

Lutz, Stefan

**Working Paper**

## The effects of quotas on vertical intra-industry trade

ZEI Working Paper, No. B 24-2002

**Provided in Cooperation with:**

ZEI - Center for European Integration Studies, University of Bonn

*Suggested Citation:* Lutz, Stefan (2002) : The effects of quotas on vertical intra-industry trade, ZEI Working Paper, No. B 24-2002, Rheinische Friedrich-Wilhelms-Universität Bonn, Zentrum für Europäische Integrationsforschung (ZEI), Bonn

This Version is available at:

<https://hdl.handle.net/10419/39462>

**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.*

Zentrum für Europäische Integrationsforschung  
Center for European Integration Studies  
Rheinische Friedrich-Wilhelms-Universität Bonn



Stefan Lutz

**The Effects of Quotas on  
Vertical Intra-industry Trade**

**Working Paper**

**B 24  
2002**

# The Effects of Quotas on Vertical Intra-Industry Trade

16 September 2002

Stefan Lutz\*

ZEW, Mannheim and ZEI, Bonn

## Abstract

A quota on foreign competition will generally lead to quality-upgrading (downgrading) of the low-quality (high-quality) firm, an increase in average quality, a reduction of quality differentiation, and a reduction of domestic consumer surplus, irrespective of whether the foreign firm produces higher or lower quality. Effects of a quota on industry profits and domestic welfare depend crucially on the direction of international vertical differentiation. If the foreign firm produces low quality, both firms' prices and profits rise but domestic welfare falls. This describes well some major effects of a Japanese VER in the US auto market and relevant empirical findings. If the foreign firm produces high quality, foreign profits will fall. Since domestic consumer surplus falls only unsubstantially, domestic profit gains lead to an increase of domestic welfare.

JEL classification: F12, F13, L13

Keywords: trade, quotas, vertical product differentiation, quality-dependent costs

---

\* Correspondence: Stefan Lutz, ZEW, Dep. of Industrial Economics, L7, 1, D-68161 Mannheim, Germany, E. lutz@zew.de.

# The Effects of Quotas on Vertical Intra-Industry Trade<sup>1</sup>

## 1. Introduction

According to recent theoretical studies of imperfect markets, quotas on foreign competition will increase qualities, prices and profits of both domestic and foreign firms under fairly general assumptions (Falvey 1979, Rodriguez 1979, Das and Donnenfeld 1987, Harris 1985, Krishna 1989 and 1990)<sup>2</sup>. This view has also found widespread empirical support, for example, for the automobile industry (Feenstra 1984, 1985, 1988, 1993; Goldberg 1992, 1994).<sup>3</sup> The above mentioned results obtain, since a quota imposes on firms a degree of collusion that they could not obtain otherwise. In doing that, it raises the marginal profitability of quality for both firms at the former free-trade qualities; and it does so even if the quota is not binding. Therefore, the quota also changes the nature of oligopolistic competition. This is the oligopolistic analogue to the case of a domestic monopoly (Bhagwati 1965).

However, theoretical research by Krishna (1987), Das and Donnenfeld (1989), and Herguera, Kujal, Petrakis (1994) suggest that a quota could also lead to quality downgrading of the domestic or the foreign quality. Krishna analyzes a monopoly, while both the latter approaches assume a duopoly with Cournot competition in the last stage of the industry-game. However, the duopoly studies differ in the exact timing of the games analyzed.

Krishna (1989) emphasizes the importance of the form of last stage game for the resulting payoff functions of the firms. Important attributes are the chosen strategic variables (prices, quantities), the form of the restrictions or policy variables (quotas, tariffs), the sequencing of the game (simultaneous, Leader-Follower, quality first or quality jointly with price, etc.). She shows that a quota will still lead to increased prices and profits for both firms for the case of differentiated substitute products and simultaneous price competition. But the

---

<sup>1</sup> This paper is based on an earlier version presented at the ZEI, Bonn (Lutz 1997).

<sup>2</sup> Falvey (1987), Rodriguez (1987), Das/Donnenfeld (1987) and Krishna (1987) deal with cases of perfect competition or monopoly. Other studies take oligopolistic competition into account but assume exogenously fixed product qualities (Leland 1979, Shapiro 1983). Harris (1985) and Krishna (1989) model in effect horizontal product differentiation and do not analyze effects on the quality stage.

<sup>3</sup> Similar findings have been forwarded by Boorstein and Feenstra (1991) for the steel industry, by Aw and Roberts (1986, 1988) for the footwear industry, and by Anderson (1985, 1991) for the cheese industry. Mintz (1973) found that U.S. quotas on meat, dairy products, textiles, and sugar lead to increased import qualities.

price equilibrium will now involve mixed-strategies on the part of the domestic firm. However, she does not analyze the previous stage of quality choice, treating quality in effect as unchanged. But given the research received so far, effects on quality are just what we are interested in.<sup>4</sup> Product quality is a strategic variable for the firm that can be influenced by trade policy<sup>5</sup> and especially by quotas or VERs.

The conceptual economic framework that explicitly includes these vertical quality aspects into the analysis is provided by models of vertical product differentiation. Using this approach, I show that a quota (near the free-trade level) on foreign competition will generally lead to quality-upgrading (downgrading) of the low-quality (high-quality) firm, an increase in average product quality, a reduction of quality differentiation, and a reduction of domestic consumer surplus, irrespective of whether the foreign firm produces the higher or lower quality. The effects of a quota on industry profits and domestic welfare depend crucially on the direction of international vertical differentiation. If the foreign firm produces low quality, both firms' prices and profits will rise but domestic welfare will fall. This describes well some major effects of a Japanese VER in the US auto market and relevant empirical findings.<sup>6</sup> If the foreign firm produces high quality, foreign profits will fall. Since domestic consumer surplus falls only unsubstantially, domestic profit gains will lead to an overall increase of domestic welfare.

For our model, analytical solutions for all equilibrium variables are available for the unregulated case<sup>7</sup> and the case of a quota at the free-trade level. As for the unregulated case, solutions for the free-trade-quota case are linear functions of the ratio of a market-size parameter (raised to some integer power) and a cost parameter.<sup>8</sup> The effects of changing the quota marginally starting at the free-trade level are investigated using simulations for

---

<sup>4</sup> Vertical quality differentiation ("high" vs. "low" product quality) between substitutable products is, of course, an important dimension in international trade, since trade in differentiated but substitutable products (intra-industry trade) has grown most in the last decades.

<sup>5</sup> See also Levinsohn (1988), Feenstra (1993), Menzler-Hokkanen (1994).

<sup>6</sup> Empirical studies of the U.S. car market find quality upgrading also for U.S. cars. However, there are some conceptual problems with these studies that will be discussed at the end of the paper. This might indicate, that this empirical research at least supports the notion of reduced quality differentiation as a quota effect. Furthermore, a highly binding quota will still lead to quality upgrading of all products within the vertical-differentiation framework.

<sup>7</sup> These solutions and their derivation for the unregulated case are well-known (e.g. Ronnen 1991, Motta 1993, Lutz 1996).

<sup>8</sup> All solutions were obtained using Mathematica.

benchmark values of market-size and cost parameters. These results are presented graphically. Changing these benchmark values does not suggest any qualitative changes in the results. Interpretation of these results also makes use of other analytical results presented so far in the literature.

The remainder of the paper is organized as follows. Section 2 describes the basic analytical framework, the price and quality stages of the industry game, and the simulation procedure. Section 3 reviews the analytical results and the simulations. Section 4 presents discussions of the empirical significance as well as the robustness of the results. Section 5 concludes.

## **2. Vertical Product Differentiation**

The standard model of duopolistic competition with endogenous product qualities has been developed since the beginning of the 80s (Mussa/Rosen 1978, Gabszewicz/Thisse 1979, Shaked/Sutton 1982, Ronnen 1991). Consumers have identical preferences and different incomes. The income differences lead to differences in the willingness to pay for a particular product quality. Two firms (domestic and foreign) offer products of different qualities in one (domestic) market. The firms bear quality-dependent costs and compete in qualities and prices in a two-stage industry game. Since higher product differentiation reduces substitutability and price competition, even identical firms will offer distinct qualities in the resulting market equilibrium. Trade will take place since the foreign firm operates in the domestic market. (In the two-market extension, both firms operate in both markets.) National governments can use trade policy to improve the strategic position of domestic industries.<sup>9</sup> There is also the possibility of strategic noncooperative interaction between two national governments.

### **2.1. 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

---

<sup>9</sup> See e.g. Brander/Spencer 1984, Krishna 1989.

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  $b$ . Marginal costs are equal to zero for both firms. Total costs of firm  $i$  are then:

$$c_i = b_i s_i^2 \quad (1)$$

In the domestic market, there is a continuum of consumers (indexed by  $t$ ) distributed uniformly over the interval  $[0, T]$  with unit density.<sup>10</sup> 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.<sup>11</sup> Consumers who do not purchase receive zero utility.

$$u_t = s_i t - p_i \quad (2)$$

The domestic government and firms  $d$  and  $f$  play a three-stage game<sup>12</sup>. In the first stage, the government sets an ad-valorem tariff on foreign imports. In the second stage, firms determine qualities to be produced and incur costs  $c_i$  ( $i = d, f$ ). In the third stage, firms choose prices simultaneously (Bertrand competition). Since the derivation of market equilibria without quotas is generally known and straightforward, it is relegated to the Appendix.

## 2.2. Price Competition and Mixed Strategies

The introduction of a quota substantially alters the price game between firms, leading to mixed-strategy pricing by the domestic firm (but not the foreign firm). The domestic firm randomizes between a price that makes the quota binding on the foreign firm and a price that does not (leading to foreign quantity below the quota). If the quota is binding, we assume the rationing rule is given by costless arbitrage. This implies that the domestic firm faces a demand when making the quota binding that is identical to its demand if the foreign firm chooses a price to equate foreign demand with the quota (even though the foreign firm

<sup>10</sup> The parameter  $t$  represents willingness to pay and increases with income. Let  $U[0, T]$  be the Uniform probability distribution. Then this distribution of consumers corresponds to  $T \cdot U[0, T]$  with density  $T \cdot 1/(T-0)=1$  for all  $t$ , regardless of the upper bound  $T$ . The total mass of consumers representing population size is equal to  $T$ , while the average income parameter  $T/2$  represents per-capita income.

<sup>11</sup> Consumers who do not purchase receive zero utility.

<sup>12</sup> 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.

actually charges a lower price).<sup>13</sup> The actual derivation of the price strategies and equilibria is identical to Krishna (1989, pp. 88-94) and is illustrated in Figure 1.<sup>14</sup>

### 2.3. Quality Choice

The derivation of quality best responses and equilibrium qualities is, in principle, almost identical to the derivation of the results without regulation shown in the appendix. The only difference is, that revenue and consumer surplus functions are now convex combinations of the respective functions given one of two domestic price realizations. The relative weights are given by the probability  $\alpha$  that the domestic firm chooses the higher price which makes the quota binding. As for the unregulated case, solutions for the free-trade-quota case are linear functions of the ratio of a market-size parameter (raised to some integer power) and a cost parameter.<sup>15</sup> These solutions are reported in Table 1.

Some changes in the properties of quality best responses are indicated by the simulation results indicated below. The existence of a quota flattens both quality best responses. A quota-constrained firm faces a lower resulting revenue increase from a quality increase, because its quantity is constrained. If it increases quality, it will also strongly increase price since it cannot gain much through quantity increases. The unconstrained firm will react with a (costless) price increase rather than a (costly) quality increase. For the case of a quota on the foreign low-quality firm, this even leads to a slightly negative slope of the high-quality best response.

### 2.4. Simulations

The paper presents 2 simulations, making a distinction between the case of low quality produced domestically (A) and high quality produced domestically (B). For the derivation of

---

<sup>13</sup> Boccard/Wauthy (1998) discuss the existence of a case where this rationing rule is violated. Such a case may arise when the foreign firm offers low quality and due to the fundamental asymmetry given by vertical product differentiation. Given that a foreign low-quality firm is restricted by a quota, a domestic high-quality firm now has an alternative choice of capturing foreign customers at the lower end of the income distribution by price (and quality) decreases. However, since in our model setup, cost of quality development are assumed to be independent of quantity produced and high quality is not fixed, the resulting high-quality profits and marginal profits are so high as to prevent this case.

<sup>14</sup> For the case of costless production and a fixed higher quality, the derivation of price strategy and equilibria is also developed in Boccard/Wauthy (1998). Consequently their free-trade setup is based on Choi/Shin (1992).

<sup>15</sup> All solutions were obtained using Mathematica. They are available upon request.



the simulations shown graphically, market size equals  $T=1$  and cost parameter  $b=1$ .<sup>16</sup> The quota is then varied between 80% and 110% of the free-trade level of imports for either case.

