

Caporale, Guglielmo Maria; Girardi, Alessandro

Working Paper

Price formation on the EuroMTS platform

CESifo Working Paper, No. 2938

Provided in Cooperation with:

Ifo Institute – Leibniz Institute for Economic Research at the University of Munich

Suggested Citation: Caporale, Guglielmo Maria; Girardi, Alessandro (2010) : Price formation on the EuroMTS platform, CESifo Working Paper, No. 2938, Center for Economic Studies and ifo Institute (CESifo), Munich

This Version is available at:

<https://hdl.handle.net/10419/30757>

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.

Price Formation on the EuroMTS Platform

Guglielmo Maria Caporale
Alessandro Girardi

CESIFO WORKING PAPER NO. 2938
CATEGORY 7: MONETARY POLICY AND INTERNATIONAL FINANCE
FEBRUARY 2010

An electronic version of the paper may be downloaded

- *from the SSRN website:* www.SSRN.com
- *from the RePEc website:* www.RePEc.org
- *from the CESifo website:* www.CESifo-group.org/wp

Price Formation on the EuroMTS Platform

Abstract

This paper examines the process of price discovery in the MTS system, which builds on the parallel quoting of euro-denominated government securities on a number of (relatively large) domestic markets and on a (relatively small) European marketplace (EuroMTS). Using twenty-seven months of daily data for 107 pairs of bonds, we present unambiguous evidence that trades on EuroMTS have a sizeable informational content.

JEL-Code: C32, G10.

Keywords: MTS system, price discovery.

Guglielmo Maria Caporale
Centre for Empirical Finance
Brunel University
UK - West London, UB8 3PH
United Kingdom
Guglielmo-Maria.Caporale@brunel.ac.uk

Alessandro Girardi
Institute for Economic Studies and Analyses
Piazza dell'Indipendenza, 4
I - 00185 - Rome
Italy
a.girardi@isae.it

December 2009

1 Introduction

The recent availability of high-quality transaction data has led to a number of empirical studies aimed at shedding light on how European government bond markets work (see Menkveld et al., 2004; Cheung et al., 2005; Dunne et al., 2007; Beber et al., 2008, among others).

The present paper contributes to this growing body of research by investigating the process of price discovery (i.e. the timely incorporation of information arrivals into market prices through trading), in the most relevant electronic platform for euro-denominated government bonds, i.e. the duplicated market setting of the MTS (Mercato Telematico dei Titoli di Stato) system, which builds on a number of domestic markets and a centralized European marketplace (EuroMTS).

The extent to which the institutional architecture of the MTS system can create an efficient environment to trade Treasury securities is being debated in academic and policy circles. A number of observers subscribe to “the redundancy hypothesis” of Cheung et al. (2005) for a centralized European marketplace as bonds being traded on EuroMTS are a fraction of the portfolio of securities traded on the domestic MTS platforms. Given this criticism, this paper aims at quantifying the degree of price discovery on the EuroMTS market by using an original and extensive dataset of daily transaction prices for 107 euro-denominated government bonds over a 27-month horizon.

2 A duplicated market setting: *E pluribus unum?*

The main electronic dealer-to-dealer platforms to trade euro-denominated Treasury securities are MTS, Icap/BrokerTec Eurex Bonds and eSpeed, with the MTS system accounting for 40% of government bond transactions (Galati and Tsatsaronis, 2003) and 72% volume of electronic trading (Persaud, 2006).

All government marketable bonds issued by euro area Member States are listed on their respective domestic MTS platforms. Only benchmark securities, or on-the-run bonds with an outstanding value of at least 5 billion euro and satisfying a number of listing requirements are admitted, instead, to trading on EuroMTS. For benchmark securities, thus, dealers are allowed to post their quotes on both market simultaneously (parallel quoting).

As a background to the discussion, Figure 1 shows (the logarithm of) daily transaction prices of a benchmark bond, over the period January 2004 - March 2006.

[Figure 1]

As can be seen, the series overlap very closely. This is not surprising since the prices of the same bond recorded in multiple markets are not independent of one another. The process of price formation, however, may occur entirely in one market or, more typically, may be split among marketplaces.

