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**An Institutional Analysis of the Enforcement Problems in
Merger Control**

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Abstract

The literature identifies a significant drop in merger control enforcement activity on both sides of the Atlantic during the last decade. Furthermore, this drop in enforcement activity is convincingly connected to enforcement problems on the sides of the competition agencies. This paper goes beyond the identification of under-enforcement and proceeds to the analysis of causes for the enforcement problems and the discussion of possible solutions. It argues that modern institutional economics suggest that a lack of ‘fit’ between the ‘new’ economic approach to merger control and the ‘old’ institutional environment of the legal enforcement procedures explains the drop of enforcement effectiveness on both sides of the Atlantic by implicitly raising the standard of proof, leading to unattainable standards, virtually eroding merger control enforcement power. As a consequence, the effects-based approach to merger control fails due to its failure to acknowledge its institutional implications. Reconciling industrial and institutional economics – promoting a comprehensive competition economics approach – however offers avenues towards an effective use of sophisticated industrial economic theories and methods. Firstly, incorporating economics into enforceable rules like strong rebuttable presumptions would adjust substantive merger control policy to the procedural institutional environment. Secondly, a reform of the standards of proof provisions would adjust the procedural framework to the characteristics of modern economic evidence and concepts. In summary, the enforcement problems in merger control require even more economic thinking, complementing industrial economic thought with institutional economic thought.

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Contents

1. Introduction	7
2. Enforcement Problems on Both Sides of the Atlantic: An Overview	10
2.1. Reported Evidence on the Decrease in Merger Control Enforcement	10
2.2. Enforcement Problems versus Justified Lenient Merger Control.....	13
3. In Search of Causes: The Explanatory Power of Institutional Economics	19
3.1. Effectivity of Rules: Why Merger Control Needs Guidance from Effective Institutions.....	19
3.2. Incongruent Institutions Causing an Implicitly Increasing Standard of Proof: The Neglected Dimension.....	22
3.3. Findings.....	31
4. Towards an Institutional Fit of an Economics-Based Merger Control: Competition Policy Recommendations	32
4.1. Introductory Remarks.....	32
4.2. Adjusting Economics-Based Merger Control: The Role of Rebuttable Presumptions	33
4.3. Adjusting the Procedural Institutions: Standard of Proof.....	38
5. Conclusions	42
6. References	44

1. Introduction

Merger control on both sides of the Atlantic has been subject to an extensive and rigorous modernization during the last 10-15 years, injecting tools, theories and methods of modern industrial economic thinking into merger control policy.¹ The goal of the ‘economics approach’ to merger control was to enhance the welfare effects of merger policy by reducing false decisions by competition policy authorities. In order to effectively attack both types of decision errors – false positives and false negatives – the previous, more structural approach was sought to be replaced by an effects-based approach,² evaluating the actual effects on consumer welfare of each specific merger project beyond certain *de minimis*-thresholds. In the light of new and innovative economic theories (in particular game-theoretic oligopoly economics), methods (inter alia modern econometrics and quantitative market definition techniques) and instruments (for instance, merger simulation models), optimism was widespread that a more rule-based merger control could be superseded by a superior case-by-case analysis of actual merger effects – anticompetitive ones (harming consumer welfare) as well as procompetitive ones (e.g. efficiencies). The rationale behind this movement was that a rule based merger policy, generalizing merger projects into types or classes according to predominantly structural criteria, may very well lead to correct decisions in the majority of cases (if the rules are well-drafted) but inevitably involves false decisions every time that a case displays untypical effects. Despite belonging to a class of mergers that display in majority harmful (harmless) effects, a particular merger project can exceptionally have procompetitive (anticompetitive) net effects on consumer welfare. Consequently, starting from a rule-based merger policy, there is room for improve-

1 In the EU, this development is usually labelled ‘more economic approach’ (inter alia Christiansen 2006, 2010; Neven 2006; Röller & Stehmann 2006). In the U.S., where a comparable development started significantly earlier, the label ‘Post Chicago economics’ is sometimes used (inter alia Brodley 1995; Baker 1999a; Hovenkamp 2001).

2 See inter alia Röller 2005; Röller & de la Mano 2006; Baxter et al. 2006; Röller & Stehmann 2006; Neven & Albaek 2007; Werden 2008; White 2008; Neven & de la Mano 2009; Drauz et al. 2010.

ment if competition policy tools are available to evaluate the effects of each single case, thus minimizing false decisions. The major driving-force of the antitrust revolution of the 1990s and 2000s was that modern industrial economics and its sophisticated quantitative techniques, along with modern computing capacities and an improved data availability (e.g. scanner cashpoints), enables competition authorities to successfully perform a more effects-based, case-by-case merger control based upon case-tailormade quantitative predictions of merger effects – something that had been impossible or impracticable in former times.

However, looking at the record of the more-economics merger control reveals a surprising picture. Prominent authors on both sides of the Atlantic bemoan severe enforcement problems in merger control (US: *Baker & Shapiro* 2008b; *Farrell & Shapiro* 2008; EU: *Maier-Rigaud & Parplies* 2009; *Christiansen* 2010: 533-536). Competition authorities have been less successful than ever to challenge harmful mergers, symbolized in all-time lows in prohibition decisions and enforcement activities (see section II.1 for details). This includes both prominent failures in court as well as a subsequent risk-averse enforcement strategy, avoiding enforcement action in order to avoid reputation-damaging failures in the courts (US: *Baker & Shapiro* 2008a; *Frankel* 2008; EU: *Maier-Rigaud & Parplies* 2009). At first sight, it looks as if the economic armament, instead of having sharpened the sword of merger control, has actually disarmed merger control, turning it into a paper tiger according to the insider opinion of practitioners (evidence provided by *Baker & Shapiro* 2008a,b). The high hopes of minimizing decisions errors by an effects-based merger control appear to be shattered. While the literature is quite vocal on the phenomenon, explanations are considerably less developed.

This paper contributes to explain the current enforcement problems of the economized merger control by pointing to a widely neglected perspective. While modern *industrial* economics have been comprehensively injected into merger control, the insights of modern *institutional* economics have been ne-

glected so far. The economics of institutions – in a simplified expression the economics of rules – focus on how sets of formal and informal rules interact with, for instance market-related, human behaviour, co-evolutionary shaping both the modes of behaviour (including business strategies) and the institutions themselves (positive institutional economics) as well as on deriving policy implications how to design effective rules (normative institutional economics). Thus, the institutional economics of competition policy (or, in other words, *the economics of competition rules*) provide insights on why rules cannot be enforced effectively and how such problems can be solved. With respect to the current enforcement problems in merger control, an institutional economic approach helps to explain the reasons for the enforcement deficits and offers valuable insights for strategies to overcome them. In this paper, I argue that a lack of ‘fit’ between the ‘new’ economic approach to merger control and the ‘old’ institutional environment of the legal procedures surrounding the enforcement of merger control decisions explains the drop of enforcement effectiveness on both sides of the Atlantic. These frictions at the institutional interface between the two systems (economic analysis vs. enforcement procedures) implicitly and self-reinforcing raised the standard of proof for anticompetitive effects. This can lead to unattainable standards of proof, virtually eroding any merger control enforcement power and eventually making sophisticated economic theories and methods worthless for competition law proceedings involving predictions about future effects. As a consequence, the effects-based approach to merger control fails due to its failure to acknowledge its institutional implications. Reconciling industrial and institutional economics – promoting a comprehensive competition economics approach – however offers avenues towards an effective use of sophisticated industrial economic theories and methods. The paper outlines two of them. Firstly, incorporating economics into enforceable rules like strong rebuttable presumptions would adjust substantive merger control policy to the procedural institutional environment. Secondly, a reform of the standards of proof provisions would adjust the procedural framework to the characteristics of modern economic evidence and concepts. In summary, the enforcement

problems in merger control require even more economic thinking, complementing industrial economic thought with institutional economic thought.

