

Dewenter, Ralf; Heimeshoff, Ulrich; Lüth, Hendrik

**Working Paper**

## The impact of the market transparency unit for fuels on gasoline prices in Germany

DICE Discussion Paper, No. 220

**Provided in Cooperation with:**

Düsseldorf Institute for Competition Economics (DICE), Heinrich Heine University Düsseldorf

*Suggested Citation:* Dewenter, Ralf; Heimeshoff, Ulrich; Lüth, Hendrik (2016) : The impact of the market transparency unit for fuels on gasoline prices in Germany, DICE Discussion Paper, No. 220, ISBN 978-3-86304-219-6, Heinrich Heine University Düsseldorf, Düsseldorf Institute for Competition Economics (DICE), Düsseldorf

This Version is available at:

<https://hdl.handle.net/10419/140879>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

# DISCUSSION PAPER

No 220

## The Impact of the Market Transparency Unit for Fuels on Gasoline Prices in Germany

Ralf Dewenter,  
Ulrich Heimeshoff,  
Hendrik Lüth

May 2016

## IMPRINT

### DICE DISCUSSION PAPER

Published by

düsseldorf university press (dup) on behalf of  
Heinrich-Heine-Universität Düsseldorf, Faculty of Economics,  
Düsseldorf Institute for Competition Economics (DICE), Universitätsstraße 1,  
40225 Düsseldorf, Germany  
[www.dice.hhu.de](http://www.dice.hhu.de)

### Editor:

Prof. Dr. Hans-Theo Normann  
Düsseldorf Institute for Competition Economics (DICE)  
Phone: +49(0) 211-81-15125, e-mail: [normann@dice.hhu.de](mailto:normann@dice.hhu.de)

### DICE DISCUSSION PAPER

All rights reserved. Düsseldorf, Germany, 2016

ISSN 2190-9938 (online) – ISBN 978-3-86304-219-6

The working papers published in the Series constitute work in progress circulated to stimulate discussion and critical comments. Views expressed represent exclusively the authors' own opinions and do not necessarily reflect those of the editor.

# The Impact of the Market Transparency Unit for Fuels on Gasoline Prices in Germany<sup>1</sup>

Ralf Dewenter\*

Ulrich Heimeshoff<sup>♦</sup>

Hendrik Lüth<sup>♠</sup>

May 2016

## Abstract

Increasing horizontal as well as vertical transparency in oligopolistic markets can be advantageous for consumers, due to reduced search costs. However, market transparency can also affect incentives to deviate from collusive agreements and the punishment by rival firms in the market. Using a panel of 27 European countries, we analyze the impact of increased market transparency via the introduction of a market transparency unit for fuels in Germany. Applying a difference-in-differences approach, we find evidence that both gasoline and diesel prices have increased. While consumers may be better off using a retail price app for fuels, gas stations are also able to compare prices at almost no cost.

*Keywords:* market transparency unit, regulation, fuel prices, difference-in-differences

---

<sup>1</sup> We thank the participants of the 2016 meeting of the Workgroup Competition of the Verein fuer Socialpolitik (German Economic Association) for helpful comments and suggestions.

\* Helmut-Schmidt-University Hamburg, Department of Economics, Holstenhofweg 85, 22043 Hamburg, email: dewenter@hsu-hh.de.

♦ Duesseldorf Institute for Competition Economics, University of Duesseldorf, Universitaetsstrasse 1, 40221 Duesseldorf, email: ulrich.heimeshoff@hhu.de.

♠ Helmut-Schmidt-University Hamburg, Department of Economics, Holstenhofweg 85, 22043 Hamburg, email: luethh@hsu-hh.de.

## 1 Introduction

As of December 2013 the German market transparency unit for fuels (Markttransparenzstelle für Kraftstoffe) went into operation. Since then German gas stations have been committed to report price changes for gasoline or diesel fuel in “real time” to the unit, which is hosted by the German competition authority (Bundeskartellamt). The aim of this regulation is to strengthen vertical market transparency by enabling consumers to gain information on current fuel prices easily.<sup>2</sup> Furthermore, the data collected should help to disclose abuse of market power or cartelization. However, the amount of information available to firms in the market increases as well, which could have negative effects.

