e., between the target firms acquired by acquirers in ‘Banking’ and the target firms acquired by acquirers in the other industry sectors). PE funds borrow a substantial amount of capital from banks by using the assets of the target companies as collateral for the loans, which means that PE-owned companies are more highly leveraged than non-PE-owned companies – their debt-to-equity ratio is substantially higher than that of non-PE-owned companies (Watt, 2008, p. 554). In the case of a good PE investment, then, returns can be high, whereas if the restructuring of the target company is unsuccessful, then the risks of bankruptcy are magnified (Watt, 2008, p. 565). Potential non-financial risks of the PE business model stem from the short-term nature of the commitment to the transaction, which may induce fund managers and owners of the target companies to focus on short-term results and to attempt to circumvent ethical, social, labor, environmental, and competition standards in order to maximize return on invested capital.

At the same time, however, the PE business model may have a significant positive impact on target firms in terms of improving management, changing strategies, increasing productivity, creating new jobs, and shifting the burden of restructuring from owners or the government and taxpayers. It is difficult to determine whether the large share of PE firms among other acquirers is a positive or negative phenomenon. To clarify the overall impact, one may balance the weight of the positive and negative impacts of the PE model against those of other business models from the economic, societal, and normative perspectives.

Finally, it is important to touch upon two biases in the findings resulting from structural differences between the PE business model in M&A transactions and that used by firms in other industry sectors, i.e., firms in the sectors other than ‘Banking’ in the dataset. First, the actual owners of the acquired target firms are virtually impossible to identify: investors and owner-managers of PE funds are not disclosed to the public. Even if a PE firm is registered, for example, in the US, the investors’ funds do not necessarily come from the US. Thus, it is almost impossible to identify the actual acquirers responsible for approximately 28 % of all the acquisitions (according to the BvD data) or approximately 50 % of acquisitions among the most expansive acquirers (according to the Commission data) in ‘Banking’. Second, PE firms do not hold on to target firms for long periods of time, implying that acquisitions by PE firms are considered temporary; indeed, the purpose of these acquisitions is to resell the target firm at a higher price after a period of 5–10 years, during which the firm’s operations are restructured.

7. Conclusion

According to the data from the Commission and BvD, the most expansive acquirers are headquartered in the UK, Germany, the US, France, and the Netherlands and classified in the ‘Banking’, ‘Other services’, ‘Machinery, equipment, furniture, and recycling’, or ‘Chemicals, rubber, plastics, and other non-metallic products’ sectors. Of the 84 most expansive acquirers, which altogether account for 601 acquisitions, CVC Capital Partners is the most expansive, and it is followed by Advent International, the Carlyle Group, 3i Group, and PAI Partners. Acquirers in ‘Banking’ compose 50 % of the most expansive acquirers according to the Commission data and 28 % of all acquirers according to the BvD data. Followed by financial services groups, investment banking groups, and banks, PE firms represent a considerable majority in this sector. For better or worse, acquirers in ‘Banking’ account for the largest share of M&A transactions cleared by the Commission during the relevant time period. These findings echo the increasing role of the

¹³ Limited partners’ investments are highly illiquid. If the target firm is listed in the stock exchange, the offer of purchase is made for the shares. If the target firm is privately owned, the purchase is negotiated with the owners.

financial sector (Foster, 2007), where mergers appear to proceed at an unparalleled scale, which is likely an indication of the aftermath of the influence of the Chicago School that aggressively reshaped the modern economics and regulatory philosophy in favor of the deregulation of the financial sector (Van Overtveldt, 2007, pp. 197-238) in combination with unreserved encouragement of mergers and leniency toward high concentration (Bork, 1993, p. 124; Posner, 1974, pp. 526-527; 2001, p. 228). Thus, on the basis of the analysis of M&As with a Community dimension (an EU dimension), it can be inferred that the increasing role of finance also appears relevant in the case of EU merger control. It is, however, difficult to conclude whether the large share of PE firms among the other acquirers – and hence the strong presence of the PE business model – is a positive or negative phenomenon.

Suggestions for possible future lines of investigation include analysis of M&A transaction deal values and stock buyout percentages (to make the network valued and hence render the ties between acquirers and targets more informative), analysis of interlocking acquirers, analysis of interlocking directorates of the most expansive acquirer firms, analysis of the complete chunk of M&A transactions in the relevant period (that is, an analysis including joint acquisitions and joint ventures), a longitudinal study of the major acquirer firms and their targets, a comparison of data on clearance decisions under the EUMR with the data on clearance decisions under the previous merger regulation (Council Regulation (EEC) 4064/89), and identification of the ultimate global owners of the most expansive acquirers and analysis of hierarchical clusters and block models of acquirer firms.

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**Chicago, Harvard, Freiburg, or considerations for Single Market integration?
Analysis of theoretical and ideational insights underpinning the European Commission's merger
control with exponential random graph models**

Dzmitry Bartalevich

Abstract

The European Commission has central authority over the European Union's merger control. It is therefore responsible for making important merger decisions that are bound to affect vast markets and EU and non-EU market players, with significant implications for wider economic, political, and societal segments. These decisions are often underpinned by theoretical and ideational insights from various schools of competition analysis and economic theories or are guided by non-economic objectives. Notwithstanding the significance of merger control, little research has examined the wider theoretical and ideational insights that underpin the Commission's merger control. This article analyzes Commission merger cases cleared under the current European Union Merger Regulation (EUMR) in an attempt to reveal whether the following insights underpin and hence explain the Commission's merger control: the Chicago School, the Harvard School, the Freiburg School, and considerations for Single Market integration. The analysis is conducted by employing an exponential random graph model (ERGM) approach.

Keywords

European Union merger control; Chicago, Harvard, and Freiburg Schools; Single Market integration; exponential random graph model (ERGM); network analysis

1. Introduction

The competition policy of the European Union (EU) has a central place in the economic regulation of the EU, with the European Commission enjoying unprecedented, far-reaching enforcement competences. EU merger control is one of the core areas of EU competition policy and its most politically and economically significant component (Gerber, 2003, p. 381). In EU merger control, the Commission has central authority over regulating changes in the market structure by deciding whether two or more firms may merge and thus enter into a merger and acquisition (M&A) transaction.¹ Commission merger decisions affect various market players, including large EU and non-EU businesses, and vast product and geographic markets.

Exercising proper merger control is important for businesses, economies, and societies. Mergers can significantly impede competition in various ways, on the one hand, and introduce substantial efficiencies and maximize total welfare, on the other – or do both simultaneously. The Commission's task is not just to screen out the few anticompetitive mergers from the majority of procompetitive ones but also to take responsibility for the implications of such decisions for the wider economic, political, and societal segments. The Commission's vast competences in merger decisions in conjunction with the significant future implications of such decisions for the wider economic, political, and societal segments implore an investigation of Commission merger decisions from a theoretical and ideational perspective, which is explained below.

In antitrust law, decisions that appear to be strictly guided by empirical analysis may frequently in fact be underpinned by theoretical and ideational insights from various schools of competition analysis and economic theories, or at times, they may be guided by non-economic objectives (Atkinson & Audretsch, 2011). Therefore, it appears relevant to analyze the Commission's merger decisions and uncover the theoretical and ideational insights that guide and inform the Commission in its decisions so that a more comprehensive understanding of Commission merger control is developed.

¹ The terms 'merger' and 'M&A transaction' are used interchangeably in this article.

Notwithstanding the significance of merger control for the functioning of the competition regime in the EU and regulation of the Single Market, little research has examined the wider theoretical and ideational insights that guide the Commission in decisions on merger cases. Current research suggests that select theoretical insights from the Chicago School (Bartalevich, 2016), Harvard School (Vallindas, 2006), and Freiburg School (Gerber, 2003) underpin and inform the Commission's approach to EU merger control and guide the Commission in merger decisions. Additionally, research suggests that the Commission is guided by the overarching goal of facilitating EU integration, within which EU competition law, including merger control, is embedded (Parret, 2010; Thatcher, 2014). For that matter, the Commission appears to be frequently guided by not only competition considerations, such as efficiency, but also other important considerations, such as Single Market integration (G. Monti, 2002, pp. 1059-1065).

