Lutz, Stefan

Working Paper

Regulatory standards can lead to predation

ZEI working paper, No. B 05-2005

Provided in Cooperation with:
ZEI - Center for European Integration Studies, University of Bonn

Suggested Citation: Lutz, Stefan (2005) : Regulatory standards can lead to predation, ZEI working paper, No. B 05-2005, ZEI, Bonn

This Version is available at:
http://hdl.handle.net/10419/39531

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.
Stefan Lutz

Regulatory Standards Can Lead to Predation
I present a model of vertical product differentiation and exit where a domestic and a foreign firm face fixed setup costs and quality-dependent costs of production and compete in quality and price in the domestic market. Quality-dependent costs are quadratic in qualities, but independent of the quantities produced. The domestic government may impose a minimum quality standard binding for both foreign and domestic firms. In the presence of an initial cost advantage of the domestic firm, a sufficiently high minimum quality standard set by the domestic government will enable the domestic firm to induce exit of the foreign firm, i.e. to engage in predation. However, the same standard would lead to predation by the foreign firm, if the foreign firm had the initial cost advantage!

JEL classification: F12, F13, L13
Keywords: vertical product differentiation, oligopoly, trade, quality, country asymmetries

1. Introduction

This note presents a case where a minimum quality standard facilitates predation, i.e. the domestic firm is enabled to force exit of the foreign firm. For this case, I use a benchmark model of vertical product differentiation that has been extensively applied in the literature. One domestic and one foreign firm face quality-dependent product development costs and constant marginal production costs. They compete in quality and price in a single domestic market. Demand is such that an uncovered market results for all possible outcomes. Since

* Contact information: University of Manchester, School of Social Sciences, Economic Studies, Oxford Road, Manchester, M13 9PL, United Kingdom, E. stefan.lutz@manchester.ac.uk. I am also a Senior Fellow at the
increased differentiation in terms of quality decreases competition between rival products, higher quality products will coexist with lower quality products, even if both firms were identical. However, in the presence of technological differences, it is possible that high-quality products will be provided by the national industry with high costs. This results in inefficient production, since costs are increasing and convex in quality.

The basic features of the model utilized here have been well-known for some time. Gabszewicz and Thisse (1979) developed a framework for quality preferences where consumers with identical tastes but different income levels demand different quality levels. They analyzed the Cournot-duopoly equilibrium and showed its dependence on the income distribution and quality parameters. Shaked and Sutton (1982) showed that in the case of duopolists that first choose quality and then compete in price, the equilibrium will include both firms entering with distinct quality levels enjoying positive profits, i.e., they demonstrated how quality differences relax price competition. Ronnen (1991) uses Shaked and Sutton’s framework to demonstrate cases where quality standards improve welfare. He concludes that there exists a binding minimum quality standard such that all consumers are weakly better off, both firms have positive profits, and total welfare is increased. Our model is based on the framework of Shaked/Sutton and Ronnen.1 As in Ronnen, the effects of quality standards on industry competition are primarily driven by their influence on price competition and the qualities produced. Due to the duopoly situation and the nature of price and quality competition, an unregulated equilibrium results in qualities being too low, prices being too high and quality differentiation being too low when compared to a welfare-maximizing

---

solution. When qualities produced become more similar, price competition intensifies. In response to a quality standard that is binding for the low-quality producer, qualities rise, quality differentiation is reduced, and prices adjusted for quality fall. High quality rises also because qualities are strategic complements due to the effect of quality differentiation on price competition. Reduced quality differentiation results because increasing quality is increasingly costly. With a high standard, profits of both firms are reduced or one firm is forced out of the market.²

In the case presented, a more efficient domestic firm and a less efficient foreign firm operate in a single domestic market. The foreign firm initially produces and sells a product of higher quality. This initial situation could be the outcome of the foreign firm being longer in the market than the domestic firm, so that the foreign firm operated as a Stackelberg-leader towards the domestic firm in the past. Since the domestic firm could make monopoly profits if it was alone in the market, there is an incentive for the domestic government to facilitate this outcome by some policy. In the absence of a facilitating policy (or a prohibitive entry cost), however, the domestic firm cannot credibly prevent entry or effect exit of the foreign firm, since the current outcome represents a Nash-equilibrium. We show that the domestic government can choose a standard such that the domestic firm: (1) cannot have nonnegative profits as the low-quality firm; and (2) can set a quality such that the foreign firm cannot have nonnegative profits as either the low-quality or the high-quality firm; and (3) domestic welfare is increased. Hence, the standard facilitates predation by the domestic firm, i.e. forcing exit of the foreign competitor.³


³ This could also be interpreted as a quality reversal induced by the standard. Quality reversals in a vertical product differentiation framework have been previously addressed by Herguera/Kujal/Petrakis (1995, 2001), Motta/Thisse/Cabrales (1997), and Herguera/Lutz (1996, 1998, 2002).
2. The Model

There are two firms, the domestic firm d and the foreign firm f, both competing in the domestic market. If both firms remain in the market, then they produce distinct goods, sold at prices \( p_d \) and \( p_f \), respectively. The two products carry a single quality attribute denoted by \( s_d \) and \( s_f \), respectively. Either firm faces production costs that are increasing, convex (quadratic) functions of quality, the exact level of which depending on quality chosen and a quality cost parameter \( b \). Total costs of firm i are then:

\[
c_i = b_i s_i^2
\]  

(1)

In the domestic market, there is a continuum of consumers distributed uniformly over the interval \([0, T]\) with unit density. Each consumer purchases at most one unit of either firm d's product or firm f's product. The higher a consumer's income parameter \( t \), the higher is her (his) reservation price. Consumer t's utility is given by equation (2) if good i is purchased. Consumers who do not purchase receive zero utility.

\[
u_t = s_i t - p_i
\]  

(2)

Firms d and f play a two-stage game. In the first stage, firms determine qualities to be produced and incur costs \( c_i \) \((i = d, f)\). In the second stage, firms choose prices simultaneously.