Information is vital for decision making in firms and consumers purchasing decisions.<sup>3</sup> While vertical market transparency is meant to accelerate consumer reaction, and therefore increase competition, the introduction of the transparency unit is also suitable for increasing horizontal market transparency, so gas stations can also base their decisions on richer information. As a result, there are two effects which might work in opposite directions. More information for consumers might lead to better decisions. Stiglitz (1989) shows that prices may fall substantially in a competitive market, if consumer search costs can be reduced significantly. On the other hand, firms may also gain additional information. The welfare effects of what the literature calls information sharing in oligopolistic markets depend on several factors, but most important are the “output adjustment” and “preferences for variety” effects.

According to Kühn and Vives (1995) there are two effects when firms face uncertain demand and share information. The first is the so-called output adjustment effect, which is caused by firms’ increased information, which reduces the adjustment of output to the state of demand. The size of output adjustment depends on the kind of competition in markets: price setting leads to more output adjustment, if more information is available, but if firms use prices as strategic variables, information sharing leads to less output adjustment and a tendency towards increased deadweight loss (see Vives, 1990).

The second effect is the so called “preference for variety” effect. When common shocks to demand information that is received by firms are assumed, sharing demand information makes firms’ outputs more uniform. On the other hand, if demand shocks are firm-specific, sharing information makes output across firms less uniform. If customers have certain preferences for variety in choices, they would prefer also a more uniform distribution of firms’ outputs. As a result, if shocks are common, effects of information sharing on consumer surplus could be positive (see Kühn and Vives, 1995).

Under Bertrand competition, the total welfare effects of information sharing can be positive if products are close substitutes (see Vives, 1984; 2000: 251). However, one generalizable result from the literature on the welfare effects of information sharing is that information sharing under Bertrand competition is almost always bad for consumers (see Vives, 2000: 252). We utilize the introduction of the German market transparency unit for Diesel and gasoline fuels as

---

<sup>2</sup> Up to January 2016, 49 so-called consumer information service providers running websites and smart phone apps were available.

<sup>3</sup> For the importance of information sharing in competition policy see Kühn (2001).

a natural experiment to test the effects of increased information available to customers, as well as firms, on retail fuel prices.

## 2 Empirical Analysis

### 2.1 Identification

In order to test whether the market transparency unit for fuels (MTU) has any positive or negative impact on fuel prices, we use a difference-in-differences approach (see Wooldridge, 2010). By these means we are able to compare fuel prices before and after the introduction of the unit and additionally to compare German prices with average prices from a control group.

The only country in our sample that has introduced a market transparency unit is Germany. Our control group consists of 27 other European countries.<sup>4</sup> As of January 2011, fuel prices in Austria are regulated, hence Austria is not in our panel.<sup>5</sup> Fuel markets are highly regional and, as a result, we can assume that our control group is independent of our treatment group. The likelihood that there are any major interrelationships between these markets is quite low.

By using fixed effects techniques we account for unobserved time-invariant country heterogeneity, which yields the following regression equation

$$\text{price}_{it} = c_i + \mathbf{x}_{it}'\boldsymbol{\beta} + \phi_1 \text{reg}_t + \phi_2 \text{regcountry}_i + \phi_3 \text{treat}_{it} + u_{it},$$

where price is either the gas or the diesel price of country  $i$  at time  $t$ ,  $c_i$  is a country specific fixed effect,  $\mathbf{x}$  is a vector of controls,  $\text{reg}$  is a dummy variable indicating the regulation period,  $\text{regcountry}$  is a dummy variable indicating whether a certain country belongs to the treatment or control group,  $\text{treat}$  is an interaction effect constructed as the product of regulation and a dummy variable for Germany, to identify the effects of the introduction of regulation in Germany, and  $u_{it}$  is an error term. To avoid biases in standard errors we report p-values that are based on clustered standard errors in our results (see Bertrand et al., 2004).

### 2.2 The Data

Our data consists of an unbalanced panel of weekly observations spanning 28 member states of the European Union from the 2<sup>nd</sup> week of 2005 to the 42<sup>nd</sup> week of 2015 (see Table 1 for descriptive statistics). The start of the treatment period is the first week of December 2013 when the market transparency unit went live.

