

Aronsson, Thomas; Koskela, Erkki

Working Paper

Redistributive income taxation under outsourcing and foreign direct investment

CESifo Working Paper, No. 3051

Provided in Cooperation with:

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

Suggested Citation: Aronsson, Thomas; Koskela, Erkki (2010) : Redistributive income taxation under outsourcing and foreign direct investment, CESifo Working Paper, No. 3051, Center for Economic Studies and ifo Institute (CESifo), Munich

This Version is available at:

<https://hdl.handle.net/10419/39004>

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.

Redistributive Income Taxation under Outsourcing and Foreign Direct Investment

Thomas Aronsson
Erkki Koskela

CESIFO WORKING PAPER NO. 3051
CATEGORY 2: PUBLIC CHOICE
MAY 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

Redistributive Income Taxation under Outsourcing and Foreign Direct Investment

Abstract

This paper deals with optimal income taxation under labor outsourcing and FDI. We show how the optimal income tax response to the joint effect of outsourcing and FDI depends on whether FDI is complementary with, or substitutable for, domestic labor.

JEL-Code: D60, H21, H23, H25, J31.

Keywords: outsourcing, foreign direct investment, optimal nonlinear taxation.

Thomas Aronsson
Department of Economics
Umeå University
90187 Umeå
Sweden
Thomas.Aronsson@econ.umu.se

Erkki Koskela
Department of Economics
University of Helsinki
P.O. Box 17 (Arkadiankatu 17)
00014 Helsinki
Finland
erkki.koskela@helsinki.fi

May 2010

Aronsson would also like to thank The Bank of Sweden Tercentenary Foundation, The Swedish Council for Working Life and Social Research, and The Swedish National Tax Board for research grants. Koskela thanks Academy of Finland (grant No. 1217622) for financial support.

1. Introduction

In the process of globalization, international outsourcing and foreign direct investment (FDI) have become increasingly important aspects of production and industrial organization. International outsourcing is meant to imply that some production stages - typically low-skilled labor intensive production – is carried out by a foreign partner (or a subsidiary located abroad), whereas FDI implies that firms invest part of their capital stock abroad instead of domestically (a process that may, or may not, be directly associated with outsourcing). A large empirical literature has examined the distributional consequences of outsourcing, where the common message is that international outsourcing leads to more wage-inequality by increasing the skill-premium in countries that outsource production abroad.¹ The (more scarce) literature dealing with the distributional consequences of FDI conveys a similar message.²

Yet, the literature dealing with the implications of globalization for optimal income taxation is surprisingly small. The purpose of this note is to analyze the simultaneous effects of outsourcing and FDI for the optimal use of redistributive income taxation. The analysis is based on the two-type optimal income tax model (developed in its original form by Stern 1982 and Stiglitz 1982), which is here modified to allow for outsourcing of low-skilled labor intensive production as well as FDI. Our study focuses on a country whose firms outsource production and invests part of its capital stock abroad (outward FDI). As such, the present study extends the recent paper by Aronsson and Koskela (2009), who examined the optimal income tax response to outsourcing without FDI. This extension is well motivated, because outsourcing and FDI jointly affect the domestic wage-distribution and, therefore, also the incentives underlying redistributive policy.

2. The Model

There are two types of consumers: a low-ability type ($i = 1$) and a high-ability type ($i = 2$). This distinction refers to productivity, meaning that the high-ability type is more productive and faces a higher before-tax wage rate than the low-ability type. As the number of

¹ See, e.g., Feenstra and Hanson (1999), Hijzen et al. (2005), Hsieh and Woo (2005) and Geishecker and Görg (2008).

² See, e.g., Choi (2006), who finds that both inward and outward FDI leads to increased inequality measured by the GINI coefficient.

individuals of each such type is not important, it will be normalized to one. The utility function facing ability-type i is given by

$$u^i = u(c^i, z^i) \quad (1)$$

where c is consumption and z leisure. Leisure is defined as a time endowment less the hours of work, l . Let w^i denote the before-tax hourly wage rate and $T(w^i l^i)$ the income tax payment faced by ability-type i . The individual budget constraint can then be written as

$$w^i l^i - T(w^i l^i) - c^i = 0. \quad (2)$$

The first order condition for work hours becomes (subindices denote partial derivatives)

$$u_c^i w^i (1 - T'(w^i l^i)) - u_z^i = 0 \quad (3)$$

where $T'(w^i l^i)$ is the marginal income tax rate.