---

4 Consumers who do not purchase receive zero utility.

5 In this formulation, firm i not entering the market is equivalent to firm i choosing \( s_i = 0 \). The entry decision by firms is made simultaneously when choosing quality.

6 To derive solutions, we will use the concept of subgame-perfect equilibrium, computing the solutions for each stage in reverse order. Both firms choose their respective product quality from the same interval \([0, \infty)\). The resulting market equilibria will include some consumers in the lower segment of the interval \([0, t]\) not valuing quality enough to buy any product. This guarantees an interior solution of the price game.
**Price Competition**

To solve the game, consider first the demand faced by the high-quality and low-quality firm, respectively. Let \( h \) and \( o \) stand for high and low quality, respectively. These demands are then given by:\(^7\)

\[
q_h = T - \frac{(p_h - p_o)}{s_h - s_o}, \quad q_o = \frac{p_h - p_o}{s_h - s_o}
\]

Let \( i = h, o; \) let \( j \neq i \). The profit function for firm \( i \) is given by

\[
\Pi_i = p_i q_i(p_i, p_j, s_i, s_j) - c_i(s_i).
\]

Taken both qualities as given, the price reaction functions in each market are given as the solutions to the first order conditions. Solving the resulting equations for both prices, equilibrium prices are then given as:

\[
p_h = \frac{2Ts_h(s_h - s_o)}{4s_h - s_o}, \quad p_o = \frac{T(s_h - s_o)s_o}{4s_h - s_o}
\]

Note that for all \( s_h > s_o, \) \( T > t_h > t_o > 0 \) will hold, i.e., equation (4) is in fact an unconstrained price equilibrium.

Given the price equilibrium depicted above, demands and thus profits can be expressed in terms of qualities. For positive qualities \( s_i (i = h, o) \), these profit functions are:

\[
\Pi_h = \frac{4T^2s_h^2(s_h - s_o)}{(4s_h - s_o)^2} - b_oh_s_h^2 \quad (5a) \quad \Pi_o = \frac{T^2s_h(s_h - s_o)s_o}{(4s_h - s_o)^2} - b_os_o^2 \quad (5b)
\]

Similarly, consumer surplus\(^8\) can be expressed in the following way:

\[
CS = \frac{T^2s_h^2(4s_h + 5s_o)}{2(-4s_h + s_o)^2}
\]

---

\(^7\)Let \( t_h = (p_h - p_o)/(s_h - s_o) \) and \( t_o = p_o/s_o \). Consumers with \( t = p_o/s_o \) will be indifferent between buying the low-quality product and not buying at all. Consumers with \( t = (p_h - p_o)/(s_h - s_o) \) will be indifferent between buying either the high-quality or the low-quality product. Consumers with \( T \geq t > t_h \) will buy high quality, consumers with \( t_h > t > t_o \) will buy low quality, and consumers with \( t < p_o/s_o \) will not buy at all.

\(^8\)Consumer surplus is defined as \( \int(t^*s_h - p_h)dt + \int(t^*s_o - p_o)dt \) where the first integral goes from \( t_h \) to \( T \) and the second goes from \( t_o \) to \( t_h \).
Quality Competition

To derive the firms’ quality best responses, we investigate each firm’s profit function, given the other firm’s quality choice, and taking into account the behavior in the price-setting subgame. Given the order of qualities, the profit functions in equations (5) are concave in the respective firm’s own quality. The profit-maximizing choices form a Nash-equilibrium in qualities, where both marginal profit functions evaluate to zero. The first order conditions for the high and low quality firm, respectively, are then given as:

\[
4T^2s_h(4s_h^2 - 3s_h s_o + 2s_o^2 -) / (4s_h - s_o)^3 = 2b_h s_h \\
T^2s_h^2 (4s_h - 7s_o) / (4s_h - s_o)^3 = 2b_o s_o
\]  

(7)

From the properties of the revenue functions and the slopes of the quality best responses depicted in the Appendix, it is easy to see that the two qualities are strategic complements. Furthermore, a forced increase of the low quality will reduce product differentiation and increase price competition.

The resulting equilibrium qualities for identical firms (i.e. \(b_h = b_o = b\)) are then:

\[
s_h = 0.126655 T^2 / b \text{ and } s_o = 0.0241192 T^2 / b
\]

However, for our example, we assume the low-quality producing home firm to have a cost advantage such that \(b_h = 1.5 \text{ and } b_o = 1.5 b\). Hence, the resulting equilibrium is

\[
s_h = 0.08533 T^2 / b \text{ and } s_o = 0.02133 T^2 / b
\]

(8)

9The exact procedure to find the analytical solution is described in the Appendix. Note that \(T^2/b\) enters in a multiplicative way and therefore does not affect the calculations.

10Of course, the parameter choice for the cost advantage is arbitrary. However, the qualitative result prevails as long as an initial unregulated equilibrium exists where the low-cost firm offers low quality.

11It is easy to check that the domestic firm has no incentive to provide high quality given the foreign firm’s quality in equation (7). This is done by calculating the domestic firm’s profits as high-quality firm given that low quality is equal to the foreign firm’s quality in (7) and maximizing with respect to quality.
Due to the foreign high-quality firm’s cost disadvantage, its quality is now substantially lower than in the symmetric case. Therefore, the home firm’s quality is lower, too. However, since the home firm has a cost advantage, quality differentiation is lower.

The resulting domestic Welfare and Profit are:

\[
W_d = 0.00978 \frac{T^4}{b} \quad \text{and} \quad \Pi_{\Omega} = 0.00068 \frac{T^4}{b}
\]

(9)

To keep the following example simple, we assume that both firms have to incur costs of providing quality per period, i.e. the quality chosen in the period before does not matter.

3. A Quality Standard Facilitating Predation

In this section, we will develop a case where the domestic government can increase welfare as well as domestic profits by an appropriately chosen standard which will induce the domestic firm to choose a quality higher than its initial quality and the formerly chosen foreign quality while the foreign firm is induced to exit the market. Hence, this is a case of policy-induced predation.