In the context of the above, this article conducts an empirical analysis of Commission merger cases cleared under the current European Union Merger Regulation (EUMR) and attempts to reveal whether the relevant theoretical and ideational insights appear to be informing and guiding the Commission in merger decisions and hence offer an explanation of Commission merger control. On the basis of an analysis of the economic theories that the current research suggests to be underpinning the Commission's logic in merger control and the Commission's considerations for Single Market integration, the following four distinct perspectives on mergers were identified for the analysis: the Chicago School, the Harvard School, the Freiburg School, and considerations for Single Market integration. These four perspectives on mergers are henceforth referred to as 'conceptions' of mergers.

The data that are used in the analysis were acquired from Bureau van Dijk (BvD), a major publisher of company and business intelligence information, and they include information on 937 merger cases cleared between January 20, 2004, and July 1, 2015. Data analysis is conducted by employing a network analytic framework and an exponential random graph model (ERGM) approach in network analysis (Lusher, Koskinen, & Robins, 2013). The choice is guided by two considerations: first, a network analytic framework offers a sophisticated yet comprehensible conceptualization of M&A transactions in the form of business transactions (Wasserman & Faust, 1994, pp. 3-10), and second, an ERGM approach is tailored for analysis of observations that are treated as interdependent and in the context of structural properties of the entire dataset (network) (Robins, Pattison, Kalish, & Lusher, 2007).

The article is structured into four sections, in addition to the Introduction and Conclusion. Section 2 briefly presents the core concepts, provisions, and procedures relevant for understanding the Commission's merger control. Section 3 introduces the relevant conceptions that current research suggests underpin the Commission's merger control. Section 4 describes the data and unpacks the methodology used in the analysis. Finally, Section 5 presents the results and discusses the findings.

2. European Commission merger control

Council Regulation (EC) No. 139/2004, adopted on January 20, 2004, is the current EUMR. The EUMR is supplemented by relevant Commission merger notices and guidelines. Under the EUMR, the concept of 'concentration' provides a definition of what constitutes a merger: a change of control on a lasting basis that results from either the merger of two or more previously independent undertakings or the sole or joint acquisition of the whole or parts of one or more other undertakings (Council, 2004, Article 3(1)). To simplify, a merger is a transaction that occurs where two or more previously independent entities merge, combine, or consolidate their businesses into one. Mergers are subdivided into two broad types: horizontal mergers between companies that are actual or potential competitors in the same relevant market and non-horizontal mergers between companies that operate in different relevant markets for which the activities of the companies involved are complementary.²

The Commission considers mergers to be important deals that may achieve the following beneficial goals:

² Non-horizontal mergers can be further subdivided into vertical mergers and conglomerate mergers. Vertical mergers are mergers between companies that operate at different levels of the supply chain; for example, where the manufacturer (an upstream firm) merges with one of its distributors (a downstream firm). Conglomerate mergers are mergers between companies that are in a relationship that is neither horizontal (i.e., competitors in the same relevant market) nor vertical.

- increase the efficiency and competitiveness of industry;
- improve the conditions of growth;
- provide an exit possibility for investors and an escape route for a company facing inevitable liquidation;
- facilitate Single Market integration (in case of cross-border mergers);
- increase the scale of EU companies (i.e., create ‘European champions’); and
- raise the standards of living in the EU (Commission, 2004, para 76; Jones & Sufrin, 2014, p. 1130).

The EUMR requires notification of mergers prior to their implementation and following the conclusion of the agreement, the announcement of the public bid, or the acquisition of the controlling interest (Council, 2004, Article 4(1)). After such notification, the Commission defines the relevant product and geographic market within which the notified merger is assessed (Commission, 1997, para 9). The EUMR focuses exclusively on mergers that have an EU dimension: mergers that create significant structural changes and have an impact that extends beyond the national borders of EU member states.³

If the notified merger has been found to have an EU dimension and to fall within the scope of the EUMR, the Commission assesses whether it potentially has significant impediment to effective competition.⁴ The Commission aims to clear mergers that would cause procompetitive effects and prevent mergers that would be likely to deprive consumers of certain benefits, such as low prices, high quality products, a wide selection of goods, and innovation. The Commission may clear the merger conditionally or unconditionally in the Phase I decision under Article 6(1)(b) EUMR, or it may initiate Phase II investigation under Article 6(1)(c) EUMR if it has serious doubts about the compatibility of the merger with the common market. The outcome of the Phase II investigation is either a conditional or unconditional clearance decision under Article 6(1)(b) EUMR – or a prohibition decision. Approximately 90 % of merger cases are addressed in Phase I proceedings, whereas only a very small number – approximately 3 to 4 % – are subjected to a Phase II investigation (Jones & Sufrin, 2014, p. 1139).

3. Theoretical and ideational foundations of European Commission merger control

EU competition law is a complex body of legislation that has significantly evolved since its inception in 1958 and has been informed by theoretical insights from influential schools of competition analysis and economic theories, as well as by antitrust developments in the United States (Kovacic, 2009). The Chicago School, including some post-Chicago developments and modifications (the Post- and Neo-Chicago Schools), Harvard School, and Freiburg School are identified as being among the major and most influential theoretical contributors to EU competition law (Jones & Sufrin, 2014, pp. 21-34).

In EU merger control, the Commission incorporates theoretical insights from several influential schools of competition analysis and economic theories, as well as certain non-economic objectives. Current research suggests that select theoretical insights from the Chicago School (Bartalevich, 2016), Harvard School (Vallindas, 2006), and Freiburg School (Gerber, 2003) underpin the Commission’s approach to EU merger control and guide the Commission in merger decisions. Additionally, and importantly, the Commission pursues the overarching goal of EU economic integration through the Single Market integration, which is strongly reflected in EU merger control (Parret, 2010; Thatcher, 2014). On the basis of schools of competition analysis and economic theories that current research suggests underpin the Commission’s logic in merger control and the Commission’s considerations for the Single Market integration, the following four distinct conceptions of mergers were identified for the analysis: the Chicago

³ A merger has an EU dimension when the combined aggregate worldwide turnover of all the undertakings is more than 5,000 million Euro and the aggregate EU-wide turnover of each of at least two of the undertakings is more than 250 million Euro (Council, 2004, Article 1(2)).

⁴ The initial screening of a proposed merger by the Commission with the view of investigating whether the merged entity may lead to a significant degree of market power is conducted on the basis of pre- or post-merger market shares and concentration levels according to the Herfindahl–Hirschman Index (Commission, 2004, para 17-20; 2008a, para 25). In addition to these parameters, the Commission assesses possible coordinated and non-coordinated anticompetitive effects and other parameters (Commission, 2004, para 24, 39; 2008a, para 18-19, 29, 80, 86-89).

School, Harvard School, Freiburg School, and considerations for Single Market integration (henceforth, SM integration rationale).⁵ The conceptions are discussed further.

3.1 *The Chicago and Harvard Schools*

The Chicago School is one of the most influential contributors to antitrust scholarship and antitrust practices in various legal jurisdictions around the world. Chicago School antitrust law and economics emerged in the 1950s and 1960s at the University of Chicago and reached its widest influence in the 1970s and 1980s in United States antitrust policy.⁶ The Chicago School advocates for an economic, pro-market, and anti-interventionist approach to antitrust based on neoclassical price theory and the market efficiency model (Becker, 2007, pp. 25-26; Easterbrook, 1986, p. 1709). Efficiency is considered the ultimate goal of Chicago School antitrust policy (Easterbrook, 1984, p. 138; Posner, 2001, pp. 19, 23), and Chicago School antitrust policy has become notorious for benefitting economies of scale, large industries, and vertical mergers, as opposed to small businesses and less efficient firms (Hovenkamp, 1985; Page, 1991, p. 2).