Information on fuel prices is taken from the *Weekly Oil Bulletin* provided by the European Commission. Pump prices are given with and without taxes for 1,000 liters gasoline (Euro-super) and diesel oil (automotive gas oil). For reasons of comparability we use prices without taxes, because they vary greatly between countries and typically include different types, such

---

<sup>4</sup>Belgium, Bulgaria, Cyprus, Czech Republic, Croatia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Luxembourg, Latvia, Malta, The Netherlands, Poland, Portugal, Romania, Sweden, Slovenia, Slovakia, Spain, and the United Kingdom.

<sup>5</sup> Since 2011 Austrian gas stations are allowed to raise prices only once a day. Additionally, Austria has introduced a transparency unit. Dewenter & Heimeshoff (2015) found that regulations (not the introduction of the transparency unit) led to a significant decrease in prices.

as value added taxes and various indirect taxes. Furthermore, there are differences in the methods used by EU member countries to average prices reported to the European Commission, which makes comparison more difficult (see European Commission, 2009). Exemplarily Germany reports unweighted arithmetic averages while the Netherlands weight fuel prices based on volumes sold. However, these methodological differences are usually constant over time and we use fixed-effects regressions to account for unobserved heterogeneity between countries. As a result, differences in methodology should not bias our general results.

A main impact factor of fuel prices is the crude oil price. We use weekly information on Brent Oil spot prices (brent) as a control variable. Furthermore, we include monthly information on macroeconomic factors such as the consumer price index (CPI) and the industrial production index (IPI), and weekly observations of taxes for diesel (Dtax)/gasoline (Gtax) fuels as explanatory variables. While macroeconomic factors are taken from Eurostat, information on taxes is calculated as the difference of fuel prices with and without taxes.

## 2.3 Results

The following table 1 reports the results of our regressions for gasoline as well as Diesel fuel.

**Table 2:** Regression Results – Difference in differences

	<b>Gas I</b>	<b>Gas II</b>	<b>Gas III</b>	<b>Diesel I</b>	<b>Diesel II</b>	<b>Diesel III</b>
Regulation	46.50 (0.00)	12.20 (0.05)	18.67 (0.05)	37.51 (0.00)	2.28 (0.76)	12.78 (0.07)
Treatment	15.87 (0.00)	12.20 (0.00)	34.15 (0.00)	-6.08 (0.18)	20.34 (0.00)	19.1 (0.00)
Brent	-	269.55 (0.00)	254.92 (0.00)	-	284.79 (0.00)	286.66 (0.00)
CPI	-	2.41 (0.00)	2.15 (0.00)	-	1.38 (0.03)	1.27 (0.00)
IPI	-	-.0227 (0.91)	-	-	.5862 (0.03)	-
Taxes	-	.1907 (0.42)	.1986 (0.00)	-	.3385 (0.00)	.3381 (0.00)
Constant	556.20 (0.00)	-1044.08 (0.00)	-967.06 (0.00)	601.85 (0.00)	-1070.03 (0.00)	-993.50 (0.00)
Country fixed effects	YES	YES	YES	YES	YES	YES
Time dummies	NO	NO	YES	NO	NO	YES
R <sup>2</sup>	0.02	0.85	0.85	0.01	0.86	0.85
F-Test (controls)	93.19 (0.00)	10320.93 (0.00)	1423.46 (0.00)	172.88 (0.00)	11064.00 (0.00)	1371.00 (0.00)
Obs	13,644	10,413	13,590	13,644	10,413	13,590

Note: p-values given in parenthesis are based on clustered standard errors.

At first we analyze gas and diesel prices using regulation and treatment dummies as well as country fixed effects. Our results suggest an increase of gasoline prices by about 1.5 euro cents per liter (see Gas I) in comparison with the control group, despite the introduction of the market transparency unit. However, referring to regression Diesel I, no significant price change can be found with respect to diesel oil.

As the explanatory power of the regressions is rather weak, we ran further regressions, including some explanatory variables discussed above (in regressions Gas II and Diesel II), as well as

time dummies (Gas III & Diesel III). In regressions III we also skipped the industrial production index, which is not available for some countries and does not have a significant impact on our results. While regressions of gasoline prices do not change, results for diesel regressions turn out to support a positive effect on prices when using a richer model.