The domestic government chooses a standard such that the following conditions are satisfied:

1) The domestic firm cannot make positive profits as the low-quality firm.

2) The domestic firm can choose a quality such that the foreign firm cannot have positive profits as either the low-quality firm or the high-quality firm.

3) Domestic welfare and profits are increased.

Condition 1) requires a standard greater than or equal to the quality level at which the domestic low-cost firm makes zero profits given that the foreign high-cost firm provides high quality at its quality best response. This requires that the standard \( s_M \) be set such that \( s_M \geq 0.04275 \frac{T^2}{b} \). (All calculations are shown in the Appendix.)

Given such a standard, entry by the foreign firm is effectively blockaded. This means that the domestic firm can set its uncontested monopoly choice \( s_d = 0.125 \frac{T^2}{b} \) at which Condition 2)
is satisfied. This is verified by calculating the foreign firm’s best response profits as the low-cost firm and the high-cost firm, respectively, setting the other quality equal to 0.125 $T^2/b$.

Both calculations yield negative results.

Condition 3) is also satisfied as can be seen by calculating domestic welfare and profits given $s_d = 0.125 T^2/b$ and $s_f = 0$. The result is summarized below.

$$s_m = 0.04275 T^2/b, s_d = 0.125 T^2/b, W_d = 0.03125 T^4/b \text{ and } \Pi_d = 0.015625 T^4/b \quad (10)$$

Since welfare is the sum of consumer surplus and profits, we can see immediately that domestic consumer surplus rises.$^{12}$ Since the foreign firm cannot make profits, the foreign country as a whole is worse off. This means that the policy includes international profit-shifting and can therefore be qualified as strategic trade policy.

### 5. Foreign Domination Instead of Domestic Predation

If the domestic firm has a cost advantage, a quality standard that is set “too low”, i.e. too close to the low-quality level without regulation, may lead to a situation where the foreign firm can only survive as the high-quality supplier in the market. Given enough time and without a persistence of quality leadership, this could lead to a quality reversal where the domestic industry is not driven out of the market, but ends up as the low-quality supplier despite of its cost advantage.

Let the home cost advantage be again such that $b_0 = 1.5 b_h = 1.5 b$. Be minimum quality standard greater than or equal to 0.0349322 $T^2/b$, but not much greater than that, will remove the foreign firm’s ability to make profits as a low-quality supplier.$^{13}$ Consequently, only one Nash-equilibrium remains once the one-shot market game is played again. This will be the

---

$^{12}$However, although quality sold rises, not all consumers win since market coverage is reduced.

$^{13}$The critical value for the standard is calculated by simultaneously solving the first-order condition for the high-quality firm with $b_0=b$ and the zero-profit condition for the low-quality firm with $b_0=1.5 b$ for $s_h$ and $s_0$. 

one with the foreign firm providing high quality despite, or here because, of its cost disadvantage.

5. When the Standard Invites Foreign Predation

If the foreign firm has the cost advantage rather than the domestic firm, then the domestic standard would lead to predation by the foreign firm and exit of the domestic firm. This follows immediately by analogy from the arguments presented in the previous section. Note, though, that domestic welfare would still rise since the increase in consumer surplus would be higher than losing the domestic firm’s low-quality profits.

To illustrate this, assume for simplicity (and without much loss of generality) that the foreign firm has an advantage such that $b_H = 1.5$ $b_0 = 1.5$ $b$. Note that again, the domestic firm provides low quality. Now the same minimum quality standards enables the foreign firm to set monopoly quality while the domestic firm’s best response is to exit. The resulting situation is summarized as:

$$s_m = 0.04275 \frac{T^2}{b}, \quad s_f = 0.125 \frac{T^2}{b}, \quad W_d = CS_d = 0.015625 \frac{T^4}{b} \quad \text{and} \quad \Pi_d = s_d = 0 \quad (11)$$

Still domestic welfare could be improved by the standard, but at the cost of market exit of the domestic industry.

6. Discussion

The purpose of the case shown above is to illustrate that domestic policies such as standards might have strategic trade effects that are not marginal but entail a complete restructuring of the international market in question. In the case presented, a standard that was nonbinding for the foreign firm ultimately lead to the exit of the foreign firm. This standard also enabled the domestic firm to act exactly like a monopolist without the threat of further entry. In doing this, the domestic firm chose a quality that was not bound by the standard, higher than the quality it
would have chosen without a standard, and higher than the quality the foreign firm would have chosen without the standard.

However, we do not generally argue for the application of such policies, even if they lead to welfare increases for the domestic country. On the contrary, policy makers should simply be aware of the possibility of rather radical and detrimental effects of domestic policies. The possibility of predation arises generally when a policy leads to negative profits for some subset of an industry’s best response choices. In addition, the final effects of such a policy and the resulting predation are rather sensitive to the exact standard chosen as well as to the magnitude and direction of cost differences between competing industries.

**Appendix**

(All calculations are available upon request.)

**Properties of the Revenue Functions**

Let $R_i$ denote firm $i$'s revenue function. Let $h$ and $o$ denote high and low quality, respectively.

\[
\frac{\partial R_h}{\partial s_h} \geq 0; \quad \frac{\partial R_o}{\partial s_o} \geq 0 \text{ for } s_o \leq \frac{4s_h}{7}; \quad \frac{\partial^2 R_h}{\partial s_o^2} < 0, \quad \frac{\partial R_o}{\partial s_h} > 0;
\]

\[
\frac{\partial^2 R_h}{\partial s_h^2} \leq 0; \quad \frac{\partial^2 R_o}{\partial s_o^2} \leq 0; \quad \frac{\partial^2 R_h}{\partial s_h \partial s_o} > 0; \quad \frac{\partial^2 R_o}{\partial s_o \partial s_h} > 0.
\]

