

# Bulletin

no 75

Summer 2000

In this issue ▾

## RESEARCH

- 2 **Research Overview:** A retrospective look at research in the Centre's seven Programme Areas.
- 7 **Reducing the Working Week: A Free Lunch or Irrational Ideology?** The French government's decision to reduce the working week from 39 to 35 hours has attracted criticism from the European Commission, IMF and OECD. Two recent discussion papers, one theoretical the other empirical, address the possible outcomes of this policy.
- 10 **Does Exchange Rate Stability Increase Trade and Capital Flows?** The empirical evidence regarding exchange rate regimes and trade flows is far from conclusive. A recent Discussion Paper takes a general equilibrium approach to the question of exchange rate uncertainty, concluding that trade is not necessarily higher under a fixed exchange rate system.
- 12 **Is the Level of Unemployment Insurance Self-Perpetuating?** Why do countries choose different levels of unemployment insurance? A recent Discussion Paper argues that different societies with identical preferences may still choose very different unemployment insurance levels, which can be sustained as stable equilibria.
- 14 **Could an Active Monetary Policy Create a Liquidity Trap?** The widespread use of Taylor rules by central banks has been well documented. A recent Discussion Paper presents a theoretical explanation of how adherence to such rules can lead an economy into a liquidity trap, owing to the zero bound on nominal interest rates.

## REPORTS

- 16 **Monetary and Exchange Rate Policies for Transition Economies.** Europe's transition economies must find a robust strategy for macroeconomic policy in preparation for entry into the EU. The fifth, and final, report in CEPR's Economic Policy Initiative examines the issues that need to be resolved along the way to membership.
- 20 **Stuck in Transit: Rethinking Russian Economic Reform.** Can Russia regain the political will to implement essential economic reform? A new CEPR report examines the current state of the Russian economy and the policy options for the future.
- 24 **Is there a Single European Market for Electricity?** The second report in the Monitoring European Deregulation series explores the obstacles to an integrated market and the policy choices facing regulators at both the national and EU level.

- 27 **Including Developing Countries in a Consensus for the WTO.** In CEPR Policy Paper No.4, Zhen Kun Wang and Alan Winters present an eight-point plan that they believe will bind the developing countries more securely into the World's trading system.
- 30 **The Eurosystem: Transparent and Accountable.** In CEPR Policy Paper No.1, Willem Buiter claimed that the ECB is not sufficiently open, transparent and accountable, and that its strategies and objectives need clarifying. In CEPR Policy Paper No.2, Otmar Issing argued that Buiter was wrong.

## MEETINGS

- 32 **European Monetary Union: A Trojan Horse to Liberalize Labour Markets.** At a lunchtime meeting, Michael Burda argued that one consequence of EMU would be that real rigidities in the labour market would fall while nominal rigidities in the goods market would increase.
- 34 **The Reliability of Credit Risk Models.** At a lunchtime meeting, William Perraudin considered the reliability of the current generation of credit risk models.
- 36 **Defusing the Pension Timebomb: What are the Policy Options?** At an evening discussion meeting organized in conjunction with the Royal Economic Society, and supported by Morgan Stanley Dean Witter, a panel of researchers examined the effects of the changing demography on public pension systems in Europe.
- 40 **Trade or Technology: Which is Responsible for Widening Wage Inequality?** At a lunchtime meeting, Jonathan Haskel argued that the contribution of technical change has been exaggerated. He presented evidence which suggested that globalization is the main contributory factor to the increase in wage inequality.

## DISCUSSION PAPERS

- 43 **Recent Discussion Papers.**

Centre for Economic Policy Research

90-98 GOSWELL ROAD • LONDON EC1V 7RR • TEL: (44 20) 7878 2900 • FAX: (44 20) 7878 2999 • EMAIL: CEPR@CEPR.ORG

[www.cepr.org](http://www.cepr.org)

# Research

The content of the Bulletin has changed. The new version will still contain reports on research papers and discussion meetings, but reports of conferences and workshops will now be posted on our website – [www.cepr.org](http://www.cepr.org). Rather than write brief summaries of all CEPR's Discussion Papers recently published, we have decided that it would be more interesting to write longer pieces on a selected few. In addition, a new section will report the activities of a specific programme area every quarter. In the first of these we have highlighted some of the main achievements of the Centre over the past two years.