Without time controls, gas prices increase by about 1.2 euro cents when including further control variables. Generally controls have the expected signs and the explanatory power of the regressions increases sharply. Adding time dummies and skipping IPI, the treatment effect increases to about 3.4 euro cents. Independently of using only controls or adding time dummies, prices for diesel oil increase in both regressions by about 2 euro cents.

### **3 Conclusions**

This paper utilizes a unique opportunity to test whether more information within a Bertrand-style oligopoly harms consumers. Our results support the hypothesis derived by Vives (1984) that information sharing between competitors in oligopolies under Bertrand competition is usually harmful. While gasoline prices increased by about 1.2 to 3.3 euro cents due to an increased horizontal market transparency, prices for diesel increased by about 2 euro cents.



## References

- Bertrand, M., E. Duflo, and S. Mullainathan (2004): How Much Should We Trust Differences-in-Differences Estimates?, in: *Quarterly Journal of Economics*, Vol. 119, 249-275.
- Dewenter, R. and U. Heimeshoff (2012): Less Pain at the Pump? The Effects of Regulatory Interventions of Retail Gasoline Markets, *DICE Discussion Papers*, No 51.
- European Commission (2009): *Survey on the Petroleum Products' Price Data Collection Published in the Weekly Oil Bulletin*, Brussels, [https://ec.europa.eu/energy/sites/ener/files/documents/survey\\_oil\\_bulletin\\_data\\_collection.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/survey_oil_bulletin_data_collection.pdf).
- Kühn, K. (2001): Fighting Collusion by Regulating Communication Between Firms, in: *Economic Policy*, Vol. 16, 169-204.
- Kühn, K. and X. Vives (1995): *Information Exchange Among Firms and their Impact on Competition*, Report for the European Commission, Brussels.
- Stiglitz, J. (1989): Imperfect Information in the Product Market, in: R. Schmalensee and R. Willig (Eds.): *Handbook of Industrial Organization*, Vol. 1, North-Holland, Amsterdam, 769-847.
- Vives, X. (1984): Duopoly Information Equilibrium: Cournot and Bertrand, in: *Journal of Economic Theory*, Vol. 34, 71-94.
- Vives, X. (1990): Trade Association Disclosure Rules, Incentives to Share Information, and Welfare, in: *Rand Journal of Economics*, Vol. 21, 409-430.
- Vives, X. (2000): *Oligopoly Pricing, Old Ideas and New Tools*, MIT Press, Cambridge: MA.
- Vives, X. (2002): Private Information, Strategic Behavior, and Efficiency in Cournot Markets, in: *RAND Journal of Economics*, Vol. 33, 361-376.
- Wooldridge, J., (2010): *Econometric Analysis of Cross Section and Panel Data*, The MIT Press, Cambridge: MA, 2. Ed.

**Appendix****Table A1: Descriptive Statistics**

	<b>Obs</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Min</b>	<b>Max</b>
Gas	14,175	563.77	116.90	226.38	860.51
Diesel	14,175	607.73	124.12	335.92	933.00
Brent	14,176	84.32	24.87	40.02	142.43
CPI	14,120	115.65	12.60	96.05	157.42
IPI	10,934	102.53	10.46	67.40	149.00
Gtax	14,175	723.20	160.58	384.73	1110.51
Dtax	14,175	589.64	127.10	339.80	1114.46