The results are summarized in 18 figures per simulation, showing the foreign quota quantity, the foreign lower quantity (when the quota is not binding), the probability that the quota binds, the equilibrium ratio of high to low quality, the equilibrium qualities, (expected) profits, (expected) consumer surplus, (expected) domestic welfare, (expected) average prices, the domestic higher and lower prices, (expected) average quantities, and the domestic higher and lower quantities respectively. The horizontal axis shows the ratio of the quota to the free-trade-level (1 represents the free-trade level). Hence the quota becomes more binding towards the left end of a particular graph. Alternative calculations suggest that changes in parameters for each simulation (other than cost differences between firms) would not alter the qualitative results.

### **3. Quotas on Foreign Competition**

The results presented in this section are grouped into analytical results of a quota introduced at the free-trade level and simulation results of changing that quota level.

#### **3.1. Effects of Introducing a Quota at the Free-Trade-Level**

A quota at the free-trade level on foreign competition will generally lead to quality-upgrading (downgrading) of the low-quality (high-quality) firm, an increase in average product quality, a reduction of quality differentiation, and a reduction of domestic consumer surplus, irrespective of whether the foreign firm produces the higher or lower quality. But the effects of a quota on industry profits and domestic welfare depend crucially on the direction of international vertical differentiation.

If the foreign firm produces low quality, both firms' prices and profits will rise but domestic welfare will fall. The fall in domestic welfare is due to three effects: high quality decreases, prices rise, total quantity bought (of both goods) falls. The last effect reduces market participation (share of consumers buying either good) to such an extent, that this

---

<sup>16</sup> The results for a quota at the free-trade level only are generally valid for any positive values of  $T$  and  $b$ , since these variables enter strictly in a multiplicative way, once the quota is fixed.

negative effect overcompensates for an increase in average quality. The increase in average quality is the result of the reduced market share of the low-quality product.

If the foreign firm produces high quality, foreign profits will fall. The foreign firm is bound by the quota, but it cannot profitably increase its already high and costly quality. Since its quantity must be reduced, it actually needs to decrease its quality. However, the domestic low-quality firm increases quality substantially. This leads to a decrease in quality-adjusted price of the low-quality good while the high quality good becomes relatively more expensive. For the consumers as a whole, these two effects almost cancel out. Therefore, domestic consumer surplus falls only unsubstantially, and domestic profit gains will lead to an overall increase of domestic welfare.

### 3.2. Effects of Changing the Level of an Existing Quota

As a function of the quota level, the quota-constrained equilibrium quality exhibits a concave shape (with the maximum near the free-trade level), while the domestic equilibrium quality is decreasing in a quota increase (relaxing the constraint), irrespective of the ordering of qualities. Similarly, the profits of the quota-constrained firm exhibit concave shapes, while the profits of the domestic firm decrease when the quota is relaxed. Domestic consumer surplus and domestic welfare increase generally with a relaxing of the quota.

Significant differences depending on the ordering of qualities arise with respect to quality differentiation and changes in low-quality quantity. With a quota on high quality, quality differentiation decreases with a tightening of the quota. Low-quality quantity rises while high-quality quantity falls with a tighter quota, leading to only small changes in total quantity sold. With a quota on low quality, quality differentiation exhibits a U-shape (with the minimum near the free-trade level). Consequently, quality differentiation rises with a tightening of the quota away from the free-trade level. This tightening of the quota also leads to decreases of both quantities.

This difference explains the relatively weaker negative effect on consumer surplus for a quota on the high-quality firm. It also explains why a foreign high-quality firm is harmed more by the tightening of a quota (away from the free-trade level).

## 4. Discussion

In this section, I first review empirical findings about the U.S. auto market in light of the presented theory. This is followed by a discussion of robustness issues.

### 4.1. Empirical Results

The standard empirical case cited is the development of the US car market during the 1980s, where Japanese imports were subjected to both quantity constraints and tariffs. To my knowledge, there is no closure yet on the debate whether quality upgrading was induced by tariffs, VERs, or a combination of both. However, the general notion is that the quality of Japanese cars was initially lower than that of U.S. cars, and that it was upgraded. Feenstra (1993) reports a quality increase of Japanese cars. Goldberg (1992, 1994) performed trade-policy simulations using an econometric model of US car demand, coming to the conclusion that quotas lead to quality upgrading, while tariffs might lead to downgrading. Goldberg also reports quality-upgrading for U.S. cars, while Feenstra does not analyze the effects on U.S. cars. I want to argue that the case of a quota on a low-quality foreign firm in my model describes the U.S.-Japan auto case well.

On first glance, Goldberg's results seem to contradict two of my theoretical results. These are decreased quality differentiation and a decrease in high quality. However, Goldberg infers an increase of quality for U.S. products from a demand shift towards higher-quality car models. She does not actually analyze any quality change of these car models. This result is arguably better comparable to my theoretical result of average quality increases. From anecdotal evidence (for example comparisons of reliability of Japanese and U.S. cars in the 1980s), I would also argue that the first reaction of U.S. car firms to the quotas was to not put as much effort into quality improvement of their own models as they would have done otherwise.

It is also noteworthy, that this theoretical model predicts the same tariff effects as shown in Goldberg's work, namely a quality decrease (see Lutz 1997). Noting that the tariff affects low-quality Japanese cars, this would also relieve the pressure on U.S. firms to increase the quality of their cars to some extent.

## 4.2. Robustness of the Model

With Cournot competition instead of Bertrand competition, many of the results presented above remain valid. Analyzing the case of Cournot competition, Herguera/Kujal/Petrakis (1994) have shown that a quota on a foreign low-quality firm will lead to upgrading of the foreign product, downgrading of the domestic product, decrease in differentiation and increase of average (quantity-weighted) quality.

## **5. Conclusions**

This paper has demonstrated that the direction of international vertical differentiation can be a major factor in determining the results of trade policies such as quotas or VERs. Furthermore, empirical observations such as for the U.S. auto market can be more fully explained taking the direction of quality differentiation into account.

## **Literature**

- Anderson, J. E. (1991). "The Coefficient of Trade Utilization: The Cheese Case," in: R. E. Baldwin (ed.) Empirical Studies of Commercial Policy (University of Chicago Press, Chicago).
- \_\_\_\_ (1985). "The Relative Inefficiency of Quotas: The Cheese Case, American Economic Review, Vol. 75(1), pp. 178-190.
- Aw, B. Y. and M. J. and Roberts (1988). Price and Quality Level Comparisons for U.S. Footware Imports: An Application of Multilateral Index Numbers," in: R. C. Feenstra (ed.) Empirical Methods for International Trade (MIT Press, Cambridge, MA).
- \_\_\_\_ (1986). "Measuring Quality in Quota-Constrained Import Markets: The Case of U.S. Footware," Journal of International Economics, Vol. 21(1/2), pp. 45-60.
- Bhagwati, J. (1965). "On the Equivalence of Tariffs and Quotas," in: R. E. Baldwin et.al. (eds.) Trade, Growth and the Balance of Payments: Essays in Honor of Gottfried Haberler (Rand McNally, Chicago).
- Boccard, N. and X. Wauthy (1998). "Import restraints and Quality Choice under Vertical Differentiation," CORE Discussion Paper 9819.
- Boom, A. (1995). "Asymmetric International Minimum Quality Standards and Vertical Differentiation," Journal of Industrial Economics, Vol. 43(1), pp. 101-119.

- Boorstein, R. and R. C. Feenstra (1991). "Quality Upgrading and its Welfare Cost in U.S. Steel Imports," in: Helpman, E. and A. Razin (eds.) International Trade and Trade Policy (MIT Press, Cambridge, MA).
- Brander, J. A. and P. R. Krugman (1983). "A Reciprocal Dumping Model of International Trade," Journal of International Economics, Vol. 15, pp. 313-323.
- Brander, J. A. and B. J. Spencer (1984). "Tariff Protection and Imperfect Competition," in: H. Kierzkowski (ed.) Monopolistic Competition and International Trade (Clarendon Press, Oxford).
- Choi, C. J. and H. S. Shin (1992). "A Comment on a Model of Vertical Product Differentiation," Journal of Industrial Economics, Vol. 40(2), pp. 229-231.
- Crampes, C. and A. Hollander (1995). "Duopoly and Quality Standards," European Economic Review, Vol. 39, pp. 71-82.
- Cremer, H. and J.-F. Thisse (1994). "Commodity Taxation in a Differentiated Oligopoly," International Economic Review, Vol. 35(3), pp. 613-633.
- \_\_\_\_ (1991). "Location Models of Horizontal Differentiation: A Special Case of Vertical Differentiation Models," Journal of Industrial Economics, Vol. 39(4), pp. 383-390.
- Das, S. P. and S. Donnenfeld (1989). "Oligopolistic Competition and International Trade: Quantity and Quality Restrictions," Journal of International Economics, Vol. 27(3-4), pp. 299-318.
- \_\_\_\_ (1987). "Trade Policy and its Impact on Quality of Imports: A Welfare Analysis," Journal of International Economics, Vol. 23, pp. 77-95.
- Falvey, R. E. (1979). "The Composition of Trade Within Import-Restricted Categories," Journal of Political Economy, Vol. 87, pp. 1105-1114.
- Feenstra, R. C. (1993). "Measuring the Welfare Effect of Quality Change: Theory and Application to Japanese Autos," NBER Discussion Paper No. 4401.
- \_\_\_\_ (1988). "Quality Change under Trade Restraints in Japanese Autos," Quarterly Journal of Economics, pp. 131-146.
- \_\_\_\_ (1985). "Automobile Prices and Protection: The U.S.-Japan Trade Restraint," Journal of Policy Modelling, Vol. 7, pp. 49-68.
- \_\_\_\_ (1984). "Voluntary Export Restraint in U.S. Autos, 1980-81: Quality, Employment and Welfare Effects," in: R. E. Baldwin and A. Krueger (eds.) The Structure and Evolution of Recent U.S. Trade Policy.
- Gabszewicz, J. J. and J.-F. Thisse (1979). "Price Competition, Quality and Income Disparities," Journal of Economic Theory, Vol. 20, pp. 340-359.
- Goldberg, P. K. (1994). "Trade Policies in the U.S. Automobile Industry," Japan and the World Economy, Vol. 6(2), pp. 175-208.
- \_\_\_\_ (1992). "Product Differentiation and Oligopoly in International Markets: The Case of the U.S. Automobile Industry," mimeo., Princeton University.

- Harris, R. (1985). "Why Voluntary Export Restraints are Voluntary?" Canadian Journal of Economics Vol. 18.
- Herguera, I., Kujal, P. and E. Petrakis (1994). "Quantity Restrictions and Endogenous Quality Choice," Universidad Carlos III de Madrid, Working Paper 94-36.
- Herguera, I. and S. Lutz (1998). "Oligopoly and Quality Leapfrogging," The World Economy, Vol. 21(1), pp. 75-94.
- Irmen, A. and J.-F. Thisse (1996). "Competition in Multi-Characteristics Spaces: Hotelling was Almost Right," CEPR Discussion Paper No. 1446.
- Krishna, K. (1990). "Export Restrictions with Imperfect Competition: A Selective Survey," NBER Working Paper No. 3244.
- \_\_\_\_\_ (1989). "Trade Restrictions as Facilitating Practices," Journal of International Economics, Vol. 26, pp. 251-270.
- \_\_\_\_\_ (1987). "Tariffs vs. Quotas with Endogenous Quality," Journal of International Economics, Vol. 23, pp. 97-122.
- Leland, H. E. (1979). "Quacks, Lemons, and Licensing: A Theory of Minimum Quality Standards," Journal of Political Economy, Vol. 87, pp. 1328-1346.
- Levinsohn, J. (1988). "Empirics of Taxes on Differentiated Products: The Case of Tariffs in the U.S. Automobile Industry," in: R. Baldwin (ed.) Trade Policy Issues and Empirical Analysis (NBER, Chicago).
- Lutz, S. (1998). "Can Taxing Foreign Competition Harm the Domestic Industry?" ZEI Policy Paper B98-15.
- \_\_\_\_\_ (1997). „Quotas with Vertical Differentiation and Price Competition,“ ZEI, Bonn, mimeo.
- \_\_\_\_\_ (1996). "Vertical Product Differentiation, Quality Standards, And International Trade Policy," CEPR Discussion Paper No. 1443.
- Menzler-Hokkanen, I. (1994). "Empirical Comparisons of Quality Measures in International Trade," in: Quality Change and Competitiveness in International Trade (Helsinki School of Business Administration, Helsinki).
- Mintz, I. (1973). "U.S. Import Quotas: Cost and Consequences," American Enterprise Institute for Public Policy Research.
- Motta, M. (1993). "Endogenous Quality Choice: Price vs. Quantity Competition," Journal of Industrial Economics, Vol. 41, pp. 113-132.
- Mussa, M. and S. Rosen (1978). "Monopoly and Product Quality," Journal of Economic Theory, Vol. 18, pp. 301-317.
- Rodriguez, C. A. (1979). "The Quality of Imports and the Differential Welfare Effects of Tariffs, Quotas and Quality Controls on Protective Devices, Canadian Journal of Economics, Vol. 12, pp. 439-449.
- Ronnen, U. (1991). "Minimum Quality Standards, Fixed Costs, and Competition," Rand Journal of Economics, Vol. 22(4), pp. 490-504.