2. Enforcement Problems on Both Sides of the Atlantic: An Overview

2.1. Reported Evidence on the Decrease in Merger Control Enforcement

According to the literature, merger control enforcers on both sides of the Atlantic prominently failed to enforce the desired sanctions against mergers with anticompetitive effects during the last decade. Prominently, both the U.S. anti-trust authorities (Federal Trade Commission, FTC, and Department of Justice, DoJ) and the European Commission (EC) failed to successfully challenge the Oracle/PeopleSoft-merger despite strong and sophisticated economic evidence (*Budzinski & Christiansen 2007a*). However, this case just represents the tip of the iceberg of controversial cases where the antitrust authorities ended up on the receiving end.³ The FTC, for instance, performed a record-breaking series of suffering defeats before the courts for about 7 years until a successful request for a preliminary injunction against the CCC/Mitchell merger (a 3-to-2 merger in automobile insurance and repair business software markets) in March 2009 (*Tucker 2009*). The other federal merger control authority in the U.S., the Anti-

3 Controversial cases to be mentioned here include (without claim of completeness) for the U.S. Oracle/PeopleSoft, SunGard Data Systems, Arch Coal/Triton, Whole Foods/Wild Oats, XM/Sirius, Häagen-Dazs/Dreyer's, Whirlpool/Maytag, Google/DoubleClick, Oracle/Sun and for the EU Tetra Laval/Sidel, SonyBMG, Oracle/PeopleSoft, T-Mobile Austria/tele.ring, E.ON/MOL, Korsnäs/Assidomän Cartonboard, Inco/Falconbridge, Tom Tom/TeleAtlas, Nokia/Navteq, Google/DoubleClick, Iberia/Vueling/Clickair, ABF/GBI, Friesland/Campina, Oracle/Sun, Nuon/Reliant (Netherlands). It cannot be claimed that all these cases have been anticompetitive mergers and should have been barred. However, this long list of controversial mergers that either were eventually cleared unconditionally or with comparatively mild conditions (for instance in settlements where the competition agency considerably fell behind its original enforcement goals) indicates that in case of controversy, it were the merger control enforcers that lost out or backed away from their original enforcement goals. (Note that some of the EU cases refer to the 'old' Merger Regulation).

trust Division of the DoJ, reduced its enforcement activity by more than 50 per cent in the same period of time (*Baker & Shapiro* 2008a: 30-32) – presumably in the face of two prominent failures in front of the courts (SunGard and Oracle; *Baker & Shapiro* 2008a: 32). The total record of the two U.S. federal antitrust enforcement agencies for the time period 1992 – 2009 counts 14 court failures (plus 2 more that were eventually overruled on appeal) from 28 cases (*Kirkwood & Zerbe* 2009: 105-108). This 50 per cent failure ratio must be viewed against the background that U.S. antitrust agencies only challenge mergers when they find evidence for considerable anticompetitive effects (and the vast majority of mergers passes unchallenged). Furthermore, the U.S. Supreme Court decided in 14 out of 15 cases (note: not necessarily merger cases) between 1994 and 2009 in favour of the defendant and against antitrust enforcement (*Grimes* 2010).

Similarly, the EC suffered a number of court defeats (Airtours/First Choice, Schneider/Legrand, Tetra Laval/Sidel, Sony/BMG)⁴ or even when it succeeded it had to accept strong criticisms by the courts (e.g. General Electric/Honeywell). This record of failures is remarkable given the fact that the EC performs an administrative procedure.⁵ In contrast to the U.S. authorities, European competition rules do not require the EC to seek prohibitions or remedies in front of the court. Instead, the EC decides the cases itself and hands out the verdicts. The merging companies (or other affected parties) can then seek appeal against the EC decision in front of the European courts. While it must be considered that the mentioned court defeats still refer to the old EC Merger Regulation,⁶ the record of the EC with the new Merger Regulation (in force since 1st of

4 In the so-called Impala-case, however, the Court of First Instance, rejecting the clearance decision of the EC, was later overruled by the European Court of Justice.

5 On the classification of competition policy regimes into ‘administration system’ (predominantly EU) and ‘court system’ (more the U.S.) see *Budzinski* (2009: 372-373).

6 However, an important element of the merger control reform, namely the new Chief economist and the economic expertise of his staff, influenced the Sony/BMG-case – without making a difference in terms of success in front of the courts (*Aigner et al.* 2007).

May 2004) remains unconvincing. It prohibited only two mergers since then – namely EDP/ENI/GDP and Ryanair/Aer Lingus.⁷ In several cases, the EC eventually cleared mergers without conditions (or with rather mild ones) after performing a spectacular U-turn (inter alia Oracle/PeopleSoft, Sony/BMG, etc). First, the EC issues a sharp statement of objections, referring to severe anti-competitive concerns. Then, however, it apparently felt itself unable to put up sufficient evidence with respect to a possible appeal by the merging parties and simply let it pass unchallenged. This represents a practice that was completely unusual in former times – to an extent that it actually required legal confirmation whether such an U-turn is in line with law at all (*Drauz et al.* 2010: 25).

However, next to anecdotic evidence, the drop in enforcement activity also displays in empirical studies in an analytically-statistically significant way. For the U.S., *Baker and Shapiro* (2008b: 244-247) show that annual merger enforcement rate (agency enforcement actions as a fraction of merger filings) dropped to 0.4 per cent (2002 – 2007) for the DoJ compared to a previous average of about 0.9 per cent (1990 – 2000). The FTC’s enforcement rate dropped less dramatically from ca. 1.1 percent (1990 – 2000) to below 0.8 per cent (2002 – 2007). *Harkrider* (2008) finds in an econometric analysis that the likelihood of a merger being challenged by the DoJ dropped by 24 per-centage points during the period 2001 - 2006. Additionally, a survey carried out among 20 expert antitrust practitioners confirmed the trend of these results (*Baker & Shapiro* 2008b: 247-248, 289-291). Eventually, *Kovacic* (2009: 138-142) rejects a simple political explanation for the decline (ideology of the Bush Jr administration) and points out the long-run dynamics of the enforcement decline by pointing at a simple structural-empirical phenomenon. “The threshold at which the federal agencies could be counted on to apply strict scrutiny and to be most likely to challenge involved a reduction of the number of significant competitors in the following manner: 1960s (12 to 11), 1970s (9 to 8), 1980s (6 to 5), 1990s (4 to 3), 2000s (4 to 3)” (*Kovacic* 2009: 143).

7 Appeal is still pending.

For the EU, *Maier-Rigaud and Parplies* (2009: 565) demonstrate “that its horizontal merger enforcement seems to have ground on a near halt when measured by the number and proportion of prohibition decisions” between 2004 and 2008. The fraction of prohibition decisions from notified mergers decreased from an annual average of 0.6 per cent (period 1990 – 2008) or even 1.0 per cent (1994 – 2003) to 0.1 percent (2004 – 2008).⁸ The basic tendency of these findings also holds if an appropriate measure for the intervention activity of the EC is introduced. Next to prohibiting mergers, the EC can also deter notified anticompetitive mergers by (the threat of) imposing prohibitive remedies (divestitures, behavioural remedies) as a condition to clear the merger (conditional clearance, Art. 6 (2), 8 (2) EMCR). Even if the sum of prohibition decisions, (phase II)⁹ conditional clearances and (phase II) withdrawals¹⁰ are accepted as enforcement activity, the intervention rate nevertheless has fallen significantly from 4.6 per cent of all notified merger proposals (1994 – 2003) to 2.2 per cent (2004 – 2008).

2.2. Enforcement Problems versus Justified Lenient Merger Control

However, one must be aware that a drop in enforcement activity does not per se constitute a lack of enforcement. First of all, it might be the case that merger

8 See *Maier-Rigaud & Parplies* (2009: 565-569) for the statistical figures throughout the complete paragraph as well as for statistical tests showing that the figures do not suffer from random effects. Other analyses demonstrating the decrease of enforcement activity in EC merger control are inter alia *German Monopolies Commission* (2006, 2008) and *Christiansen* (2010).

9 Upon notification, the EC commences a two step procedure with phase I representing a rough screening of possible antitrust concerns and phase II an in-depth effects analysis of those cases where phase I screening revealed potentially serious competition concerns.

10 Withdrawals during phase II proceedings can be due to two fundamentally different reasons: (i) the companies anticipate imminent prohibition or prohibitive remedies and withdraw because they see no chance to get their deal through merger control anymore or (ii) companies run into trouble regarding the business aspects of their merger project (as notification must take place early in the merger process, approval of the shareholders’ meeting might failed or contract details proved to be too controversial, etc.) and thus withdraw the notification. As it can be difficult to discriminate between these two motivations to withdraw, all phase II withdrawals are treated as EC enforcement activity. In this regard, the figures tend to overestimate the actual intervention rate.

control has been overly active and interventionist from a welfare point of view in previous times. The injection of modern industrial thought might just have exactly corrected that mistake and led towards a more appropriate level of merger control activity. Secondly, the decrease in enforcement activity might correspond to a decrease in (the share of) anticompetitive merger projects. Such a development can follow two underlying rationales.