## PREVIOUS DISCUSSION PAPERS

- 220 Dewenter, Ralf, Heimeshoff, Ulrich and Lüth, Hendrik, The Impact of the Market Transparency Unit for Fuels on Gasoline Prices in Germany, May 2016.
- 219 Schain, Jan Philip and Stiebale, Joel, Innovation, Institutional Ownership, and Financial Constraints, April 2016.
- 218 Haucap, Justus and Stiebale, Joel, How Mergers Affect Innovation: Theory and Evidence from the Pharmaceutical Industry, April 2016.
- 217 Dertwinkel-Kalt, Markus und Wey, Christian, Evidence Production in Merger Control: The Role of Remedies, March 2016.
- 216 Dertwinkel-Kalt, Markus, Köhler, Katrin, Lange, Mirjam R. J. and Wenzel, Tobias, Demand Shifts Due to Salience Effects: Experimental Evidence, March 2016. Forthcoming in: Journal of the European Economic Association.
- 215 Dewenter, Ralf, Heimeshoff, Ulrich and Thomas, Tobias, Media Coverage and Car Manufacturers' Sales, March 2016.
- 214 Dertwinkel-Kalt, Markus and Riener, Gerhard, A First Test of Focusing Theory, February 2016.
- 213 Heinz, Matthias, Normann, Hans-Theo and Rau, Holger A., How Competitiveness May Cause a Gender Wage Gap: Experimental Evidence, February 2016. Forthcoming in: European Economic Review.
- 212 Fudickar, Roman, Hottenrott, Hanna and Lawson, Cornelia, What's the Price of Consulting? Effects of Public and Private Sector Consulting on Academic Research, February 2016.
- 211 Stühmeier, Torben, Competition and Corporate Control in Partial Ownership Acquisitions, February 2016. Forthcoming in: Journal of Industry, Competition and Trade.
- 210 Muck, Johannes, Tariff-Mediated Network Effects With Incompletely Informed Consumers, January 2016.
- 209 Dertwinkel-Kalt, Markus and Wey, Christian, Structural Remedies as a Signalling Device, January 2016. Published in: Information Economics and Policy, 35 (2016), pp. 1-6.
- 208 Herr, Annika and Hottenrott, Hanna, Higher Prices, Higher Quality? Evidence From German Nursing Homes, January 2016. Published in: Health Policy, 120 (2016), pp. 179-189.
- 207 Gaudin, Germain and Mantzari, Despoina, Margin Squeeze: An Above-Cost Predatory Pricing Approach, January 2016. Published in: Journal of Competition Law & Economics, 12 (2016), pp. 151-179.
- 206 Hottenrott, Hanna, Rexhäuser, Sascha and Veugelers, Reinhilde, Organisational Change and the Productivity Effects of Green Technology Adoption, January 2016. Published in: Energy and Resource Economics, 43 (2016), pp. 172–194.
- 205 Dauth, Wolfgang, Findeisen, Sebastian and Suedekum, Jens, Adjusting to Globalization – Evidence from Worker-Establishment Matches in Germany, January 2016.

- 204 Banerjee, Debosree, Ibañez, Marcela, Riener, Gerhard and Wollni, Meike, Volunteering to Take on Power: Experimental Evidence from Matrilineal and Patriarchal Societies in India, November 2015.
- 203 Wagner, Valentin and Riener, Gerhard, Peers or Parents? On Non-Monetary Incentives in Schools, November 2015.
- 202 Gaudin, Germain, Pass-Through, Vertical Contracts, and Bargains, November 2015. Published in: *Economics Letters*, 139 (2016), pp. 1-4.
- 201 Demeulemeester, Sarah and Hottenrott, Hanna, R&D Subsidies and Firms' Cost of Debt, November 2015.
- 200 Kreickemeier, Udo and Wrona, Jens, Two-Way Migration Between Similar Countries, October 2015. Forthcoming in: *World Economy*.
- 199 Haucap, Justus and Stühmeier, Torben, Competition and Antitrust in Internet Markets, October 2015. Forthcoming in: Bauer, J. and M. Latzer (Eds.), *Handbook on the Economics of the Internet*, Edward Elgar: Cheltenham 2016.
- 198 Alipranti, Maria, Milliou, Chrysovalantou and Petrakis, Emmanuel, On Vertical Relations and the Timing of Technology, October 2015. Published in: *Journal of Economic Behavior and Organization*, 120 (2015), pp. 117-129.
- 197 Kellner, Christian, Reinstein, David and Riener, Gerhard, Stochastic Income and Conditional Generosity, October 2015.
- 196 Chlaß, Nadine and Riener, Gerhard, Lying, Spying, Sabotaging: Procedures and Consequences, September 2015.
- 195 Gaudin, Germain, Vertical Bargaining and Retail Competition: What Drives Countervailing Power?, September 2015.
- 194 Baumann, Florian and Friehe, Tim, Learning-by-Doing in Torts: Liability and Information About Accident Technology, September 2015.
- 193 Defever, Fabrice, Fischer, Christian and Suedekum, Jens, Relational Contracts and Supplier Turnover in the Global Economy, August 2015.
- 192 Gu, Yiquan and Wenzel, Tobias, Putting on a Tight Leash and Levelling Playing Field: An Experiment in Strategic Obfuscation and Consumer Protection, July 2015. Published in: *International Journal of Industrial Organization*, 42 (2015), pp. 120-128.
- 191 Ciani, Andrea and Bartoli, Francesca, Export Quality Upgrading under Credit Constraints, July 2015.
- 190 Hasnas, Irina and Wey, Christian, Full Versus Partial Collusion among Brands and Private Label Producers, July 2015.
- 189 Dertwinkel-Kalt, Markus and Köster, Mats, Violations of First-Order Stochastic Dominance as Salience Effects, June 2015. Published in: *Journal of Behavioral and Experimental Economics*. 59 (2015), pp. 42-46.
- 188 Kholodilin, Konstantin, Kolmer, Christian, Thomas, Tobias and Ulbricht, Dirk, Asymmetric Perceptions of the Economy: Media, Firms, Consumers, and Experts, June 2015.