Turning to production, the representative firm uses four variable inputs: domestic labor of each ability-type, l^1 and l^2 ; outsourcing, m ; and FDI, I . By slightly extending the production-model used in Koskela and Stenbacka (2010), we write the production function as follows;

$$y = F(l^1 + \delta m, l^2, I) \quad (4)$$

where y denotes output, while $\delta > 0$ is a parameter. The variable m is interpretable as an intermediate good bought from a foreign partner; alternatively, this good may be manufactured domestically by use of low-skilled labor (this process is embedded in the production function). The production function is increasing and strictly concave in each of its three separate arguments – i.e. $F_{l^1} > 0$, $F_{l^2} > 0$, $F_I > 0$, and $F_{l^1 l^1} < 0$, $F_{l^2 l^2} < 0$, $F_{II} < 0$, where $\tilde{l}^1 = l^1 + \delta m$ - and the technology is characterized by constant returns to scale. We also assume that the two types of domestic labor are technical complements in the sense that $F_{l^1 l^2} > 0$. This formulation means that increased outsourcing leads to higher wage-inequality.

Whether FDI is a technical complement or technical substitute to domestic labor is subject to debate, and we consider both these scenarios below.³ In Case I, domestic labor and FDI are technical substitutes in the sense that $F_{l^1 I} < 0$ and $F_{l^2 I} < 0$, whereas Case II implies that domestic labor and FDI are technical complements such as $F_{l^1 I} > 0$ and $F_{l^2 I} > 0$.⁴ Case I is interpretable to reflect market-seeking (horizontal) FDI, and Case II to reflect cost-saving (vertical) FDI. In each such case, our main results will be derived on the assumption that increased FDI leads to increased domestic wage-inequality.⁵ However, as the effect of FDI on the wage distribution is uncertain to some extent, we also discuss how results are modified if increased FDI instead leads to less domestic wage-inequality.

There is also a cost associated with outsourcing, $\psi(m)$, and FDI, $q(I)$, each of which is increasing and convex in its argument. The first order conditions can be written as

$$F_{l^1}(l^1 + \delta m, l^2, I) - w^1 = 0 \quad (5)$$

$$F_{l^2}(l^1 + \delta m, l^2, I) - w^2 = 0 \quad (6)$$

$$\delta F_{l^1}(l^1 + \delta m, l^2, I) - \psi_m(m) = 0 \quad (7)$$

$$F_I(l^1 + \delta m, l^2, I) - q_I(I) = 0 \quad (8)$$

where subindices denote partial derivatives. Since the decision-problem facing the government will be written in terms of l^1 and l^2 , it will be convenient to solve equations (7) and (8) for m and I , respectively, as functions of l^1 and l^2 . These functions can be written as

$$m = m(l^1, l^2) \quad (9a)$$

$$I = I(l^1, l^2). \quad (9b)$$

³ Based on cross-country data, Feldstein (1995) and Desai et al. (2005) find that domestic investment tends to decline in response to outward FDI (in what appears to be a one-to-one relationship). If domestic labor and domestic capital are technical complements, then this would suggest that domestic labor and foreign direct investment ought to be treated as technical substitutes in the production function set out above. However, by focusing solely on U.S. multinationals, Desai et al. find the opposite relationship between domestic investment and outward FDI; namely, that increased FDI in other countries by U.S. multinationals tends to increase the domestic investment as well.

⁴ See also the overview article by Crino (2009), who argues that outward FDI appears to be substitutable for domestic labor, although the effect is relatively small.

⁵ See, e.g., Choi 2006. Note that Choi focuses on the GINI coefficient instead of on wage-inequality (which is the measure used here).