- (i) Business enterprises might anticipate competition rules and avoid rule-violating merger projects. From an institutional-economic perspective, a drop in merger activity can actually be a sign for a more effective merger control! It makes no sense for business companies to propose a merger when they know in advance it will be successfully challenged by the competition authorities. Thus, it is perfectly rational for business companies to design merger projects in a way that they comply with merger rules. In consequence, the deterrence effect of merger control – eroding the incentive to engage in anticompetitive merger projects – would be effective.
- (ii) The environment of business activity has become more competitive, for instance in the course of the globalization of markets, because of technological progress or through the liberalization and deregulation movement. In this case, the emergence of larger enterprises through mergers just corresponds to the emergence of larger and more competitive markets.

In each of these cases, the drop in enforcement activity does not represent a welfare problem. Instead it is justified by either better knowledge about merger effects or a changing merger environment, favouring a higher share of procompetitive combinations and discouraging anticompetitive projects.

However, there are a lot of indices that the justifications for the decrease in enforcement activity do not hold and, instead, considerable enforcement problems

allow an increasing number of anticompetitive mergers to pass merger control unchallenged.

- (i) Empirical ex post studies of mergers that caused antitrust concerns but eventually were not prevented by U.S. agencies demonstrate significant anticompetitive post merger effects (*Ashenfelter & Hosken 2008; Hunter et al. 2008; Weinberg 2008; DeGraba 2009*). In the clear majority of the analysed so-called ‘marginal cases’,¹¹ consumer welfare was eventually harmed.¹² This represents convincing indication that U.S. merger control has become too lenient.
- (ii) Empirical ex post analyses of European merger control come to the conclusion that particularly prohibitions serve to effectively protect and sustain competition as well as effectively deter anticompetitive mergers in the future whereas mild remedies and (mutually negotiated) agreements perform significantly worse (*European Commission 2005; Duso et al. 2006; Seldeslachts et al. 2007*). This line of empirical research puts weight behind (the harmful effects of) the specifically radical drop in merger prohibitions.
- (iii) Furthermore, the co-existence of unchallenged mergers and subsequent ex post regulatory and abuse interventions because of observed anticompetitive structures and conducts as well as sector enquiries following considerable competition concerns in the very same industries

11 The term ‘marginal cases’ refers to merger cases that lie close to the borderline between pro- and anticompetitive or clear and challenged mergers. Thus, marginal cases must be distinguished from either clearly monopolising mergers or clearly harmless mergers (not involving any antitrust concerns).

12 *Hunter et al. (2008)* rightfully emphasize that that this does not imply that mergers in general are welfare-decreasing. The cited studies focus on so-called ‘marginal’ or ‘borderline’ cases, in which initial antitrust concern could not be manifested into enforcement action (for reasons to be analysed in the forthcoming chapters of this paper). Their predominantly anticompetitive effects indicate that, from hindsight, merger control would have been beneficial if it had challenged more of those ‘critical’ cases. Notwithstanding, the vast majority of mergers does not raise antitrust concerns at all.

(inter alia the energy sector, financial services, mobile telephone market) cast doubt on the procompetitive interpretations of the drop in enforcement activity (*Maier-Rigaud & Parplies 2009: 567, 570-571*).

- (iv) Also, the hypothesis that merging companies better anticipate merger control rules and, consequently, only propose conformal mergers appears to be problematic at the least regarding European merger control. The major reform of EC Merger Control in 2004 inter alia introduced a new test (SIEC-Significant Impediment of Effective Competition instead of the ‘old’ dominance test; *Röller & de la Mano 2006*), enhancing the scope of merger control regarding mergers in oligopolies (unilateral and coordinated effects). Since (a) there has been no previous experience with the new test and (b) the new test is broader and less clear-cut than the old one, the ability of merging companies to anticipate the exact borderline between conformal and non-conformal merger proposals should have decreased (instead of improved). In accordance with this, several authors expected legal uncertainty to (at least temporarily) increase as a consequence of this institutional innovation (*Voigt & Schmidt 2004; Budzinski & Christiansen 2005; Christiansen 2010*). Only after a period of trial-and-error and after some new landmark decisions providing a guideline for the interpretation of the new legal framework, anticipability could be expected to improve again. However, this should trigger an (temporary) increase in enforcement activity and not a drop. Furthermore, analyses on the reformed European Merger Control System struggle to identify so-called gap cases that explore the borderlines of the new regulation. Instead, the only two prohibition decisions of the EC refer to rather classical mergers to near-monopoly (EDP/ENI/GDP and Ryanair/Aer Lingus; *Maier-Rigaud & Parplies 2009: 566-567, 569-571*). The lack of successful interventions into oligopoly cases (marginal or ‘borderline’ cases) is consistent with a drop in enforcement competence as well as with an anticipation of this drop by the merging companies. It

is not consistent, however, with a trial-and-error process where merging companies are testing out the borderlines of the new rules. Also, U.S. antitrust agencies increasingly display a trend towards merely challenging mergers in clear excess of the guidelines concentration thresholds (*Daniel 2009*) – and not challenging borderline cases.

- (v) Eventually, there is one more indication that casts doubt both on the ‘more appropriate level of merger control’ and the ‘better anticipation’ hypothesis. Furthermore, this indication is observable on both sides of the Atlantic. It must be emphasized that the competition agencies in Europe and the U.S. actually *tried* to intervene against anticompetitive mergers – but *failed* to succeed in front of the courts (see above). Furthermore, the EC performed a couple of spectacular U-turns, first issuing a sharp statement of objections but then eventually clearing the merger without considerable conditions. As a consequence, prominent authors identify subsequent risk-averse enforcement strategies by U.S. and EU agencies, avoiding enforcement action in order to avoid reputation-damaging failures in the courts (US: *Baker & Shapiro 2008a: 32, 2008b: 247-248, 251*; EU: *Maier-Rigaud & Parplies 2009: 575-577*). Again, the drop of enforcement activity hints to the probable effect that competition agencies on both sides of the Atlantic restricted themselves to bring only very clear cases – and nevertheless frequently failed to enforce merger control rules even here. Marginal cases appear to have passed merger control screenings on both sides of the Atlantic unchallenged despite economic theory demonstrating that they can display considerable negative welfare effects as well.¹³

In summary, the literature advanced quite well regarding the identification of (i) the drop in enforcement activity and (ii) this drop being caused by enforcement problems rather than being justified by advanced effects analyses. Merger con-

¹³ In the U.S., even a merger to monopoly (XM/Sirius) successfully passed the antitrust system (*Baker & Shapiro 2008a: 32; Sidak & Singer 2008*).

trol is frequently held to be too lenient due to a lack of enforcement power.¹⁴ Predominantly for the U.S., it is additionally shown that especially economic evidence on market delineation (although often not even relevant for the overall welfare effects of the merger in question) as well as simulation models and quantitative predictions represented a problem and received rejection (case studies and analytical empirical studies: *Gavil* 2006; *Aigner et al.* 2007; *Budzinski & Christiansen* 2007a; *Froeb et al.* 2007; *Baker & Shapiro* 2008a, 2008b; *Baye & Wright* 2008; *Farrell & Shapiro* 2008; *Frankel* 2008; *Sidak & Singer* 2008; *DeGraba* 2009; *Maier-Rigaud & Parplies* 2009; *Sørgard* 2009; *Budzinski* 2010a; *Budzinski & Ruhmer* 2010; *Christiansen* 2010). Thus, a connection between the employment of advanced economics in merger control proceedings and the enforcement problems appears to be existent. Notably, there is indication that similar problems emerge in abuse of market power cases whereas the quantitative economic instruments appear to be very effective and work very well in cartel cases. Thus, the problem might not lie in the use of modern industrial economics *per se* but rather in the way *how* it is used. Furthermore, analyses involving the prediction of future effects (merger control; partly also abusive and predatory business behaviour) seem to be more prone to enforcement problems than such referring to past effects (cartel detection and sanction enforcement).

While the literature is well advanced regarding the identification of the under-enforcement, the same cannot be claimed neither regarding the analysis of the causes of this under-enforcement nor regarding the derivation of possible solutions. Therefore, this paper does not attempt to contribute to the detection and prove of the under-enforcement; it takes it as given. Instead, this paper contributes to explain causes for the under-enforcement (section III) and discuss possible solutions (section IV).