As benchmark bond trading takes place for the most part in the domestic MTS markets (Cheung et al., 2005), the informational content of prices recorded on the EuroMTS is doubtful. In the MTS system, indeed, EuroMTS seems to be a prototype of a "satellite market" (in the sense of Hasbrouck, 1995), competing with a number of large domestic markets.

3 Econometric framework

Consider a bond traded on EuroMTS (E) and on its domestic MTS market (D). Its (log-) price in market $j = E, D$ at time t , p_t^j , can be represented as the sum of a common permanent component (capturing information arrivals cumulating over time), ϕ_t , and an idiosyncratic transitory part (capturing market-specific characteristics), v_t^j :

$$p_t^j = \phi_t + v_t^j \quad (1)$$

The law of motion of the permanent part is $\phi_t = \phi_{t-1} + \mu_t^\phi = \phi_0 + \sum_{i=1}^t \mu_i^\phi$, with initial conditions ϕ_0 and μ_t^ϕ such that $E(\mu_t^\phi) = 0$, $E(\mu_t^\phi)^2 = \sigma_\phi^2$, $E(\mu_t^\phi \mu_s^\phi) = 0$ for $s \neq t$. The v_t^j term is a covariance stationary process

$v_t^j = \sum_{i=1}^{\infty} \delta_i^j \xi_{t-i}^j = \delta^j(L)\xi_t^j$, where ξ_t^j 's are independently distributed with mean zero and constant variance.

Under these assumptions, the two log-price series, albeit individually non-stationary, are linked to one another by a stationary equilibrium condition:

$$p_t^E - p_t^D = \delta^E(L)\xi_t^E - \delta^D(L)\xi_t^D = \varepsilon_t \quad (2)$$

The empirical implications of equation (2) can be suitably captured by specifying, for each pair (p_t^E, p_t^D) , a Vector Error Correction model (Johansen, 1995), which constitutes the basis to construct price discovery statistics as suggested by Harris et al. (1995) and Hasbrouck (1995):

$$\begin{bmatrix} \Delta p_t^E \\ \Delta p_t^D \end{bmatrix} = \Pi \cdot \begin{bmatrix} p_{t-1}^E \\ p_{t-1}^D \end{bmatrix} + \sum_{j=1}^{k-1} A_j \cdot \begin{bmatrix} \Delta p_{t-j}^E \\ \Delta p_{t-j}^D \end{bmatrix} + \begin{bmatrix} u_t^E \\ u_t^D \end{bmatrix}, \quad E(u_t \cdot u_t') = \Sigma = \begin{bmatrix} \sigma_E^2 & \rho\sigma_E\sigma_D \\ \rho\sigma_E\sigma_D & \sigma_D^2 \end{bmatrix} \quad (3)$$

where Δ is the first difference operator, A 's are matrices of autoregressive coefficients, u 's are residuals, ρ is the correlation coefficient and σ 's are standard deviations. If condition (2) holds, the long-run matrix Π can be factored as:

$$\Pi = \begin{bmatrix} \alpha^E \\ \alpha^D \end{bmatrix} \cdot [1 \quad -1] \quad (4)$$

with feedback parameters such that $\alpha^E < 0$ and $\alpha^D > 0$.

Harris et al. (1995) attribute superior price discovery to the market that adjusts the least to price movements in the other market:

$$\gamma_E = \frac{\alpha^D}{\alpha^D - \alpha^E}, \quad \gamma_D = \frac{\alpha^E}{\alpha^E - \alpha^D} \quad (5)$$

so that EuroMTS (domestic MTS) market's contribution to price discovery, γ_E (γ_D), depends on both α 's. Hasbrouck's model defines markets' contribution to price discovery as their contribution in explaining the variance of the innovations to the common factor. With price innovations correlated across markets, Hasbrouck's approach can only provide upper and lower bounds. Using condition (5), they can be written for the EuroMTS market as:

$$S_E^{ub} = \frac{(\gamma_E\sigma_E + \rho\gamma_D\sigma_D)^2}{(\gamma_E\sigma_E + \rho\gamma_D\sigma_D)^2 + \gamma_D^2\sigma_D^2(1-\rho^2)}, \quad S_E^{lb} = \frac{\gamma_E^2\sigma_E^2(1-\rho^2)}{\gamma_E^2\sigma_E^2(1-\rho^2) + (\rho\gamma_E\sigma_E + \gamma_D\sigma_D)^2}$$

respectively. However, Baillie et al. (2002) argue that the average of the bounds:

$$\zeta_E = \frac{1}{2}(S_E^{ub} + S_E^{lb}) \quad (6)$$

provides a sensible estimate of markets' contribution in determining the efficient price. Both γ_E and ζ_E can range in the $[0,1]$ interval, with $\gamma_E + \gamma_D = \zeta_E + \zeta_D = 1$. High (low) values of the statistics indicate sizeable EuroMTS (domestic MTS) market's contribution to price discovery.¹