## Research Overview

We are now almost 17 years old, and have grown into an active and productive network, with over 500 Research Fellows, Affiliates and Associates based throughout Europe as well as in North America and elsewhere. Our focus remains policy-relevant economic research, but within that remit we aim to be inclusive, bringing into our networks the best researchers working in a variety of fields. Since we are a network and not a think tank with in-house research staff, the directions in which we expand are influenced by the emergence of new research frontiers within economics. The creation of two new Programme Areas in 1998 – Labour Economics and Public Policy – offers a good example of this evolution.

The size of our research network and the scale of our activities continue to be impressive: during 1999/00 there were 530 CEPR researchers and we organized 92 meetings. We have attempted to maintain a balance between research excellence and policy relevance in the face of this rapid growth by fostering interchanges between researchers working at the frontiers of their field and the business and policy communities. One by-product of this process is an impressive *Discussion Paper* series: we published 290 Papers in 1999/00. Most of these will appear in due course in leading journals. We also published ten reports, books and journals in this period: these are aimed not only at researchers, but also at decision-makers in the private sector and the policy community.

Our workshops and conferences play an equally important role in the process, bringing researchers together, often at an early stage in the research process, to exchange ideas. In 1999/00 we held 49 workshops and conferences, including our series of annual symposia, which play a particularly important role in sustaining our commitment to research excellence. Each symposium brings together CEPR Research Fellows and Affiliates, as well as other leading researchers,

to discuss the most relevant research topics in the field and to help push back the frontiers of our understanding.

### International Macroeconomics (IM)

IM is our largest Programme, with over 140 Fellows and Affiliates, led by Jordi Gali, Lucrezia Reichlin and Charles Wyplosz. Research spans a wide range of topics, but the key areas include:

- *European Monetary Union*: assessing the policy stance of the ECB and whether it is appropriate for the Euroland economy; the transmission mechanism for monetary policy in Euroland; evaluation of the properties of alternative monetary policy rules and their implications for how the ECB should conduct monetary policy.
- *Economic fluctuations in Europe*: understanding economic fluctuations in Euroland and their interaction with monetary and fiscal policies, as well as with business cycles abroad; the synchronization of business cycles across Europe; and (related to the first theme) the impact of the common monetary policy across European countries and regions.
- *Exchange rate policies for the euro zone*: analysis of the implications of alternative policy strategies regarding exchange rates between the euro, US dollar and the yen.
- *The international financial system*: the Mexican, Asian, and Russian crises, origins and responses; international capital flows; Europe's links to the global economy and its role in the management of the international financial system.

EMU features prominently in the Centre's activities. In April 1998, for example, *Economic Policy* published a special issue, entitled 'EMU: Prospects and Challenges for the Euro'. In autumn 1998 we completed four studies for Directorate General II of the European Commission, each focusing on aspects of EMU:

- 'Monetary Policy in Stage 3: Implications of Different Debt Structures'.
- 'The Factors Hindering the Efficiency of the Transmission Mechanism of Monetary Policy in the Associated Countries of Central and Eastern Europe'.
- 'Equilibrium and Adjustment Dynamics of the Exchange Rates in the Associated Countries of Central and Eastern Europe'.
- 'Impact of EMU on Global Interest Rate Linkages and Consequences for Exchange Rate Policy of the Euro'.

The results of 'Monetary Policy in Stage 3: Implications of Different Debt Structures' were published earlier this year in our new *Policy Paper* series. In the summer of 1998, we were awarded contracts to carry out further studies on the impact of the single currency for Directorate General II. One of the studies, completed in early 2000, examines the impact of EMU on portfolio adjustment, focusing on the indirect effect of the euro (in terms of transaction costs and changing investment opportunities) on portfolio allocations.

The institutional structure and the policies pursued by the European Central Bank (ECB) have also been an important focus for the IM programme. In October 1998 we launched a new series of reports, *Monitoring the ECB* (MECB), which aims to play a key role in establishing the accountability of the ECB and ensuring that its actions receive thorough and detailed scrutiny. We published the first MECB report, 'Safe At Any Speed', in October 1998. The Report argued that many operational issues facing the ECB remained unresolved: targeting, supervision, openness and accountability, and the respective roles of the ECB Executive Board and national central banks. In May 1999 we published an 'MECB Update', a shorter report which assessed the developments in the European economy and ECB policy in the first months of 1999. 'One Money, Many Countries', the second full MECB Report, was published in February 2000. It provides an assessment of the key issues facing European monetary policy, focusing in particular on the political economy of the ECB and on banking in EMU.