**Slopes of Firms' Quality Best Responses**

The slopes of the high and low quality firms' quality best responses can be calculated (using the implicit function theorem) as $d s_i / d s_j = -\left(\frac{\partial (\partial \Pi_i / \partial s_i)}{\partial s_j}\right) / \left(\frac{\partial (\partial \Pi_i / \partial s_i)}{\partial s_i}\right)$, where $i$ is either high or low quality and $j$ is the other quality. Both slopes are positive, but less than one.
Properties of the Consumer Surplus Functions

Let $CS_I (I = D, F)$ denote region $I$'s consumer surplus function. Firms' qualities are denoted by $s_h$ and $s_o$ for high and low quality, respectively.

\[
\frac{\partial CS_I}{\partial s_h} > 0 \text{ for } s_h < \frac{4s_o}{5}; \quad \frac{\partial^2 CS_I}{\partial s_h^2} > 0; \quad \frac{\partial^2 CS_I}{\partial s_o^2} > 0; \quad \frac{\partial^2 CS_I}{\partial s_h \partial s_o} < 0.
\]

Calculation Procedure for the Quality Equilibria in Section 2

Divide the first order conditions given in (7), rearrange and write $s_h = r s_o$ and $b_o = a b_h$ to obtain:

\[
\frac{4(2 - 3r + 4r^2)}{4r^2 - 7r} = \frac{r}{a}
\]

For $a=1$ (i.e. $b_h = b_o = b$) $r = 5.25123$ while for $a=2/3$ (i.e. $b_h = 1.5 b_o = 1.5 b$) $r = 4.0$. Using $r$ to express $s_h$ in terms of $s_o$ and substituting for $s_h$ in the first equation of (7) allows for calculating the equilibrium qualities for any given value of $T$ and $b$. (However, the ratio of cost parameters $a$ must be fixed.)

Calculations for the Case of Section 3

Calculation of a standard such that the domestic firm makes zero-profits as low-quality provider. The standard would bind the domestic firm. Take equations (5a) and (5b) with ($b_h = 1.5 b$, $b_o = b$). Solve simultaneously:

\[
\{ \partial \Pi_h / \partial s_h = 0 \text{ and } P_i_o = 0 \} \text{ to obtain } \{ s_h = 0.091728 \frac{T^2}{b}, s_o = 0.0427526 \frac{T^2}{b} \}
\]

In this solution, $s_o$ represents the binding standard on the domestic firm.

Calculation of the uncontested monopoly choice of the domestic firm. Take equation (5a) with ($b_h = 1$, $s_o = 0$). Solve:

\[
\partial \Pi_h / \partial s_h = 0 \text{ to obtain } s_h = 0.125 \frac{T^2}{b}
\]

Here, $s_h$ is the uncontested monopoly choice of the domestic firm.
Given the domestic firm’s quality choice in equation (A.5b), the calculations below show that the foreign firm cannot make positive profits.

Take equation (5a) with \( (b_h = 1.5 \ b) \). Solve simultaneously:

\[
\left\{ \frac{\partial \pi_h}{\partial s_h} = 0 \text{ and } P_{ih} = 0 \right\} \quad \text{to obtain} \quad \left\{ s_h = 0.0972222 \ T^2/b, \ s_o = 0.0555556 \ T^2/b \right\}
\]

In this solution, \( s_o \) represents the minimum domestic quality such that the foreign firm cannot make positive profits as the high-quality provider. This quality is less than the chosen domestic quality of \( 0.125 \ T^2/b \).

Take equation (5b) with \( (b_o = 1.5 \ b, \ s_h = 0.125 \ T^2/b) \). Solve:

\[
\pi_o = 0 \quad \text{to obtain} \quad s_o = 0.034746 \ T^2/b
\]

This solution represents the maximum foreign quality such that the foreign firm can make nonnegative profits as the low-quality provider. It is less than the standard of \( 0.0427526 \ T^2/b \).

**Literature**


B18-04  Transmission Channels of Business Cycles Synchronization in an Enlarged EMU
Iulia Traistaru

B17-04  Foreign Exchange Regime, the Real Exchange Rate and Current Account Sustainability: The Case of Turkey
Sübidey Togan, Hasan Ersel

Harry P. Bowen, Jennifer Pédussel Wu

B15-04  Do Economic Integration and Fiscal Competition Help to Explain Local Patterns?
Christian Volpe Martincus

B14-04  Euro Adoption and Maastricht Criteria: Rules or Discretion?
Jiri Jonas

B13-04  The Role of Electoral and Party Systems in the Development of Fiscal Institutions in the Central and Eastern European Countries
Sami Yläoutinen

B12-04  Measuring and Explaining Levels of Regional Economic Integration
Jennifer Pédussel Wu

B11-04  Economic Integration and Location of Manufacturing Activities: Evidence from MERCOSUR
Pablo Sanguinetti, Iulia Traistaru, Christian Volpe Martincus

B10-04  Economic Integration and Industry Location in Transition Countries
Laura Resmini

Ayse Y. Evrensel, Ali M. Kutan

B08-04  European Integration, Productivity Growth and Real Convergence
Taner M. Yigit, Ali M. Kutan

B07-04  The Contribution of Income, Social Capital, and Institutions to Human Well-being in Africa
Mina Baliamoune-Lutz, Stefan H. Lutz

B06-04  Rural Urban Inequality in Africa: A Panel Study of the Effects of Trade Liberalization and Financial Deepening
Mina Baliamoune-Lutz, Stefan H. Lutz

B05-04  Money Rules for the Eurozone Candidate Countries
Lucjan T. Orłowski

B04-04  Who is in Favor of Enlargement? Determinants of Support for EU Membership in the Candidate Countries’ Referenda
Orla Doyle, Jan Fidrmuc

B03-04  Over- and Underbidding in Central Bank Open Market Operations Conducted as Fixed Rate Tender
Ulrich Bindseil

B02-04  Total Factor Productivity and Economic Freedom Implications for EU Enlargement
Ronald L. Moomaw, Euy Seok Yang

B01-04  Die neuen Schutzklauseln der Artikel 38 und 39 des Beitrittvertrages: Schutz der alten Mitgliedstaaten vor Störungen durch die neuen Mitgliedstaaten
Martin Seidel