14 See inter alia *Ashenfelter & Hosken* (2008); *Baker & Shapiro* (2008a, 2008b); *Farrell & Shapiro* (2008, 2010a, 2010b); *Frankel* (2008); *Weinberg* (2008); *Daniel* (2009); *Kamerbeek* (2009); *Maier-Rigaud & Parplies* (2009); *Shapiro* (2009); *Sørgard* (2009); *Christiansen* (2010). However, see also the contrary opinion of *Carlton* (2007).

3. In Search of Causes: The Explanatory Power of Institutional Economics

3.1. Effectivity of Rules: Why Merger Control Needs Guidance from Effective Institutions

When the advocates of the more economic approach refer to the injection of modern economics into competition policy, then they – more often than not – implicitly constrain the ‘more economics’ to modern industrial economics. Modern industrial economics, a broad and diverse sub-discipline of economics that is far from constituting a homogeneous school of competition thinking (Fisher 1991), represents the currently dominant paradigm in economics regarding the analysis of welfare and competition effects of business behaviour and (pro- and anticompetitive) business strategies (Budzinski 2008, 2010a). Therefore, it is an essential ingredient to scientific-based competition policy. However, competition policy includes an additional dimension. Next to the analysis of competitive effects (modern industrial economics), it requires thinking about the institutional design of competition policy, i.e. how can the knowledge about effects be incorporated into the system of competition rules and enforcement. The underlying general question, the economics of rules, is the domain of modern institutional economics, another sub-discipline of economics that has been heralded with a number of Nobel prizes during recent decades (Coase 1984, Buchanan 1990; North 1990, Williamson 2000, Ostrom 2008, etc.).¹⁵ Given the complementary character of the dimensions ‘economics of competitive effects’ and ‘economics of competition rules’, it seems somewhat surprising that the more economic approach has usually been constrained to the former one and neglected the latter one. However, a comprehensive economic approach to competition policy requires the inclusion of both dimensions – modern industrial economics and modern institutional economics. Indeed, it is the main point

15 Examples of institutional competition economics include inter alia *Vanberg* (1999, 2010), *Voigt & Schmidt* (2005), *Christiansen & Kerber* (2006), *Eucken* (2006), *Kerber* (2006) and *Haucap* (2010). See also with more references *Budzinski* (2008: 305-313).

of this paper that the ignorance of the institutional dimension causes problems for the workability of the effects dimension.

In extension of North (1990), Vanberg (2002) defines institutions as “sets of rules that allow a plurality of persons to coordinate their behaviour and to routinely solve typical problems that arise in social interaction”. Thus, institutions include written and codified rules (formal institutions) as well as unwritten rules (informal institutions). The former would, for instance, include competition law as well as merger guidelines whereas the latter would include typical and recurrent practices that are not codified like the standard of proof in merger control court proceedings. Basic economics of institutions include effects on transaction costs, complexity reduction in a world of uncertainty (imperfect knowledge), stabilization of mutual expectations, points of reference/orientation/guidance for individual or corporate behavior and economization on scarce cognitive resources. In summary, institutions enhance the competence of individuals and business to act in a complex environment by structuring the option room of behavioural contingencies, thereby channeling the behavior of (for instance) market participants.¹⁶ Without workable institutions, the behavioural options at disposal are unlimited and unstructured, disallowing for (at least imperfectly) predictable and rational behavior.

The basic rationales of institutional economics become highly relevant when a shift in competition policy from a rule-based merger control towards a case-by-case merger control (as described and defined in section 1) is introduced. According to theoretical institutional economics, a rule-based competition policy is the more beneficial compared to a case-by-case effects analysis the more appropriate the following characteristics describe the relevant scenario:

16 The limited space of this paper does not allow for a comprehensive overview on the rich canon of general institutional economics. But see the writings of the Nobel laureates mentioned in the preceding paragraph. Introductory textbooks include inter alia *Kasper & Streit* (2001) and *Furubotn & Richter* (2005).

- fundamentally imperfect knowledge and information (quantitatively and qualitatively); impossibility of providing precise estimates,
- uncertainty about future effects,
- important effects lie in the future which not determined by the present (indeterminism),
- complex environment with a mixture of pro- and con-effects.

Such scenarios benefit from a rule-based regulation because rules provide points of reference, orientation and guidance and channel the behavior of the rule addressees into an option room of predominantly precompetitive modes of behavior. A case-by-case approach, however, fails to deter anticompetitive options since virtually everything can come out of the case analysis and due to complexity and uncertainty, the likelihood of getting the effects right is comparatively low. A sound rule-based approach, then, enjoys the advantages of getting the majority of typical cases right and of deterring the majority of anti-competitive cases.

The characteristics described above are best matched by antitrust cases involving complex future effects. Thus, in these cases effective competition rules are particularly important. Within the realm of competition policy, complex future effects are especially connected to merger control and here particularly to coordinated and unilateral oligopoly effects (whereas mergers to monopoly are comparatively less complex). To a lesser extent, abuse of dominance and related monopolization cases involve complex future effects. This is the case when an abusive strategy in question has not already ousted, predated or deterred competitors and/or the welfare effects of the strategies in question still lie in the future. In other words, whenever competition policy intervenes early into abuse cases (and not after the strategy in question has been practiced for years)

the importance of effective rules increases. In contrast, prosecuted cartel cases – while indeed being complex – usually do not involve complex future effects.¹⁷

Since the focus of the economic armament of merger control on both sides of the Atlantic were on case-by-case analyses of competitive/welfare effects, an institutional economic perspective would predict the most severe problems for merger control in oligopolistic markets as well as abuse control dealing with ex ante effects (e.g. predatory pricing cases) but fewest problems for cartel prosecution. Drawing on the analysis in chapter II, an impressive accordance with the empirical picture can be observed.

3.2. Incongruent Institutions Causing an Implicitly Increasing Standard of Proof: The Neglected Dimension

However, what exactly causes the enforcement problems in complex merger control cases? The preceding section ‘only’ offered the explanation that this type of competition policy particularly requires effective rules – but not yet an explanation why the move towards a case-by-case policy based on sophisticated economic instruments and analytical tools tends to cause enforcement failures. The hypothesis offered in this paper is that incongruent institutions – the ‘new’ economic case-by-case effects analysis on the one hand and the ‘traditional’ legal procedural institutions on the other hand – implicitly and unintentionally led to an increasing standard of proof. The ‘new’ substantive institutions lacked fit with the ‘old’ procedural institutions, therefore creating frictions in the institutional interfaces. These frictions impair the desired effects of the sophisticated economic instruments and create unintended side-effects. The consequent unintended increase in the required standard of proof goes along with an amplification of the allocation of the burden of proof – in the extreme leading to a situation where whoever suffers from the burden of proof is likely to lose the case.

17 Note that this would be different if cartels were subject to an ex ante control, i.e. companies must notify cartel projects to the competition authorities and await their approval. This has been the system for non-hardcore cartels in European competition policy until 2004.

Neglecting the institutional dimension of the effects-based approach, i.e. the fit of ‘new’ sophisticated economic instruments with ‘old’ procedural institutions, influences the (a)symmetry between the standard of proof and the standard of doubt. If competition authorities on both sides of the Atlantic want to enjoin a merger proposal or impose significant conditions and modifications on the combination in question, the authorities must meet a certain standard of proof. In the U.S., this is directly the case since the competition authorities must succeed in the courts in order to prohibit or modify a merger (or reach a settlement in the shadow of the likely court outcome). In the EU, the standard of proof comes into play more indirectly through the right of the merging parties to appeal in court any decision by the EC. Notably, the relevant standard of proof for merger procedures is not codified law (inter alia Vesterdorf 2005; Botteman 2006; Lindsay 2006: 66-75; Frankel 2008: 176-178). Instead, it can only indirectly be inferred from court judgements, is developing through case law – and thus subject to evolution. Although there is no definite consensus among legal scholars the standard ‘balance of probabilities’ appears to be a frequently chosen one.¹⁸ Moreover, this standard fits quite well with the idea of an effects based approach as it refers to the balancing of pro- and anticompetitive effects and the probabilities of their occurrence post-merger. In short, the standard requires the competition authority to prove that the probability of an anticompetitive impact of the merger is higher than the probability of a neutral or even procompetitive impact. At the same time, the ‘balance of probabilities’ standard implies that defendants have to argue on about the same level of accuracy in order to shatter the case of the authority, demonstrating that the probability of an anticompetitive impact is not larger than the one of a neutral or procompetitive impact. Thus, the standard of proof and the standard of doubt are not that different.