With the assumptions made above, one can show that equation (9a) implies $\partial m / \partial l^1 < 0$ and $\partial m / \partial l^2 > 0$. For equation (9b), the comparative statics results depend on whether FDI is complementary with, or substitutable for, domestic labor. If domestic labor and FDI are technical substitutes (Case I), we have $\partial I / \partial l^1 < 0$ and $\partial I / \partial l^2 < 0$; if they are technical complements (Case II), we obtain $\partial I / \partial l^1 > 0$ and $\partial I / \partial l^2 > 0$.

3. Optimal Income Taxation

We analyze Pareto efficient taxation by assuming that the government maximizes the utility of the low-ability type subject to a minimum utility restriction for the high-ability type. The minimum utility restriction for the high-ability type is given by (for minimum utility \bar{u}^2)

$$u^2 = u(c^2, z^2) \geq \bar{u}^2. \quad (10)$$

The informational assumptions are conventional. The government knows the income of each individual, while ability is private information. By following much earlier literature in assuming that redistribution means income transfers from the high-ability to the low-ability type, one would like to prevent the high-ability type from becoming a mimicker. The self-selection constraint that may bind then becomes

$$u^2 = u(c^2, z^2) \geq u(c^1, H - \phi l^1) = \hat{u}^2 \quad (11)$$

where \hat{u}^2 denotes the utility of the mimicker, and $\phi = w^1 / w^2 < 1$ is the relative wage rate. The mimicker faces the same income and consumption point (and, therefore, pays as much tax as) the low-ability type. As the mimicker is more productive than the low-ability type, he/she spends more time on leisure. By using the first order conditions for the firm, one can write ϕ is a function of l^1 , l^2 , m and I , i.e.

$$\phi = \phi(l^1, l^2, m, I). \quad (12)$$

With equation (4) at our disposal, it is straight forward to show that $\partial\phi/\partial m < 0$. As empirical evidence suggests that outward FDI also contributes to increased wage-inequality, i.e. $\partial\phi/\partial I < 0$, this implies additional (implicit) restrictions on the production function. For $\partial\phi/\partial I < 0$ to hold, Case I must imply that FDI is at least as substitutable for low-skilled labor as it is for high-skilled labor; in Case II, it follows that FDI is a stronger complement to high-skilled than to low-skilled labor.

By using $\sum_i T(w^i l^i) = 0$ together with the private budget constraints and the objective function of the firm, we can write the budget constraint faced by government as follows;

$$F(l^1 + \delta m, l^2, I) - \sum_i c^i - \psi(m) - q(I) = 0. \quad (13)$$

The Lagrangean is given by

$$L = u^1 + \rho u^2 + \lambda[u^2 - \hat{u}^2] + \gamma[F(l^1 + \delta m, l^2, I) - \sum_i c^i - \psi(m) - q(I)] \quad (14)$$

where ρ , λ and γ are Lagrange multipliers. To shorten the notation, let Δ_m and Δ_I denote the welfare effect following an increase in outsourcing and FDI, respectively. By using the first order conditions of the firm and the assumptions underlying the wage-distribution, we have

$$\Delta_m = \frac{\partial L}{\partial m} = \lambda \hat{u}_z^2 l^1 \frac{\partial \phi}{\partial m} < 0$$

$$\Delta_I = \frac{\partial L}{\partial I} = \lambda \hat{u}_z^2 l^1 \frac{\partial \phi}{\partial I} < 0.$$

The government's first order conditions for hours of work and consumption can be written as

$$-u_z^1 + \lambda \hat{u}_z^2 \left[\phi + l^1 \frac{\partial \phi}{\partial l^1} \right] + \gamma w^1 + \Delta_m \frac{\partial m}{\partial l^1} + \Delta_I \frac{\partial I}{\partial l^1} = 0 \quad (15)$$

$$u_c^1 - \lambda \hat{u}_c^2 - \gamma = 0 \quad (16)$$

$$-(\delta + \lambda) u_z^2 + \lambda \hat{u}_z^2 l^1 \frac{\partial \phi}{\partial l^2} + \gamma w^2 + \Delta_m \frac{\partial m}{\partial l^1} + \Delta_I \frac{\partial I}{\partial l^1} = 0 \quad (17)$$