- Scarpa, C. (1996). "Quality Standards in a Vertically Differentiated Oligopoly," International Journal of Industrial Organization, forthcoming.
- Shaked, A. and J. Sutton (1982). "Relaxing Price Competition Through Product Differentiation," Review of Economic Studies, Vol. 49, pp. 3-13.
- Shapiro, C. (1983). "Premiums for High Quality Products as Returns to Reputations," Quarterly Journal of Economics, Vol. 98, pp. 659-679.

## Appendix

(All calculations are available upon request.)

### The Model Without Quotas

This appendix demonstrates the derivation of the unconstrained market equilibria for the model presented in Section 2. Firms d and f play a two-stage game<sup>17</sup>. 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.<sup>18</sup>

### 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:<sup>19</sup>

$$q_h = T - \left( \frac{p_h - p_o}{s_h - s_o} \right), \quad q_o = \frac{p_h - p_o}{s_h - s_o} - \frac{p_o}{s_o} \quad (\text{A.3.1})$$

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:

$$p_h = \frac{2Ts_h(s_h - s_o)}{4s_h - s_o}, \quad p_o = \frac{T(s_h - s_o)s_o}{4s_h - s_o} \quad (\text{A.4.1})$$

Note that for all  $s_h > s_o$ ,  $T > t_h > t_o > 0$  will hold, *i.e.*, equation (A.4.1) 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:

$$\Pi_h = \frac{4T^2 s_h^2 (s_h - s_o)}{(4s_h - s_o)^2} - b_h s_h^2, \quad \Pi_o = \frac{T^2 s_h (s_h - s_o) s_o}{(4s_h - s_o)^2} - b_o s_o^2 \quad (\text{A.5.1})$$

Similarly, consumer surplus<sup>20</sup> can be expressed in the following way:

<sup>17</sup> 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.

<sup>18</sup> 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.

<sup>19</sup> 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  $T \gg t > t_h$  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.

<sup>20</sup> Consumer surplus is defined as  $\int_{t_h}^T (t * s_h - p_h) dt + \int_{t_o}^{t_h} (t * s_o - p_o) dt$  where the first integral goes from  $t_h$  to  $T$  and the second goes from  $t_o$  to  $t_h$ .



$$CS = \frac{T^2 s_h^2 (4s_h + 5s_o)}{2(-4s_h + s_o)^2} \quad (A.6.1)$$

### Properties of the Revenue and Consumer Surplus Functions

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

$$\frac{\partial R_h}{\partial s_h} \geq 0; \quad \frac{\partial R_o}{\partial s_o} \geq 0 \text{ for } s_o \leq \frac{4s_h}{7}; \quad \frac{\partial R_h}{\partial s_o} < 0, \quad \frac{\partial R_o}{\partial s_h} > 0; \quad (A.7.1)$$

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

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.

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

### 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 (A.5.1) 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:

$$4T^2 s_h (4s_h^2 - 3s_h s_o + 2s_o^2) / (4s_h - s_o)^3 = 2b_h s_h \quad (A.9.1)$$

$$T^2 s_h^2 (4s_h - 7s_o) / (4s_h - s_o)^3 = 2b_o s_o$$

The slopes of the high and low quality firms' quality best responses can be calculated (using the implicit function theorem) as  $ds_i/ds_j = -(\partial(\partial\Pi_i/\partial s_j)/\partial s_j)/(\partial(\partial\Pi_i/\partial s_i)/\partial s_i)$ , where  $i$  is either high or low quality and  $j$  is the other quality. Both slopes are positive, but less than one.

From the properties of the revenue functions and the slopes of the quality best responses, it can be derived that the two qualities are strategic complements. Furthermore, a forced increase of the low quality will reduce product differentiation and increase price competition.

Divide the first order conditions given in (A.9), 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.  $b_o = b_h = b$ )  $r = 5.25123$  while for  $a=2$  (i.e.  $b_o = 2 b_h = 2 b$ )  $r = 9.14152$ . Using  $r$  to express  $s_h$  in terms of  $s_o$  and substituting for  $s_h$  in the first equation of (A.9.1) allows for

calculating the equilibrium qualities for any given value of  $T$  and  $b$ . (However, the ratio of cost parameters  $a$  must be fixed.)

The resulting equilibrium qualities for identical firms (i.e.  $b_h = b_o = b$ ) are then:<sup>21</sup>

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

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

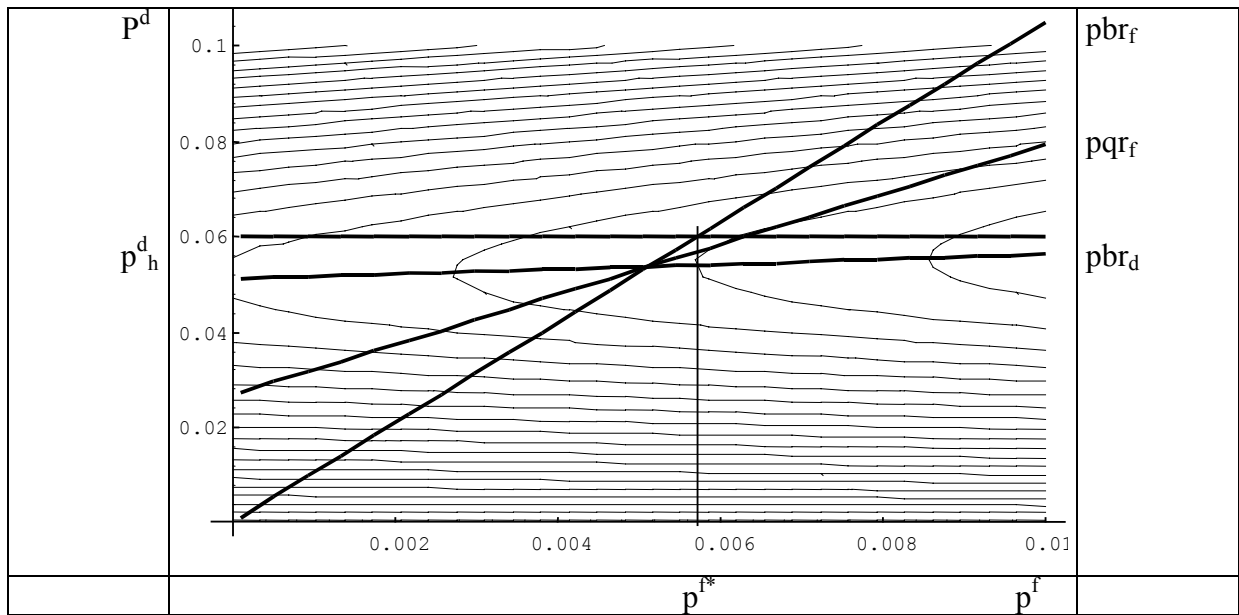
$$\Pi_h = 0.012219 T^4 / b \text{ and } \Pi_o = 0.0007637 T^4 / b$$

### Quota and Price Competition

Figure 1 shows the actual calculated price best responses for the parameter set  $\{T=1, b=1, s_f=0.126655, s_d=0.241192 \text{ and } \text{quot}=0.262497\}$ , i.e. the domestic firm produces high quality and the foreign firm is subjected to a quota equal to its free-trade quantity choice.

The graph also includes iso-profit lines of the domestic firm, where domestic profits increase to the right and interior of a particular contour line, i.e. with increases in foreign price.

Figure 1



The straight lines  $pbr_d$  and  $pbr_f$  are the domestic and foreign free-trade price best responses, respectively. As usual they are both upward-sloping. Since the foreign firm produces low quality, its best response starts from the origin. Originally, the foreign firm is not quota-constrained when moving upward along its best response since its optimal price choice is high relative to domestic price. The line  $pqr_f$  denotes the ratio of domestic to foreign

price choice such that the quota would be exactly binding. It becomes the foreign firm's best response from the point of their intersection.

In equilibrium, the foreign, low-quality producer chooses  $p^{f*}$  while the domestic, high-quality producer randomizes between  $p_h^d$  and  $p_{br_d}(p^{f*})$ . At  $p^{f*}$ , the domestic firm is indifferent between using the quota to choose the higher price and playing its free-trade best response. An equilibrium is obtained when the domestic firm chooses the probability for the higher price  $\alpha$  such that the expected price induces the foreign firm to choose  $p^{f*}$  as best response.

---

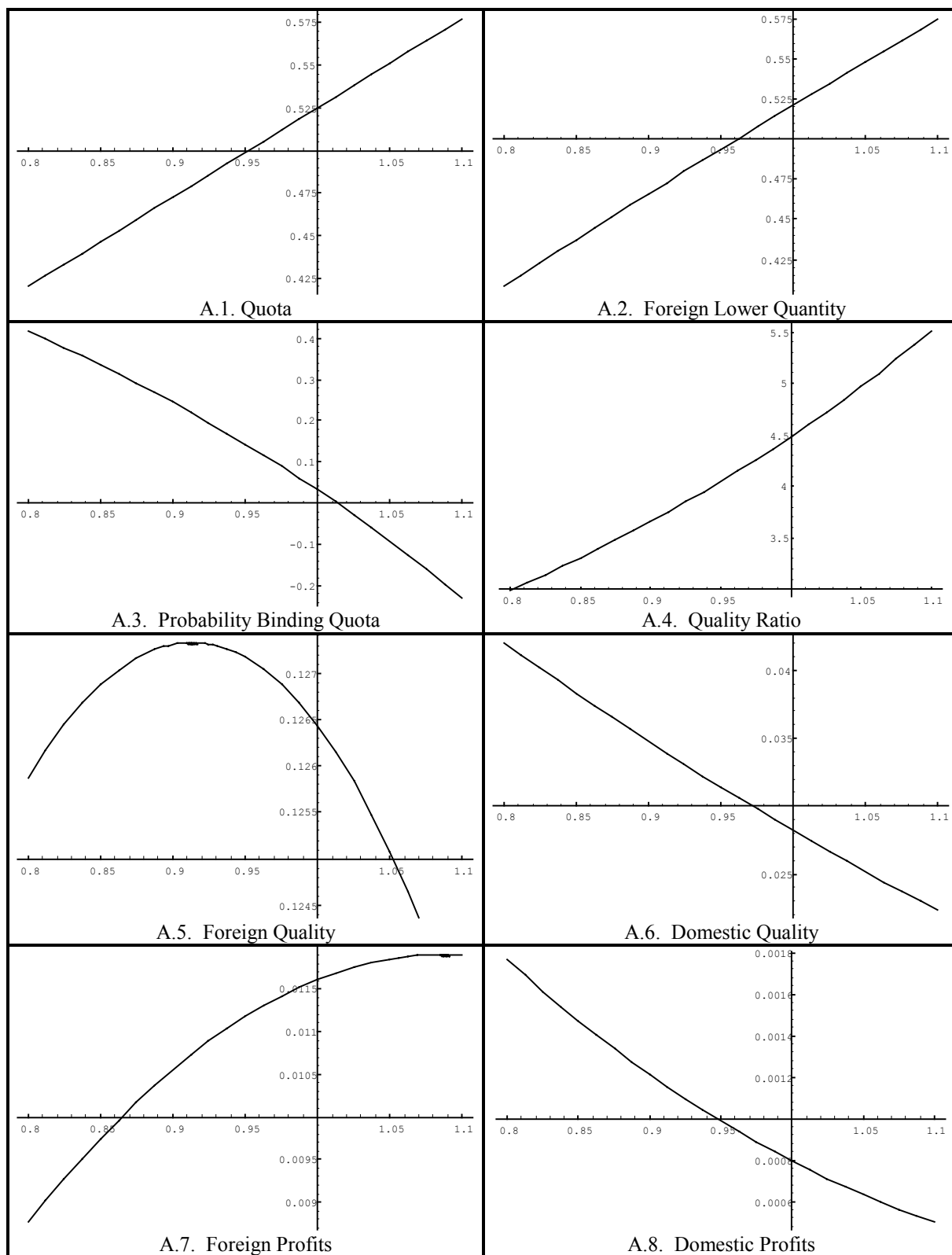
<sup>21</sup> Note that  $T^2/b$  enters in a multiplicative way and therefore does not affect the calculations.