18 For a systematic treatment of different possible standards of proof see *Budzinski & Christiansen* (2007b).

Unfortunately, however, the trend towards sophisticated economic case-by-case analysis has driven the standard of proof away from the ‘balance of probabilities’ and destroyed its relative symmetry with the standard of doubt.¹⁹

The Asymmetric Demise of Documentary Evidence

In the face of the presence and availability of the ‘new’ sophisticated economic evidence, the ‘old’ documentary evidence that traditionally represented the main body of the competition authorities’ cases rapidly decreased in terms of probative force. That becomes quite clear if one looks into the borderline cases (see section II) and the respective court proceedings. Anecdotic evidence exemplifies the general trend. For instance, in the Arch Coal/Triton merger the court dismissed customer conclusions about the future price effects of mergers. “Customers do not, of course, have the expertise to state what will happen in the (.) market” (FTC vs. Arch Coal, Inc., 329 F. Supp. 2d 109: 146). ‘Qualitative’ evidence – here the unanimous and unambiguous conviction of all customers that the merger in question will lead to higher prices – is not viewed to be sufficiently reliable anymore because it is not rooted in explicit economics (*DeGraba* 2009: 107-108).²⁰ Consequently, competition authorities lose a tool of generating evidence (expertise of market participants) that usually had an important probative force. Similarly, the court in the Whole Foods/Wild Oats merger rejected documentary evidence demonstrating the assessment of pre-

19 The phenomenon of an implicitly increasing standard of proof has been taken place in the U.S. for a longer period now than in the EU (corresponding to the differing introduction times of the effects-based analyses in question), therefore the majority of examples in the following paragraphs stems from U.S. cases. In addition, the administrative procedure in the EU leaves some types of argumentation (for instance the weighting of documentary evidence) more in the dark or to non-quotable informal talks with EC staff. However, for the sake of the argument, I stick to providing a common basic line of explanation for both regimes because the underlying dynamics are the same and the necessary policy answers (see section IX) need to follow the same logic – at the admitted price that it de-emphasizes the existing differences on both sides of the Atlantic.

20 See for comparable court reasoning for instance Oracle/PeopleSoft or SunGard Datasystems/Comdisco (*Heyer* 2007; *Tucker et al.* 2007; *Baker & Shapiro* 2008b). “[S]ome judges appear to want customers to do empirical or econometric analysis to understand fully how a merger may affect them” (*Muris & Sayyed* 2010: 9).

merger competitive interrelation and likely post-merger effects by market participants (including detected confidential pre-merger strategy papers by the acquiring company assessing the merger project to be anticompetitive in its nature) as unreliable because it lacks explicit economic theory (*Tucker & Yingling 2007; Varner & Cooper 2007*). In Oracle/PeopleSoft, internal party documents demonstrating that the merging companies were each other's closest competitors were rejected for similar reasons (*Tucker et al. 2007; Frankel 2008: 166*).

While these types of evidence lack the sophisticated techniques of econometrics and modelling, it, nevertheless, remains unclear whether an economic perspective should devalue its probative force. Economists generally expect information asymmetries to occur in markets in the sense that market participants know more (albeit sometimes in a more tacit manner) about the market than external analysts – be it regulators, government agencies or external experts can ever obtain. Actually, the existence and inescapability of this information asymmetries is the main justification for having markets as superior decentralized coordination mechanisms in the first place! Surprisingly, the courts have somewhat turned this standard economic wisdom upside down by assuming that the economic theory of the case (as reported by external expertise) entails more and better knowledge about the market in question than the market participants.

This goes along with the devaluation of another type of documentary evidence that is intent evidence. Documents clearly showing the anticompetitive intent of an acquisition (as most drastically in Whole Foods; *Tucker & Yingling 2007; Varner & Cooper 2007; Farrell & Shapiro 2008: 5*) have also lost most of their probative force. This stands in accordance with the logic of the effects-based approach where only effects count and not intentions. However, anticompetitive intent in the case of an acquisition will rationally be backed by internal knowledge about the actual possibility of rising prices post-merger (or removing a competitive constraint on pricing, for that matter). In other words, intent should usually follow achievable effect prospects.

Altogether, the standard of proof required to challenge a merger increased by the devaluation of previously accepted ‘qualitative’ documentary evidence. Instead, in the face of the presence and availability of sophisticated quantitative techniques, anticompetitive effects increasingly *must* be evidenced by the power of these tools.

The same, however, does not hold for the standard of doubt. In Arch-Coal/Triton, the court – while rejecting the customers’ expertise that the merger will increase prices as unfounded due to a lack of explicit economics – accepted the assessment of these customers that the pre-merger market was competitive although this ‘view’ is as (un-)substantiated as the other one (*DeGraba* 2009: 105). In other words, the court believed that the customers were competent to reliably assess the degree of competitiveness in the pre-merger market but not competent to reliably assess the probability of post-merger price increases. Again, similar ostensible ‘inconsistencies’ can be observed in Whole Foods/Wild Oats (and in many other cases). For instance, when discussing the market delineation, the court rejected documentary evidence on the side of the FTC because it cannot replace sophisticated econometric analysis. However, the court followed the defendant’s market delineation although it was also based on documentary evidence. Furthermore, internal Whole Foods documents demonstrating that Wild Oats represented a particularly close competitor and significant competitive constraint (thus, supporting the authority’s case) were found to lack probative force. On the other hand, rather vague internal strategy considerations from Whole Foods about potential repositioning of traditional supermarkets (so that they perhaps become a closer competitor in the future) were found sufficient to upset the economic evidence of the competition authority (see on the whole paragraph: *Tucker & Yingling* 2007).

The common pattern behind these ostensible inconsistencies is that documentary evidence has been devaluated as part of the ‘proof’ whereas it remains fully accepted as part of the ‘doubt’. The competition authority faces considerably higher standards for evidence quality than the defendants enjoy regarding the

upsetting of the evidence. This reflects an increased standard of proof beyond the ‘balance of probabilities’ concept.

(False) Sense of Precision and (Overly) Ambitious Expectations

In a different context, *Hansen & Heckman* (1996: 98) describe an additional caveat regarding the use of quantitative evidence and numerical predictions: “Precise numerical outputs are reported, but with no sense of the confidence that can be placed in the estimates. This produces a false sense of precision.” The underlying implication is that numerical predictions and quantitative evidence create an illusion of precision that deviates from and tend to ignore the capacity of the estimates. If a price increase, for instance, is predicted to be 7.7 per cent as the outcome of a – inevitably – simplifying merger simulation model, then this creates a stronger sense (or even perception) of precision than a more vague qualitative assessment à la ‘considerable price increases must be expected’. The problematic implication of this cognitive framing effect (*Kahneman* 2003a, 2003b) is that it becomes easier to shatter the trust in the evidence by the defendants. In the case of the numerical prediction it might suffice to create doubt on the *exact figure* of the price increase (‘with other model specifications, the increase becomes significantly lower’), whereas in the case of the qualitative assessment the hurdle to create doubt that price increases occur *at all* is much higher.²¹

Paradoxically, ambitious expectations about the power of the ‘new’ sophisticated methods and instruments contribute to their failure in court because they increase the susceptibility of these instruments to doubt. For instance in *Arch Coal/Triton*, the court demanded an increased quality of evidence for (tacit) collusion-stabilizing punishment mechanisms as well as a higher probability for an anticompetitive impact because of the more sophisticated instruments (*De-*

21 This problem becomes further aggravated if predictive quantitative economic evidence is – intentionally or unintentionally – treated as forensic evidence that attempts to prove facts of the past. A merger simulation model, for instance, can never achieve the degree of certainty of a genetic fingerprint simply because future effects can not be perfectly foreseen in a non-deterministic world.

Graba 2009: 104-106).²² In Oracle/Peoplesoft, the predictions of the merger simulations, where different and independent models on both side of the Atlantic pointed to very similar severe anticompetitive effects (comparison: *Budzinski & Christiansen* 2007a), were not dismissed because of a better model with contrary predictions. It sufficed to cast doubt on the precision of the *level* of the price increases – without providing substantial doubt on the *direction* of the price changes. Thus, the pseudo precision phenomenon leads to an implicit increase in the standard of proof (overly ambitious expectations...) and an implicit decrease in the standard of doubt (... are easier to shatter).