April 1999 saw the launch of our new series of *Policy Papers*. In the first *Policy Paper*, 'Alice in Euroland', Willem Buiter argued strongly for more transparency in the formulation of ECB policy. This Paper provoked a vigorous response from Otmar Issing, a former member of our Executive Committee, whose response was published in June 1999 as our second *Policy Paper*, 'The Eurosystem: Transparent and Accountable or Willem in Euroland'.

In 1996 we launched one of the first networks in economics funded by the European Commission's 'Training and Mobility

of Researchers' (TMR) programme. This network aims to carry out basic research and postdoctoral training on 'The Economic Analysis of Political Institutions: Coalition Building and Constitutional Design'. Its output provided an important input into a conference designed to address a very policy relevant topic: 'The Political Economy of Fiscal and Monetary Stability in EMU'. Our second TMR network, on 'New Approaches to the Study of Economic Fluctuations', began work in 1998.

In September 1999, in conjunction with the International Center for Monetary and Banking Studies (ICMBS) in Geneva, we published a report entitled 'An Independent and Accountable IMF'. It analyses the performance of the Fund in predicting, averting and managing new types of financial crises. These crises have become more violent, disruptive and difficult to predict and manage because they are now centred on the capital account, in contrast to earlier crises which were rooted in imbalances in the current account. The Report concludes that the IMF has yet to integrate this evolution into its diagnoses, procedures and conditions. The second Report in this series was published in July 2000, entitled 'Asset Prices and Central Bank Policy'.

## International Trade (IT)

Research in the IT Programme, led by Richard Baldwin and Tony Venables, currently focuses on topics such as:

- *Economic geography*: the location of economic activity; the impact of the Single Market and the single currency on location.
- *Foreign direct investment and the behaviour of multinationals*: modelling the decisions of multinational firms to invest in a given country, license technology to firms in that country or to produce elsewhere and export finished products to that country; the impact of FDI on the sending and the receiving countries.
- *The world trading system*: issues in the next WTO round; trade policy in the transition economies.
- *'Dematerialization' and trade*: the impact of 'weightless commodities' on output and trading patterns.

The IT Programme's annual 'symposium', the European Workshop in International Trade (ERWIT), focused in 1998 on economic geography and in particular the connection between trade and labour market outcomes. Work on economic geography continued with an August 1998 conference on 'New Issues in Trade and Location', held in Lund; an October 1998 conference in Bonn on 'Regionalism

in Europe'; and a July 1999 workshop in Paris on 'Economic Geography and Public Policies'. The tenth *Monitoring European Integration* Report, published in April 2000 and entitled 'Integration and the Regions of Europe: How the Right Policies Can Prevent Polarization', also drew on the new economic geography literature, exploring the factors influencing the location of economic activity in Europe.

In the summer of 1998 we were awarded two contracts from Directorate General II of the Commission to carry out studies on the impact of market integration in Europe. The first study, on 'EMU and the Integration of European Product Markets', involves researchers drawn from both the IT and the IO Programmes. It aims to analyse the impact of monetary integration on European product markets. The second project, on 'Factors Affecting the Location of Activities within the EU' draws on the IT Programme's work on location and the new economic geography.

Our third TMR network, on 'Foreign Direct Investment and the Multinational Corporation' began work in 1998. The network contains several of the leading doctoral programmes in economics, and the cooperation among the network partners is allowing them to improve the training of young European researchers in International Trade. The network held its first workshop in London at the end of November 1998 and a second in Vouliagmeni in September 1999.

We held a workshop on 'New Issues in the World Trading System' in February 1999, funded by the UK Foreign and Commonwealth Office. The new WTO Round was also the focus of the 1999 International Seminar on International Trade (ISIT), which took place in June 1999 in Cambridge MA. The role of the developing countries in the WTO was the subject of our fourth *Policy Paper*, entitled 'Putting "Humpty" Together Again: Including Developing Countries in a pro-WTO Consensus'. It was published in April 2000.

## Labour Economics (LE)

Juan Dolado joined Klaus Zimmermann as Co-Director of the LE Programme in August 1998. The first European Summer Symposium in Labour Economics (ESSLE) was held in Gerzensee in September 1998. It focused on issues of education and training, skill-biased technical change, and migration and its economic consequences. The second Symposium took place in Ammersee in September 1999. Researchers in the LE Programme are currently focusing on the following research areas:

- *Regulation and deregulation in European labour markets*: the impact of labour market policies on

productivity and growth, the development of new techniques for evaluating the effectiveness of European labour market policies.

- *Education, training and labour market outcomes*.
- *Migration and social exclusion in Europe*: migration within the EU and from its periphery.