The breakthrough of the Chicago School came at the expense of the 'structuralist' (structure–conduct–performance) Harvard School, which flourished in US antitrust law in the 1930s throughout the 1950s (Crane, 2007, p. 1194). In the late 1970s, the Harvard School underwent significant transformations: the school significantly departed from structuralism (Hovenkamp, 2005, pp. 35-38) and borrowed many of its important theoretical insights and tools in antitrust analysis from the Chicago School (Crane, 2007, p. 1194). Both the Chicago and Harvard Schools have embraced the competition objectives that are intended to maintain and boost welfare, efficiency, innovation, and other procompetitive benefits and discourage non-efficiency objectives (Kovacic, 2007, p. 35).⁷

In merger control, despite the notable similarities between the schools in the treatment of mergers (Areeda, 1983, p. 309; 1987, pp. 975-979; Posner, 2001, pp. 147-158; Turner, 1982; 1987, p. 807), several disagreements exist between them, especially with regard to the significance of appropriate assessment parameters and their application in merger decisions. Arguably, the most drastic disagreement concerns the significance of market concentration. Both schools agree that the analysis of market concentration and market shares should not be central (Areeda, 1983, p. 309; 1987, pp. 975-979; Posner, 2001, pp. 120-158; Turner, 1982; 1987, p. 808), yet the Chicago School is tolerant of high market concentration and large mergers, whereas the Harvard School deconcentrates concentrated markets, breaks up large companies, and generally distrusts large mergers (Posner, 1979, pp. 944-948; Vallindas, 2006, p. 643). In contrast to the Harvard School, the Chicago School is permissive even with regard to horizontal mergers, although clearing such mergers may frequently lead to competition problems resulting from a loss of direct competition between the merging companies in the same relevant market (Bork, 1993, p. 124; Posner, 2001, p. 228). The position presupposes that where parties to a merger are direct competitors, the Chicago School would generally recommend clearing the mergers, provided that efficiencies outweigh anticompetitive effects.

In sum, the analysis suggests that the Chicago School is more lenient to clearing both horizontal and non-horizontal mergers than the Harvard School (Bork, 1993, pp. 124, 248, 261; Posner, 1974, pp. 526-527; 2001, pp. 223-229), whereas the Harvard School is more cautious, especially with regard to

⁵ The Post- and Neo-Chicago Schools are excluded from the analysis because in contrast to some other areas in EU competition law, these schools have had limited influence on EU merger control. The Post-Chicago School developed on the premise of the Chicago School but departed from some of its core assumptions (Jacobs, 1995, pp. 240-250). The emphasis of the Post-Chicago School on market failure enabled it to demonstrate that business agreements viewed as procompetitive by the Chicago School may, under some assumptions, be anticompetitive. The Post-Chicago School has offered useful theoretical insights on the treatment of tying, exclusive dealing, predatory pricing, and vertical foreclosure resulting from business agreements that raise rivals' costs (RRC), and it has influenced EU competition law in some of these areas (Wright, 2012, pp. 249-250). The Neo-Chicago School accepts the Chicago School's basic premises as refined by the emerging body of criticism (Crane, 2009, p. 1929). The school has not exerted substantial influence on EU competition law but has offered theoretical perspectives on the treatment of exclusive dealing and tying (Padilla & Evans, 2005).

⁶ Richard Posner, Robert Bork, and Frank Easterbrook have been the major and most influential contributors to the Chicago School (Kovacic, 2007, p. 34; Pitofsky, 2008, p. 4).

⁷ Donald Turner and Phillip Areeda have been the most important contributors to the Harvard School (Kovacic, 2007, p. 33; Pitofsky, 2007, p. 109).

horizontal mergers that may increase concentration and non-horizontal interindustry mergers (Areeda & Turner, 1979, p. 1102). Therefore, horizontal mergers, large market shares, and large mergers would be highly tolerated by the Chicago School, whereas the Harvard School would generally consider them unacceptable.

3.2 The Freiburg School and the SM integration rationale

The Freiburg School (ordoliberalism) occupied the central position in the post-war economic and competition policy of the Federal Republic of Germany (FRG) after the fall of National Socialism in 1945.⁸ Outside the FRG, the Freiburg School has significantly influenced EC/EU competition law (cf. Akman & Kassim, 2010). Ordoliberals were the main proponents for including competition law provisions in the Treaty of Rome; the most important area of the ordoliberal influence is widely considered to be the prohibition of the abuse of a dominant position (Gerber, 1994, pp. 69-74; 2003, pp. 342-345; Gormsen, 2007, pp. 339-342).

According to the Freiburg School, the core element of an effective economic system should be built around protecting economic competition and be guided by the 'economic constitution', which contains the relevant constitutive and regulatory principles navigating governmental actions in the analysis of economic problems (Gerber, 2003, pp. 243-247). The market should not be merely left to itself; instead, conditions should be created for the market to function in a way that provides equal opportunities for participation to (small- and medium-sized) enterprises, whereas a high concentration should be disallowed and economies of scale should be discouraged (Gerber, 1994, pp. 81-83; 2003, pp. 240-255). For the Freiburg School, concentration and dominance are arguably the most important issues to address (Gerber, 1994, pp. 81-83), which means that merger control should not tolerate large mergers.

The SM integration rationale is a tool that the Commission frequently deploys to facilitate and enforce economic integration in the EU (Ziltener, 2004). The SM integration rationale is ideologically underpinned by the ordoliberal conception of market integration, which is considered an important precondition to achieving the overarching goal of greater economic freedom (G. Monti, 2002, p. 1063). The central ordoliberal idea of the creation of an effective market economy maintains that European [EU] integration is possible by creating a common European [EU] market and furthering economic integration (Gerber, 1994, pp. 71-76). Concerning merger control, research suggests that considerations for SM integration instigate the Commission to promote mergers between companies that are headquartered in the EU – EU mergers – including both within- and cross-border EU mergers (Thatcher, 2014, pp. 445-446), and increase cross-border merger activity in the EU (Neary, 2007, p. 1129).

Although the SM integration rationale has been structured along ordoliberal lines to a considerable extent, there is a significant departure from the Freiburg School regarding the means to facilitate SM integration. The Freiburg School prioritizes the protection and promotion of small- and medium-sized companies over large companies (Gerber, 1994, pp. 81-83; 2003, pp. 240-255; Wigger & Nölke, 2007), whereas the Commission considers the creation of large EU businesses ('European champions') through mergers to be an indispensable tool for facilitating SM integration (M. Monti, 2010, pp. 86-87) and allowing large EU businesses to expand operations, strengthen their market position, and compete in the global economy (Buch-Hansen & Wigger, 2010, 2011).

In sum, the analysis suggests that large mergers are likely to be favored according to the SM integration rationale, whereas the Freiburg School is much more likely to disallow them. Further, the SM integration rationale suggests that mergers between companies headquartered in the EU and across borders within the EU should be encouraged by Commission merger control.

4. Data and methodology

⁸ Walter Eucken and Franz Böhm were the most important contributors to the Freiburg School (Gerber, 1994, pp. 28-32).

4.1 Data

The data for investigating whether the four conceptions of mergers inform and guide the Commission in merger decisions were acquired from Bureau van Dijk (BvD), a major publisher of company and business intelligence information.⁹ The BvD data contain 937 merger cases cleared between January 20, 2004 (the date when the EUMR was adopted), and July 1, 2015 (the date until when the data were collected), for which the transactions are confirmed and completed, the regulatory body is the Commission, the specified region is the EU, and the relevant deal type is either acquisition or institutional buy-out.

The BvD data are among the most comprehensive, accessible, and reliable sources of information on mergers, but they have two important limitations. First, the BvD data are not specialized data on merger cases in the EU, which means that the accuracy and completeness of the BvD data are unclear. In an attempt to address this limitation, the BvD data were matched, where available, with the official data published by the Commission on mergers cleared under Article 6(1)(b) and (2) of the EUMR during the relevant time period (mergers cleared in Phase I and II investigations).¹⁰ In this case, the advantage of using the BvD data is that they offer detailed and accessible information on mergers at the level of detail that the Commission's official website does not offer in an easily accessible way. Second, the BvD data do not provide information on the type of merger (horizontal or non-horizontal mergers or joint ventures), the relevant assessment parameters, and the phase of investigation (Phase I or II) in which clearance decisions were taken.¹¹ Such data could reveal additional information on the Commission's merger control by including more variables and allow a more technical and specialized analysis of merger cases. However, this specific limitation does not undermine the research design or results of the analysis. In contrast, the unavailability of more technical data provides an opportunity to make the analysis more accessible to scholarship outside antitrust law and economics.