When Complexity of Economic Evidence Meets the Incentives of Courts and Judges

The increasing complexity of economic evidence in the courtroom meets with judges which are not specialized economists. On both sides of the Atlantic, predominantly general courts are competent for merger control proceedings, i.e. judges that have to hear and decide cases from many different areas.²³ More often than not, the generalist character coincides with a high case load, so that many different cases from different areas are on the judge's docket and compete for attention time (*Frankel* 2008: 173-175). Thus, judges expectably struggle to understand complex and sophisticated quantitative economic evidence to a degree that they can actually reliably balance the pro- and con-evidence injected by the parties of the trial. The 'battle of experts' often does not provide an obvious result.

How does this interfere with the standard of proof and its implicit evolution? A hypothesis from legal science claims that a high standard of proof (like beyond reasonable doubt) for plaintiff requires less specialized Judges, whereas more

22 „This requires a sophisticated attempt to show a developing propensity towards this form of tacit coordination ...“ *FTC vs. Arch Coal*: 132.

23 Note that this remains true even for courts that only deal with business law since these merger-specific analytical tools require a very specialized knowledge that, for instance, cannot even be expected from the 'typical' graduate from an economics master programme.

moderate standards of proof (like balancing of pro and con-evidence) requires more sophisticated expert knowledge from the Judge (*Wood 2009: 61*). The reasoning is that if the plaintiff faces an ambitious ('compelling') standard of proof, she or he must convince the non-expert Judge. If she fails (or the defendants manage to raise doubts), then the Judge can easily reject the case. If however a more sophisticated judgement must be made, weighing the pros and cons brought forward by the parties (which is the very idea of the effects-based approach), then this is more demanding to the expertise of the Judge and the court.

Applying this concept implies that increasing the sophistication of the economic evidence without changing the court proceedings/institutions (incl. the degree of court/Judge specialization) provides an incentive for courts to incrementally increase standards of proof in order to protect themselves from (accountable) mistakes. Following the economic theory of law courts, judges have an interest in not being accounted for 'wrong' decisions (reputation effect). Accordingly, a behavioural explanation would point to incentives of avoiding exposure to lack of competence. Now, if the court rejects a case due to a lack of evidence, the accountable 'mistake' lies with the plaintiff (the competition authority in our case) who just failed to be convincing enough ('beyond reasonable doubt'). In contrast, if a rejection follows a weighing of complex pro and con evidence ('balance of probabilities'), the 'blame' falls more on the court or the Judges. Thus, the courts protect themselves in the face of a change in the nature of evidence that is not accompanied by an according change in the procedural institutions – and they can do so by implicitly and somewhat unintentionally raising the standard of proof above the previous level of a 'balance of probabilities' towards a 'beyond reasonable doubt' standard.

Towards Unreasonable Standards of Proof: Lost in Translation

Note the 'vicious circle' from the interplay of the three institutional interface frictions discussed in this section. The devaluation of qualitative evidence combined with the ambitious expectations towards sophisticated quantitative evi-

dence as a consequence of courts' self-protection leads competition authorities to bring even more sophisticated evidence in order to prove their case. This, in turn, will further drive up the implicit standard of proof because the court will seek to defend its reputation and so on and so forth.

This positive feedback loop caused by incongruent institutions, mutually reinforcing an increase in sophistication and in demanded standards of proof, might lead towards unreasonable standard of proofs that can never be met (*Gavil* 2006: 592-594). The tendency towards something comparable to criminal law's 'beyond reasonable doubt' standard is unreasonable for merger control since it necessarily deals with the prediction of future effects. And future effects can never be proved to a certainty that is comparable to finding facts of the past. By demanding ambitious economics proof for likely future effects (mergers, predatory strategies), the courts tend to codify standards of proof that can never be met.²⁴ As a non-intentional consequence, some theories of harm 'die' in a legal sense because they can never be sufficiently proved. With respect to merger control, this particularly applies to unilateral oligopoly effects. There is some indication on both sides of the Atlantic that it has become virtually impossible to win an unilateral oligopoly effects case – with the rational consequence that the competition authorities rationally anticipate this and follow a risk-averse strategy (see section II). They do not challenge those mergers in the first place despite modern industrial economics clearly demonstrating the anticompetitive impact and the welfare losses associated to unilateral oligopoly effects of mergers among close competitors in differentiated markets (*Kaplow & Shapiro* 2007; *Werden & Froeb* 2008; *Kerber & Schwalbe* 2008). To a more moderate extent, the same applies to coordinated oligopoly effects. And for the U.S., *Ga-*

24 “This effect is magnified when judges choose to discount the evidence placed before them, despite the fact that such evidence may be the best, or only, information available about a relevant issue” (with reference to the SunGard case *Frankel* 2008: 179). In Oracle/PeopleSoft, the “court has in essence written into law an economic standard that is unlikely to ever be met (...)” (*Gavil* 2006: 594). *Baker & Shapiro* (2008b: 243) wonder “whether real-world data could ever be good enough for this court”.

vil (2006: 591) argues that due to legally ‘incomprehensible economics’, predatory pricing has become “virtually per se legal”.

3.3. Findings

The preceding sections have demonstrated that neglecting the institutional dimension during the process of the economic armament of merger control has led to an implicitly and unintentionally increasing standard of proof along with an increase in the ‘distance’ between the standard of proof and the standard of doubt. Due to inherent dynamics, unreasonable standards of proof may be established. This process ‘disarms’ the party that carries the burden of proof. When it comes to challenge a merger involving competitive concerns, the burden to prove the anticompetitive effects naturally falls on the competition authorities.²⁵ Thus, ironically, due to incongruent institutions, the economic armament of merger control agencies in the U.S. and the EU actually and unintended led to their ‘disarmament’. As a consequence of this development, competition policy challenging some types of anticompetitive mergers (and conduct) appears to have become virtually unenforceable. This affects in particular cases with complex future effects, namely coordinated and especially unilateral oligopoly effects.

Thus, an institutional-economic explanation for the enforcement problems of merger control on both sides of the Atlantic, the frequent failures and the consequent voluntary abandonment of challenging potentially harmful mergers – as described in section II – is provided.

25 Note, however, that the same phenomenon affects the few areas where the merging companies carry the burden of proof. From this perspective, it is not surprising that it seems virtually impossible for merging companies to sufficiently prove efficiencies and synergies from the merger in court (*Schwalbe & Zimmer*: 318-356). That is when then companies are actually required to *prove* precompetitive efficiency effects as a formal defence and cannot just ‘hint’ to their *possible* existence as a means to raise doubt on the anticompetitive evidence of the competition agency.

4. Towards an Institutional Fit of an Economics-based Merger Control: Competition Policy Recommendations

4.1. Introductory Remarks

The value of the provided institutional-economic explanation includes the possibility to judge solution proposals to the enforcement problem regarding their adequacy to alleviate the problem of frictions in the institutional interfaces. A frequently discussed proposal is to enhance the economic knowledge and education of judges.²⁶ Although this proposal reflects some understanding of the institutional dimension, it is likely to run into two severe problems: (i) the level of economic sophistication of modern merger analysis would require absolute specialists that cannot realistically form a general court and (ii) the fundamental incentive problem would not be addressed because the institutional framework remains basically unchanged. Thus, this kind of reasoning consequently leads to the call for specialized courts. However, such a fundamental change in the legal system seems to be not realistic in the short run and legal science also refers to some considerable disadvantages of a system of specialized courts (*Frankel* 2008: 211-213). Similarly, the related option of appointing an independent court expert in economics, advising the judges, is met with much scepticism from the perspective of legal sciences (e.g. *Posner* 1999). The proposal to strengthen consumer organisations as an additional, competition-preserving party in the court trials (*Maier-Rigaud & Parplies* 2009), on the other hand, does not address the institutional dimension at all. Apart from fundamental economic reservations (*Budzinski* 2010b), this proposal would actually preserve or even enhance the cause of the enforcement problems – the incongruent institutions – and therefore cannot be expected to improve merger control from the institutional-economic perspective offered in this paper.

26 For a comprehensive discussion see *Baye & Wright* (2008).

Following the institutional explanation discussed in the preceding sections, a policy solution seeking to alleviate the enforcement problems needs to directly address the institutional interfaces. This implies either

- to adjust economics-based merger control to the institutional framework of merger enforcement (section 3.2), or
- to adjust the procedural institutions, particularly the standard of proof (section 3.3).