Our project on migration and social exclusion explores the post-1970 effects of technological change and market integration on the demand for labour with different levels of education and skills, and on unemployment and the process of social exclusion across Europe. The first conference held under the auspices of this project, entitled 'Labour Demand, Education and the Dynamics of Social Exclusion', took place in Lisbon in November 1998. A second conference, on 'Marginal Labour Markets in Metropolitan Areas', was held in Dublin in October 1999.

## Financial Economics (FE)

Bruno Biais joined Marco Pagano as Co-Director of the FE Programme in the summer of 1998. Activities have grown steadily, with a variety of initiatives under way in areas which include:

- *Structural change in European financial markets*: bank restructuring and consolidation in response to changes in pension financing and the single currency; the readjustment of European household portfolios.
- *The industrial organization of banking and financial markets*: increasing competition among banks and between them and security markets; effects on the stability of the credit market and banking regulation; credit information systems and credit risk management.
- *Developments in security markets*: the consolidation and changing geography of European equities markets; the role of the primary market for equity (IPOs and venture capital); the effects of international integration on the return on equity and the cost of equity capital.
- *Corporate governance*: patterns of ownership and control in Europe (West and East).
- *Legal institutions and the performance of financial systems*: corporate governance; bankruptcy codes; enforcement and the behaviour of the judicial system; credit markets and the legal system.

The European Summer Symposium in Financial Markets held its tenth meeting in Gerzensee in July 1999. The 'focus sessions' were devoted to Legal Rules and Corporate Structures; Bank Risk Management; Liquidity and Experimental Finance Markets. A conference on 'Europe's Changing Financial Landscape' was held in Brussels in

September 1998. The meeting focused primarily on the current consolidation and restructuring of European banking, analysing its causes and effects, and comparing it with the American experience.

The ninth *Monitoring European Integration* Report, entitled 'The Future of European Banking', was published in February 1999. It also dealt with the issue of structural change in the European financial sector, examining the restructuring of European banking and its impact on European monetary policy and on the provision of financial intermediation to firms and households. The Report argued that in the medium term European banks' need to diversify will be satisfied by consolidation within – and not across – national boundaries. An April 1999 conference in Helsinki, on 'The Future of the Financial Services Industry and New Challenges for Supervision', returned to this theme.

Our fourth TMR network, on 'The Industrial Organization of Banking and Financial Markets in Europe', began work in the summer of 1998. The first workshop, on 'Banking and Financial Markets', was held in November 1999 and a second took place in London in February 2000.

The Programme also launched new collaborations with two leading finance journals. In March 1999, in conjunction with *The Review of Financial Studies*, we organized a conference on 'Price Formation', which dealt with a number of issues in market microstructure. In May 1999, in conjunction with the *Journal of Financial Intermediation*, we organized the 'Symposium on Competition, Regulation and Financial Integration'.

Other conferences held under the auspices of the FE programme include 'European Venture Capital: Financing of Innovation for Long-Term Growth', held in Milan in November 1998; 'Security Prices in Secondary markets: The Impact of Incentives, Regulation and Market Structure', held in Louvain-la-Neuve in May 1999; and 'Core Competencies, Diversification and the Role of Internal Capital Markets', held in Naples in January 1999.

During 1998/9 the research foundation of the Banque de France agreed to support two research projects involving FE researchers:

- 'Where to List: The Geography of Equity Issuance and Trading' (led by Marco Pagano).
- 'Judicial Enforcement and Information Sharing in Credit Markets' (led by Tullio Jappelli).

The second project falls within a new area of research for the FE Programme – 'law and finance'. A new network on this topic, entitled 'Understanding Financial Architecture:

Legal Framework, Political Environment and Economic Efficiency', began work in mid-2000.

## Industrial Organization (IO)

Phillipe Aghion joined Lars-Hendrik Röller as Programme Director in the summer of 1998. Activities in the Programme currently focus on themes which include:

- *Liberalization and regulation in 'network' industries*: the liberalization and integration of telecommunications, energy and other network industries in Europe.
- *Competition policy*: antitrust policy at national and the EU level; the design and operation of competition policy in the transition economies.
- *Market integration*: the impact of EMU and the Single Market on product market integration.
- *Innovation*: the interrelationship between innovation and the structure of product and financial markets in Europe.