$$(\delta + \lambda)u_c^2 - \gamma = 0. \quad (18)$$

The marginal income tax rate implemented for the low-ability type can be derived by combining equations (3), (15) and (16), whereas the marginal income tax rate implemented for the high-ability type can be derived by combining equations (3), (17) and (18). Let $MRS_{z,c}^i$ and $\hat{MRS}_{z,c}^2$ denote the marginal rate of substitution between leisure and private consumption for ability-type i and the mimicker, respectively. We can then derive the following expressions for the marginal income tax rates;

$$T'(w^1 l^1) = \frac{\lambda^*}{w^1} [MRS_{z,c}^1 - \phi \hat{MRS}_{z,c}^2] - \frac{\lambda}{\gamma w^1} \hat{u}_z^2 l^1 \frac{\partial \phi}{\partial l^1} - \Delta_m \frac{\partial m}{\partial l^1} - \Delta_I \frac{\partial I}{\partial l^1} \quad (19)$$

$$T'(w^2 l^2) = -\frac{\lambda}{\gamma w^2} \hat{u}_z^2 l^1 \frac{\partial \phi}{\partial l^2} - \Delta_m \frac{\partial m}{\partial l^2} - \Delta_I \frac{\partial I}{\partial l^2} \quad (20)$$

where $\lambda^* = \lambda \hat{u}_c^2 / \gamma$. In the absence of outsourcing and FDI, i.e. if $\Delta_m = \Delta_I = 0$, equations (19) and (20) would coincide with the marginal income tax rate formulas derived by Stiglitz (1982).

The terms proportional to Δ_m and Δ_I are due to the appearance of outsourcing and FDI, respectively. Note that both these components are, in turn, proportional to the Lagrange multiplier associated with the self-selection constraint, meaning that the policy incentives created by outsourcing and FDI are due to the desire to relax the self-selection constraint. Since $\Delta_m < 0$, $\partial m / \partial l^1 < 0$ and $\partial m / \partial l^2 > 0$, it follows that labor outsourcing by itself contributes to decrease the marginal income tax rate implemented for the low-ability type and increase the marginal income tax rate implemented for the high-ability type. Therefore, the result derived by Aronsson and Koskela (2009) in the absence of FDI carries over to this more general model. We also see that the appearance of FDI contributes to decrease both marginal income tax rates in Case I and increase both marginal income tax rates in Case II.

We have derived the following results with respect to the joint effect of outsourcing and FDI on the marginal income tax rates;

Proposition 1. *Case I. If FDI is substitutable for domestic labor, then the joint effect of labor outsourcing and FDI is to decrease the marginal income tax rate implemented for the low-ability type, whereas the marginal income tax rate implemented for the high-ability type may change in either direction.*

Case II. If FDI is complementary with domestic labor, then the joint effect of labor outsourcing and FDI is to increase the marginal income tax rate implemented for the high-ability type, whereas the marginal income tax rate faced by the low-ability type may change in either direction.

These policy responses reflect an incentive to simultaneously reduce the levels of labor outsourcing and FDI which, in turn, leads to less wage-inequality. In Case I, where FDI is horizontal, this can be accomplished via increased hours of work supplied by the low-ability type; therefore, the optimal policy response is to decrease the marginal income tax rate implemented for the low-ability type. The corresponding marginal tax rate response for the high-ability type depends on whether the incentive to reduce the level of outsourcing via a smaller labor supply dominates or is dominated by the incentive to reduce the FDI via a higher labor supply by the high-ability type. In Case II, where FDI is vertical, we may simultaneously reduce the levels of outsourcing and FDI by implementing a higher marginal income tax rate for the high-ability type, whereas the corresponding change in the marginal income tax rate of the low-ability type reflects two counteracting incentives.

Note finally that if increased FDI instead leads to less wage-inequality, the results presented in Proposition 1 must be modified, as the government in this case may reduce the wage-inequality by implementing policies that lead to increased in FDI. Here, we find that the government implements a higher marginal income tax rate for the high-ability type in response to the joint effect of outsourcing and FDI in Case I, whereas the change in the marginal income tax rate implemented for the low-ability type is ambiguous. In Case II, the optimal policy response means a lower marginal income tax rate of the low-ability type, while the joint effect of outsourcing and FDI on the marginal income tax rate of the high-ability type is ambiguous.