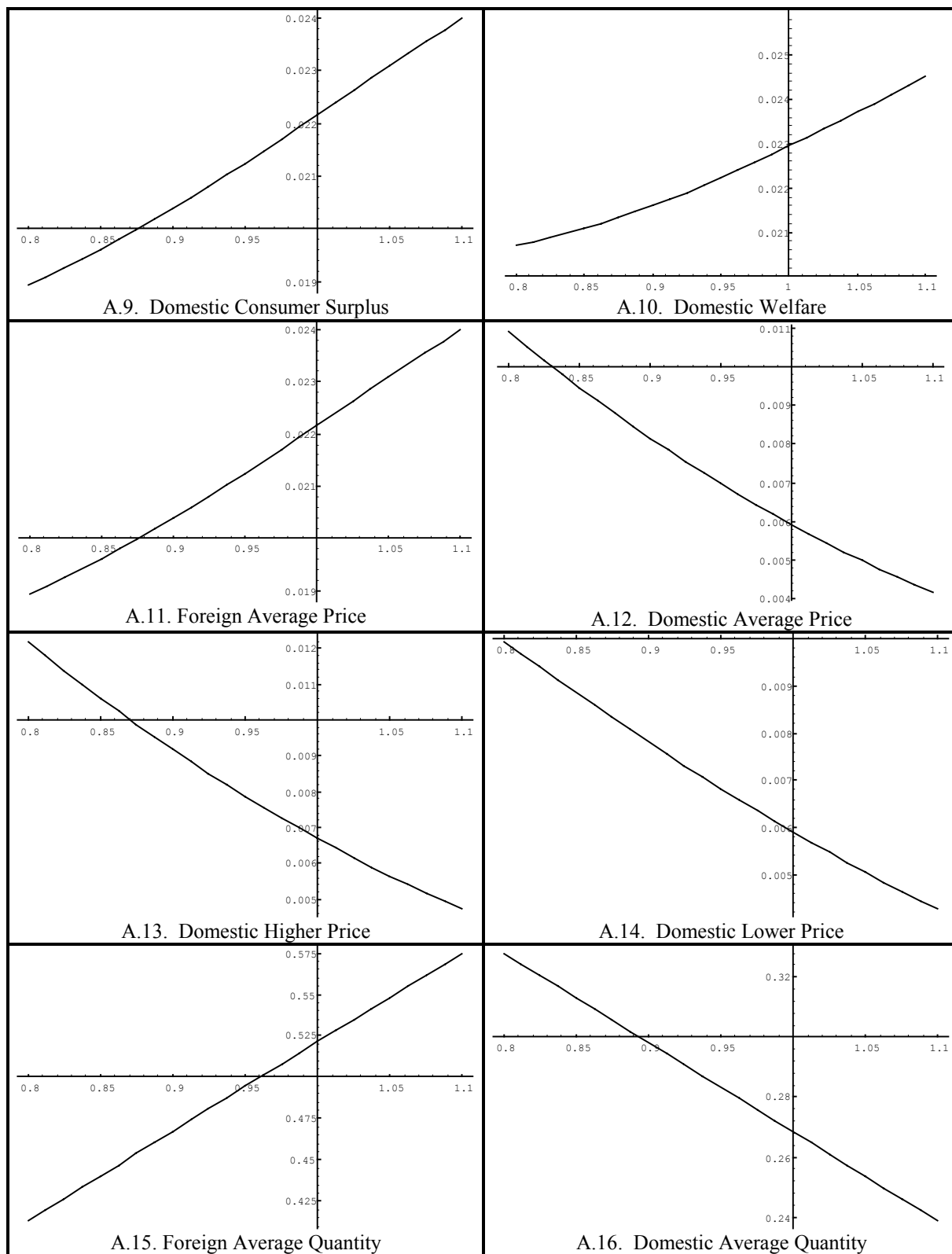
Table 1. Results

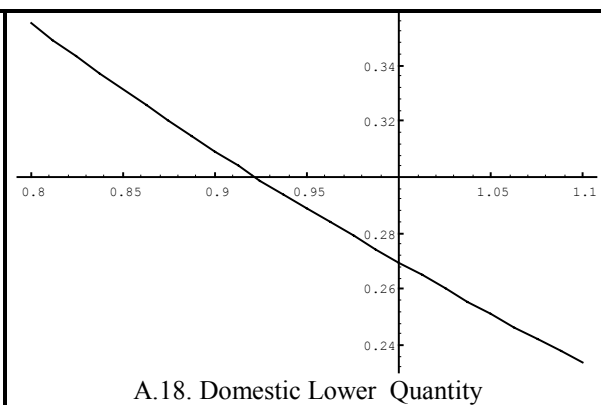
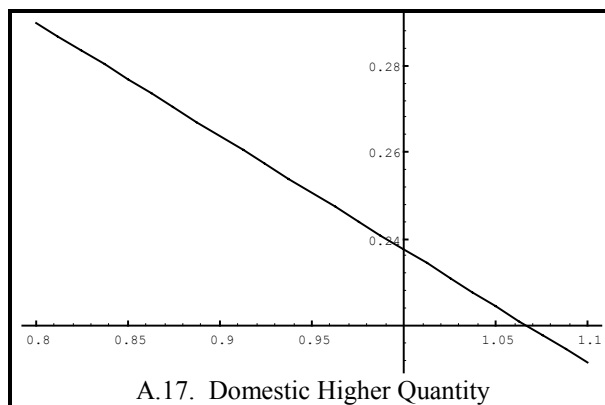
Variable	Unregulated	Quota Firm 1	Quota Firm 2
$s_1^{1)}$	0.126655	0.126431	0.124638
$s_2^{1)}$	0.0241192	0.0282038	0.0255657
$s_1/s_2$	5.25123	4.48276	4.87520
Average s	0.0924764	0.0930464	0.0934694
$\alpha$	0	0.03261	0.20204
$p_1^{2)}$	0.0538309	0.0529348	0.0538612
$p_2^{2)}$	0.00512555	0.00593017	0.00606684
$q_1^{3)}$	0.524994	0.521329	0.518993
$q_2^{3)}$	0.262497	0.268409	0.238224
Total q	0.787491	0.789738	0.757217
$PI_1^{4)}$	0.0122193	0.0116117	0.0123597
$PI_2^{4)}$	0.000763706	0.000795456	0.00079166
$CS^{4)}$	0.0216091	0.0216089	0.0207368
$w_1^{4)}$	0.0338284	-	0.0330966
$w_2^{4)}$	0.022372806	0.022404356	-

- 1) Multiply values with  $T^2/b$ ; 2) Multiply values with  $T^3/b$   
3) Multiply values with  $T$ ; 4) Multiply values with  $T^4/b$

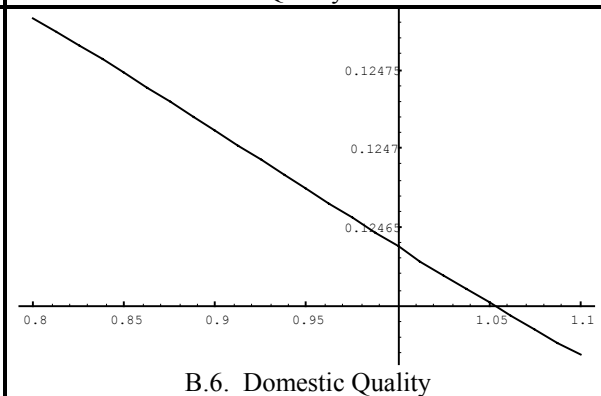
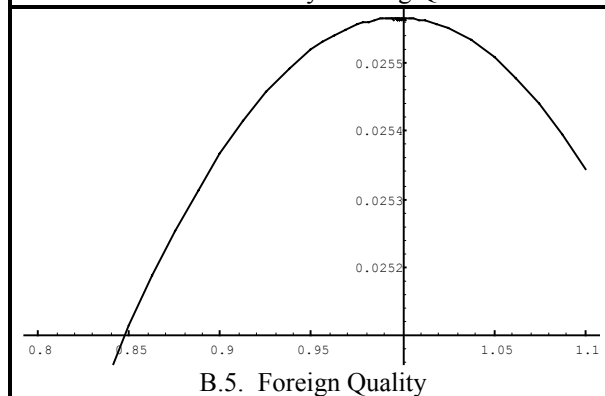
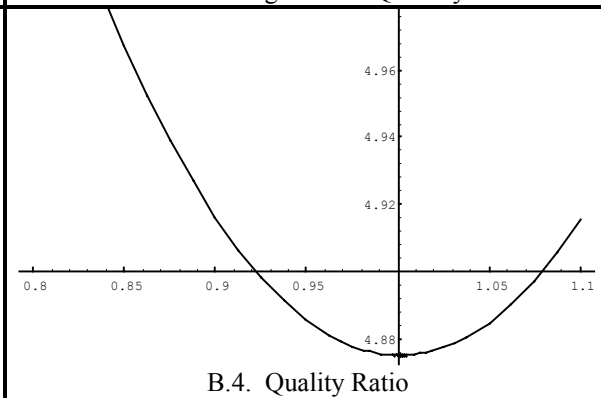
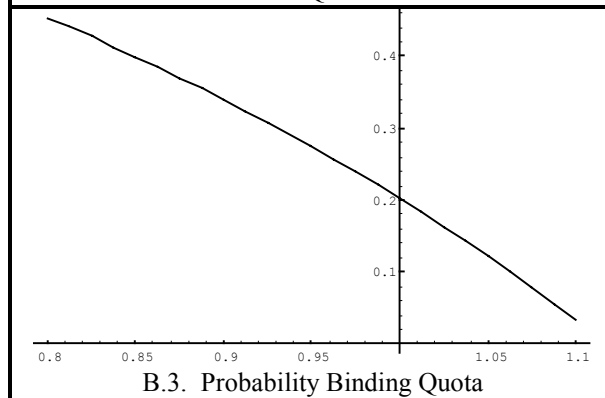
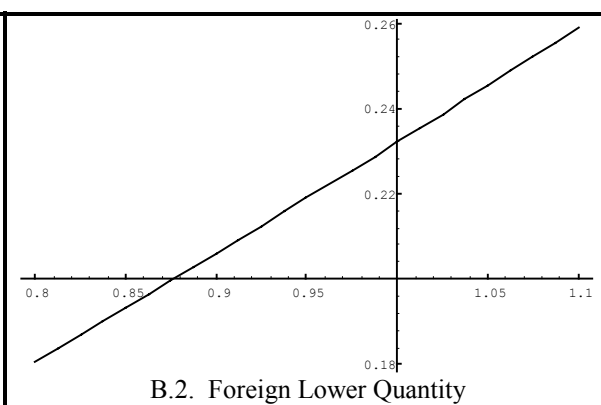
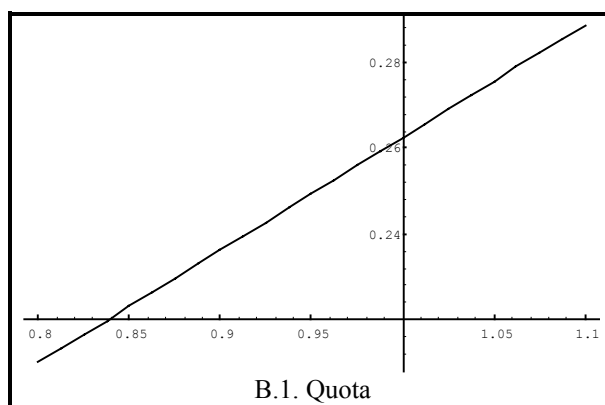
Case A. Quota on the Foreign High-Quality Firm  
(Domestic Low-Quality Firm Randomizes Price)