4.2. Adjusting Economics-Based Merger Control: The Role of Rebuttable Presumptions

The basic idea of adjusting the use of modern industrial economics in order to alleviate the frictions with the procedural institutional framework is to employ rigorous and sophisticated economics (theory, methods and instruments) to shape adequate competition rules, in our case merger control rules. While advanced industrial economics is currently used to provide case-specific effects analyses, the conceptual progress would be to identify typically harmful case categories and design rules accordingly. If a phenotype case constellation typically involves anticompetitive net effects (the cons outweighing the pros), then it should not be necessary to prove these anticompetitive effects for each individual case (case-by-case). Instead, it should be the (rare) exceptions from the typical effects that should carry the burden of being proved (Breyer 2009). Thus, instead of putting the case-specific burden of proof on the typical effects (according to advanced modern economics), it should be put on the atypical effects.

This fundamental approach stands in accordance with the proposal to establish so-called rebuttable presumptions (Baker & Shapiro 2008b: 33-35; Farrell & Shapiro 2008; Shapiro 2009; Farrell & Shapiro 2010b). It requires agencies to establish simple and practical presumptions of harm to competition, consistent

with sound economic analysis. It is the authorities' duty to 'prove' that these presumptions of harm stand in accordance with the scientifically accepted body of modern competition economics thought and represent case categories (phenotypes) that typically entails a net anticompetitive impact. However, after being established, these rebuttable presumptions need not be proved in each single case (case-by-case). Instead, a rule-based competition policy applies in the sense that it suffices to identify with comparably simply-measurable and unambiguous criteria (for instance, market shares, HHIs, diversion ratios, etc.) that a case at hand belongs into this category of harm. Based upon this rule-based competition policy, the majority of cases should be decided correctly ('typical effects'). However, the concept of rebuttable presumptions accepts that there can be extraordinary cases displaying atypical effects. Therefore, the presumptions are rebuttable if merging parties overcome them by presenting strong and reliable evidence that their case represents an exception from the rule ('atypical effects'). The burden of proof to demonstrate the exceptional character of the case ('defences'), however, falls on the merging parties.

How could such rebuttable presumptions look like? Baker & Shapiro (2008b: 34-35) suggest examples for rebuttable presumptions for coordinated and unilateral oligopoly effects.²⁷

- Coordinated Effects (*Baker & Shapiro* 2008b: 34):
 - ✓ *first presumption*: within a sound relevant market, a merger includes a likely maverick;
 - ✓ *second presumption*: within a sound relevant market, a merger reduces the number of significant firms/increases concentration significantly

²⁷ An actually existing example of a rebuttable presumption would be § 19 GWB (the German Act against Restraints of Competition) that stipulates market share-based presumptions about what constitutes a dominant position (in the context of abusive and predatory strategies, not regarding merger control) and adds "unless the undertakings demonstrate that the conditions of competition may be ex-

- Unilateral Effects (*Baker & Shapiro* 2008b: 34-35):

✓ *first presumption*: within a sound relevant markets, a merger substantially increases concentration and a mechanism can be articulated by which the merger will cause a price increase;

second presumption: the diversion ratio between the merging companies is large enough to give the merged firm an incentive to raise the price of one or more products significantly.

These exemplary proposals showcase how such rebuttable presumptions could incorporate the knowledge from economics and provide a rule-based merger control. However, given the framework presented in this paper, an even more precise phrasing of the presumptions might be advantageous. In particular, the focus on the ‘sound relevant market’ in three of the four horizontal merger presumptions might be problematic because in many cases it was exactly the quantitative estimation of the market boundaries that was subject to controversy (*Frankel* 2008: 178-179). American and European antitrust agencies frequently failed in the courtroom to meet the standard of proof for the economic evidence on market delineation and the subsequent rejection of the market definition generally prejudiced the rejection of the overall agency case. However, this problem should be less severe in more homogeneous markets and more severe in strongly heterogeneous markets – an assessment that derives from modern industrial economics and is also backed by the case records. It was predominantly mergers in rather heterogeneous markets where market definition controversies played a decisive role. As a consequence, relying on a sound delineation of the relevant market may well form an important part of a coordinated effects presumption. However, it does not qualify for an unilateral oligopoly effects presumption. This fits with *Baker and Shapiro’s* (2008b) presumption proposals with the exception of the first presumption for unilateral effects. This

pected to maintain substantial competition between them, or that the number of undertakings has no paramount market position in relation to the remaining competitors” (§19.3 GWB).

presumption is meant to capture monopolising mergers, creating or strengthening a dominant company. One could argue that the very nature of the dominance concept requires the definition of a relevant market because it defines the reference universe (*Farrell & Shapiro* 2010b: 4).

Along with establishing rebuttable presumptions, *Farrell* and *Shapiro* (2008, 2010a) advocate to re-focus merger analysis from attempting to fully assess the underlying forces that determine either pre-merger or post-merger prices towards assessing how a merger changes pricing incentives. The latter is (i) more adequate for the nature of the regulatory problem that actually refers to a change (prevention of mergers who *lessen* competition or *significantly impede effective* competition) and (ii) easier and more reliably and readily assessable (*Farrell & Shapiro* 2010a: 586-587).²⁸ Thus, the task of categorizing merger proposals according to the established rebuttable presumptions should focus on comparatively easy-accessible criteria, namely concentration ratios (esp. HHI) for rather homogeneous markets and upward pricing pressure (UPP) ratios (e.g. diversion ratios) for rather heterogeneous markets (*Farrell & Shapiro* 2008, 2010a).

Table I offers modified rebuttable presumption that stand in accordance with the modern mainstream of competition economics but are more radical than Baker and Shapiro's in terms of precision and generalization. Note that – as it has always been common in merger control – *de minimis* thresholds (usually turnover thresholds) prevent insignificant mergers from being scrutinized according to the presumptions. Such presumptions could be codified either in

28 “[A] simple metaphor may be helpful. If I take a swig from a glass of water, an observer can readily testify that there is less water in the glass than there was; and this testimony is more, not less, reliable because the observer is not basing it on any quantitative assessment of how much water the glass held pre-swig, or of how much it now holds post-swig. (...) Focusing on the change due to a merger, not on the level, also facilitates use of the correct benchmark: the prices that would prevail but-for the merger. These prices may be uncertain, controversial, or hard to predict, hindering an approach based on price *levels* but not necessarily creating problems for a difference-based approach” (*Farrell & Shapiro* 2010a: 586-587).

guidelines (here: the horizontal merger guidelines) or in law. While within the European administration system of merger control a manifestation in guidelines might suffice to be effective, the same might not be so uncontroversial with respect to the more court-based system of merger control in the U.S.

Table 1. Rebuttable Presumptions for Anticompetitive Horizontal Mergers²⁹

Phenotype Case Category	Rebuttable Presumption I. moderate II. radical	Research Challenge for Competition Economics
<i>Dominance</i>	<p>I. It is typically anticompetitive if a merger within a sound relevant market substantially increases concentration and a mechanism can be articulated by which the merger will cause a price increase.</p> <p>II. It is typically anticompetitive if a merger within a sound relevant market either establishes a monopoly or leads to a combined market share of the merging firms of more than σ.</p>	<p>Well established.</p> <p>Determination of σ.</p>
<i>Coordinated Oligopoly Effects</i>	<p>I. It is typically anticompetitive if a significant oligopolist merges with a likely maverick or a merger among significant oligopolists reduces the number of significant firms/increases concentration significantly.</p> <p>II. It is typically anticompetitive if a significant oligopolist merges with a likely maverick or a merger among significant oligopolists reduces the number of significant firms in the market below α or increases concentration above a HHI-level of β.</p>	<p>What is a ‘likely maverick’?</p> <p>What is a ‘likely maverick’? Determination of α and β.</p>

29 Note that these presumptions serve a demonstration purpose. Established rebuttable presumptions should reflect the state of accepted competition economics knowledge, thus, it is a research challenge to specify them. The table is restricted to horizontal mergers for reasons of simplification and better established economic consensus. Providing sound rebuttable presumptions for vertical and conglomerate mergers represents an important challenge for economic research.

<i>Unilateral Oligopoly Effects</i>	I. It is typically anticompetitive if a significant oligopolist in a non-homogeneous market merges with its closest competitor, for instance displaying the highest diversion ratio.	Well established.
	II. It is typically anticompetitive, if a merger among significant oligopolists in a non-homogeneous market exceeds a diversion ratio of γ .	Determination of γ .