References

Aronsson, T. and Koskela, E. (2009) Outsourcing and Optimal Nonlinear Taxation: A Note. *Economics Letters* **102**, 135-137.

- Choi, C. (2006) Does Foreign Direct Investment Affect Domestic Income Inequality? *Applied Economics Letters* **13**, 811-814.
- Crino, R. (2009) Offshoring, Multinationals and Labor Market: A Review of the Empirical Literature. *Journal of Economic Surveys* **23**, 197-249.
- Desai, M. C., Foley, C. F. and Hines Jr, J. R. (2005) Foreign Direct Investment and the Domestic Capital Stock. *American Economic Review* **95**, 33-38.
- Feenstra, R.C. and Hanson, G.H. (1999) The Impact of Outsourcing and High-Technology Capital on Wages. *Quarterly Journal of Economics* **114**, 907-940.
- Feldstein, M. (1995) The Effects of Outbound Foreign Direct Investment on the Domestic Capital Stock. In Feldstein, M., Hines Jr, J. R. and Hubbard, G. J. (Eds) *The Effects of Taxation on Multinational Corporations*. University of Chicago Press, 43-66.
- Geishecker, I. and Görg, H. (2008) Winners and Losers: A Micro-Level Analysis of International Outsourcing and Wages. *Canadian Journal of Economics* **41**, 243-270.
- Hijzen, A. (2007) International Outsourcing, Technological Change, and Wage Inequality. *Review of International Economics* **15**, 188-205.
- Hsieh, C-T. and Woo, K.T. (2005) The Impact of Outsourcing to China on Hong Kong's Labor Market. *American Economic Review* **95**, 1673-1687.
- Koskela, E. and Stenbacka, R. (2010) Equilibrium Unemployment with Outsourcing and Wage Solidarity under Labor Market Imperfections. *European Economic Review* **54**, 376-392.
- Stern, N.H. (1982) Optimum Taxation with Errors in Administration. *Journal of Public Economics* **17**, 181-211.
- Stiglitz, J. E. (1982) Self-Selection and Pareto Efficient Taxation. *Journal of Public Economics* **17**, 213-240.

CESifo Working Paper Series

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

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

- 2985 Francesca Barion, Raffaele Miniaci, Paolo M. Panteghini and Maria Laura Parisi, Profit Shifting by Debt Financing in Europe, March 2010
- 2986 Alexander Haupt and Magdalena Stadejek, The Choice of Environmental Policy Instruments: Energy Efficiency and Redistribution, March 2010
- 2987 John Komlos and Marek Brabec, The Trend of BMI Values among US Adults, March 2010
- 2988 Emanuele Massetti and Lea Nicita, The Optimal Climate Policy Portfolio when Knowledge Spills across Sectors, March 2010
- 2989 Helmut Rainer and Thomas Siedler, Family Location and Caregiving Patterns from an International Perspective, March 2010
- 2990 Toru Kikuchi and Ngo Van Long, A Simple Model of Service Offshoring with Time Zone Differences, March 2010
- 2991 Assaf Razin, Efraim Sadka and Benjarong Suwankiri, Migration and the Welfare State: Dynamic Political-Economy Theory, March 2010
- 2992 Bård Harstad, Buy Coal! Deposit Markets Prevent Carbon Leakage, March 2010
- 2993 Axel Dreher, Stephan Klasen, James Raymond Vreeland and Eric Werker, The Costs of Favoritism: Is Politically-driven Aid less Effective?, March 2010
- 2994 Sven Neelsen and Thomas Stratmann, Effects of Prenatal and Early Life Malnutrition: Evidence from the Greek Famine, March 2010
- 2995 Claude Hillinger and Bernd Süßmuth, The Quantity Theory of Money: An Assessment of its Real Linchpin Prediction, March 2010
- 2996 Matthew M. Chingos and Martin R. West, Do More Effective Teachers Earn More Outside of the Classroom?, March 2010
- 2997 Laurence Jacquet and Dirk Van de gaer, A Comparison of Optimal Tax Policies when Compensation or Responsibility Matter, March 2010
- 2998 Valentina Bosetti, Carlo Carraro, Romain Duval and Massimo Tavoni, What Should we Expect from Innovation? A Model-Based Assessment of the Environmental and Mitigation Cost Implications of Climate-Related R&D, March 2010
- 2999 Scott Alan Carson, Nineteenth Century Stature and Family Size: Binding Constraint or Productive Labor Force?, March 2010