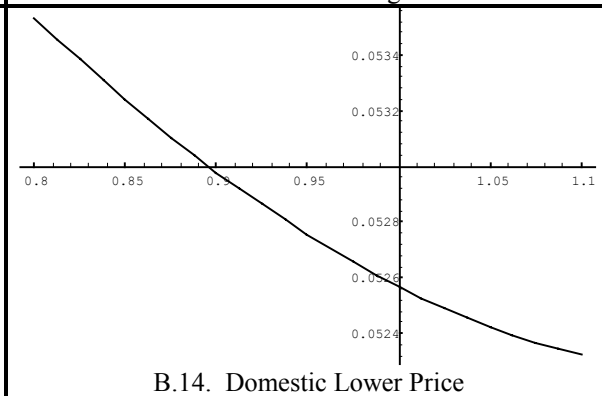
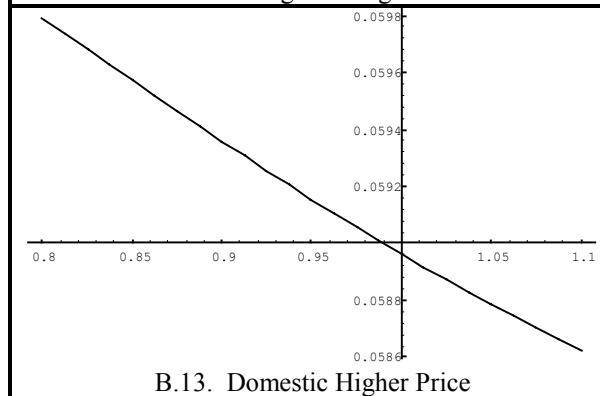
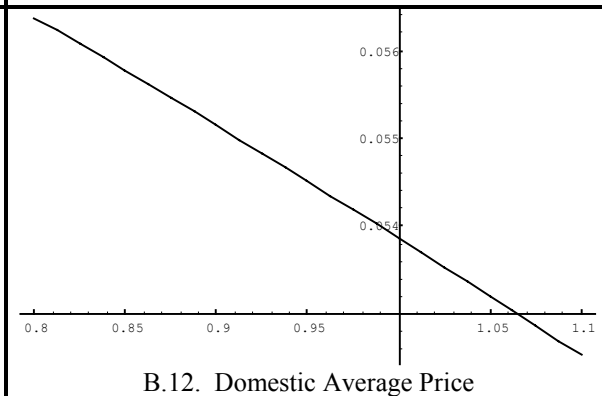
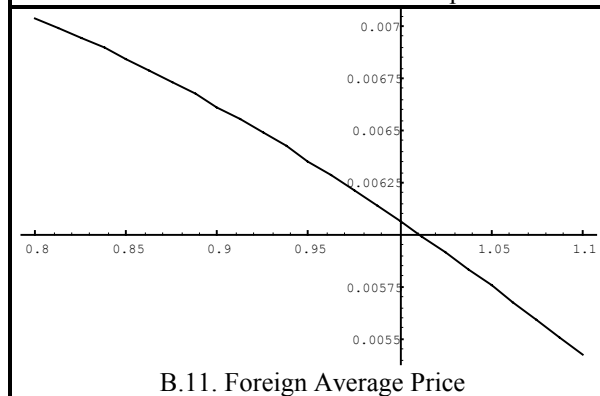
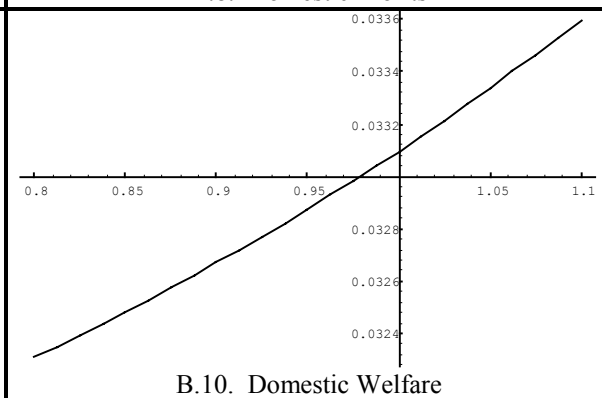
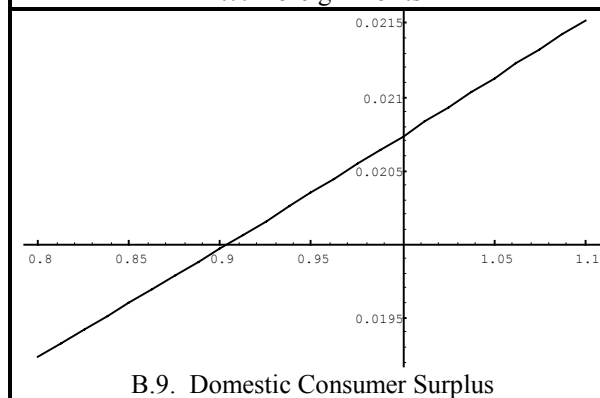
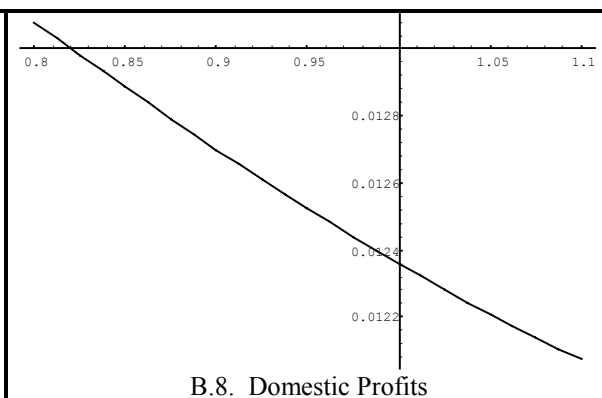
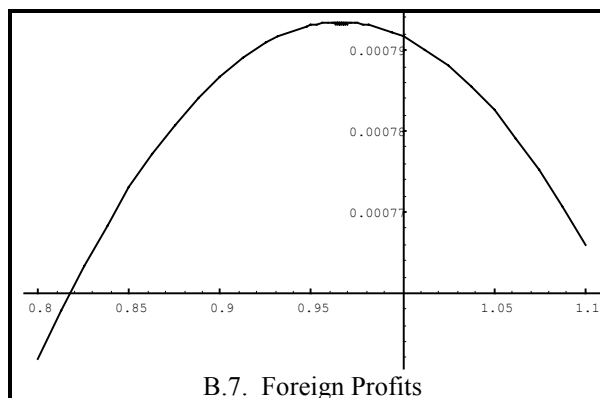




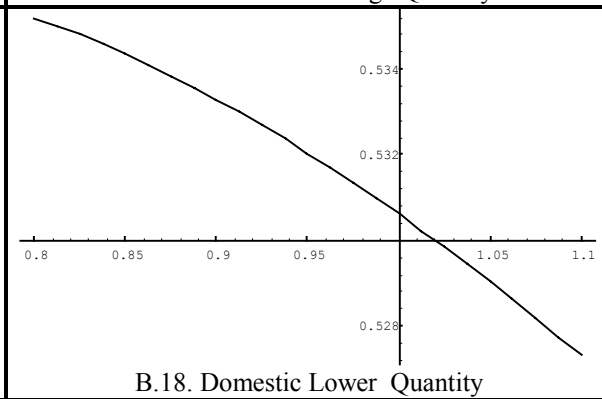
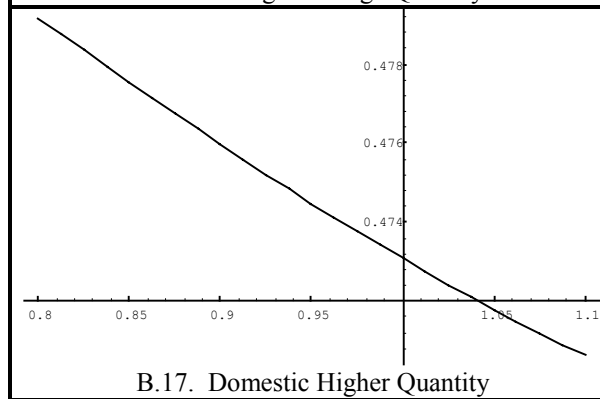
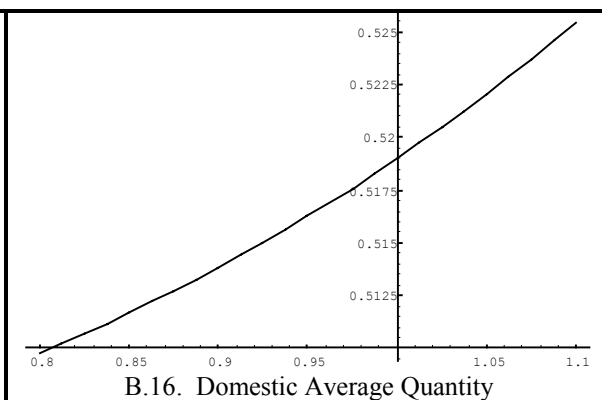
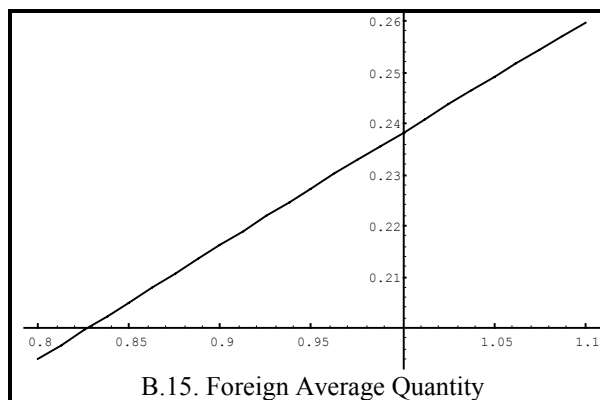


Case B. Quota on the Foreign Low-Quality Firm  
(Domestic High-Quality Firm Randomizes Price)









<b>2008</b>		
B01-08	<b>Euro-Diplomatie durch gemeinsame „Wirtschaftsregierung“</b>	<i>Martin Seidel</i>
<b>2007</b>		
B03-07	<b>Löhne und Steuern im Systemwettbewerb der Mitgliedstaaten der Europäischen Union</b>	<i>Martin Seidel</i>
B02-07	<b>Konsolidierung und Reform der Europäischen Union</b>	<i>Martin Seidel</i>
B01-07	<b>The Ratification of European Treaties - Legal and Constitutional Basis of a European Referendum.</b>	<i>Martin Seidel</i>
<b>2006</b>		
B03-06	<b>Financial Frictions, Capital Reallocation, and Aggregate Fluctuations</b>	<i>Jürgen von Hagen, Haiping Zhang</i>
B02-06	<b>Financial Openness and Macroeconomic Volatility</b>	<i>Jürgen von Hagen, Haiping Zhang</i>
B01-06	<b>A Welfare Analysis of Capital Account Liberalization</b>	<i>Jürgen von Hagen, Haiping Zhang</i>
<b>2005</b>		
B11-05	<b>Das Kompetenz- und Entscheidungssystem des Vertrages von Rom im Wandel seiner Funktion und Verfassung</b>	<i>Martin Seidel</i>
B10-05	<b>Die Schutzklauseln der Beitrittsverträge</b>	<i>Martin Seidel</i>
B09-05	<b>Measuring Tax Burdens in Europe</b>	<i>Guntram B. Wolff</i>
B08-05	<b>Remittances as Investment in the Absence of Altruism</b>	<i>Gabriel González-König</i>
B07-05	<b>Economic Integration in a Multicore World?</b>	<i>Christian Volpe Martincus, Jennifer Pédussel Wu</i>
B06-05	<b>Banking Sector (Under?)Development in Central and Eastern Europe</b>	<i>Jürgen von Hagen, Valeriya Dinger</i>
B05-05	<b>Regulatory Standards Can Lead to Predation</b>	<i>Stefan Lutz</i>
B04-05	<b>Währungspolitik als Sozialpolitik</b>	<i>Martin Seidel</i>
B03-05	<b>Public Education in an Integrated Europe: Studying to Migrate and Teaching to Stay?</b>	<i>Panu Poutvaara</i>
B02-05	<b>Voice of the Diaspora: An Analysis of Migrant Voting Behavior</b>	<i>Jan Fidrmuc, Orla Doyle</i>
B01-05	<b>Macroeconomic Adjustment in the New EU Member States</b>	<i>Jürgen von Hagen, Iulia Traistaru</i>
<b>2004</b>		
B33-04	<b>The Effects of Transition and Political Instability On Foreign Direct Investment Inflows: Central Europe and the Balkans</b>	<i>Josef C. Brada, Ali M. Kutan, Tanner M. Yigit</i>
B32-04	<b>The Choice of Exchange Rate Regimes in Developing Countries: A Multinomial Panel Analysis</b>	<i>Jürgen von Hagen, Jizhong Zhou</i>
B31-04	<b>Fear of Floating and Fear of Pegging: An Empirical Analysis of De Facto Exchange Rate Regimes in Developing Countries</b>	<i>Jürgen von Hagen, Jizhong Zhou</i>
B30-04	<b>Der Vollzug von Gemeinschaftsrecht über die Mitgliedstaaten und seine Rolle für die EU und den Beitrittsprozess</b>	<i>Martin Seidel</i>
B29-04	<b>Deutschlands Wirtschaft, seine Schulden und die Unzulänglichkeiten der einheitlichen Geldpolitik im Eurosystem</b>	<i>Dieter Spethmann, Otto Steiger</i>
B28-04	<b>Fiscal Crises in U.S. Cities: Structural and Non-structural Causes</b>	<i>Guntram B. Wolff</i>
B27-04	<b>Firm Performance and Privatization in Ukraine</b>	<i>Galyna Grygorenko, Stefan Lutz</i>
B26-04	<b>Analyzing Trade Opening in Ukraine: Effects of a Customs Union with the EU</b>	<i>Oksana Harbuzyuk, Stefan Lutz</i>
B25-04	<b>Exchange Rate Risk and Convergence to the Euro</b>	<i>Lucjan T. Orlowski</i>
B24-04	<b>The Endogeneity of Money and the Eurosystem</b>	<i>Otto Steiger</i>
B23-04	<b>Which Lender of Last Resort for the Eurosystem?</b>	<i>Otto Steiger</i>
B22-04	<b>Non-Discretionary Monetary Policy: The Answer for Transition Economies?</b>	<i>Elham-Mafi Kreft, Steven F. Kreft</i>
B21-04	<b>The Effectiveness of Subsidies Revisited: Accounting for Wage and Employment Effects in Business R+D</b>	<i>Volker Reinthaler, Guntram B. Wolff</i>
B20-04	<b>Money Market Pressure and the Determinants of Banking Crises</b>	<i>Jürgen von Hagen, Tai-kuang Ho</i>
B19-04	<b>Die Stellung der Europäischen Zentralbank nach dem Verfassungsvertrag</b>	<i>Martin Seidel</i>