- 187 Dertwinkel-Kalt, Markus and Wey, Christian, Merger Remedies in Oligopoly under a Consumer Welfare Standard, June 2015  
Published in: Journal of Law, Economics, & Organization, 32 (2016), pp. 150-179.
- 186 Dertwinkel-Kalt, Markus, Salience and Health Campaigns, May 2015  
Forthcoming in: Forum for Health Economics & Policy.
- 185 Wrona, Jens, Border Effects without Borders: What Divides Japan's Internal Trade?, May 2015.
- 184 Amess, Kevin, Stiebale, Joel and Wright, Mike, The Impact of Private Equity on Firms' Innovation Activity, April 2015.  
Forthcoming in: European Economic Review.
- 183 Ibañez, Marcela, Rai, Ashok and Riener, Gerhard, Sorting Through Affirmative Action: Three Field Experiments in Colombia, April 2015.
- 182 Baumann, Florian, Friehe, Tim and Rasch, Alexander, The Influence of Product Liability on Vertical Product Differentiation, April 2015.
- 181 Baumann, Florian and Friehe, Tim, Proof beyond a Reasonable Doubt: Laboratory Evidence, March 2015.
- 180 Rasch, Alexander and Waibel, Christian, What Drives Fraud in a Credence Goods Market? – Evidence from a Field Study, March 2015.
- 179 Jeitschko, Thomas D., Incongruities of Real and Intellectual Property: Economic Concerns in Patent Policy and Practice, February 2015.  
Forthcoming in: Michigan State Law Review.
- 178 Buchwald, Achim and Hottenrott, Hanna, Women on the Board and Executive Duration – Evidence for European Listed Firms, February 2015.
- 177 Heblich, Stephan, Lameli, Alfred and Riener, Gerhard, Regional Accents on Individual Economic Behavior: A Lab Experiment on Linguistic Performance, Cognitive Ratings and Economic Decisions, February 2015  
Published in: PLoS ONE, 10 (2015), e0113475.
- 176 Herr, Annika, Nguyen, Thu-Van and Schmitz, Hendrik, Does Quality Disclosure Improve Quality? Responses to the Introduction of Nursing Home Report Cards in Germany, February 2015.
- 175 Herr, Annika and Normann, Hans-Theo, Organ Donation in the Lab: Preferences and Votes on the Priority Rule, February 2015.  
Forthcoming in: Journal of Economic Behavior and Organization.
- 174 Buchwald, Achim, Competition, Outside Directors and Executive Turnover: Implications for Corporate Governance in the EU, February 2015.
- 173 Buchwald, Achim and Thorwarth, Susanne, Outside Directors on the Board, Competition and Innovation, February 2015.
- 172 Dewenter, Ralf and Giessing, Leonie, The Effects of Elite Sports Participation on Later Job Success, February 2015.
- 171 Haucap, Justus, Heimeshoff, Ulrich and Siekmann, Manuel, Price Dispersion and Station Heterogeneity on German Retail Gasoline Markets, January 2015.