2003

B29-03  Macroeconomic Implications of Low Inflation in the Euro Area
Jürgen von Hagen, Boris Hofmann

B28-03  The Effects of Transition and Political Instability on Foreign Direct Investment: Central Europe and the Balkans
Josef C. Brada, Ali M. Kutan, Taner M. Yigit

B27-03  The Performance of the Euribor Futures Market: Efficiency and the Impact of ECB Policy Announcements (Electronic Version of International Finance)
Kerstin Bernoth, Juergen von Hagen

B26-03  Sovereign Risk Premia in the European Government Bond Market (überarbeitete Version zum Herunterladen)
Kerstin Bernoth, Juergen von Hagen, Ludger Schultechn

B25-03  How Flexible are Wages in EU Accession Countries?
Anna Iara, Iulia Traistaru

B24-03  Monetary Policy Reaction Functions: ECB versus Bundesbank
Bernd Hayo, Boris Hofmann

B23-03  Economic Integration and Manufacturing Concentration Patterns: Evidence from Mercosur
Iulia Traistaru, Christian Volpe Martincus

B22-03  Reformzwänge innerhalb der EU angesichts der Osterweiterung
Martin Seidel

B21-03  Reputation Flows: Contractual Disputes and the Channels for Inter-Firm Communication
William Pyle

B20-03  Urban Primacy, Gigantism, and International Trade: Evidence from Asia and the Americas
Ronald L. Moomaw, Mohammed A. Alwosabi

B19-03  An Empirical Analysis of Competing Explanations of Urban Primacy Evidence from Asia and the Americas
Ronald L. Moomaw, Mohammed A. Alwosabi
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Effects of Regional and Industry-Wide FDI Spillovers on Export</td>
<td>Stefan H. Lutz, Oleksandr Talavera, Sang-Min</td>
</tr>
<tr>
<td>of Ukrainian Firms</td>
<td>Park</td>
</tr>
<tr>
<td>Determinants of Inter-Regional Migration in the Baltic States</td>
<td>Mihails Hazans</td>
</tr>
<tr>
<td>South-East Europe: Economic Performance, Perspectives, and Policy</td>
<td>Iulia Traistaru, Jürgen von Hagen</td>
</tr>
<tr>
<td>Challenges</td>
<td></td>
</tr>
<tr>
<td>Employed and Unemployed Search: The Marginal Willingness to Pay</td>
<td>Jos van Ommeren, Mihails Hazans</td>
</tr>
<tr>
<td>for Attributes in Lithuania, the US and the Netherlands</td>
<td></td>
</tr>
<tr>
<td>The IS Curve and the Transmission of Monetary Policy: Is there a</td>
<td>Charles Goodhart, Boris Hofmann</td>
</tr>
<tr>
<td>Puzzle?</td>
<td></td>
</tr>
<tr>
<td>What Makes Regions in Eastern Europe Catching Up? The Role of</td>
<td>Gabriele Tondl, Goran Vuksic</td>
</tr>
<tr>
<td>Foreign Investment, Human Resources, and Geography</td>
<td></td>
</tr>
<tr>
<td>Die Weisungs- und Herrschaftsmacht der Europäischen Zentralbank im</td>
<td>Martin Seidel</td>
</tr>
<tr>
<td>europäischen System der Zentralbanken - eine rechtliche Analyse</td>
<td></td>
</tr>
<tr>
<td>Foreign Direct Investment and Perceptions of Vulnerability to</td>
<td>Josef C. Brada, Vladimír Tomšík</td>
</tr>
<tr>
<td>Foreign Exchange Crises: Evidence from Transition Economies</td>
<td></td>
</tr>
<tr>
<td>The European Central Bank and the Eurosystem: An Analysis of the</td>
<td>Gunnar Heinsohn, Otto Steiger</td>
</tr>
<tr>
<td>Missing Central Monetary Institution in European Monetary Union</td>
<td></td>
</tr>
<tr>
<td>The Determination of Capital Controls: Which Role Do Exchange Rate</td>
<td>Jürgen von Hagen, Jizhong Zhou</td>
</tr>
<tr>
<td>Regimes Play?</td>
<td></td>
</tr>
<tr>
<td>Fiscal Discipline and Growth in Euroland. Experiences with the</td>
<td>Martin Seidel</td>
</tr>
<tr>
<td>Stability and Growth Pact</td>
<td></td>
</tr>
<tr>
<td>Reconsidering the Evidence: Are Eurozone Business Cycles</td>
<td>Michael Massmann, James Mitchell</td>
</tr>
<tr>
<td>Converging?</td>
<td></td>
</tr>
<tr>
<td>Do Ukrainian Firms Benefit from FDI?</td>
<td>Stefan H. Lutz, Oleksandr Talavera</td>
</tr>
<tr>
<td>Europäische Steuerkoordination und die Schweiz</td>
<td>Stefan H. Lutz</td>
</tr>
<tr>
<td>Commuting in the Baltic States: Patterns, Determinants, and Gains</td>
<td>Mihails Hazans</td>
</tr>
<tr>
<td>Die Wirtschafts- und Währungsunion im rechtlichen und politischen</td>
<td>Martin Seidel</td>
</tr>
<tr>
<td>Gefüge der Europäischen Union</td>
<td></td>
</tr>
</tbody>
</table>