On the basis of the BvD data, a network was constructed for the purpose of conducting (inferential) network analysis with ERGMs (an ERGM approach). The choice of a network analytic framework and, more specifically, an ERGM approach is guided by a conceptual consideration and a methodological consideration. The conceptual consideration addresses the conceptualization of the data. This consideration is addressed by employing a network analytic framework that is able to offer a comprehensive conceptualization of ties between pairs of individual units that may take the form of any relationship between the units, such as business transactions, trade and resource flows, and behavioral interaction (Wasserman & Faust, 1994, p. 8). The network analytic framework is able to offer a sophisticated yet comprehensible conceptualization of M&A transactions in the form of business transactions flowing from acquirer units to target units (Chon, Choi, Barnett, Danowski, & Joo, 2003; Knoke, 2001, pp. 110-117).

The methodological consideration of how to analyze the data is addressed by an ERGM approach in network analysis to study complex structures. Network analysis is well suited for the study of actions by pairs of individual units in the context of structured relationships with other units and for the study of the complete structure of the units (Wasserman & Faust, 1994, pp. 3-10). An ERGM approach in network analysis is specifically tailored to analysis of the local configurations of ties between pairs of units in the context of structural properties of the complete (network) data structure (Lusher et al., 2013, p. 19). The fundamental concept underpinning the approach is the dependence of network ties between pairs of units on the complete (network) data structure (Robins, Pattison, et al., 2007). Thus, an important methodological feature of an ERGM approach is that it is designed for analysis of complex structures whereby individual units or pairs of units are treated as dependent observations and are supplemented with a pool of observations with other similar or related individual units or pair of units that constitute the complete structure. Therefore, an ERGM approach to network analysis appears to be applicable to address the challenges stemming from analysis of complex structures, such as networks of business transactions (Wasserman & Faust, 1994, p. 8). In mergers, an ERGM approach addresses the observations of single mergers as interdependent with other relevant observations of transactions. The approach allows a more

⁹ <http://www.bvdinfo.com>

¹⁰ <http://ec.europa.eu/competition>

¹¹ The assessment parameters include pre- or post-merger market shares and concentration levels, coordinated and non-coordinated effects, buyer power, entry barriers, efficiencies, and other parameters (Commission, 2004, 2008a).

comprehensive analysis of the actions by acquirer units to acquire target units through mergers by incorporating similar or related transactions into the analysis of the complete (network) data.

There are two possible ways to construct a network of M&A transactions on the basis of the BvD data. It is possible to construct a network according to either the geographic or product criteria – in other words, according to the acquirer and target companies' domiciles or industry sectors into which they are categorized. The network was constructed according to the acquirer and target companies' industry sectors to make the data manipulations more manageable (there are fewer vertices in the network of industry sectors than in the network of domiciles) and to reduce unnecessary zero modification in the estimation of the ERGMs (there are fewer zero values in the network of industry sectors). The network is henceforth referred to as the *Sectors* network.

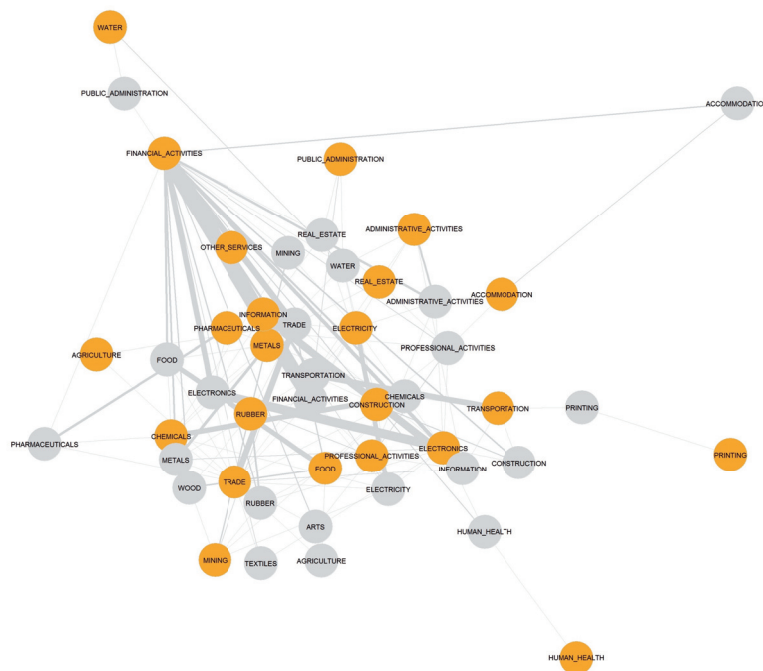
The *Sectors* network contains ties (edges) between pairs (dyads) of acquirer and target entities (vertices) according to their respective industry sectors. The categorization of acquirer and target companies in the BvD data into industry sectors was made according to the appropriate sections of economic activities in NACE Rev. 2, the official statistical classification of economic activities in the EU (Commission, 2008b).¹² The *Sectors* network is valued (edges between the acquirer and target sectors are counts) and directed (the direction goes from acquirer to target sectors in all instances). Overall, there are 143 valued, directed edges between the acquirer and target sectors in the *Sectors* network, whereas the sum of dyad values in the network is 937. Figure 1 visualizes the *Sectors* network in the form of a network graph.¹³

In addition to the data on acquirer and target companies that form the basis of the *Sectors* network, complementary data for the *Sectors* network were acquired from the BvD. The description and purpose of acquiring the additional data for the *Sectors* network are offered below.

Figure 1. Network graph of the *Sectors* network.

¹² NACE is the acronym for 'Nomenclature statistique des activités économiques dans la Communauté européenne'. The list of the appropriate sections that the acquirer and target companies in the dataset were categorized into is available in Appendix 1.

¹³ The visualization is made using the *igraph* package (Csárdi & Nepusz, 2006) in the statistical computing environment R (R Development Core Team, 2014). The network is visualized as a two-mode network to provide a more accurate visualization of the acquirer and target industry sectors and to exclude self-loops. The Kamada–Kawai algorithm is used as a layout algorithm. (The Kamada–Kawai algorithm is a force-directed layout algorithm. Force-directed layout algorithms attempt to draw a graph where edges are similar in length and cross each other as little as possible. Edges attract connected vertices closer together and vertices repulse each other when they get too close. Consequently, vertices are plotted more evenly, and vertices that share more connections are plotted closer to each other.) Although the network is a directed network where the direction goes from the acquirer sector to the target sector, arrow heads were removed for clearer visualization. Isolates were also removed for clearer visualization. The vertex color denotes whether the industry sectors are acquirers or targets: orange vertices represent the acquirer, whereas grey vertices represent the target industry sectors. The thickness of edges between vertices is visualized according to the number of mergers between the acquirer and target sectors: the thicker the lines, the larger the number of acquisitions.



4.2 Variables

In network analytic terms, the *Sectors* network emerged conditional on and following clearance decisions by the Commission; the clearance decisions enabled M&A transactions to be completed between pairs of acquirer and target industry sectors. The response variable is the edge attribute in the *Sectors* network, which contains the edge values in the dyads in the network or, to put it simply, the number of M&A transactions between industry sectors.¹⁴ The number of M&A transactions corresponds to the sum of the dyad values in the *Sectors* network, where the sum is 937.

In addition to the data required for constructing the *Sectors* network, complementary data were acquired from BvD to determine whether the four conceptions of mergers outlined in Section 3 underpin and can offer an explanation for the Commission's merger control.