- 170 Schweinberger, Albert G. and Suedekum, Jens, De-Industrialisation and Entrepreneurship under Monopolistic Competition, January 2015  
Published in: Oxford Economic Papers, 67 (2015), pp. 1174-1185.
- 169 Nowak, Verena, Organizational Decisions in Multistage Production Processes, December 2014.
- 168 Benndorf, Volker, Kübler, Dorothea and Normann, Hans-Theo, Privacy Concerns, Voluntary Disclosure of Information, and Unraveling: An Experiment, November 2014.  
Published in: European Economic Review, 75 (2015), pp. 43-59.
- 167 Rasch, Alexander and Wenzel, Tobias, The Impact of Piracy on Prominent and Non-prominent Software Developers, November 2014.  
Published in: Telecommunications Policy, 39 (2015), pp. 735-744.
- 166 Jeitschko, Thomas D. and Tremblay, Mark J., Homogeneous Platform Competition with Endogenous Homing, November 2014.
- 165 Gu, Yiquan, Rasch, Alexander and Wenzel, Tobias, Price-sensitive Demand and Market Entry, November 2014  
Forthcoming in: Papers in Regional Science.
- 164 Caprice, Stéphane, von Schlippenbach, Vanessa and Wey, Christian, Supplier Fixed Costs and Retail Market Monopolization, October 2014.
- 163 Klein, Gordon J. and Wendel, Julia, The Impact of Local Loop and Retail Unbundling Revisited, October 2014.
- 162 Dertwinkel-Kalt, Markus, Haucap, Justus and Wey, Christian, Raising Rivals' Costs through Buyer Power, October 2014.  
Published in: Economics Letters, 126 (2015), pp.181-184.
- 161 Dertwinkel-Kalt, Markus and Köhler, Katrin, Exchange Asymmetries for Bads? Experimental Evidence, October 2014.  
Published in: European Economic Review, 82 (2016), pp. 231-241.
- 160 Behrens, Kristian, Mion, Giordano, Murata, Yasusada and Suedekum, Jens, Spatial Frictions, September 2014.
- 159 Fonseca, Miguel A. and Normann, Hans-Theo, Endogenous Cartel Formation: Experimental Evidence, August 2014.  
Published in: Economics Letters, 125 (2014), pp. 223-225.
- 158 Stiebale, Joel, Cross-Border M&As and Innovative Activity of Acquiring and Target Firms, August 2014.  
Published in: Journal of International Economics, 99 (2016), pp.1-15.
- 157 Haucap, Justus and Heimeshoff, Ulrich, The Happiness of Economists: Estimating the Causal Effect of Studying Economics on Subjective Well-Being, August 2014.  
Published in: International Review of Economics Education, 17 (2014), pp. 85-97.
- 156 Haucap, Justus, Heimeshoff, Ulrich and Lange, Mirjam R. J., The Impact of Tariff Diversity on Broadband Diffusion – An Empirical Analysis, August 2014.  
Forthcoming in: Telecommunications Policy.
- 155 Baumann, Florian and Friehe, Tim, On Discovery, Restricting Lawyers, and the Settlement Rate, August 2014.