Our TMR network on 'The Evolution of Market Structures in European Network Industries' began work in 1998 and held its first workshop in the autumn of the same year. The regulation of 'network industries' has emerged as a key issue on the European policy agenda, yet there is little high-quality research capable of informing debates on this issue. In September 1998 we launched a new series of reports on *Monitoring European Deregulation*, which attempt to address this problem. The first Report concentrated on the general issues that arise in the regulation in network industries, with a second section focusing on the telecoms industry. The second Report, entitled 'A European Market for Electricity?', was published in October 1999.

The IO programme has for some years played a leading role in the analysis of competition policy in Europe, and the Programme made a number of key contributions to the policy debate during the last two years. In September 1998 we published 'Trawling for Minnows: European Competition Policy and Agreements Between Firms'.

Researchers from the IO Programme have carried out a study on 'Efficiency Gains from Mergers' for Directorate General II of the European Commission. This study, completed in late 1999, suggests a methodology to measure and evaluate efficiency gains from mergers, and ways in which such measures could be used in the design and implementation of European competition policy. The report has been welcomed by the Directorate General for

Competition of the European Commission, which has already taken steps to implement some of the proposals put forward by the report.

## Transition Economics (TE)

Research in the TE Programme, led by Gérard Roland and Jan Svejnar, currently focuses on issues which include:

- *The economic implications of Eastern enlargement*: the impact on intra-European trade and production patterns.
- *Monetary and exchange rate policies in Central and Eastern Europe*: the relationship between accession, membership of the monetary union and monetary, fiscal and exchange rate policy in the Associated Countries.
- *Competition policy in Central and Eastern Europe*: its role in the Accession Process and in economic transition more generally.
- *Economic transition in Russia and the CIS*: research and capacity building at the Russian European Centre for Economic Policy (RECEP) in Moscow.

Monetary and exchange rate policies were the focus of a number of the Programme's recent activities. The project on 'Policy-making in a Small Open Economy Aiming at Joining the European Union: The Case of Hungary' aimed to transfer to Hungarian researchers the skills and knowledge necessary to carry out basic research on the implementation of monetary and exchange rate policy.

As part of the *Economic Policy Initiative* (EPI), a conference on 'Monetary Policy and Accession to the European Union', held in November 1998, discussed the design of monetary policy and the choice of exchange rates regimes in Central and Eastern Europe. In September 1999 a revised version of the report presented at the conference was published as *Economic Policy Initiative No. 5*.

We also held EPI workshops on the regulation of network industries and on corporate governance. The *Economic Policy Initiative* drew to a close in April 1999 with a Forum on the implications of the structural funds for the Associated Countries. Work was also completed on 'Inside the Transforming Firm: A Study of Enterprise Restructuring in the CIS'. The project aimed to analyse the restructuring process using firm-level survey data for Russia, by identifying how the structure and the behaviour of firms is affected by factors such as the economic environment, state policies, harder budget constraints, new private owners and governance structures.

Our new 'Transition Economics Summer Workshop for Young Academics', launched in 1998, aims to promote the research of young economists from Central and Eastern Europe (and the EU) who are working in the field of transition economics. The first workshop took place in Prague in June 1998, and the second in Budapest in May 1999.

The Centre has also been involved in administering RECEP in Moscow. It has succeeded in attracting back a number of Russians who have recently received doctorates from leading American and European universities. RECEP held its first annual research conference in September 1998, in the aftermath of the August crisis. The Programme's third annual symposium took place in Beijing in July 1999, and focused on 'Twenty Years After: China's Reforms and its Place in the World Economy'.

## Public Policy (PP)

In early 1999 Raquel Fernández joined Tim Besley as a Programme Director. Research so far has focused on the following issues:

- *Political economy and the reform of European institutions*: the relationship between the political system, coalition formation and the performance of institutions; the political economy of the international financial institutions; the role of institutions in economic growth and development.
- *Taxation*: tax competition and tax harmonization in Europe.
- *Welfare state*: the role of the public and the private sector in the provision of welfare services; the financing of the welfare state and its impact on European financial markets.

Although activities in the Programme are only in their initial stages, a number of conferences have been held over the past year, including 'Psychology and Economics' held in Toulouse in June 1999, and 'Institutions of Restraint' held in Toulouse in June 2000.

**Mathias Dewatripont**  
Research Director

**Stephen Yeo**  
Chief Executive Officer

## Reducing the Working Week: Un Déjeuner Gratuit ou de l'Idéologie Déraisonnable\*?

The French government's decision to reduce the working week from 39 to 35 hours became law on 1 February 2000. Martine Aubry, France's employment minister, has stated that the objective of the policy is to reduce unemployment by sharing out the available work. The appeal of this proposal lies in its promise to reduce unemployment without affecting the Welfare State. Yet many economists have labelled the policy an 'irrational ideology' and have argued that imposing further restrictions on an already highly regulated labour market will result in even greater inefficiencies and may actually worsen France's unemployment problem.