B18-04	<b>Transmission Channels of Business Cycles Synchronization in an Enlarged EMU</b>	<i>Iulia Traistaru</i>
B17-04	<b>Foreign Exchange Regime, the Real Exchange Rate and Current Account Sustainability: The Case of Turkey</b>	<i>Sübüdey Togan, Hasan Ersel</i>
B16-04	<b>Does It Matter Where Immigrants Work? Traded Goods, Non-traded Goods, and Sector Specific Employment</b>	<i>Harry P. Bowen, Jennifer Pédussel Wu</i>
B15-04	<b>Do Economic Integration and Fiscal Competition Help to Explain Local Patterns?</b>	<i>Christian Volpe Martincus</i>
B14-04	<b>Euro Adoption and Maastricht Criteria: Rules or Discretion?</b>	<i>Jiri Jonas</i>
B13-04	<b>The Role of Electoral and Party Systems in the Development of Fiscal Institutions in the Central and Eastern European Countries</b>	<i>Sami Yläoutinen</i>
B12-04	<b>Measuring and Explaining Levels of Regional Economic Integration</b>	<i>Jennifer Pédussel Wu</i>
B11-04	<b>Economic Integration and Location of Manufacturing Activities: Evidence from MERCOSUR</b>	<i>Pablo Sanguinetti, Iulia Traistaru, Christian Volpe Martincus</i>
B10-04	<b>Economic Integration and Industry Location in Transition Countries</b>	<i>Laura Resmini</i>
B09-04	<b>Testing Creditor Moral Hazard in Sovereign Bond Markets: A Unified Theoretical Approach and Empirical Evidence</b>	<i>Ayşe Y. Evrensel, Ali M. Kutan</i>
B08-04	<b>European Integration, Productivity Growth and Real Convergence</b>	<i>Taner M. Yigit, Ali M. Kutan</i>
B07-04	<b>The Contribution of Income, Social Capital, and Institutions to Human Well-being in Africa</b>	<i>Mina Balamoune-Lutz, Stefan H. Lutz</i>
B06-04	<b>Rural Urban Inequality in Africa: A Panel Study of the Effects of Trade Liberalization and Financial Deepening</b>	<i>Mina Balamoune-Lutz, Stefan H. Lutz</i>
B05-04	<b>Money Rules for the Eurozone Candidate Countries</b>	<i>Lucjan T. Orłowski</i>
B04-04	<b>Who is in Favor of Enlargement? Determinants of Support for EU Membership in the Candidate Countries' Referenda</b>	<i>Orla Doyle, Jan Fidrmuc</i>
B03-04	<b>Over- and Underbidding in Central Bank Open Market Operations Conducted as Fixed Rate Tender</b>	<i>Ulrich Bindseil</i>
B02-04	<b>Total Factor Productivity and Economic Freedom Implications for EU Enlargement</b>	<i>Ronald L. Moomaw, Euy Seok Yang</i>
B01-04	<b>Die neuen Schutzklauseln der Artikel 38 und 39 des Beitrittsvertrages: Schutz der alten Mitgliedstaaten vor Störungen durch die neuen Mitgliedstaaten</b>	<i>Martin Seidel</i>
<b>2003</b>		
B29-03	<b>Macroeconomic Implications of Low Inflation in the Euro Area</b>	<i>Jürgen von Hagen, Boris Hofmann</i>
B28-03	<b>The Effects of Transition and Political Instability on Foreign Direct Investment: Central Europe and the Balkans</b>	<i>Josef C. Brada, Ali M. Kutan, Taner M. Yigit</i>
B27-03	<b>The Performance of the Euribor Futures Market: Efficiency and the Impact of ECB Policy Announcements (Electronic Version of International Finance)</b>	<i>Kerstin Bernoth, Juergen von Hagen</i>
B26-03	<b>Sovereign Risk Premia in the European Government Bond Market (überarbeitete Version zum Herunterladen)</b>	<i>Kerstin Bernoth, Juergen von Hagen, Ludger Schulknecht</i>
B25-03	<b>How Flexible are Wages in EU Accession Countries?</b>	<i>Anna Iara, Iulia Traistaru</i>
B24-03	<b>Monetary Policy Reaction Functions: ECB versus Bundesbank</b>	<i>Bernd Hayo, Boris Hofmann</i>
B23-03	<b>Economic Integration and Manufacturing Concentration Patterns: Evidence from Mercosur</b>	<i>Iulia Traistaru, Christian Volpe Martincus</i>
B22-03	<b>Reformzwänge innerhalb der EU angesichts der Osterweiterung</b>	<i>Martin Seidel</i>
B21-03	<b>Reputation Flows: Contractual Disputes and the Channels for Inter-Firm Communication</b>	<i>William Pyle</i>
B20-03	<b>Urban Primacy, Gigantism, and International Trade: Evidence from Asia and the Americas</b>	<i>Ronald L. Moomaw, Mohammed A. Alwosabi</i>
B19-03	<b>An Empirical Analysis of Competing Explanations of Urban Primacy Evidence from Asia and the Americas</b>	<i>Ronald L. Moomaw, Mohammed A. Alwosabi</i>

<b>2008</b>		
B01-08	<b>Euro-Diplomatie durch gemeinsame „Wirtschaftsregierung“</b>	<i>Martin Seidel</i>
<b>2007</b>		
B03-07	<b>Löhne und Steuern im Systemwettbewerb der Mitgliedstaaten der Europäischen Union</b>	<i>Martin Seidel</i>
B02-07	<b>Konsolidierung und Reform der Europäischen Union</b>	<i>Martin Seidel</i>
B01-07	<b>The Ratification of European Treaties - Legal and Constitutional Basis of a European Referendum.</b>	<i>Martin Seidel</i>
<b>2006</b>		
B03-06	<b>Financial Frictions, Capital Reallocation, and Aggregate Fluctuations</b>	<i>Jürgen von Hagen, Haiping Zhang</i>
B02-06	<b>Financial Openness and Macroeconomic Volatility</b>	<i>Jürgen von Hagen, Haiping Zhang</i>
B01-06	<b>A Welfare Analysis of Capital Account Liberalization</b>	<i>Jürgen von Hagen, Haiping Zhang</i>
<b>2005</b>		
B11-05	<b>Das Kompetenz- und Entscheidungssystem des Vertrages von Rom im Wandel seiner Funktion und Verfassung</b>	<i>Martin Seidel</i>
B10-05	<b>Die Schutzklauseln der Beitrittsverträge</b>	<i>Martin Seidel</i>
B09-05	<b>Measuring Tax Burdens in Europe</b>	<i>Guntram B. Wolff</i>
B08-05	<b>Remittances as Investment in the Absence of Altruism</b>	<i>Gabriel González-König</i>
B07-05	<b>Economic Integration in a Multicore World?</b>	<i>Christian Volpe Martincus, Jennifer Pédussel Wu</i>
B06-05	<b>Banking Sector (Under?)Development in Central and Eastern Europe</b>	<i>Jürgen von Hagen, Valeriya Dinger</i>
B05-05	<b>Regulatory Standards Can Lead to Predation</b>	<i>Stefan Lutz</i>
B04-05	<b>Währungspolitik als Sozialpolitik</b>	<i>Martin Seidel</i>
B03-05	<b>Public Education in an Integrated Europe: Studying to Migrate and Teaching to Stay?</b>	<i>Panu Poutvaara</i>
B02-05	<b>Voice of the Diaspora: An Analysis of Migrant Voting Behavior</b>	<i>Jan Fidrmuc, Orla Doyle</i>
B01-05	<b>Macroeconomic Adjustment in the New EU Member States</b>	<i>Jürgen von Hagen, Iulia Traistaru</i>
<b>2004</b>		
B33-04	<b>The Effects of Transition and Political Instability On Foreign Direct Investment Inflows: Central Europe and the Balkans</b>	<i>Josef C. Brada, Ali M. Kutan, Tanner M. Yigit</i>
B32-04	<b>The Choice of Exchange Rate Regimes in Developing Countries: A Multinomial Panel Analysis</b>	<i>Jürgen von Hagen, Jizhong Zhou</i>
B31-04	<b>Fear of Floating and Fear of Pegging: An Empirical Analysis of De Facto Exchange Rate Regimes in Developing Countries</b>	<i>Jürgen von Hagen, Jizhong Zhou</i>
B30-04	<b>Der Vollzug von Gemeinschaftsrecht über die Mitgliedstaaten und seine Rolle für die EU und den Beitrittsprozess</b>	<i>Martin Seidel</i>
B29-04	<b>Deutschlands Wirtschaft, seine Schulden und die Unzulänglichkeiten der einheitlichen Geldpolitik im Eurosystem</b>	<i>Dieter Spethmann, Otto Steiger</i>
B28-04	<b>Fiscal Crises in U.S. Cities: Structural and Non-structural Causes</b>	<i>Guntram B. Wolff</i>
B27-04	<b>Firm Performance and Privatization in Ukraine</b>	<i>Galyna Grygorenko, Stefan Lutz</i>
B26-04	<b>Analyzing Trade Opening in Ukraine: Effects of a Customs Union with the EU</b>	<i>Oksana Harbuzyuk, Stefan Lutz</i>
B25-04	<b>Exchange Rate Risk and Convergence to the Euro</b>	<i>Lucjan T. Orlowski</i>
B24-04	<b>The Endogeneity of Money and the Eurosystem</b>	<i>Otto Steiger</i>
B23-04	<b>Which Lender of Last Resort for the Eurosystem?</b>	<i>Otto Steiger</i>
B22-04	<b>Non-Discretionary Monetary Policy: The Answer for Transition Economies?</b>	<i>Elham-Mafi Kreft, Steven F. Kreft</i>
B21-04	<b>The Effectiveness of Subsidies Revisited: Accounting for Wage and Employment Effects in Business R+D</b>	<i>Volker Reintaler, Guntram B. Wolff</i>
B20-04	<b>Money Market Pressure and the Determinants of Banking Crises</b>	<i>Jürgen von Hagen, Tai-kuang Ho</i>
B19-04	<b>Die Stellung der Europäischen Zentralbank nach dem Verfassungsvertrag</b>	<i>Martin Seidel</i>