4 Empirical results

4.1 Data and preliminary analyses

Daily data over the period 02/01/2004 to 31/03/2006 for the last transaction prices (reference prices) recorded before market close are extracted from the MTS Time series database. All euro-denominated government securities traded in January 2004 maturing after the end of our estimation horizon are included: a total of 107 bonds, whose codes are listed below.

[Table 1]

The estimation horizon ranges from 557 to 585 observations, with an average of 580 datapoints.² Standard ADF test results for each of 214 individual log-price series lead to reject the null hypothesis of a unit root at conventional levels of significance. On the other hand, differencing the series appears to induce stationarity.³

The trace test suggests choosing rank 1 for Π in 104 models.⁴ The symmetry and proportionality assumption

¹ See Baillie et al. (2002) for a detailed discussion of the two price discovery measures.

² Following Upper and Werner (2002), in the case of missing observations (owing to lack of transactions) we use the last available transaction price ("fill-in" method).

³ Complete results of this Section are available upon request.

⁴ In three models, the rank of Π turns out to be two, which is not consistent with the conclusions from the unit root tests but confirms that condition (2) holds in these cases too.

implied by condition (2) is tested through a standard χ^2 -distributed LR test. In 94 models, the over-identifying restriction is not rejected by the data at (least at) the 5% level of significance. For the remaining 10 cases, the evidence is less conclusive, even though the existence of a $[1 \ -1]'$ cointegration vector is strongly supported by the Horvath and Watson (1995) test. As for the feedback parameters, both α 's are correctly signed, implying direct convergence towards the long-run relationship in all but six models.

4.2 *The EuroMTS market's contribution to price discovery*

Discarding the cases with wrongly signed α 's, Figure 2 presents the scatter plot (γ_E versus ζ_E) of price discovery measures for the (107-3-6=98) remaining models.

[Figure 2]

Even though estimated values for γ_E and ζ_E reveal that the process of price discovery takes place mainly in the domestic markets for all but two models (those in quadrant I), their averages values (roughly 0.2) are significantly different from zero, according to asymptotic and a number of bootstrap (with 1000 replicates) 95% confidence intervals (Table 2, Panel A).⁵ Moreover, when testing for the equivalence of the mean (γ_E minus ζ_E) the null cannot be rejected, suggesting that considering γ_E or ζ_E leads to the same conclusions, as also confirmed by their strong correlation (0.81).⁶ Finally, with wrongly signed α^D 's replaced by zero (as in Blanco et al., 2005), the two price discovery measures in the larger sample of 107-3=104 models (Table 2, Panel B) are highly correlated, with their average values not statistically different and quite close in magnitude to their counterparts in Panel A.⁷

⁵ Although asymptotic intervals are not very sensitive to the assumption of normality, QQ-plots and normality tests indicate clear departures from this assumption for γ_E and ζ_E in the two samples.

⁶ The "fill-in" method may influence the short-term information flow for the less frequent trading marketplace (EuroMTS, in the present case) even if the trades taking place on that market do contain information (Lehmann, 2002). Accordingly, our estimated values for γ_E and ζ_E can be considered as *lower* bounds.

⁷ By comparing the mean value of γ_E (ζ_E) in Panel A to its counterpart in Panel B, the null of equivalence is not rejected according to asymptotic and bootstrap-based tests. Furthermore, replicating these computations for weighted quantities by traded volumes or by

5 Conclusions

This paper documents that the duplicated market setting of the MTS system is able to eliminate persistent price discrepancies for the same bond traded on the domestic MTS and the EuroMTS platforms, with about 20% of price discovery occurring in the European marketplace. Our results clearly suggest that trades on EuroMTS have a sizeable informational content, in contrast to the “redundancy hypothesis”.