- 3000 Jukka Pirttilä and Ilpo Suoniemi, Public Provision, Commodity Demand and Hours of Work: An Empirical Analysis, March 2010
- 3001 Bertrand Candelon and Franz C. Palm, Banking and Debt Crises in Europe: The Dangerous Liaisons?, March 2010
- 3002 Joan Costa-i-Font and Marin Gemmill-Toyama, Does Cost Sharing really Reduce Inappropriate Prescriptions?, March 2010
- 3003 Scott Barrett, Climate Treaties and Backstop Technologies, March 2010
- 3004 Hans Jarle Kind, Tore Nilssen and Lars Sørgard, Price Coordination in Two-Sided Markets: Competition in the TV Industry, March 2010
- 3005 Jay Pil Choi and Heiko Gerlach, Global Cartels, Leniency Programs and International Antitrust Cooperation, March 2010
- 3006 Aneta Hryckiewicz and Oskar Kowalewski, Why do Foreign Banks Withdraw from other Countries? A Panel Data Analysis, March 2010
- 3007 Eric A. Hanushek and Ludger Woessmann, Sample Selectivity and the Validity of International Student Achievement Tests in Economic Research, March 2010
- 3008 Dennis Novy, International Trade and Monopolistic Competition without CES: Estimating Translog Gravity, April 2010
- 3009 Yin-Wong Cheung, Guonan Ma and Robert N. McCauley, Renminbising China's Foreign Assets, April 2010
- 3010 Michel Beine and Sara Salomone, Migration and Networks: Does Education Matter more than Gender?, April 2010
- 3011 Friedrich Schneider, Tilman Brück and Daniel Meierrieks, The Economics of Terrorism and Counter-Terrorism: A Survey (Part I), April 2010
- 3012 Friedrich Schneider, Tilman Brück and Daniel Meierrieks, The Economics of Terrorism and Counter-Terrorism: A Survey (Part II), April 2010
- 3013 Frederick van der Ploeg and Steven Poelhekke, The Pungent Smell of "Red Herrings": Subsoil Assets, Rents, Volatility and the Resource Curse, April 2010
- 3014 Vjollca Sadiraj, Jan Tuinstra and Frans van Winden, Identification of Voters with Interest Groups Improves the Electoral Chances of the Challenger, April 2010
- 3015 Guglielmo Maria Caporale, Davide Ciferri and Alessandro Girardi, Time-Varying Spot and Futures Oil Price Dynamics, April 2010
- 3016 Scott Alan Carson, Racial Differences in Body-Mass Indices for Men Imprisoned in 19th Century US Prisons: A Multinomial Approach, April 2010