As mentioned previously, the BvD data are not specialized data on merger cases in the EU, and they do not contain technical information on merger cases or relevant assessment parameters. The limitations of the data pose a challenge to finding and selecting the relevant information that can be used in investigating Commission merger cases against the backdrop of the four conceptions of mergers. However, there are two major advantages to these limitations. First, the availability of more technical data creates the necessity to conduct a more specialized analysis that would be less accessible to scholarship outside antitrust law and economics. Second, specialized data cannot be explained by the Freiburg School and SM integration rationale, as the Freiburg School and SM integration rationale, in contrast to the Chicago or Harvard Schools, do not offer econometric tools or methods to conduct comprehensive competitive assessments of mergers but rather offer broad theoretical perspectives on competition (Jones & Sufrin, 2014, p. 33; Venit, 2004, p. 1163).

Despite the challenges posed by the limitations to the data, it is nonetheless possible to extract relevant information from BvD and reshape the data for analysis. The BvD data for each M&A transaction contain information on acquirers and targets' domiciles, industry sectors, NACE class codes, legal forms, and transaction deal values. On the basis of this information, five attributes were compiled, and they are

¹⁴ In the ERGMs in this article, the response variable is the edge attribute represented by the weight of edges between the acquirer and target industry sectors.

represented by five (continuous) predictor variables in the analysis:¹⁵ *Cross-border merger*, *EU merger*, *Large merger*, *Legal form*, and *NACE class*. The variables *Cross-border merger* and *EU merger* are the predictor variables, whereas the variables *Large merger*, *Legal form*, and *NACE class* are the control variables. These five variables were expected to reveal whether the data exhibit preferences for certain kinds of transactions. The preferences were then matched with the corresponding conceptions of mergers.

The variable *Cross-border merger* represents the total number of cross-border mergers in each sector. Cross-border mergers refer to mergers in which the acquirer and target are headquartered in different domiciles.¹⁶ The analysis in Section 3 suggests that the SM integration rationale is the relevant conception tested by this variable. A positive coefficient in the estimate would indicate that there is a preference for cross-border mergers in EU merger control and that the SM integration rationale may be underpinning it, whereas a negative one would indicate otherwise.¹⁷

The variable *EU merger* indicates the total number of mergers in each sector in which both the acquirer and target are headquartered in the EU.¹⁸ The analysis in Section 3 suggests that the SM integration rationale is the relevant conception tested by this variable. A positive coefficient would indicate that there is preference for EU mergers in the Commission's merger control and that the SM integration rationale may be underpinning it, whereas a negative one would indicate otherwise.

The variable *Large merger* indicates the total number of mergers in each sector with a transaction value exceeding 0.5 billion Euro, which is an approximation of a threshold for large and important mergers.¹⁹ Large mergers are generally indicated by either large transaction values or large market shares. The BvD data do not contain information on (large) market shares; therefore, large mergers are identified according to the transactions' deal values. The analysis in Section 3 suggests that all the four conceptions of mergers are the relevant conceptions tested by this variable. A positive coefficient would indicate that there is a preference for large mergers in EU merger control and that the Chicago School or SM integration rationale may be underpinning it, whereas a negative coefficient would indicate that there is no preference for large mergers and that the Harvard or Freiburg Schools may be underpinning the preference.

The variable *Legal form* indicates the total number of mergers in each sector in which the acquirer and target are categorized into the same legal form or approximate equivalence.²⁰ Legal form is a term that denotes a type of business entity and includes corporations, partnerships, sole proprietorships, and limited liability companies, among other types. The estimate would reveal whether there is preference in the Commission's merger control for mergers of the same legal form or approximate equivalence. It was not possible to identify whether a relevant conception is tested by this variable. However, it is still relevant to include the variable in the models as a control variable because the results may reveal some additional information about Commission merger control.

Finally, the variable *NACE class* represents the total number of mergers in each sector in which the acquirer and target are categorized into the same NACE class.²¹ The NACE class is the most detailed category of NACE and provides a very precise industrial classification of units on the basis of the activities in which they engage (Commission, 2008b, p. 21).²² NACE class is arguably the closest proxy to the concept of a product market. Thus, the estimate would reveal whether there is preference for mergers that

¹⁵ Continuous predictor variables are referred to as 'covariates' in the context of network data analysis.

¹⁶ The corresponding entry for a transaction receives a value of '1' if the merger occurs between two entities that are headquartered in different countries, including non-EU domiciles, and '0' otherwise.

¹⁷ It is important to note that data on mergers for this variable include mergers between companies headquartered both in and outside the EU. Because the majority of mergers are between EU domiciles according to the BvD data, it may be inferred that this variable should indicate cross-border merger activity predominantly within the EU, which is therefore guided by the SM integration rationale.

¹⁸ The corresponding entry for a transaction receives a value of '1' if the merger occurs between two entities that are both headquartered in an EU member state and '0' otherwise. In cases in which mergers occur between countries that became official members of the EU in the 2004 and 2007 enlargements, the dates of completed mergers were considered to avoid including the EU candidate countries that were not yet official EU members at the time of the completion of the transactions.

¹⁹ The corresponding entry for a transaction receives a value of '1' if the transaction value of the merger exceeds the 0.5 billion Euro threshold and '0' otherwise.

²⁰ The corresponding entry for a transaction receives a value of '1' if the merger occurs between two entities that are categorized into the same legal form and '0' otherwise.

²¹ The corresponding entry for the transaction receives a value of '1' if the merger occurs between two entities that are categorized in the same NACE class and '0' otherwise.

²² To give an example of the extent of the detail, 'Floor and wall covering' is a NACE class in the 'Construction' sector.

operate in the same or closely related product market and whether there is hence a de facto preference for horizontal mergers. As discussed in Section 3, the Chicago School is permissive even with regard to horizontal mergers and is generally not suspicious of companies merging in the same relevant market, whereas the Harvard School's position regarding this issue is in stark contrast to the Chicago School. Thus, the Chicago and Harvard Schools are the relevant conceptions of mergers tested by this variable. A positive coefficient would indicate that the Chicago School may be underpinning the preference, whereas a negative one would indicate that the Harvard School may be underpinning it.

Table 1 summarizes the variables and corresponding preferences and conceptions of mergers.

Table 1. Variables and corresponding preferences and conceptions of mergers.

Variable	Preference	Conception			
		Chicago	Harvard	Freiburg	Single Market
Cross-border merger	Preference for cross-border mergers				+
EU merger	Preference for mergers between entities headquartered in the EU				+
Large merger	Preference for large mergers	+	-	-	+
Legal form	Preference for mergers between entities categorized into the same legal form or approximate equivalence				
NACE class	Preference for mergers between entities operating in the same or closely related product market	+	-		

4.3 Exponential random graph models

ERGMs, or p^* models, are a class of statistical models in network data analysis (Lusher et al., 2013; Robins, Pattison, et al., 2007). ERGMs are intended to facilitate the adaptation and extension of well-established statistical principles and methods for the construction, fitting, and comparison of models. However, ERGMs are a substantial departure from standard regression procedures in that they assume dependence between observations; networks show complex dependencies between pairs of vertices, and these dependencies are related to the structural properties of a network. ERGMs attempt to account for these complex dependence structures by using both endogenous and exogenous parameters, which makes the specification and fitting of ERGMs subtler than in a standard regression procedure. Endogenous parameters refer to structural network properties, whereas exogenous parameters are represented by (edge and vertex) attributes external to the network structure.

The ERGM framework allows a number of extension and variations. ERGMs may have directed and undirected versions, and they may operate in two modes: non-valued (binary) and valued (weighted) modes. The *Sectors* network is a directed and valued network; hence, the ERGMs in this article are directed versions and operate in a valued mode.