B18-04	<b>Transmission Channels of Business Cycles Synchronization in an Enlarged EMU</b>	<i>Iulia Traistaru</i>
B17-04	<b>Foreign Exchange Regime, the Real Exchange Rate and Current Account Sustainability: The Case of Turkey</b>	<i>Sübüdey Togan, Hasan Ersel</i>
B16-04	<b>Does It Matter Where Immigrants Work? Traded Goods, Non-traded Goods, and Sector Specific Employment</b>	<i>Harry P. Bowen, Jennifer Pédussel Wu</i>
B15-04	<b>Do Economic Integration and Fiscal Competition Help to Explain Local Patterns?</b>	<i>Christian Volpe Martincus</i>
B14-04	<b>Euro Adoption and Maastricht Criteria: Rules or Discretion?</b>	<i>Jiri Jonas</i>
B13-04	<b>The Role of Electoral and Party Systems in the Development of Fiscal Institutions in the Central and Eastern European Countries</b>	<i>Sami Yläoutinen</i>
B12-04	<b>Measuring and Explaining Levels of Regional Economic Integration</b>	<i>Jennifer Pédussel Wu</i>
B11-04	<b>Economic Integration and Location of Manufacturing Activities: Evidence from MERCOSUR</b>	<i>Pablo Sanguinetti, Iulia Traistaru, Christian Volpe Martincus</i>
B10-04	<b>Economic Integration and Industry Location in Transition Countries</b>	<i>Laura Resmini</i>
B09-04	<b>Testing Creditor Moral Hazard in Sovereign Bond Markets: A Unified Theoretical Approach and Empirical Evidence</b>	<i>Ayşe Y. Evrensel, Ali M. Kutan</i>
B08-04	<b>European Integration, Productivity Growth and Real Convergence</b>	<i>Taner M. Yigit, Ali M. Kutan</i>
B07-04	<b>The Contribution of Income, Social Capital, and Institutions to Human Well-being in Africa</b>	<i>Mina Balamoune-Lutz, Stefan H. Lutz</i>
B06-04	<b>Rural Urban Inequality in Africa: A Panel Study of the Effects of Trade Liberalization and Financial Deepening</b>	<i>Mina Balamoune-Lutz, Stefan H. Lutz</i>
B05-04	<b>Money Rules for the Eurozone Candidate Countries</b>	<i>Lucjan T. Orlowski</i>
B04-04	<b>Who is in Favor of Enlargement? Determinants of Support for EU Membership in the Candidate Countries' Referenda</b>	<i>Orla Doyle, Jan Fidrmuc</i>
B03-04	<b>Over- and Underbidding in Central Bank Open Market Operations Conducted as Fixed Rate Tender</b>	<i>Ulrich Bindseil</i>
B02-04	<b>Total Factor Productivity and Economic Freedom Implications for EU Enlargement</b>	<i>Ronald L. Moomaw, Euy Seok Yang</i>
B01-04	<b>Die neuen Schutzklauseln der Artikel 38 und 39 des Beitrittsvertrages: Schutz der alten Mitgliedstaaten vor Störungen durch die neuen Mitgliedstaaten</b>	<i>Martin Seidel</i>
<b>2003</b>		
B29-03	<b>Macroeconomic Implications of Low Inflation in the Euro Area</b>	<i>Jürgen von Hagen, Boris Hofmann</i>
B28-03	<b>The Effects of Transition and Political Instability on Foreign Direct Investment: Central Europe and the Balkans</b>	<i>Josef C. Brada, Ali M. Kutan, Taner M. Yigit</i>
B27-03	<b>The Performance of the Euribor Futures Market: Efficiency and the Impact of ECB Policy Announcements (Electronic Version of International Finance)</b>	<i>Kerstin Bernoth, Juergen von Hagen</i>
B26-03	<b>Sovereign Risk Premia in the European Government Bond Market (überarbeitete Version zum Herunterladen)</b>	<i>Kerstin Bernoth, Juergen von Hagen, Ludger Schulknecht</i>
B25-03	<b>How Flexible are Wages in EU Accession Countries?</b>	<i>Anna Iara, Iulia Traistaru</i>
B24-03	<b>Monetary Policy Reaction Functions: ECB versus Bundesbank</b>	<i>Bernd Hayo, Boris Hofmann</i>
B23-03	<b>Economic Integration and Manufacturing Concentration Patterns: Evidence from Mercosur</b>	<i>Iulia Traistaru, Christian Volpe Martincus</i>
B22-03	<b>Reformzwänge innerhalb der EU angesichts der Osterweiterung</b>	<i>Martin Seidel</i>
B21-03	<b>Reputation Flows: Contractual Disputes and the Channels for Inter-Firm Communication</b>	<i>William Pyle</i>
B20-03	<b>Urban Primacy, Gigantism, and International Trade: Evidence from Asia and the Americas</b>	<i>Ronald L. Moomaw, Mohammed A. Alwosabi</i>
B19-03	<b>An Empirical Analysis of Competing Explanations of Urban Primacy Evidence from Asia and the Americas</b>	<i>Ronald L. Moomaw, Mohammed A. Alwosabi</i>

B18-03	<b>The Effects of Regional and Industry-Wide FDI Spillovers on Export of Ukrainian Firms</b>	<i>Stefan H. Lutz, Oleksandr Talavera, Sang-Min Park</i>
B17-03	<b>Determinants of Inter-Regional Migration in the Baltic States</b>	<i>Mihails Hazans</i>
B16-03	<b>South-East Europe: Economic Performance, Perspectives, and Policy Challenges</b>	<i>Iulia Traistaru, Jürgen von Hagen</i>
B15-03	<b>Employed and Unemployed Search: The Marginal Willingness to Pay for Attributes in Lithuania, the US and the Netherlands</b>	<i>Jos van Ommeren, Mihails Hazans</i>
B14-03	<b>FCIs and Economic Activity: Some International Evidence</b>	<i>Charles Goodhart, Boris Hofmann</i>
B13-03	<b>The IS Curve and the Transmission of Monetary Policy: Is there a Puzzle?</b>	<i>Charles Goodhart, Boris Hofmann</i>
B12-03	<b>What Makes Regions in Eastern Europe Catching Up? The Role of Foreign Investment, Human Resources, and Geography</b>	<i>Gabriele Tondl, Goran Vuksic</i>
B11-03	<b>Die Weisungs- und Herrschaftsmacht der Europäischen Zentralbank im europäischen System der Zentralbanken - eine rechtliche Analyse</b>	<i>Martin Seidel</i>
B10-03	<b>Foreign Direct Investment and Perceptions of Vulnerability to Foreign Exchange Crises: Evidence from Transition Economies</b>	<i>Josef C. Brada, Vladimír Tomsík</i>
B09-03	<b>The European Central Bank and the Eurosystem: An Analysis of the Missing Central Monetary Institution in European Monetary Union</b>	<i>Gunnar Heinsohn, Otto Steiger</i>
B08-03	<b>The Determination of Capital Controls: Which Role Do Exchange Rate Regimes Play?</b>	<i>Jürgen von Hagen, Jizhong Zhou</i>
B07-03	<b>Nach Nizza und Stockholm: Stand des Binnenmarktes und Prioritäten für die Zukunft</b>	<i>Martin Seidel</i>
B06-03	<b>Fiscal Discipline and Growth in Euroland. Experiences with the Stability and Growth Pact</b>	<i>Jürgen von Hagen</i>
B05-03	<b>Reconsidering the Evidence: Are Eurozone Business Cycles Converging?</b>	<i>Michael Massmann, James Mitchell</i>
B04-03	<b>Do Ukrainian Firms Benefit from FDI?</b>	<i>Stefan H. Lutz, Oleksandr Talavera</i>
B03-03	<b>Europäische Steuerkoordination und die Schweiz</b>	<i>Stefan H. Lutz</i>
B02-03	<b>Commuting in the Baltic States: Patterns, Determinants, and Gains</b>	<i>Mihails Hazans</i>
B01-03	<b>Die Wirtschafts- und Währungsunion im rechtlichen und politischen Gefüge der Europäischen Union</b>	<i>Martin Seidel</i>
<b>2002</b>		
B30-02	<b>An Adverse Selection Model of Optimal Unemployment Assurance</b>	<i>Marcus Hagedorn, Ashok Kaul, Tim Mennel</i>
B29B-02	<b>Trade Agreements as Self-protection</b>	<i>Jennifer Pédussel Wu</i>
B29A-02	<b>Growth and Business Cycles with Imperfect Credit Markets</b>	<i>Debajyoti Chakrabarty</i>
B28-02	<b>Inequality, Politics and Economic Growth</b>	<i>Debajyoti Chakrabarty</i>
B27-02	<b>Poverty Traps and Growth in a Model of Endogenous Time Preference</b>	<i>Debajyoti Chakrabarty</i>
B26-02	<b>Monetary Convergence and Risk Premiums in the EU Candidate Countries</b>	<i>Lucjan T. Orlowski</i>
B25-02	<b>Trade Policy: Institutional Vs. Economic Factors</b>	<i>Stefan Lutz</i>
B24-02	<b>The Effects of Quotas on Vertical Intra-industry Trade</b>	<i>Stefan Lutz</i>
B23-02	<b>Legal Aspects of European Economic and Monetary Union</b>	<i>Martin Seidel</i>
B22-02	<b>Der Staat als <i>Lender of Last Resort</i> - oder: Die Achillesverse des Eurosystems</b>	<i>Otto Steiger</i>
B21-02	<b>Nominal and Real Stochastic Convergence Within the Transition Economies and to the European Union: Evidence from Panel Data</b>	<i>Ali M. Kutan, Taner M. Yigit</i>
B20-02	<b>The Impact of News, Oil Prices, and International Spillovers on Russian Financial Markets</b>	<i>Bernd Hayo, Ali M. Kutan</i>

B19-02	<b>East Germany: Transition with Unification, Experiments and Experiences</b>	<i>Jürgen von Hagen, Rolf R. Strauch, Guntram B. Wolff</i>
B18-02	<b>Regional Specialization and Employment Dynamics in Transition Countries</b>	<i>Iulia Traistaru, Guntram B. Wolff</i>
B17-02	<b>Specialization and Growth Patterns in Border Regions of Accession Countries</b>	<i>Laura Resmini</i>
B16-02	<b>Regional Specialization and Concentration of Industrial Activity in Accession Countries</b>	<i>Iulia Traistaru, Peter Nijkamp, Simonetta Longhi</i>
B15-02	<b>Does Broad Money Matter for Interest Rate Policy?</b>	<i>Matthias Brückner, Andreas Schaber</i>
B14-02	<b>The Long and Short of It: Global Liberalization, Poverty and Inequality</b>	<i>Christian E. Weller, Adam Hersch</i>
B13-02	<b>De Facto and Official Exchange Rate Regimes in Transition Economies</b>	<i>Jürgen von Hagen, Jizhong Zhou</i>
B12-02	<b>Argentina: The Anatomy of A Crisis</b>	<i>Jiri Jonas</i>
B11-02	<b>The Eurosystem and the Art of Central Banking</b>	<i>Gunnar Heinsohn, Otto Steiger</i>
B10-02	<b>National Origins of European Law: Towards an Autonomous System of European Law?</b>	<i>Martin Seidel</i>
B09-02	<b>Monetary Policy in the Euro Area - Lessons from the First Years</b>	<i>Volker Clausen, Bernd Hayo</i>
B08-02	<b>Has the Link Between the Spot and Forward Exchange Rates Broken Down? Evidence From Rolling Cointegration Tests</b>	<i>Ali M. Kutan, Su Zhou</i>
B07-02	<b>Perspektiven der Erweiterung der Europäischen Union</b>	<i>Martin Seidel</i>
B06-02	<b>Is There Asymmetry in Forward Exchange Rate Bias? Multi-Country Evidence</b>	<i>Su Zhou, Ali M. Kutan</i>
B05-02	<b>Real and Monetary Convergence Within the European Union and Between the European Union and Candidate Countries: A Rolling Cointegration Approach</b>	<i>Josef C. Brada, Ali M. Kutan, Su Zhou</i>
B04-02	<b>Asymmetric Monetary Policy Effects in EMU</b>	<i>Volker Clausen, Bernd Hayo</i>
B03-02	<b>The Choice of Exchange Rate Regimes: An Empirical Analysis for Transition Economies</b>	<i>Jürgen von Hagen, Jizhong Zhou</i>
B02-02	<b>The Euro System and the Federal Reserve System Compared: Facts and Challenges</b>	<i>Karlheinz Ruckriegel, Franz Seitz</i>
B01-02	<b>Does Inflation Targeting Matter?</b>	<i>Manfred J. M. Neumann, Jürgen von Hagen</i>
<b>2001</b>		
B29-01	<b>Is Kazakhstan Vulnerable to the Dutch Disease?</b>	<i>Karlygash Kuralbayeva, Ali M. Kutan, Michael L. Wyzan</i>
B28-01	<b>Political Economy of the Nice Treaty: Rebalancing the EU Council. The Future of European Agricultural Policies</b>	<i>Deutsch-Französisches Wirtschaftspolitisches Forum</i>
B27-01	<b>Investor Panic, IMF Actions, and Emerging Stock Market Returns and Volatility: A Panel Investigation</b>	<i>Bernd Hayo, Ali M. Kutan</i>
B26-01	<b>Regional Effects of Terrorism on Tourism: Evidence from Three Mediterranean Countries</b>	<i>Konstantinos Drakos, Ali M. Kutan</i>
B25-01	<b>Monetary Convergence of the EU Candidates to the Euro: A Theoretical Framework and Policy Implications</b>	<i>Lucjan T. Orlowski</i>
B24-01	<b>Disintegration and Trade</b>	<i>Jarko and Jan Fidrmuc</i>
B23-01	<b>Migration and Adjustment to Shocks in Transition Economies</b>	<i>Jan Fidrmuc</i>
B22-01	<b>Strategic Delegation and International Capital Taxation</b>	<i>Matthias Brückner</i>
B21-01	<b>Balkan and Mediterranean Candidates for European Union Membership: The Convergence of Their Monetary Policy With That of the European Central Bank</b>	<i>Josef C. Brada, Ali M. Kutan</i>
B20-01	<b>An Empirical Inquiry of the Efficiency of Intergovernmental Transfers for Water Projects Based on the WRDA Data</b>	<i>Anna Rubinchik-Pessach</i>
B19-01	<b>Detrending and the Money-Output Link: International Evidence</b>	<i>R.W. Hafer, Ali M. Kutan</i>