It is widely recognized that markets’ contribution to price discovery may be influenced by market-specific characteristics as well as by institutional arrangements. Addressing this issue is of relevance for policy makers, as the degree of price discovery might be entirely due to liquidity conditions, institutional features or possibly both, with different implications for developing a more efficient regulatory framework. This topic is left for future research.

References

- Baillie R.T., G.G. Booth, Y. Tse, T. Zobotina (2002), Price Discovery and Common Factor Models, *Journal of Financial Markets*, 5, 309-321.
- Beber A., M.W. Brandt, K.A. Kavajecz (2008), Flight-to-Quality or Flight-to-Liquidity? Evidence from the Euro-Area Bond Market, *Review of Financial Studies*, forthcoming.
- Blanco R., S. Brennan, I. Marsh (2005), An Empirical Analysis of the Dynamic Relation between Investment-Grade Bonds and Credit Default Swaps, *Journal of Finance*, 60, 2255-2281.
- Chakravarty S., H. Gulen, S. Mayhew (2004), Informed Trading in Stock and Option Markets, *Journal of Finance*, 59, 1235-1258.
- Cheung C., F. de Jong, B. Rindi (2005), Trading European Sovereign Bonds: The Microstructure of the MTS Trading Platforms, ECB Working Paper, 432.
- Dunne P.G., M.J. Moore, R. Portes (2007), Benchmark Status in Fixed-Income Asset Markets, *Journal of Business Finance and Accounting*, 34, 1615-1634.
- Galati G., K. Tsatsaronis (2003), The Impact of the Euro on Europe’s Financial Markets, *Financial Markets, Institutions and*

average number of trades over the 27-month horizon considered gives quantitatively similar results (not reported) to those in Table 2.

Instruments, 12, 165-221.

Harris F., T. McNish, G. Shoemith, R. Wood (1995), Cointegration, Error Correction, and Price Discovery on Informationally Linked Security Markets, *Journal of Financial and Quantitative Analysis*, 30, 563-579.

Hasbrouck J. (1995), One Security, Many Markets: Determining the Contributions to Price Discovery, *Journal of Finance*, 50, 1175-1199.

Horvath M.T.K., M.W. Watson (1995), Testing for Cointegration when Some of the Cointegrating Vectors Are Prespecified, *Econometric Theory*, 11, 984-1014.

Johansen S. (1995), *Likelihood-Based Inference in Cointegrated Vector Autoregressive Models*, Oxford University Press.

Lehmann B.N. (2002), Some Desiderata for the Measurement of Price Discovery across Markets, *Journal of Financial Markets*, 5, 259-276.

Menkveld A.J., Y.C. Cheung, F. de Jong (2004), Euro Area Sovereign Yield Dynamics: The Role of Order Imbalance, ECB Working Paper, 385.

Persaud A.D. (2006), Improving Efficiency in the European Government Bond Market, Discussion Paper ICAP plc.

Upper C., T. Werner (2002), How Resilient Are Financial Markets to Stress? Bund Futures and Bonds during the 1998 Turbulence, *BIS Papers*, 12, 110-123.