A *Discussion Paper* by Ramon Marimon and Fabrizio Zilibotti addresses the questions of both the employment and the redistributive effects of a policy that reduces working time. Much of the previous literature on this subject has cautioned that government action to reduce the working week may not result in the desired reduction in unemployment. The main contribution of Marimon and Zilibotti's work is that it is able to trace back the possible employment effects to basic parameters such as workers' preferences for consumption and leisure, and the degree of capital mobility. Hence, their model can be calibrated and solved numerically to obtain a quantitative assessment of the effects of the policy. It also provides a clear rationale as to why workers often lobby for legislative restrictions on working time.

The proponents of 'Restrictions on Working Hours' (RWH) argue that the policy will induce employers to substitute some of the labour provided by their current employees with new hirings. But opponents point out that some of the firms' labour costs are fixed per employee (e.g. screening, hiring, training, etc) and, as such, are independent of the number of hours worked. Hence hiring more workers will increase the costs of production, which in turn will reduce the incentives for firms to generate employment.

In the paper, the authors develop a general equilibrium model where unemployment originates from search matching frictions; wages are set endogenously via a standard Nash bargaining solution; and capital is assumed to be fixed. The main forces stressed by advocates and opponents of the policy are both present. First, in the tradition of the search-matching literature, fixed costs are included in the form of a vacancy creation cost associated with the hiring of new workers. The existence of fixed costs means that the simple 'lump of labour' argument does not apply. Second, the model assumes diminishing returns to labour, and workers and hours are assumed to be perfect

substitutes. This means that the marginal product of labour increases and firms therefore have an incentive to post new vacancies when the number of hours of labour per employee falls. The presence of forces with opposite signs makes the employment effects of the policy *a priori* ambiguous.

In order to study the employment and welfare effects of RWH, the paper first characterizes the equilibrium in a laissez-faire environment (wages and hours are endogenous) and then constrains the maximum number of hours worked (wages are endogenous). The initial result is that workers and employers have largely differing (endogenous) preferences on working time. In general, RWH benefits workers, both unemployed and employed, but reduces profits and output. This is because restricting working hours below the laissez-faire solution increases the workers' bargaining power. Although the bargaining process under regulation gives a socially inefficient outcome, the distributional gains for the workers more than outweigh the efficiency loss.

The employment effects of RWH crucially depend on the response of wages. If hours were reduced but the total wage per employee remained constant, employment would unambiguously fall. In the model, however, wages adjust endogenously and the final effect on employment depends on the extent to which the reduction in hours affects both the workers' marginal utility of consumption and the marginal productivity of labour. The net employment effect will therefore depend on both technology and the workers' preferences for consumption and leisure.

Although a standard Cobb-Douglas production technology is maintained throughout, the paper does offer results for different classes of preferences. The benchmark utility function (GHH) is a generalized version of quasi-linear utility, first introduced into the real business cycle literature by Greenwood, Hercowitz and Huffman (1988). GHH preferences have the property that the marginal rate of substitution between consumption and leisure is independent of the consumption level within the period. The second utility function used is one that exhibits a Constant Elasticity of Substitution (CES) between consumption and leisure.

The assumption of a GHH utility function produces a number of interesting results. First, the relationship between working time and employment is non-monotonic. Specifically, starting



**Steady-state equilibrium conditions under alternative work time regulations with GHH preferences:** *The above graphs are drawn for the following parameter values: Relative Risk Aversion (RRA) of 0.8; interest rate of 4.5%; average job tenure of six years; elasticity of output to labour of 0.65; bargaining strength parameter and the elasticity of the matching function are both equated to 0.5 (this is the standard Hosios-Pissarides condition). The remaining parameters are calibrated so as to give a steady state unemployment rate of 8%. It is assumed that the maximum length of the working week is 80 hours.*

from a laissez-faire equilibrium, there exists a range of reductions in working hours that will increase employment. Second, there exists a range of reductions in working hours that increase the welfare of all workers. Firms, however, lose since profits fall. Third, reducing working time below the laissez-faire equilibrium reduces employment when capital is perfectly mobile and there is no fixed factor of production. This finding suggests that at least part of the positive employment effects which may materialize in the short run are likely to vanish as firms adjust their productive capacity. It might also explain why some proponents of the policy would like it implemented on the widest possible area – e.g. the EU.