B18-01	<b>Monetary Policy in Unknown Territory. The European Central Bank in the Early Years</b>	<i>Jürgen von Hagen, Matthias Brückner</i>
B17-01	<b>Executive Authority, the Personal Vote, and Budget Discipline in Latin American and Caribbean Countries</b>	<i>Mark Hallerberg, Patrick Marier</i>
B16-01	<b>Sources of Inflation and Output Fluctuations in Poland and Hungary: Implications for Full Membership in the European Union</b>	<i>Selahattin Dibooglu, Ali M. Kutan</i>
B15-01	<b>Programs Without Alternative: Public Pensions in the OECD</b>	<i>Christian E. Weller</i>
B14-01	<b>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</b>	<i>Rolf R. Strauch, Jürgen von Hagen</i>
B13-01	<b>German Public Finances: Recent Experiences and Future Challenges</b>	<i>Jürgen von Hagen, Rolf R. Strauch</i>
B12-01	<b>The Impact of Eastern Enlargement On EU-Labour Markets. Pensions Reform Between Economic and Political Problems</b>	<i>Deutsch-Französisches Wirtschaftspolitisches Forum</i>
B11-01	<b>Inflationary Performance in a Monetary Union With Large Wage Setters</b>	<i>Lilia Cavallar</i>
B10-01	<b>Integration of the Baltic States into the EU and Institutions of Fiscal Convergence: A Critical Evaluation of Key Issues and Empirical Evidence</b>	<i>Ali M. Kutan, Niina Pautola-Mol</i>
B09-01	<b>Democracy in Transition Economies: Grease or Sand in the Wheels of Growth?</b>	<i>Jan Fidrmuc</i>
B08-01	<b>The Functioning of Economic Policy Coordination</b>	<i>Jürgen von Hagen, Susanne Mundschenk</i>
B07-01	<b>The Convergence of Monetary Policy Between Candidate Countries and the European Union</b>	<i>Josef C. Brada, Ali M. Kutan</i>
B06-01	<b>Opposites Attract: The Case of Greek and Turkish Financial Markets</b>	<i>Konstantinos Drakos, Ali M. Kutan</i>
B05-01	<b>Trade Rules and Global Governance: A Long Term Agenda. The Future of Banking.</b>	<i>Deutsch-Französisches Wirtschaftspolitisches Forum</i>
B04-01	<b>The Determination of Unemployment Benefits</b>	<i>Rafael di Tella, Robert J. McCulloch</i>
B03-01	<b>Preferences Over Inflation and Unemployment: Evidence from Surveys of Happiness</b>	<i>Rafael di Tella, Robert J. McCulloch, Andrew J. Oswald</i>
B02-01	<b>The Konstanz Seminar on Monetary Theory and Policy at Thirty</b>	<i>Michele Fratianni, Jürgen von Hagen</i>
B01-01	<b>Divided Boards: Partisanship Through Delegated Monetary Policy</b>	<i>Etienne Farvaque, Gael Lagadec</i>
<b>2000</b>		
B20-00	<b>Breakin-up a Nation, From the Inside</b>	<i>Etienne Farvaque</i>
B19-00	<b>Income Dynamics and Stability in the Transition Process, general Reflections applied to the Czech Republic</b>	<i>Jens Hölscher</i>
B18-00	<b>Budget Processes: Theory and Experimental Evidence</b>	<i>Karl-Martin Ehrhart, Roy Gardner, Jürgen von Hagen, Claudia Keser</i>
B17-00	<b>Rückführung der Landwirtschaftspolitik in die Verantwortung der Mitgliedsstaaten? - Rechts- und Verfassungsfragen des Gemeinschaftsrechts</b>	<i>Martin Seidel</i>
B16-00	<b>The European Central Bank: Independence and Accountability</b>	<i>Christa Randzio-Plath, Tomasso Padoa-Schioppa</i>
B15-00	<b>Regional Risk Sharing and Redistribution in the German Federation</b>	<i>Jürgen von Hagen, Ralf Hepp</i>
B14-00	<b>Sources of Real Exchange Rate Fluctuations in Transition Economies: The Case of Poland and Hungary</b>	<i>Selahattin Dibooglu, Ali M. Kutan</i>
B13-00	<b>Back to the Future: The Growth Prospects of Transition Economies Reconsidered</b>	<i>Nauro F. Campos</i>



B12-00	<b>Rechtsetzung und Rechtsangleichung als Folge der Einheitlichen Europäischen Währung</b>	<i>Martin Seidel</i>
B11-00	<b>A Dynamic Approach to Inflation Targeting in Transition Economies</b>	<i>Lucjan T. Orłowski</i>
B10-00	<b>The Importance of Domestic Political Institutions: Why and How Belgium Qualified for EMU</b>	<i>Marc Hallerberg</i>
B09-00	<b>Rational Institutions Yield Hysteresis</b>	<i>Rafael Di Tella, Robert MacCulloch</i>
B08-00	<b>The Effectiveness of Self-Protection Policies for Safeguarding Emerging Market Economies from Crises</b>	<i>Kenneth Kletzer</i>
B07-00	<b>Financial Supervision and Policy Coordination in The EMU</b>	<i>Deutsch-Französisches Wirtschaftspolitisches Forum</i>
B06-00	<b>The Demand for Money in Austria</b>	<i>Bernd Hayo</i>
B05-00	<b>Liberalization, Democracy and Economic Performance during Transition</b>	<i>Jan Fidrmuc</i>
B04-00	<b>A New Political Culture in The EU - Democratic Accountability of the ECB</b>	<i>Christa Randzio-Plath</i>
B03-00	<b>Integration, Disintegration and Trade in Europe: Evolution of Trade Relations during the 1990's</b>	<i>Jarko Fidrmuc, Jan Fidrmuc</i>
B02-00	<b>Inflation Bias and Productivity Shocks in Transition Economies: The Case of the Czech Republic</b>	<i>Josef C. Brada, Arthur E. King, Ali M. Kutan</i>
B01-00	<b>Monetary Union and Fiscal Federalism</b>	<i>Kenneth Kletzer, Jürgen von Hagen</i>
<b>1999</b>		
B26-99	<b>Skills, Labour Costs, and Vertically Differentiated Industries: A General Equilibrium Analysis</b>	<i>Stefan Lutz, Alessandro Turrini</i>
B25-99	<b>Micro and Macro Determinants of Public Support for Market Reforms in Eastern Europe</b>	<i>Bernd Hayo</i>
B24-99	<b>What Makes a Revolution?</b>	<i>Robert MacCulloch</i>
B23-99	<b>Informal Family Insurance and the Design of the Welfare State</b>	<i>Rafael Di Tella, Robert MacCulloch</i>
B22-99	<b>Partisan Social Happiness</b>	<i>Rafael Di Tella, Robert MacCulloch</i>
B21-99	<b>The End of Moderate Inflation in Three Transition Economies?</b>	<i>Josef C. Brada, Ali M. Kutan</i>
B20-99	<b>Subnational Government Bailouts in Germany</b>	<i>Helmut Seitz</i>
B19-99	<b>The Evolution of Monetary Policy in Transition Economies</b>	<i>Ali M. Kutan, Josef C. Brada</i>
B18-99	<b>Why are Eastern Europe's Banks not failing when everybody else's are?</b>	<i>Christian E. Weller, Bernard Morzuch</i>
B17-99	<b>Stability of Monetary Unions: Lessons from the Break-Up of Czechoslovakia</b>	<i>Jan Fidrmuc, Julius Horvath and Jarko Fidrmuc</i>
B16-99	<b>Multinational Banks and Development Finance</b>	<i>Christian E. Weller and Mark J. Scher</i>
B15-99	<b>Financial Crises after Financial Liberalization: Exceptional Circumstances or Structural Weakness?</b>	<i>Christian E. Weller</i>
B14-99	<b>Industry Effects of Monetary Policy in Germany</b>	<i>Bernd Hayo and Birgit Uhlenbrock</i>
B13-99	<b>Financial Fragility or What Went Right and What Could Go Wrong in Central European Banking?</b>	<i>Christian E. Weller and Jürgen von Hagen</i>
B12-99	<b>Size Distortions of Tests of the Null Hypothesis of Stationarity: Evidence and Implications for Applied Work</b>	<i>Mehmet Caner and Lutz Kilian</i>
B11-99	<b>Financial Supervision and Policy Coordination in the EMU</b>	<i>Deutsch-Französisches Wirtschaftspolitisches Forum</i>
B10-99	<b>Financial Liberalization, Multinational Banks and Credit Supply: The Case of Poland</b>	<i>Christian Weller</i>
B09-99	<b>Monetary Policy, Parameter Uncertainty and Optimal Learning</b>	<i>Volker Wieland</i>
B08-99	<b>The Connection between more Multinational Banks and less Real Credit in Transition Economies</b>	<i>Christian Weller</i>

B07-99	<b>Comovement and Catch-up in Productivity across Sectors: Evidence from the OECD</b>	<i>Christopher M. Cornwell and Jens-Uwe Wächter</i>
B06-99	<b>Productivity Convergence and Economic Growth: A Frontier Production Function Approach</b>	<i>Christopher M. Cornwell and Jens-Uwe Wächter</i>
B05-99	<b>Tumbling Giant: Germany's Experience with the Maastricht Fiscal Criteria</b>	<i>Jürgen von Hagen and Rolf Strauch</i>
B04-99	<b>The Finance-Investment Link in a Transition Economy: Evidence for Poland from Panel Data</b>	<i>Christian Weller</i>
B03-99	<b>The Macroeconomics of Happiness</b>	<i>Rafael Di Tella, Robert McCulloch and Andrew J. Oswald</i>
B02-99	<b>The Consequences of Labour Market Flexibility: Panel Evidence Based on Survey Data</b>	<i>Rafael Di Tella and Robert McCulloch</i>
B01-99	<b>The Excess Volatility of Foreign Exchange Rates: Statistical Puzzle or Theoretical Artifact?</b>	<i>Robert B.H. Hauswald</i>
<b>1998</b>		
B16-98	<b>Labour Market + Tax Policy in the EMU</b>	<i>Deutsch-Französisches Wirtschaftspolitisches Forum</i>
B15-98	<b>Can Taxing Foreign Competition Harm the Domestic Industry?</b>	<i>Stefan Lutz</i>
B14-98	<b>Free Trade and Arms Races: Some Thoughts Regarding EU-Russian Trade</b>	<i>Rafael Reuveny and John Maxwell</i>
B13-98	<b>Fiscal Policy and Intranational Risk-Sharing</b>	<i>Jürgen von Hagen</i>
B12-98	<b>Price Stability and Monetary Policy Effectiveness when Nominal Interest Rates are Bounded at Zero</b>	<i>Athanasios Orphanides and Volker Wieland</i>
B11A-98	<b>Die Bewertung der "dauerhaft tragbaren öffentlichen Finanzlage" der EU Mitgliedstaaten beim Übergang zur dritten Stufe der EWWU</b>	<i>Rolf Strauch</i>
B11-98	<b>Exchange Rate Regimes in the Transition Economies: Case Study of the Czech Republic: 1990-1997</b>	<i>Julius Horvath and Jiri Jonas</i>
B10-98	<b>Der Wettbewerb der Rechts- und politischen Systeme in der Europäischen Union</b>	<i>Martin Seidel</i>
B09-98	<b>U.S. Monetary Policy and Monetary Policy and the ESCB</b>	<i>Robert L. Hetzel</i>
B08-98	<b>Money-Output Granger Causality Revisited: An Empirical Analysis of EU Countries (überarbeitete Version zum Herunterladen)</b>	<i>Bernd Hayo</i>
B07-98	<b>Designing Voluntary Environmental Agreements in Europe: Some Lessons from the U.S. EPA's 33/50 Program</b>	<i>John W. Maxwell</i>
B06-98	<b>Monetary Union, Asymmetric Productivity Shocks and Fiscal Insurance: an Analytical Discussion of Welfare Issues</b>	<i>Kenneth Kletzer</i>
B05-98	<b>Estimating a European Demand for Money (überarbeitete Version zum Herunterladen)</b>	<i>Bernd Hayo</i>
B04-98	<b>The EMU's Exchange Rate Policy</b>	<i>Deutsch-Französisches Wirtschaftspolitisches Forum</i>
B03-98	<b>Central Bank Policy in a More Perfect Financial System</b>	<i>Jürgen von Hagen / Ingo Fender</i>
B02-98	<b>Trade with Low-Wage Countries and Wage Inequality</b>	<i>Jaleel Ahmad</i>
B01-98	<b>Budgeting Institutions for Aggregate Fiscal Discipline</b>	<i>Jürgen von Hagen</i>
<b>1997</b>		
B04-97	<b>Macroeconomic Stabilization with a Common Currency: Does European Monetary Unification Create a Need for Fiscal Insurance or Federalism?</b>	<i>Kenneth Kletzer</i>
B-03-97	<b>Liberalising European Markets for Energy and Telecommunications: Some Lessons from the US Electric Utility Industry</b>	<i>Tom Lyon / John Mayo</i>
B02-97	<b>Employment and EMU</b>	<i>Deutsch-Französisches Wirtschaftspolitisches Forum</i>
B01-97	<b>A Stability Pact for Europe</b>	<i>(a Forum organized by ZEI)</i>

---

ISSN 1436 - 6053

---

Zentrum für Europäische Integrationsforschung  
Center for European Integration Studies  
Rheinische Friedrich-Wilhelms-Universität Bonn

Walter-Flex-Strasse 3  
D-53113 Bonn  
Germany

Tel.: +49-228-73-1732  
Fax: +49-228-73-1809  
[www.zei.de](http://www.zei.de)