Table I. Bond codes

Austria	Belgium	Finland	France	Germany	Greece	Ireland	Italy	Netherlands	Portugal	Spain
AT0000383518	BE0000286923	FD0001004822	FR00000187361	DE0001135176	GR0110014165	IE0006857530	IT0001448619	NL0000102101	PTOTECE0E0011	ES00000012239
AT0000383864	BE0000291972	FD0001005167	FR00000187655	DE0001135192	GR0114012371	IE0031256211	IT0003080402	NL0000102317	PTOTECE0E0009	ES00000012387
AT0000384227	BE0000296054	FD0001005332	FR00000187874	DE0001135200	GR0114015408	IE0031256328	IT00003171946	NL0000102606	PTOTECE0E0006	ES00000012411
AT0000384821	BE0000297060	FD0001005407	FR00000188328	DE0001135218	GR0124006405	IE0032384868	IT00003190912	NL0000102671	PTOTECE0E0003	ES00000012445
AT0000384938	BE0000298076	FD0001005514	FR00000188690	DE0001135226	GR0124011454	.	IT00003242747	NL0000102689	PTOTECE0E0009	ES00000012452
AT0000384953	BE0000300096	FD0001005522	FR00000188989	DE0001135234	GR0124015497	.	IT00003256820	NL0000102697	PTOTECE0E0016	ES00000012783
AT0000385067	BE0000301102	.	FR00000189151	DE0001135242	GR0124018525	.	IT00003271019	.	.	ES00000012791
AT0000385356	BE0000302118	.	FR00100111130	DE0001141380	GR0124021552	.	IT00003357982	.	.	ES00000012825
AT0000385745	BE0000303124	.	FR0103230423	DE0001141398	GR0124024580	.	IT00003413892	.	.	ES00000012866
AT0000385992	.	.	FR0103840098	DE0001141406	GR0128002590	.	IT00003472336	.	.	ES00000012882
.	.	.	FR0104446556	DE0001141414	GR0133001140	.	IT00003477111	.	.	.
.	.	.	FR0105427795	DE0001141422	GR0133002155	.	IT00003492258	.	.	.
.	.	.	FR0105760112	DE0001141430	.	.	IT00003522254	.	.	.
.	.	.	FR0106589437	.	.	.	IT00003532097	.	.	.
.	.	.	.	.	.	.	IT00003535157	.	.	.
.	.	.	.	.	.	.	IT00003611156	.	.	.
.	.	.	.	.	.	.	IT00003618383	.	.	.

Table 2. Tests for the mean values of γ_E and ζ_E

	Panel A: 98 bonds		Panel B: 104 bonds	
	γ_E	ζ_E	γ_E	ζ_E
Mean	0.1966	0.2064	0.1853	0.2031
Correlation (95% confidence interval)	0.8116 (0.7309 , 0.8699)		0.7820 (0.6940 , 0.8471)	
<i>Test for the significance of the means (95% confidence intervals)</i>				
Asymptotic interval	(0.1704 , 0.2228)	(0.1832 , 0.2296)	(0.1590 , 0.2115)	(0.1807 , 0.2256)
Bootstrap: normal approximation interval	(0.1665 , 0.2152)	(0.1870 , 0.2353)	(0.1525 , 0.1993)	(0.1882 , 0.2359)
Bootstrap: percentile interval	(0.1804 , 0.2253)	(0.1782 , 0.2252)	(0.1717 , 0.2182)	(0.1714 , 0.2178)
Bootstrap: adjusted percentile interval	(0.1706 , 0.2170)	(0.1875 , 0.2388)	(0.1610 , 0.1994)	(0.1883 , 0.2295)
Bootstrap: studentized interval	(0.1736 , 0.2252)	(0.1835 , 0.2316)	(0.1603 , 0.2131)	(0.1801 , 0.2271)
<i>Test for the equivalence of the means (95% confidence intervals)</i>				
Asymptotic interval	(-0.0446 , 0.0250)		(-0.0522 , 0.0165)	
Bootstrap: normal approximation interval	(-0.0443 , 0.0266)		(-0.0522 , 0.0167)	
Bootstrap: percentile interval	(-0.0470 , 0.0241)		(-0.0537 , 0.0156)	
Bootstrap: adjusted percentile interval	(-0.0449 , 0.0259)		(-0.0547 , 0.0148)	
Bootstrap: studentized interval	(-0.0452 , 0.0275)		(-0.0526 , 0.0170)	

Figure 1. Daily transaction prices (in logs) on the MTS system (bond code: IT0003242747)