- 154 Hottenrott, Hanna and Lopes-Bento, Cindy, R&D Partnerships and Innovation Performance: Can There be too Much of a Good Thing?, July 2014.  
Forthcoming in: Journal of Product Innovation Management.
- 153 Hottenrott, Hanna and Lawson, Cornelia, Flying the Nest: How the Home Department Shapes Researchers' Career Paths, July 2015 (First Version July 2014).  
Forthcoming in: Studies in Higher Education.
- 152 Hottenrott, Hanna, Lopes-Bento, Cindy and Veugelers, Reinhilde, Direct and Cross-Scheme Effects in a Research and Development Subsidy Program, July 2014.
- 151 Dewenter, Ralf and Heimeshoff, Ulrich, Do Expert Reviews Really Drive Demand? Evidence from a German Car Magazine, July 2014.  
Published in: Applied Economics Letters, 22 (2015), pp. 1150-1153.
- 150 Bataille, Marc, Steinmetz, Alexander and Thorwarth, Susanne, Screening Instruments for Monitoring Market Power in Wholesale Electricity Markets – Lessons from Applications in Germany, July 2014.
- 149 Kholodilin, Konstantin A., Thomas, Tobias and Ulbricht, Dirk, Do Media Data Help to Predict German Industrial Production?, July 2014.
- 148 Hogrefe, Jan and Wrona, Jens, Trade, Tasks, and Trading: The Effect of Offshoring on Individual Skill Upgrading, June 2014.  
Forthcoming in: Canadian Journal of Economics.
- 147 Gaudin, Germain and White, Alexander, On the Antitrust Economics of the Electronic Books Industry, September 2014 (Previous Version May 2014).
- 146 Alipranti, Maria, Milliou, Chrysovalantou and Petrakis, Emmanuel, Price vs. Quantity Competition in a Vertically Related Market, May 2014.  
Published in: Economics Letters, 124 (2014), pp. 122-126.
- 145 Blanco, Mariana, Engelmann, Dirk, Koch, Alexander K. and Normann, Hans-Theo, Preferences and Beliefs in a Sequential Social Dilemma: A Within-Subjects Analysis, May 2014.  
Published in: Games and Economic Behavior, 87 (2014), pp. 122-135.
- 144 Jeitschko, Thomas D., Jung, Yeonjei and Kim, Jaesoo, Bundling and Joint Marketing by Rival Firms, May 2014.
- 143 Benndorf, Volker and Normann, Hans-Theo, The Willingness to Sell Personal Data, April 2014.
- 142 Dauth, Wolfgang and Suedekum, Jens, Globalization and Local Profiles of Economic Growth and Industrial Change, April 2014.
- 141 Nowak, Verena, Schwarz, Christian and Suedekum, Jens, Asymmetric Spiders: Supplier Heterogeneity and the Organization of Firms, April 2014.
- 140 Hasnas, Irina, A Note on Consumer Flexibility, Data Quality and Collusion, April 2014.
- 139 Baye, Irina and Hasnas, Irina, Consumer Flexibility, Data Quality and Location Choice, April 2014.
- 138 Aghadadashli, Hamid and Wey, Christian, Multi-Union Bargaining: Tariff Plurality and Tariff Competition, April 2014.  
Published in: Journal of Institutional and Theoretical Economics (JITE), 171 (2015), pp. 666-695.

- 137 Duso, Tomaso, Herr, Annika and Suppliet, Moritz, The Welfare Impact of Parallel Imports: A Structural Approach Applied to the German Market for Oral Anti-diabetics, April 2014.  
Published in: Health Economics, 23 (2014), pp. 1036-1057.
- 136 Haucap, Justus and Müller, Andrea, Why are Economists so Different? Nature, Nurture and Gender Effects in a Simple Trust Game, March 2014.
- 135 Normann, Hans-Theo and Rau, Holger A., Simultaneous and Sequential Contributions to Step-Level Public Goods: One vs. Two Provision Levels, March 2014.  
Published in: Journal of Conflict Resolution, 59 (2015), pp.1273-1300.
- 134 Bucher, Monika, Hauck, Achim and Neyer, Ulrike, Frictions in the Interbank Market and Uncertain Liquidity Needs: Implications for Monetary Policy Implementation, July 2014 (First Version March 2014).
- 133 Czarnitzki, Dirk, Hall, Bronwyn, H. and Hottenrott, Hanna, Patents as Quality Signals? The Implications for Financing Constraints on R&D?, February 2014.  
Published in: Economics of Innovation and New Technology, 25 (2016), pp. 197-217.
- 132 Dewenter, Ralf and Heimeshoff, Ulrich, Media Bias and Advertising: Evidence from a German Car Magazine, February 2014.  
Published in: Review of Economics, 65 (2014), pp. 77-94.
- 131 Baye, Irina and Sapi, Geza, Targeted Pricing, Consumer Myopia and Investment in Customer-Tracking Technology, February 2014.
- 130 Clemens, Georg and Rau, Holger A., Do Leniency Policies Facilitate Collusion? Experimental Evidence, January 2014.

Older discussion papers can be found online at:

<http://ideas.repec.org/s/zbw/dicedp.html>



**Heinrich-Heine-University of Düsseldorf**

**Düsseldorf Institute for  
Competition Economics (DICE)**

Universitätsstraße 1\_ 40225 Düsseldorf  
[www.dice.hhu.de](http://www.dice.hhu.de)

ISSN 2190-9938 (online)  
ISBN 978-3-86304-219-6