In order to assess the quantitative importance of these results, the authors construct calibrated economies and simulate the effects of reductions in working time. Using conventional estimates of parameter values and GHH preferences the paper presents results for three different risk aversion parameters, ranging from risk neutrality ( $RRA=0$ ) to almost unit relative risk aversion ( $RRA=1$ ). The above graphs plot the unemployment rate, the welfare of the employed, the welfare of the unemployed and the firms' profits as functions of the number of hours worked for the case of  $RRA=0.8$ . The dashed line corresponds to the laissez-faire equilibrium (i.e. 44 hours).

The laissez-faire equilibrium in the calibrated model is confirmed by the data: 44 hours is the average working week in the UK, the only European country with virtually no restrictions on working time. While the length of the working week that maximizes workers' utility is approximately 29 hours. The effect on employment varies with the level of risk aversion, since this affects the wage response. However, for all three values of risk aversion, moving from the laissez-faire to the utility maximizing working week (i.e. from 44 to 29 hours) results in a fall in unemployment, with the decrease in the unemployment rate ranging from 0.5 to 0.9 percentage points – the number of unemployed falling between 6.25% and 11.25%. These small employment effects imply that the total number of working hours in the economy is reduced by almost the full amount of the reduction in hours per worker. Subsequently, GDP falls by about a quarter.

Relating the model to the current policy debate, the paper compares two regulated economies with working weeks of 40 and 35 hours, respectively. As is evident from the graph, the employment differences between these two economies are small. These results do not significantly change if the model is recalibrated with a higher structural unemployment rate. If parameters were set so the unemployment rate in the 40 hours economy was 11% (about the average for continental Western Europe), then the unemployment rate in the 35 hours economy would be 10.7%.



When the analysis is extended to include CES preferences the results are even less positive. Specifically, unless consumption and leisure are better substitutes than in the Cobb-Douglas case, reductions of working time cannot increase employment. The more complementary are consumption and leisure, the more negative are the employment effects of restricting working time. Yet even when these restrictions cause unemployment, the welfare of the workers, both unemployed and employed, is still maximized when a relatively large restriction on working time is imposed.

Marimon and Zilibotti's results are consistent with history: since the industrial revolution workers have supported reductions in the working week and employers have opposed them. Policies that reduce working hours are nothing new, but there is an important difference in the current reasoning for legislation: what was intended as a policy for alleviating the conditions of the employed has now become a policy for alleviating the conditions of the unemployed. Hence, there are very few examples of policies that are motivated by this new rationale. One such example is again that of France, which in 1981 decided to shorten the working week from 40 to 39 hours. And it is this situation that Bruno Crépon and Francis Kramarz study in their *Discussion Paper*.

A few months after the election of François Mitterrand in May 1981, the French government announced a mandatory reduction in the working week from 40 to 39 hours and a 5% increase in the French minimum wage, the SMIC. This was coupled with mandatory stability of monthly earnings for minimum-wage workers – effectively a further increase in their hourly wage – and a strong recommendation for the stability of monthly earnings for those earning above this level. The law became effective on 1 February 1982.

In order to evaluate the effects of the policy, Crépon and Kramarz compare workers who, in March 1981, were identical in all but one respect: some were working 40 hours a week (i.e. those directly affected by the policy) whereas others were working between 36–39 hours (i.e. those unaffected by the policy). This second group can be viewed as a control group. The paper uses panel data from the French labour force survey. The sample used contains individuals who were surveyed for the years 1981, 1982 and 1983, thus allowing the authors to follow the same individuals and characterize their situation before, during and after the implementation of the policy.

Marimon and Zilibotti's paper emphasized the importance of the response of wages to the result of the policy. In 1981 minimum-wage earners were guaranteed the same take-home pay as before the implementation of the policy, but for other workers this was only a recommendation. However, a survey carried out in 1982 shows that more than 90% of these workers had their monthly pay

unchanged after the introduction of the law. Marimon and Zilibotti's work suggests that this scenario would lead to a fall in employment. And this is confirmed by the results of Crépon and Kramarz.