Non-valued ERGMs are designed in analogy to the classical generalized linear models, especially standard log-linear models and logistic regression (Lusher et al., 2013, p. 52).²³ A major limitation to non-valued ERGMs is that they can be applied only to binary data. Until recently, valued network data had to be dichotomized for ERGM analysis, which leads to information loss. By contrast, valued ERGMs allow analyzing networks in which edges between vertices are unbounded counts, which makes valued ERGMs

²³ The estimated coefficients in non-valued ERGMs are interpreted as in a logistic regression model: the dependent variable is the log odds of establishing an edge between two vertices, and the coefficients in ERGMs are interpreted as log-odds ratios conditional on the rest of the network. The response variable in binary ERGMs is dyads, or pair of vertices, measured by the presence or absence of an edge between them (Morris, Handcock, & Hunter, 2008, p. 1).

more advanced than non-valued ERGMs. The majority of terms for valued ERGMs are similar to the terms for non-valued ERGMs, yet they are applied differently.

In defining a valued ERGM, it is necessary to specify the appropriate reference measure with respect to which the model is defined (Krivitsky, 2012, p. 5). In the *Sectors* network data, the appropriate reference distribution is the Poisson distribution (Krivitsky & Butts, 2015, p. 13). Further, it is important to represent, if necessary, the under- or overdispersion of the data. Doing so is relevant in the case of the *Sectors* network data, which have a dispersed distribution. To do so, a Conway–Maxwell–Poisson (CMP) statistic is added to the Poisson-reference ERGMs (Krivitsky, 2012, p. 11). The CMP distribution is one of the common exponential-family approaches for representing both under- and overdispersion.

The construction, fitting, and assessment of the ERGMs in this article are performed in the statistical computing environment R (R Development Core Team, 2014). The most comprehensive and sophisticated package for ERGMs in R is the *ergm* package (Hunter, Handcock, Butts, Goodreau, & Morris, 2008), which is part of the *statnet* suite of packages for statistical modeling and analysis of network data (Handcock, Hunter, Butts, Goodreau, & Morris, 2008). The *ergm* package is used in the analysis in this article. In addition to the *ergm* package, the *ergm.count* package – a set of extensions to the *ergm* package that are specifically intended for valued ERGMs – is also used (Krivitsky, Handcock, & Hunter, 2016).

4.4 Model terms

Overall, nine model terms are used in the analysis, four of which are endogenous parameters and five of which are exogenous parameters. The five exogenous terms are the valued vertex attributes represented by the five continuous predictor variables outlined in Section 4.2.

It is not possible to model the network structure and estimate the ERGMs without including endogenous parameters that are selected on the basis of how they reflect the network structure. Including relevant endogenous parameters in the ERGMs is necessary for methodological reasons, even though the endogenous parameters are not able to reveal information about the conceptions underpinning the Commission’s merger control. Therefore, the ERGMs in this article include endogenous parameters, four altogether, in addition to the five exogenous parameters. The following endogenous terms were selected on the basis of the analysis of properties of the *Sectors* network structure: *Mutuality*, *Sparsity*, *Sum*, and *Threshold*. The description of terms and the reasons for their selection are unpacked below.²⁴

The *Mutuality* term adds one network statistic to the model equal to the similarity between the minimum values of two vertices in a dyad, where the minimum value is set to ‘1’. The term is added to the ERGMs to account for whether there is a tendency to reciprocate at least one acquisition between acquirer and target sectors – in other words, the tendency for entities from the target sector to acquire at least one entity in the acquirer sector. The minimum value is set to as low as ‘1’ to account for as many reciprocated transactions between two sectors as possible.

The *Sparsity* term adds one network statistic that amounts to an excess of zeros in the data relative to the appropriate reference distribution, which means that sparse networks amount to zero inflation (Krivitsky, 2012, p. 10; Krivitsky & Butts, 2015, p. 20). The *Sectors* network is a sparse network, in which case it is appropriate to use this term in the ERGMs.

The *Sum* term is a term that adds one statistic equal to the sum of dyad values in the network. In the ERGMs in this article, the sum of dyad values is taken to the power of $\frac{1}{2}$ to add a CMP term to represent both under- and overdispersion (Krivitsky & Butts, 2015, p. 24).

The *Threshold* term adds one network statistic equal to the number of dyads whose values exceed a specific threshold. In the ERGMs, the thresholding procedure includes a statistic that equals the number of

²⁴ There are approximately twelve terms (excluding within-term arguments and configurations) in the *ergm* package that are appropriate for valued networks as opposed to a substantially larger number of terms that are appropriate for binary networks. Of the twelve terms, four terms are related to the thresholding of dyad values; it is appropriate to use only one of these terms. Further, six of the twelve terms are related to vertex attributes, which makes them not suitable because they represent exogenous parameters. Nonetheless, it is possible to choose enough suitable endogenous parameters of a relatively small pool of terms available in the package. The explanation of the endogenous terms that represent network statistics in the *ergm* package (including the *ergm.count* package) is taken from R documentation.

dyads whose values exceed ‘5’, which means that it includes the values for which acquirer sectors acquired at least five targets. In the *Sectors* network of 937 acquisitions, the majority of the transactions have values of either below ‘5’ or significantly above ‘5’, which justifies the incorporation of the term.

A summary of the model terms is presented in Table 2. It may be helpful to remind the reader that the response variable in the ERGMs, Models 1 through 4, is the edge attribute that contains the weight of edges between the dyads in the *Sectors* network.

Table 2. Terms for the exponential random graph models.

Parameter	Term	Description
Exogenous	Cross-border merger	Vertex attribute representing the total number of cross-border mergers in each sector
	EU merger	Vertex attribute representing the total number of mergers in each sector in which both the acquirer and target are headquartered in the EU
	Large merger	Vertex attribute representing the total number of mergers in each sector with a transaction value exceeding 0.5 billion Euro
	Legal form	Vertex attribute representing the total number of mergers in each sector in which the acquirer and target are categorized into the same legal form
	NACE class	Vertex attribute representing the total number of mergers in each sector in which the acquirer and target are categorized into the same NACE class
Endogenous	Mutuality	Term representing similarity between the minimum values of two vertices in a dyad (the minimum value is set to ‘1’)
	Sparsity	Term representing sparsity and zero modification
	Sum	Term representing the sum of dyad values in the network taken to the power of $\frac{1}{2}$ in order to include a CMP statistic
	Threshold	Term representing the number of dyads whose values exceed a specific threshold (the threshold is set to ‘5’)

5. Results and discussion

Overall, four ERGMs were estimated, each including a combination of terms. Model 1 is the baseline model, which is used as a reference point for comparing Models 2 through 4. It includes four endogenous terms and three exogenous terms. Models 2 and 3 include the terms from the baseline model plus either the *Cross-border merger* or *EU merger* terms. Model 4 is the full model, which includes all the terms. The combinations of parameters used in the models were selected based on a systematic search and experimentation for finding the right estimates so that the observed statistics are central in the distribution of graph statistics from the resulting ERGMs (Lusher et al., 2013, p. 35). The results of the ERGM estimation are reported in Table 3, which contains the estimated coefficients, significance, and standard error in brackets.²⁵

The ERGMs were fitted with the Markov Chain Monte Carlo (MCMC) Maximum Likelihood Estimation (MLE).²⁶ Parameter estimates are based on MCMC simulation, in which large numbers of networks are produced to reflect the model being tested. The estimates were refined by comparing the observed graphs against a distribution of random graphs generated by a stochastic simulation using the approximate parameter values (Robins, Snijders, Wang, Handcock, & Pattison, 2007, p. 203). There were no convergence issues when running the MCMC diagnostics in R.²⁷ The goodness-of-fit (GOF) procedure was performed in a way that is different from a typical GOF assessment employing four sets of network statistics (Hunter et al., 2008, p. 20) because the GOF function is not made available in the *ergm.count* package. Therefore, GOF was assessed indirectly by comparing simulated distributions of dyad values to the observed values.

Comparisons across the ERGMs were made according to the Akaike Information Criterion (AIC) and, in particular, the Bayesian Information Criterion (BIC), with the aim of determining which of the

²⁵ The standard error is a measure of the precision of the estimate of an ERGM statistic; a small standard error indicates greater precision and certainty (Lusher et al., 2013, p. 35).

²⁶ MCMC diagnostics for Model 3 can be found in Appendix 2.