2002

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>An Adverse Selection Model of Optimal Unemployment Assurance</td>
<td>Marcus Hagedorn, Ashok Kaul, Tim Mennel</td>
</tr>
<tr>
<td>Trade Agreements as Self-protection</td>
<td>Jennifer Pédussel Wu</td>
</tr>
<tr>
<td>Growth and Business Cycles with Imperfect Credit Markets</td>
<td>Debajyoti Chakrabarty</td>
</tr>
<tr>
<td>Inequality, Politics and Economic Growth</td>
<td>Debajyoti Chakrabarty</td>
</tr>
<tr>
<td>Poverty Traps and Growth in a Model of Endogenous Time Preference</td>
<td>Debajyoti Chakrabarty</td>
</tr>
<tr>
<td>Monetary Convergence and Risk Premiums in the EU Candidate Countries</td>
<td>Lucjan T. Orlowski</td>
</tr>
<tr>
<td>Trade Policy: Institutional Vs. Economic Factors</td>
<td>Stefan Lutz</td>
</tr>
<tr>
<td>The Effects of Quotas on Vertical Intra-industry Trade</td>
<td>Stefan Lutz</td>
</tr>
<tr>
<td>Legal Aspects of European Economic and Monetary Union</td>
<td>Martin Seidel</td>
</tr>
<tr>
<td>Der Staat als Lender of Last Resort - oder: Die Achillesverse des</td>
<td>Otto Steiger</td>
</tr>
<tr>
<td>Eurosystems</td>
<td></td>
</tr>
<tr>
<td>Nominal and Real Stochastic Convergence Within the Transition</td>
<td>Ali M. Kutan, Taner M. Yigit</td>
</tr>
<tr>
<td>Economies and to the European Union: Evidence from Panel Data</td>
<td></td>
</tr>
<tr>
<td>The Impact of News, Oil Prices, and International Spillovers on</td>
<td>Bernd Hayo, Ali M. Kutan</td>
</tr>
<tr>
<td>Russian Financial Markets</td>
<td></td>
</tr>
</tbody>
</table>
East Germany: Transition with Unification, Experiments and Experiences
Jürgen von Hagen, Rolf R. Strauch, Guntram B. Wolff

Regional Specialization and Employment Dynamics in Transition Countries
Iulia Traistaru, Guntram B. Wolff

Specialization and Growth Patterns in Border Regions of Accession Countries
Laura Resmini

Regional Specialization and Concentration of Industrial Activity in Accession Countries
Iulia Traistaru, Peter Nijkamp, Simonetta Longhi

Does Broad Money Matter for Interest Rate Policy?
Matthias Brückner, Andreas Schaber

The Long and Short of It: Global Liberalization, Poverty and Inequality
Christian E. Weller, Adam Hersch

De Facto and Official Exchange Rate Regimes in Transition Economies
Jürgen von Hagen, Jizhong Zhou

Argentina: The Anatomy of A Crisis
Jiri Jonas

The Eurosystem and the Art of Central Banking
Gunnar Heinsohn, Otto Steiger

National Origins of European Law: Towards an Autonomous System of European Law?
Martin Seidel

Monetary Policy in the Euro Area - Lessons from the First Years
Volker Clausen, Bernd Hayo

Has the Link Between the Spot and Forward Exchange Rates Broken Down? Evidence From Rolling Cointegration Tests
Ali M. Kutan, Su Zhou

Perspektiven der Erweiterung der Europäischen Union
Martin Seidel

Is There Asymmetry in Forward Exchange Rate Bias? Multi-Country Evidence
Su Zhou, Ali M. Kutan

Real and Monetary Convergence Within the European Union and Between the European Union and Candidate Countries: A Rolling Cointegration Approach
Josef C. Brada, Ali M. Kutan, Su Zhou

Asymmetric Monetary Policy Effects in EMU
Volker Clausen, Bernd Hayo

The Choice of Exchange Rate Regimes: An Empirical Analysis for Transition Economies
Jürgen von Hagen, Jizhong Zhou

The Euro System and the Federal Reserve System Compared: Facts and Challenges
Karlheinz Ruckriegel, Franz Seitz

Does Inflation Targeting Matter?
Manfred J. M. Neumann, Jürgen von Hagen

2001

Is Kazakhstan Vulnerable to the Dutch Disease?
Karlygash Kuralbayeva, Ali M. Kutan, Michael L. Wyzan

Political Economy of the Nice Treaty: Rebalancing the EU Council. The Future of European Agricultural Policies
Deutsch-Französisches Wirtschaftspolitisches Forum

Investor Panic, IMF Actions, and Emerging Stock Market Returns and Volatility: A Panel Investigation
Bernd Hayo, Ali M. Kutan

Regional Effects of Terrorism on Tourism: Evidence from Three Mediterranean Countries
Konstantinos Drakos, Ali M. Kutan

Monetary Convergence of the EU Candidates to the Euro: A Theoretical Framework and Policy Implications
Lucjan T. Orlowski

Disintegration and Trade
Jarko and Jan Fidrmuc

Migration and Adjustment to Shocks in Transition Economies
Jan Fidrmuc

Strategic Delegation and International Capital Taxation
Matthias Brückner

Balkan and Mediterranean Candidates for European Union Membership: The Convergence of Their Monetary Policy With That of the European Central Bank
Josef C. Brada, Ali M. Kutan

An Empirical Inquiry of the Efficiency of Intergovernmental Transfers for Water Projects Based on the WRDA Data
Anna Rubinchik-Pessach

Detrending and the Money-Output Link: International Evidence
R.W. Hafer, Ali M. Kutan
B18-01 Monetary Policy in Unknown Territory. The European Central Bank in the Early Years
Jürgen von Hagen, Matthias Brückner

B17-01 Executive Authority, the Personal Vote, and Budget Discipline in Latin American and Carribean Countries
Mark Hallerberg, Patrick Marier

B16-01 Sources of Inflation and Output Fluctuations in Poland and Hungary: Implications for Full Membership in the European Union
Selahattin Dibooglu, Ali M. Kutan

B15-01 Programs Without Alternative: Public Pensions in the OECD
Christian E. Weller

B14-01 Formal Fiscal Restraints and Budget Processes As Solutions to a Deficit and Spending Bias in Public Finances - U.S. Experience and Possible Lessons for EMU
Rolf R. Strauch, Jürgen von Hagen

B13-01 German Public Finances: Recent Experiences and Future Challenges
Jürgen von Hagen, Rolf R. Strauch

B12-01 The Impact of Eastern Enlargement On EU-Labour Markets. Pensions Reform Between Economic and Political Problems
Deutsch-Französisches Wirtschaftspolitisches Forum