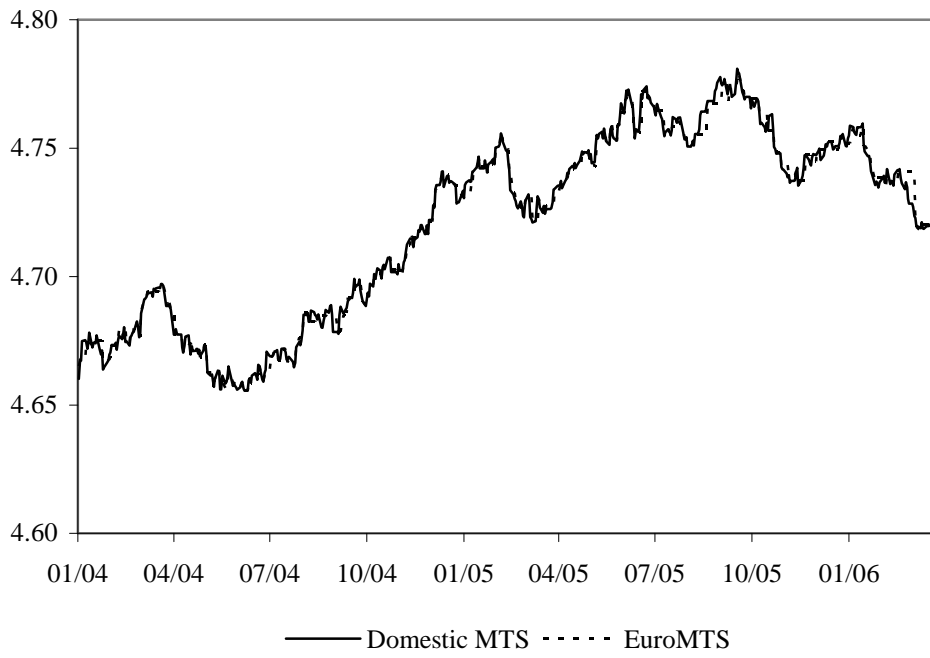
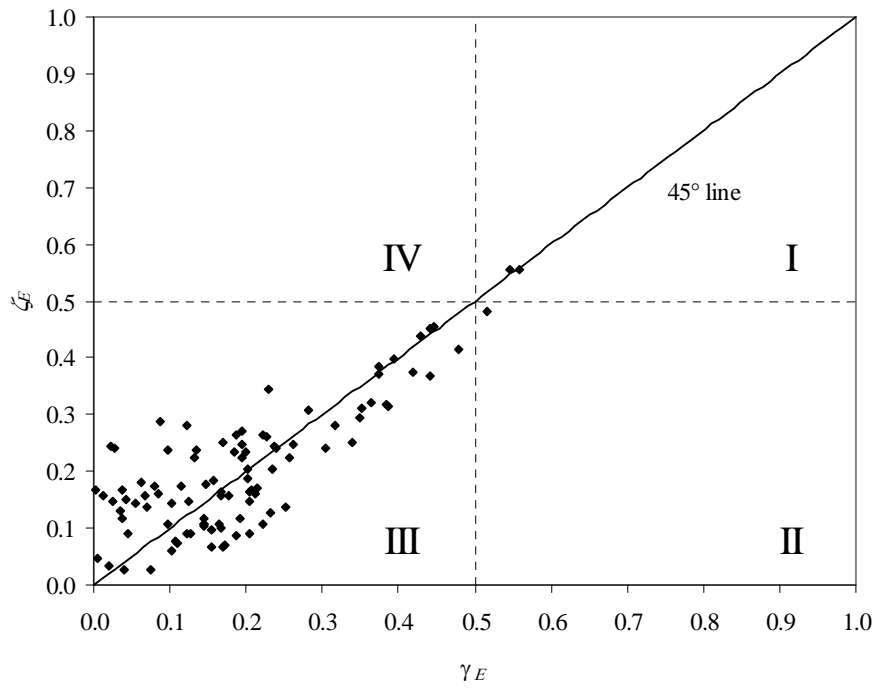


Figure 2. Scatter plot: γ_E versus ζ_E



CESifo Working Paper Series

for full list see www.cesifo-group.org/wp

(address: Poschingerstr. 5, 81679 Munich, Germany, office@cesifo.de)