It represents a challenging but manageable task for competition economics research to identify the adequate presumptions (i.e. identifying phenotype case categories that typically display a net anticompetitive impact) and, thus, ensure that they are consistent with mainstream modern competition economics – theoretically and empirically. For instance with a view to advanced econometrics (*Rubinfeld 2010*) and sophisticated merger simulation techniques (*Budzinski & Ruhmer 2010*), this requires an enhanced research activity, conducting (ex post) industry studies in apparently collusive markets as well as simulating considerable amount of actual mergers (ex post studies) as well as hypothetical mergers in order to generate knowledge about typically anticompetitive constellations. The demand for additional research along these lines is particularly important regarding non-horizontal mergers. However, sophisticated economic evidence will enter the courtrooms only if exceptional effects – countering the relevant presumption in a specific case – are to be proven. Then, the burden to meet the standard of proof lies with the exception-seeking parties (here the merging companies).

4.3. Adjusting the Procedural Institutions: Standard of Proof

While the conceptual approach of the preceding section is to adjust the use of economic evidence in a way that only exceptional reasoning (countering the rule) and not the typical one (the rule) must meet the ambitious standard of proof that has evolved due to the effects-based approach, this section addresses the level of the standard of proof directly. Thus, it seeks to put the adjustment

on the procedural institutions and make them more coherent with case-by-case economics-based merger control. Standards of proof can be differentiated according to the requirements for the proof of anticompetitive effects (most ambitious standard first, less ambitious standard last; *Budzinski & Christiansen* 2007b):

- a) beyond reasonable doubt (i.e. virtually certainty),
- b) balance of probabilities (i.e. more likely than not, preponderance of evidence; (probability $\pi > 0.5$),
- c) considerable or appreciable effect (i.e. a more than negligible probability; e.g. $\pi > 0.25$),
- d) plausibility (i.e. not against logic and experience),
- e) possibility (i.e. a positive probability; $\pi > 0$).

Due to the nature of economic evidence in merger cases (predictive evidence), the most ambitious standard (a) would make it almost impossible to prove anti-competitive merger effects and, thus, represents an unattainable or unreasonable standard. In case of standard (b) the requirement would merely be that harm to consumers must be more likely than no harm. However, if “there is a 40 per cent chance that the merger will result in a significant impediment to effective competition”, then according to (b) the competition agency “has not satisfied the standard of proof” (*Lindsay* 2006: 71). While (a) would factually impede the use of predictive economic evidence, (b) would in theory allow rather unambiguous models and evidence to enter the courts. In a way, standard (b) might still be overly ambitious, though, since especially close call or borderline mergers will often not allow for sufficient certainty that $\pi > 0.5$ actually holds. However, keeping in mind the line of argumentation in chapter II (section II.2), it must be considered that a standard (b) is unlikely to preserve in the courtroom in the face of sophisticated economic evidence. Instead, institutional economic theory and the experience from the last decades hint to an inherently and unintentional upward dynamic. Consequently, without adjusting the way economic evidence is used (see preceding section III.2) standard (b) tacitly evolves to-

wards standard (a). In conclusion, both standards (a and b) are unattainable for an effects-based merger control rooted in sophisticated and predictive quantitative economic evidence. Incongruence between the institutional framework of substantive analysis and the institutional framework of procedural issues would prevail.

Standard (c) would alleviate much of the problems with standard (b). For instance, Lindsay's '40 per cent chance of significant anticompetitive effects' case would be enforceable here³⁰ and the demand for overly ambitious models and simulations would be reduced, bringing the standard of proof closer to what predictive economic evidence can actually do. However, it is more questionable whether the inherent upward dynamics described in section II.2 would be sufficiently alleviated.

Standards (d) and (e) might even allow for economics-only-based decisions since assessing the plausibility of causal relations represents a domain of formal model theory and a probability > 0 is easy to prove. Standard (d) is somewhat consistent with the *deferential standard* advocated by *Frankel* (2008: 175-180). He argues that competition agencies are better equipped to analyse complex cases and apply sophisticated economics than courts and, moreover, less partisan than business companies. Thus, the analysis of the 'expert agency' should be honoured and the burden to prove agency mistakes put on the ones challenging an agency decision. The downside especially of standard (e) is that a rather restrictive approach to merger control could be supported, which would unduly interfere with the private parties' right to combine their assets productively (i.e. make use of their property rights). *Budzinski* and *Christiansen* (2007b) cau-

30 It is a different question whether an estimation of a 40 per cent chance of anticompetitive effects *should* actually lead to a challenge by competition agencies. Even if it would be exact, the probability must be combined with the severity of welfare damages if the 'less likely' thing happens (i.e. anticompetitive impact comes into effect). A high damage can justify a lower-than-50-per-cent threshold (*Katz & Shelanski* 2007). However, predictions are not exact and neither are the estimates for different scenarios. Therefore, in the face of fundamental uncertainty, a *procompetition presumption* (*Farrell & Shapiro* 2010b: 2) might also justify a lower threshold.

tiously derive (c) as the most adequate standard for what economic models can do. However, given the analysis in this paper, standard (d) might seem more appropriate. Due to the inherent dynamics of the interplay of generalized courts, allocation of burden of proof and the nature of sophisticated economic evidence, such an adequate standard of proof cannot be expected to evolve out of case law. Instead, it would have to be codified explicitly in competition law.

An alternative to the explicit reduction of the standard of proof would be to introduce a two-sided standard of proof (*Budzinski & Christiansen 2007b*). In this scenario, it would not be enough for the opposing side to raise doubts, instead, the opposing party would be obliged to present a reasonable and at least equally plausible alternative.³¹ The two-sided standard prevents that economic evidence is turned down simply because of the unavoidable imperfectness of sophisticated economic evidence (no ‘perfect’ models, no perfect predictions). Instead of merely pointing to deviating assumptions, the opposing party is required to submit own economic evidence of a comparable quality and validity if it wants to see a specific piece of economic evidence rejected. With a mixed burden of proof the legitimacy threshold remains comparatively high because rational competition authorities will produce convincing evidence when they intend to prohibit a merger or impose severe modifications since they anticipate that, otherwise, they would lose the case in the courtroom. In essence, the two-sided standard aims at closing the gap between the standard of proof and the standard of doubt (see section III.2). The lost-in-translation problem, however, would not be solved in a direct way.

The line of reasoning in this section should be viewed as a preliminary analysis. Further research is necessary to derive an optimal standard of proof for the nature of modern sophisticated economic evidence on complex future effects of mergers.

31 However, this innovative solution might pose difficult legal-procedural problems, which have yet to be solved.

5. Conclusions

The literature identifies a significant drop in merger control enforcement activity on both sides of the Atlantic during the last decade. Furthermore, this drop in enforcement activity is convincingly connected to enforcement problems on the sides of the competition agencies. This paper goes beyond the identification of under-enforcement and proceeds to the analysis of causes for the enforcement problems and the discussion of possible solutions. It argues that modern institutional economics suggest that a lack of ‘fit’ between the ‘new’ economic approach to merger control and the ‘old’ institutional environment of the legal procedures explains the drop of enforcement effectiveness on both sides of the Atlantic by implicitly raising the standard of proof, leading to unattainable standards, virtually eroding merger control enforcement power. As a consequence, the effects-based approach to merger control fails due to its failure to acknowledge its institutional implications. Reconciling industrial and institutional economics – promoting a comprehensive competition economics approach – however offers avenues towards an effective use of sophisticated industrial economic theories and methods. Firstly, incorporating economics into enforceable rules like strong rebuttable presumptions would adjust substantive merger control policy to the procedural institutional environment. Secondly, a reform of the standards of proof provisions would adjust the procedural framework to the characteristics of modern economic evidence and concepts. While both avenues offer the prospect of alleviating the enforcement problems with a causal therapy, the first avenue (rebuttable presumptions) appears to be more advanced in terms of research. The second avenue (standard of proof) requires considerable more research effort before implementable recommendations can be derived.

In summary, the enforcement problems in merger control require even more economic thinking, complementing industrial economic thought with institutional economic thought. This insight goes way beyond the issue of merger control. A comprehensive competition economics approach, embracing not only

(narrow) industrial economics but also institutional, behavioural and evolutionary economics, is necessary in order to create a sound framework of competition policy and regulation for the benefit of society.

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