B11-01 Inflationary Performance in a Monetary Union With Large Wage Setters
Lilia Cavallar

B10-01 Integration of the Baltic States into the EU and Institutions of Fiscal Convergence: A Critical Evaluation of Key Issues and Empirical Evidence
Ali M. Kutan, Niina Pautola-Mol

B09-01 Democracy in Transition Economies: Grease or Sand in the Wheels of Growth?
Jan Fidrmuc

B08-01 The Functioning of Economic Policy Coordination
Jürgen von Hagen, Susanne Mundschken, Josef C. Brada, Ali M. Kutan

B07-01 The Convergence of Monetary Policy Between Candidate Countries and the European Union
Konstantinos Drakos, Ali M. Kutan

B06-01 Opposites Attract: The Case of Greek and Turkish Financial Markets
Deutsch-Französisches Wirtschaftspolitisches Forum

B05-01 Trade Rules and Global Governance: A Long Term Agenda. The Future of Banking.
Rafael di Tella, Robert J. McCulloch

B04-01 The Determination of Unemployment Benefits
Rafael di Tella, Robert J. McCulloch, Andrew J. Oswald

B03-01 Preferences Over Inflation and Unemployment: Evidence from Surveys of Happiness
Michele Fratianni, Jürgen von Hagen

B02-01 The Konstanz Seminar on Monetary Theory and Policy at Thirty
Etienne Farvaque, Gael Lagadec

B01-01 Divided Boards: Partisanship Through Delegated Monetary Policy

2000

B20-00 Breakin-up a Nation, From the Inside
Etienne Farvaque

B19-00 Income Dynamics and Stability in the Transition Process, general Reflections applied to the Czech Republic
Jens Hölscher

B18-00 Budget Processes: Theory and Experimental Evidence
Karl-Martin Ehrhart, Roy Gardner, Jürgen von Hagen, Claudia Keser

B17-00 Rückführung der Landwirtschaftspolitik in die Verantwortung der Mitgliedstaaten? - Rechts- und Verfassungsfragen des Gemeinschaftsrechts
Martin Seidel

B16-00 The European Central Bank: Independence and Accountability
Christa Randzio-Plath, Tomasso Padoa-Schioppa

B15-00 Regional Risk Sharing and Redistribution in the German Federation
Jürgen von Hagen, Ralf Hepp

B14-00 Sources of Real Exchange Rate Fluctuations in Transition Economies: The Case of Poland and Hungary
Selahattin Dibooglu, Ali M. Kutan

B13-00 Back to the Future: The Growth Prospects of Transition Economies Reconsidered
Nauro F. Campos
<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rechtsetzung und Rechtsangleichung als Folge der Einheitlichen</td>
<td>Martin Seidel</td>
</tr>
<tr>
<td>Europäischen Währung</td>
<td></td>
</tr>
<tr>
<td>A Dynamic Approach to Inflation Targeting in Transition Economies</td>
<td>Lucjan T. Orlowski</td>
</tr>
<tr>
<td>The Importance of Domestic Political Institutions: Why and How</td>
<td>Marc Hallerberg</td>
</tr>
<tr>
<td>Belgium Qualified for EMU</td>
<td></td>
</tr>
<tr>
<td>Rational Institutions Yield Hysteresis</td>
<td>Rafael Di Tella, Robert Mac-</td>
</tr>
<tr>
<td>Culloch</td>
<td>Kenneth Kletzer</td>
</tr>
<tr>
<td>The Effectiveness of Self-Protection Policies for Safeguarding</td>
<td></td>
</tr>
<tr>
<td>Emerging Market Economies from Crises</td>
<td></td>
</tr>
<tr>
<td>Financial Supervision and Policy Coordination in The EMU</td>
<td>Deutsch-Französisches Wirtschaftspolitisches Forum</td>
</tr>
<tr>
<td>The Demand for Money in Austria</td>
<td>Bernd Hayo</td>
</tr>
<tr>
<td>Liberalization, Democracy and Economic Performance during Transition</td>
<td>Jan Fidrmuc</td>
</tr>
<tr>
<td>A New Political Culture in The EU - Democratic Accountability of the</td>
<td>Christa Randzio-Plath</td>
</tr>
<tr>
<td>ECB</td>
<td></td>
</tr>
<tr>
<td>Integration, Disintegration and Trade in Europe: Evolution of Trade</td>
<td>Jarko Fidrmuc, Jan Fidrmuc</td>
</tr>
<tr>
<td>Relations during the 1990’s</td>
<td></td>
</tr>
<tr>
<td>Inflation Bias and Productivity Shocks in Transition Economies:</td>
<td>Josef C. Barda, Arthur E. King,</td>
</tr>
<tr>
<td>The Case of the Czech Republic</td>
<td>Ali M. Kutan</td>
</tr>
<tr>
<td>Monetary Union and Fiscal Federalism</td>
<td>Kenneth Kletzer, Jürgen von Hagen</td>
</tr>
<tr>
<td>1999</td>
<td></td>
</tr>
<tr>
<td>Skills, Labour Costs, and Vertically Differentiated Industries: A</td>
<td>Stefan Lutz, Alessandro Turrini</td>
</tr>
<tr>
<td>General Equilibrium Analysis</td>
<td></td>
</tr>
<tr>
<td>Micro and Macro Determinants of Public Support for Market Reforms in</td>
<td>Bernd Hayo</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>Robert MacCulloch</td>
</tr>
<tr>
<td>What Makes a Revolution?</td>
<td>Rafael Di Tella, Robert Mac-</td>
</tr>
<tr>
<td>Culloch</td>
<td>Rafael Di Tella, Robert Mac-</td>
</tr>
<tr>
<td>Informal Family Insurance and the Design of the Welfare State</td>
<td>Culloch</td>
</tr>
<tr>
<td>Partisan Social Happiness</td>
<td></td>
</tr>
<tr>
<td>The End of Moderate Inflation in Three Transition Economies?</td>
<td>Christian E. Weller</td>
</tr>
<tr>
<td>Subnational Government Bailouts in Germany</td>
<td>Helmut Seitz</td>
</tr>
<tr>
<td>The Evolution of Monetary Policy in Transition Economies</td>
<td>Ali M. Kutan, Josef C. Brada</td>
</tr>
<tr>
<td>Why are Eastern Europe’s Banks not failing when everybody else’s</td>
<td>Christian E. Weller, Bernard Mor-</td>
</tr>
<tr>
<td>are?</td>
<td>zuch</td>
</tr>
<tr>
<td>Stability of Monetary Unions: Lessons from the Break-Up of</td>
<td>Jan Fidrmuc, Julius Horvath and</td>
</tr>
<tr>
<td>Czechoslovakia</td>
<td>Jarko Fidrmuc</td>
</tr>
<tr>
<td>Multinational Banks and Development Finance</td>
<td>Christian E.Weller and Mark J.</td>
</tr>
<tr>
<td>Scher</td>
<td></td>
</tr>
<tr>
<td>Financial Crises after Financial Liberalization: Exceptional</td>
<td>Christian E. Weller</td>
</tr>
<tr>
<td>Circumstances or Structural Weakness?</td>
<td></td>
</tr>
<tr>
<td>Industry Effects of Monetary Policy in Germany</td>
<td>Bernd Hayo and Birgít Uhlenbrock</td>
</tr>
<tr>
<td>Financial Fragility or What Went Right and What Could Go Wrong in</td>
<td>Christian E. Weller and Jürgen</td>
</tr>
<tr>
<td>Central European Banking?</td>
<td>von Hagen</td>
</tr>
<tr>
<td>Size Distortions of Tests of the Null Hypothesis of Stationarity:</td>
<td>Mehmet Caner and Lutz Kilian</td>
</tr>
<tr>
<td>Evidence and Implications for Applied Work</td>
<td></td>
</tr>
<tr>
<td>Financial Supervision and Policy Coordination in the EMU</td>
<td>Deutsch-Französisches Wirtschaftspolitisches Forum</td>
</tr>
<tr>
<td>Financial Liberalization, Multinational Banks and Credit Supply:</td>
<td>Christian Weller</td>
</tr>
<tr>
<td>The Case of Poland</td>
<td></td>
</tr>
<tr>
<td>Monetary Policy, Parameter Uncertainty and Optimal Learning</td>
<td>Volker Wieland</td>
</tr>
<tr>
<td>The Connection between more Multinational Banks and less Real Credit</td>
<td>Christian Weller</td>
</tr>
<tr>
<td>in Transition Economies</td>
<td></td>
</tr>
</tbody>
</table>
B07-99  Comovement and Catch-up in Productivity across Sectors: Evidence from the OECD
Christopher M. Cornwell and Jens-Uwe Wächter