- 2877 Martin Schlotter, Guido Schwerdt and Ludger Woessmann, *Econometric Methods for Causal Evaluation of Education Policies and Practices: A Non-Technical Guide*, December 2009
- 2878 Mathias Dolls, Clemens Fuest and Andreas Peichl, *Automatic Stabilizers and Economic Crisis: US vs. Europe*, December 2009
- 2879 Tom Karkinsky and Nadine Riedel, *Corporate Taxation and the Choice of Patent Location within Multinational Firms*, December 2009
- 2880 Kai A. Konrad, Florian Morath and Wieland Müller, *Taxation and Market Power*, December 2009
- 2881 Marko Koethenbueger and Michael Stimmelmayer, *Corporate Taxation and Corporate Governance*, December 2009
- 2882 Gebhard Kirchgässner, *The Lost Popularity Function: Are Unemployment and Inflation no longer Relevant for the Behaviour of Germany Voters?*, December 2009
- 2883 Marianna Belloc and Ugo Pagano, *Politics-Business Interaction Paths*, December 2009
- 2884 Wolfgang Buchholz, Richard Cornes and Dirk Rübhelke, *Existence and Warr Neutrality for Matching Equilibria in a Public Good Economy: An Aggregative Game Approach*, December 2009
- 2885 Charles A.E. Goodhart, Carolina Osorio and Dimitrios P. Tsomocos, *Analysis of Monetary Policy and Financial Stability: A New Paradigm*, December 2009
- 2886 Thomas Aronsson and Erkki Koskela, *Outsourcing, Public Input Provision and Policy Cooperation*, December 2009
- 2887 Andreas Ortmann, "The Way in which an Experiment is Conducted is Unbelievably Important": *On the Experimentation Practices of Economists and Psychologists*, December 2009
- 2888 Andreas Irmen, *Population Aging and the Direction of Technical Change*, December 2009
- 2889 Wolf-Heimo Grieben and Fuat Şener, *Labor Unions, Globalization, and Mercantilism*, December 2009
- 2890 Conny Wunsch, *Optimal Use of Labor Market Policies: The Role of Job Search Assistance*, December 2009

- 2891 Claudia Buch, Cathérine Tahmee Koch and Michael Kötter, Margins of International Banking: Is there a Productivity Pecking Order in Banking, too?, December 2009
- 2892 Shafik Hebous and Alfons J. Weichenrieder, Debt Financing and Sharp Currency Depreciations: Wholly vs. Partially Owned Multinational Affiliates, December 2009
- 2893 Johannes Binswanger and Daniel Schunk, What is an Adequate Standard of Living during Retirement?, December 2009
- 2894 Armin Falk and James J. Heckman, Lab Experiments are a Major Source of Knowledge in the Social Sciences, December 2009
- 2895 Hartmut Egger and Daniel Etzel, The Impact of Trade on Employment, Welfare, and Income Distribution in Unionized General Oligopolistic Equilibrium, December 2009
- 2896 Julian Rauchdobler, Rupert Sausgruber and Jean-Robert Tyran, Voting on Thresholds for Public Goods: Experimental Evidence, December 2009
- 2897 Michael McBride and Stergios Skaperdas, Conflict, Settlement, and the Shadow of the Future, December 2009
- 2898 Ben J. Heijdra and Laurie S. M. Reijnders, Economic Growth and Longevity Risk with Adverse Selection, December 2009
- 2899 Johannes Becker, Taxation of Foreign Profits with Heterogeneous Multinational Firms, December 2009
- 2900 Douglas Gale and Piero Gottardi, Illiquidity and Under-Valuation of Firms, December 2009
- 2901 Donatella Gatti, Christophe Rault and Anne-Gaël Vaubourg, Unemployment and Finance: How do Financial and Labour Market Factors Interact?, December 2009
- 2902 Arno Riedl, Behavioral and Experimental Economics Can Inform Public Policy: Some Thoughts, December 2009
- 2903 Wilhelm K. Kohler and Marcel Smolka, Global Sourcing Decisions and Firm Productivity: Evidence from Spain, December 2009
- 2904 Marcel Gérard and Fernando M. M. Ruiz, Corporate Taxation and the Impact of Governance, Political and Economic Factors, December 2009
- 2905 Mikael Priks, The Effect of Surveillance Cameras on Crime: Evidence from the Stockholm Subway, December 2009
- 2906 Xavier Vives, Asset Auctions, Information, and Liquidity, January 2010
- 2907 Edwin van der Werf, Unilateral Climate Policy, Asymmetric Backstop Adoption, and Carbon Leakage in a Two-Region Hotelling Model, January 2010