- 3017 Alessandro Fedele, Paolo M. Panteghini and Sergio Vergalli, Optimal Investment and Financial Strategies under Tax Rate Uncertainty, April 2010
- 3018 Laurence Jacquet, Take it or Leave it: Take-up, Optimal Transfer Programs, and Monitoring, April 2010
- 3019 Wilhelm Kohler and Jens Wrona, Offshoring Tasks, yet Creating Jobs?, April 2010
- 3020 Paul De Grauwe, Top-Down versus Bottom-Up Macroeconomics, April 2010
- 3021 Karl Ove Aarbu, Demand Patterns for Treatment Insurance in Norway, April 2010
- 3022 Toke S. Aidt and Jayasri Dutta, Fiscal Federalism and Electoral Accountability, April 2010
- 3023 Bahram Pesaran and M. Hashem Pesaran, Conditional Volatility and Correlations of Weekly Returns and the VaR Analysis of 2008 Stock Market Crash, April 2010
- 3024 Stefan Buehler and Dennis L. Gärtner, Making Sense of Non-Binding Retail-Price Recommendations, April 2010
- 3025 Leonid V. Azarnert, Immigration, Fertility, and Human Capital: A Model of Economic Decline of the West, April 2010
- 3026 Christian Bayer and Klaus Wälde, Matching and Saving in Continuous Time: Theory and 3026-A Matching and Saving in Continuous Time: Proofs, April 2010
- 3027 Coen N. Teulings and Nick Zubanov, Is Economic Recovery a Myth? Robust Estimation of Impulse Responses, April 2010
- 3028 Clara Graziano and Annalisa Luporini, Optimal Delegation when the Large Shareholder has Multiple Tasks, April 2010
- 3029 Erik Snowberg and Justin Wolfers, Explaining the Favorite-Longshot Bias: Is it Risk-Love or Misperceptions?, April 2010
- 3030 Doina Radulescu, The Effects of a Bonus Tax on Manager Compensation and Welfare, April 2010
- 3031 Helmut Lütkepohl, Forecasting Nonlinear Aggregates and Aggregates with Time-varying Weights, April 2010
- 3032 Silvia Rocha-Akis and Ronnie Schöb, Welfare Policy in the Presence of Unionised Labour and Internationally Mobile Firms, April 2010
- 3033 Steven Brakman, Robert Inklaar and Charles van Marrewijk, Structural Change in OECD Comparative Advantage, April 2010
- 3034 Dirk Schindler and Guttorm Schjelderup, Multinationals, Minority Ownership and Tax-Efficient Financing Structures, April 2010

- 3035 Christian Lessmann and Gunther Markwardt, Decentralization and Foreign Aid Effectiveness: Do Aid Modality and Federal Design Matter in Poverty Alleviation?, April 2010
- 3036 Eva Deuchert and Conny Wunsch, Evaluating Nationwide Health Interventions when Standard Before-After Doesn't Work: Malawi's ITN Distribution Program, April 2010
- 3037 Eric A. Hanushek and Ludger Woessmann, The Economics of International Differences in Educational Achievement, April 2010
- 3038 Frederick van der Ploeg, Aggressive Oil Extraction and Precautionary Saving: Coping with Volatility, April 2010
- 3039 Ainura Uzagalieva, Evžen Kočenda and Antonio Menezes, Technological Imitation and Innovation in New European Union Markets, April 2010
- 3040 Nicolas Sauter, Jan Walliser and Joachim Winter, Tax Incentives, Bequest Motives, and the Demand for Life Insurance: Evidence from two Natural Experiments in Germany, April 2010
- 3041 Matthias Wrede, Multinational Capital Structure and Tax Competition, April 2010
- 3042 Burkhard Heer and Alfred Maussner, A Note on the Computation of the Equity Premium and the Market Value of Firm Equity, April 2010
- 3043 Kristiina Huttunen, Jukka Pirttilä and Roope Uusitalo, The Employment Effects of Low-Wage Subsidies, May 2010
- 3044 Matthias Kalkuhl and Ottmar Edenhofer, Prices vs. Quantities and the Intertemporal Dynamics of the Climate Rent, May 2010
- 3045 Bruno S. Frey and Lasse Steiner, Pay as you Go: A New Proposal for Museum Pricing, May 2010
- 3046 Henning Bohn and Charles Stuart, Population under a Cap on Greenhouse Gas Emissions, May 2010
- 3047 Balázs Égert and Rafal Kierzenkowski, Exports and Property Prices in France: Are they Connected?, May 2010
- 3048 Thomas Eichner and Thorsten Upmann, Tax-Competition with Involuntary Unemployment, May 2010
- 3049 Taiji Furusawa, Kazumi Hori and Ian Wooton, A Race beyond the Bottom: The Nature of Bidding for a Firm, May 2010
- 3050 Xavier Vives, Competition and Stability in Banking, May 2010
- 3051 Thomas Aronsson and Erkki Koskela, Redistributive Income Taxation under Outsourcing and Foreign Direct Investment, May 2010