B06-99  Productivity Convergence and Economic Growth: A Frontier Production Function Approach
Christopher M. Cornwell and Jens-Uwe Wächter

B05-99  Tumbling Giant: Germany's Experience with the Maastricht Fiscal Criteria
Jürgen von Hagen and Rolf Strauch

B04-99  The Finance-Investment Link in a Transition Economy: Evidence for Poland from Panel Data
Christian Weller

B03-99  The Macroeconomics of Happiness
Rafael Di Tella, Robert MacCulloch and Andrew J. Oswald

B02-99  The Consequences of Labour Market Flexibility: Panel Evidence Based on Survey Data
Robert B.H. Hauswald

1998

B16-98  Labour Market + Tax Policy in the EMU
Deutsch-Französisches Wirtschaftspolitisches Forum

B15-98  Can Taxing Foreign Competition Harm the Domestic Industry?
Stefan Lutz

B14-98  Free Trade and Arms Races: Some Thoughts Regarding EU-Russian Trade
Rafael Reuveny and John Maxwell

B13-98  Fiscal Policy and Intrational Risk-Sharing
Jürgen von Hagen

B12-98  Price Stability and Monetary Policy Effectiveness when Nominal Interest Rates are Bounded at Zero
Athanasios Orphanides and Volker Wieland

B11A-98  Die Bewertung der "duerhaft tragbaren offentlichen Finanzlage"der EU Mitgliedstaaten beim Ubergang zur dritten Stufe der EWWU
Rolf Strauch

B11-98  Exchange Rate Regimes in the Transition Economies: Case Study of the Czech Republic: 1990-1997
Julius Horvath and Jiri Jonas

B10-98  Der Wettbewerb der Rechts- und politischen Systeme in der Europäischen Union
Martin Seidel

B09-98  U.S. Monetary Policy and Monetary Policy and the ESCB
Robert L. Hetzel

B08-98  Money-Output Granger Causality Revisited: An Empirical Analysis of EU Countries (überarbeitete Version zum Herunterladen)
Bernd Hayo

B07-98  Designing Voluntary Environmental Agreements in Europe: Some Lessons from the U.S. EPA's 33/50 Program
John W. Maxwell

B06-98  Monetary Union, Asymmetric Productivity Shocks and Fiscal Insurance: an Analytical Discussion of Welfare Issues
Kenneth Kletzer

B05-98  Estimating a European Demand for Money (überarbeitete Version zum Herunterladen)
Bernd Hayo

B04-98  The EMU's Exchange Rate Policy
Deutsch-Französisches Wirtschaftspolitisches Forum

B03-98  Central Bank Policy in a More Perfect Financial System
Jürgen von Hagen / Ingo Fender

B02-98  Trade with Low-Wage Countries and Wage Inequality
Jaleel Ahmad

B01-98  Budgeting Institutions for Aggregate Fiscal Discipline
Jürgen von Hagen

1997

B04-97  Macroeconomic Stabilization with a Common Currency: Does European Monetary Unification Create a Need for Fiscal Insurance or Federalism?
Kenneth Kletzer

Tom Lyon / John Mayo

B02-97  Employment and EMU
Deutsch-Französisches Wirtschaftspolitisches Forum

B01-97  A Stability Pact for Europe
(a Forum organized by ZEI)