- 2908 Margarita Katsimi and Vassilis Sarantides, Do Elections Affect the Composition of Fiscal Policy?, January 2010
- 2909 Rolf Golombek, Mads Greaker and Michael Hoel, Climate Policy without Commitment, January 2010
- 2910 Sascha O. Becker and Ludger Woessmann, The Effect of Protestantism on Education before the Industrialization: Evidence from 1816 Prussia, January 2010
- 2911 Michael Berlemann, Marco Oestmann and Marcel Thum, Demographic Change and Bank Profitability. Empirical Evidence from German Savings Banks, January 2010
- 2912 Øystein Foros, Hans Jarle Kind and Greg Shaffer, Mergers and Partial Ownership, January 2010
- 2913 Sean Holly, M. Hashem Pesaran and Takashi Yamagata, Spatial and Temporal Diffusion of House Prices in the UK, January 2010
- 2914 Christian Keuschnigg and Evelyn Ribi, Profit Taxation and Finance Constraints, January 2010
- 2915 Hendrik Vrijburg and Ruud A. de Mooij, Enhanced Cooperation in an Asymmetric Model of Tax Competition, January 2010
- 2916 Volker Meier and Martin Werding, Ageing and the Welfare State: Securing Sustainability, January 2010
- 2917 Thushyanthan Baskaran and Zohal Hessami, Globalization, Redistribution, and the Composition of Public Education Expenditures, January 2010
- 2918 Angel de la Fuente, Testing, not Modelling, the Impact of Cohesion Support: A Theoretical Framework and some Preliminary Results for the Spanish Regions, January 2010
- 2919 Bruno S. Frey and Paolo Pamini, World Heritage: Where Are We? An Empirical Analysis, January 2010
- 2920 Susanne Ek and Bertil Holmlund, Family Job Search, Wage Bargaining, and Optimal Unemployment Insurance, January 2010
- 2921 Mariagiovanna Baccara, Allan Collard-Wexler, Leonardo Felli and Leeat Yariv, Gender and Racial Biases: Evidence from Child Adoption, January 2010
- 2922 Kurt R. Brekke, Roberto Cellini, Luigi Siciliani and Odd Rune Straume, Competition and Quality in Regulated Markets with Sluggish Demand, January 2010
- 2923 Stefan Bauernschuster, Oliver Falck and Niels Große, Can Competition Spoil Reciprocity? – A Laboratory Experiment, January 2010

- 2924 Jerome L. Stein, A Critique of the Literature on the US Financial Debt Crisis, January 2010
- 2925 Erkki Koskela and Jan König, Profit Sharing, Wage Formation and Flexible Outsourcing under Labor Market Imperfection, January 2010
- 2926 Gabriella Legrenzi and Costas Milas, Spend-and-Tax Adjustments and the Sustainability of the Government's Intertemporal Budget Constraint, January 2010
- 2927 Piero Gottardi, Jean Marc Tallon and Paolo Ghirardato, Flexible Contracts, January 2010
- 2928 Gebhard Kirchgässner and Jürgen Wolters, The Role of Monetary Aggregates in the Policy Analysis of the Swiss National Bank, January 2010
- 2929 J. Trent Alexander, Michael Davern and Betsey Stevenson, Inaccurate Age and Sex Data in the Census PUMS Files: Evidence and Implications, January 2010
- 2930 Stefan Krasa and Mattias K. Polborn, Competition between Specialized Candidates, January 2010
- 2931 Yin-Wong Cheung and Xingwang Qian, Capital Flight: China's Experience, January 2010
- 2932 Thomas Hemmelgarn and Gaetan Nicodeme, The 2008 Financial Crisis and Taxation Policy, January 2010
- 2933 Marco Faravelli, Oliver Kirchkamp and Helmut Rainer, Social Welfare versus Inequality Concerns in an Incomplete Contract Experiment, January 2010
- 2934 Mohamed El Hedi Arouri and Christophe Rault, Oil Prices and Stock Markets: What Drives what in the Gulf Corporation Council Countries?, January 2010
- 2935 Wolfgang Lechthaler, Christian Merkl and Dennis J. Snower, Monetary Persistence and the Labor Market: A New Perspective, January 2010
- 2936 Klaus Abberger and Wolfgang Nierhaus, Markov-Switching and the Ifo Business Climate: The Ifo Business Cycle Traffic Lights, January 2010
- 2937 Mark Armstrong and Steffen Huck, Behavioral Economics as Applied to Firms: A Primer, February 2010
- 2938 Guglielmo Maria Caporale and Alessandro Girardi, Price Formation on the EuroMTS Platform, February 2010