²⁷ The estimation algorithm for the model converged. The convergence of estimates and the MCMC estimation procedure decreased the likelihood of model degeneracy.

ERGMs is the best in explaining the network (Heaney, 2014, p. 75). BIC in the baseline Model 1 is -1273 , which is used as a reference point for comparing Models 2 through 4. AIC and BIC in Model 3 are the lowest, -1314 and -1278 , respectively, in comparison with Model 2 and even the full Model 4. Model 3 is superior to the other ERGMs considered in the analysis. Model 2 and the full Model 4 are marginally inferior to Model 3 according to the BIC. Thus, Models 2 and 4 may also provide a relatively good account of the *Sectors* network structure.

The standard errors of the estimates in Model 3 and the remainder of the models are small, especially in the exogenous terms, which indicates more precision and certainty. The estimation results demonstrate that there are no substantive differences among the coefficients and their significance across the exogenous parameters in the four ERGMs. The *Cross-border merger* variable is important for discussion in conjunction with the *EU merger* variable. The *EU merger* statistic is positive and significant in both Models 3 and 4, indicating that the *Sectors* network structure exhibits preference for mergers by entities that are both headquartered in EU member states. The *Cross-border merger* statistic, which is included in Model 2 and in the full Model 4, is positive and highly significant, which clearly indicates a preference for cross-border mergers in the *Sectors* network. However, the variable is not included in Model 3, the superior model in accordance with the BIC. A possible explanation for the fact that the models that include this variable are inferior to Model 3, which does not include it, could be that acquisitions tend to increase where both the acquirer and target are headquartered in the EU, including both within- and cross-border EU mergers, as opposed to cross-border mergers between EU and non-EU companies. Adding the variable *EU merger*, which reflects a preference for mergers between companies headquartered in the EU, by companies headquartered in the same EU member state and by companies in two different EU member states, appears to decrease the BIC and improves the ERGM. On the other hand, adding the variable *Cross-border merger*, which reflects cross-border mergers between EU and non-EU companies, appears to increase the BIC of the ERGM and make it inferior in comparison to Model 3. The SM integration rationale offers a highly probable explanation for the Commission's merger control with regard to its preference for mergers between entities headquartered in the EU, including within- and cross-border transactions. This particular finding corroborates and extends conclusions drawn by Thatcher (2014) and Neary (2007) regarding the increase of cross-border merger activity within the EU in response to the Commission's integrationist stance.

The *Large merger* statistic is negative and significant in Model 3, indicating that the *Sectors* network structure does not reveal a preference for larger mergers. The coefficients are negative across all the ERGMs, yet they are significant only in Model 1 and, most importantly, Model 3. A credible interpretation of the finding may be offered by the Harvard or Freiburg Schools. Both schools are cautious of large market shares and large mergers, and in contrast to the Chicago School and SM integration rationale, they discourage, if not oppose, large mergers. This particular piece of evidence conflicts with current research suggesting that the Chicago School (cf. Bartalevich, 2016) and SM integration rationale (cf. M. Monti, 2010; Thatcher, 2014) underpin the Commission's merger control. Thus, it may be assumed that the Harvard and Freiburg Schools may be useful in offering an explanation of the Commission's merger control in the particular case of the treatment of large mergers.

Legal form has a negative coefficient and is not significant in Model 3, indicating that entities of the same legal form or approximate equivalence do not tend to enter into mergers. The same result is evident in Models 2 and 4, where the coefficients are negative and significant. However, because the estimate is not significant in the superior Model 3 and because the variable is not useful for revealing the conceptions behind Commission merger control, this estimate appears to provide no interesting information.

Finally, the *NACE class* statistic in Model 3 and the remainder of the models is positive and highly significant, indicating that the *Sectors* network structure shows a strong preference for mergers between entities operating in the same or closely related product market, indicating a de facto preference for horizontal mergers. The finding suggests that the Chicago School may offer a potentially important explanation of the Commission's merger control with regard to this finding. Interestingly, the finding is counterintuitive since the Commission has expressed an intent to promote interindustry mergers; thus, there was an expectation to observe the manifestation of such an intent in the *Sectors* network (cf. Buch-Hansen & Wigger, 2010, 2011). On a more general note, it is important to note that the majority of the mergers in the *Sectors* network are within-industry mergers. In the context of the above, it may be helpful to examine

the network as a heatmap graphic in Figure 2, which demonstrates that the majority of mergers occur between entities categorized in the same industry sectors.²⁸

Although not as important for analysis of conceptions underpinning Commission merger control as the results derived from the exogenous parameters, the results derived from the endogenous parameters are also informative. The estimation results from Model 3 and the remainder of the models demonstrate that the endogenous parameters were well selected to account for the network structure. The *Mutuality* statistic in Model 3 and the remainder of the models is negative and significant, indicating that M&A transactions between sectors do not tend to be reciprocated. This phenomenon may indicate the expansiveness of certain industry sectors, most notably the financial sector, whereby the expansive sectors tend to acquire many companies across other less expansive sectors, whereas less expansive sectors do not tend to acquire nearly as many companies in the expansive sectors in return. The *Sparsity* statistic in Model 3 is negative and significant, indicating considerable sparsity and zero modification. This result shows that several expansive sectors tend to account for the majority of the total number of acquisitions, whereas many sectors tend to account for few or no acquisitions. The *Threshold* statistic in Model 3 and the remainder of the models is negative and significant, again indicating that there tend to be many sectors with few acquisitions – less than five – and few expansive sectors that are responsible for the majority of acquisitions. Figure 2 testifies to these findings and reveals additional information on the most active acquirers in terms of the number of acquisitions of targets that occur to be from the financial sector and manufacturing (chemicals through wood).

Figure 2. Heatmap of the *Sectors* network.

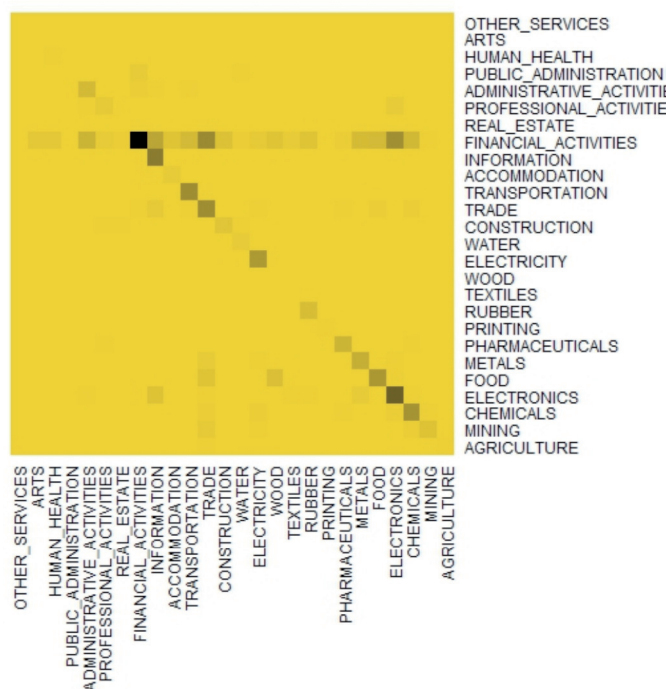


Table 3. Exponential random graph models.

	Model 1	Model 2	Model 3	Model 4
Cross-border merger		0.087*** (0.008)		0.086*** (0.008)

²⁸ The visualization is made using the *igraph* package (Csárdi & Nepusz, 2006). Cells in the heatmap reflect edge values, i.e., the number of acquisitions of target industry sectors by acquirer industry sectors. Row names in the margin labels are the acquirer industry sectors, and column names are the target industry sectors.

EU merger			0.018** (0.006)	0.009* (0.004)
Large merger	-0.015* (0.006)	-0.004 (0.004)	-0.021** (0.007)	-0.007 (0.005)
Legal form	0.006 (0.005)	-0.084*** (0.008)	-0.009 (0.008)	-0.090*** (0.009)
NACE class	0.054*** (0.004)	0.029*** (0.004)	0.046*** (0.004)	0.026*** (0.005)
Mutuality	-1.293*** (0.373)	-0.956*** (0.346)	-1.303*** (0.353)	-1.141* (0.468)
Sparsity	-2.436** (0.939)	0.541*** (0.138)	-2.421** (0.913)	0.502** (0.175)
Sum	-2.881*** (0.768)	-6.292*** (0.184)	-2.857*** (0.736)	-6.212*** (0.226)
Threshold	-2.304** (0.825)	-2.958** (0.895)	-2.073* (0.843)	-2.845** (0.896)
Sum of dyad values	937	937	937	937
AIC	-1305	-1357	-1314	-1363
BIC	-1273	-1321	-1278	-1322

MCMC MLE: *** p≤0.001, ** p≤0.01, * p≤0.05.

6. Conclusion

Merger control is considered central to the functioning of the EU competition policy and the regulation of the Single Market. Considering that there is little evidence on the theoretical and ideational insights that guide and inform the Commission's merger control, this article sought to investigate whether such broader theoretical and ideational conceptions of mergers appear to in fact be guiding and informing the Commission's merger control as manifested in the BvD data on merger cases. The following four conceptions of mergers were selected: the Chicago School, Harvard School, Freiburg School, and SM integration rationale. The article employed a network analytic framework and an ERGM approach.

The analysis demonstrates that almost all variables are useful in determining whether the preferences and the corresponding conceptions of mergers can explain the data and Commission merger control. The results exhibit a preference for mergers by entities that are headquartered in the EU, including within- and cross-border transactions, over cross-border mergers between EU and non-EU companies, in which case, SM integration rationale offers a highly credible explanation of the data. A preference for large mergers cannot be observed in the data, indicating that the Chicago School and SM integration rationale are not able to offer a credible explanation, whereas the Harvard and Freiburg Schools may be able to do so, as the schools have traditionally opposed large mergers, in line with the negative preference for large mergers. Further, the analysis reveals that there appears to be no preference for entities of the same legal form or approximate equivalence to merge. In contrast, the data exhibit a strong preference for mergers between entities operating in the same or closely related product markets, which may reveal the influence of the Chicago School and, more generally, that interindustry mergers do not appear to be particularly widespread in the EU. The results further indicate that transactions between sectors do not tend to be reciprocated, reflecting the tendency by some industry sectors, most notably the financial and manufacturing sectors, to acquire more targets than others. Additionally, there tends to be a relatively small number of sectors that account for the majority of the total number of acquisitions, whereas the majority of sectors account for few acquisitions.

The findings indicate that the Commission appears to have a particular approach to EU merger control that cannot be explained entirely by any particular conception of mergers among the four conceptions selected for the analysis. The Commission does not seem to exhibit preference for any conception in particular, but it leans toward the Chicago School and consideration for SM integration. This approach resembles 'muddling through' in an attempt to find the best fit for EU merger control given the existence of a more economic approach to competition, on the one hand, and the difficult challenges and realities of EU economic functioning and integration, on the other; however, it is difficult to conclude with certainty what the Commission's strategy appears to be. In addition, it is difficult to investigate whether the Commission has developed its approach to merger control directly on the basis of the examined theories or

whether it has done so indirectly as a result of policy convergence with antitrust jurisdictions of other countries, most notably of the US, which has been heavily influenced by the Chicago and Harvard Schools.

The results of the analysis are already indicative of a fusion of various elements from the four conceptions employed by the Commission, although the analysis employed relatively few variables. If the data were more specialized or if the data were collected specifically for the purpose of analyzing the theoretical and ideational insights that guide and inform Commission merger control and if the analysis included more variables, the results could likely have been even less indicative of a tendency toward any school of competition analysis or economic theory. The results would have likely even more convincingly demonstrated that the Commission employs the wide range of theoretical and ideational insights adopted from different schools of competition analysis or economic theories.

One may speculate that the Commission is attempting to refine and modernize EU merger control with newer insights from the Post- and Neo-Chicago Schools and insights from the Chicago and Harvard Schools in relation to the 'old economy' and to combine them with the pursuit of the ultimate objectives of EU competition policy, of EU merger control in particular, and of the wider public interest criteria. In due time, it could likely fuse the above with some emerging perspectives from behavioral economics. In theory, such an approach may appear to be a perfect fit for EU merger control, but in practice, it is an inherently complex task to design it, given both the subtle and fundamental differences between the theories. A less burdensome task for the Commission appears to be to select a school of competition analysis or economic theory and squarely incorporate its objectives and insights into policy. However, economic theories are fallible and subject to alternatives, so it may nevertheless be wise for the Commission to keep experimenting and finding ad-hoc solutions to the old and emerging issues in EU merger control by adopting insights from a wide selection of economic theories.

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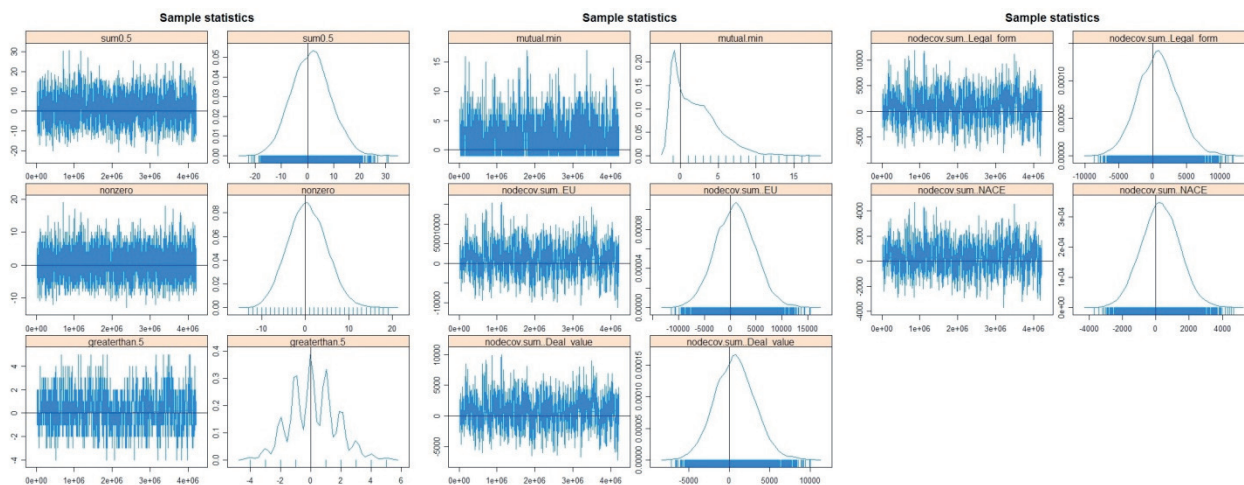
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Appendix 1: NACE industry sectors²⁹

- A. Agriculture, forestry, and fishing
- B. Mining and quarrying
- C. Manufacturing (chemicals and chemical products)
- C. Manufacturing (computer, electronic, and optical products; electrical equipment, machinery, furniture)
- C. Manufacturing (food, beverages, and tobacco)
- C. Manufacturing (metals and metal products)
- C. Manufacturing (pharmaceutical products)
- C. Manufacturing (printing)
- C. Manufacturing (rubber, plastic products, and non-metallic mineral products)
- C. Manufacturing (textiles and wearing apparel)
- C. Manufacturing (wood, cork, and paper)
- D. Electricity, gas, steam, and air conditioning supply
- E. Water supply; sewerage, waste management and remediation activities
- F. Construction
- G. Wholesale and retail trade; repair of motor vehicles and motorcycles
- H. Transportation and storage
- I. Accommodation and food service activities
- J. Information and communication
- K. Financial and insurance activities
- L. Real estate activities
- M. Professional, scientific, and technical activities
- N. Administrative and support service activities
- O. Public administration and defense; compulsory social security
- Q. Human health and social work activities
- R. Arts, entertainment, and recreation
- S. Other service activities

Appendix 2: MCMC diagnostics of Model 3



²⁹ NACE Rev. 2 (Commission, 2008b).

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