They found that for observationally identical workers, those affected by the policy were twice as likely to lose their jobs compared with those unaffected by the policy: 3.2% of workers employed 36–39 hours in March 1981 were unemployed in 1982, whereas 6.2% of workers employed 40 hours in March 1981 were unemployed in 1982. As such, these results do not constitute definitive evidence that the policy had an adverse impact. They may stem from different unobservable characteristics of those working 40 hours compared to those working 36–39 hours or from the simultaneous increase in the SMIC. Hence the authors examined the employment to unemployment transition before the announcement of the policy, which was unexpected as Mitterrand's election is widely regarded as being unforeseen. The results of this show that between 1979–81 those working 40 hours appeared less likely to become unemployed than those working 36–39. In addition, removing the relatively small proportion of minimum wage workers had little effect on the results.

For those working 40 hours the most severely affected were workers who were also affected by the rise in the SMIC. For workers earning above the SMIC, those most affected worked in the service sector, had long job tenure and a low level of education. Hence, it seems that the institutions that were designed to protect such workers have harmed them disproportionately: it is the workers that have the greatest difficulties in finding a job once unemployed (i.e. minimum wage workers, the poorly educated and senior workers) that have been most severely affected by the policy.

Not all firms were able to implement the working time restrictions immediately. Hence, the authors extend their analysis by examining the employment to unemployment probabilities of those workers who were still working 40 hours after February 1982. Using a completely different data set, they found that workers employed 40 hours in 1982, 1983 and 1984 were significantly more likely to lose their jobs than those employed 39 hours in the same years. This second analysis reinforces the authors' initial result and they conclude that the reduction of the workweek from 40 to 39 hours is directly responsible for increased unemployment.

The central message from both of the papers is that the response of wages is crucial. Crépon and Kramarz show that if wages remain unchanged then unemployment will rise. But France's current policy is slightly different in structure

from the 1982 version. As in 1982, minimum-wage workers are guaranteed the same take-home pay, but this is now partly subsidized by the government. Employers of non-minimum-wage workers will be 'expected' to maintain the monthly earnings of their employees, although no legal arrangements have been made to enforce this. However, there are reasons to believe that employers may be less likely to comply with this recommendation than they were in 1982 (when 90% of workers had their pay unaltered): a number of firms have negotiated a commitment to wage moderation, many having frozen wages for the next 18 months. Hence, if wages are allowed to adjust then, according to Marimon and Zilibotti, unemployment could initially fall.

So is reducing the working week a free lunch or an irrational ideology? The answer would seem to be neither. Marimon and Zilibotti's paper suggests that there may be nothing irrational behind workers' support for working time reductions. Their model suggests that even when restrictions on working hours cause unemployment, the welfare of both unemployed and employed workers is maximized when a relatively large

restriction is imposed. But the conditions for obtaining even small increases in employment are rather restrictive. In particular, employment increases can only occur if firms have some fixed factor of production: if capital can freely adjust then reducing working hours unambiguously reduces employment. In addition, the output loss associated with the policy will have negative effects on both the tax base and government expenditure. Therefore what little benefits there are may well be short-lived.

\*: A free lunch or irrational ideology

*Discussion Paper No. 2127: 'Employment and Distributional Effects of Restricting Working Time' by Ramon Marimon (European University Institute, Firenze, and CEPR) and Fabrizio Zilibotti (Institute for International Economic Studies, Stockholm University, and CEPR).*

*Discussion Paper No. 2358: 'Employed 40 Hours or Not-Employed 39: Lessons from the 1982 Mandatory Reduction of the Workweek' by Bruno Crépon (CREST-INSEE, Paris) and Francis Kramarz (CREST-INSEE, Paris, and CEPR).*

---

## Does Exchange Rate Stability Increase Trade and Capital Flows?

Many economists and policy-makers believe that a stable exchange rate fosters trade in goods and movement of capital: the 1990 European Community report 'One Market, One Money' describes increased trade and capital market integration as one of the main benefits of adopting a single currency in Europe. But despite this widespread view, the substantial empirical literature examining the link between exchange rate uncertainty and trade has not found a consistent relationship. Even in those papers that do find a negative relationship, it is generally weak. This discrepancy between the conventional wisdom and the empirical evidence calls into question the framework used to think about these issues. In particular, these questions have not been cast in a macroeconomic, general equilibrium framework.

In a recent *Discussion Paper*, Philippe Bacchetta and Eric van Wincoop develop a benchmark model that allows them to capture the main mechanisms through which the exchange rate regime can affect trade and capital flows. Two factors play a central role in their analysis: a general equilibrium framework and a deviation from purchasing power parity (PPP). Most open economy models do not contain these two ingredients. While there exists a literature that investigates the impact of exchange rate uncertainty

on trade flows, it generally adopts a partial equilibrium approach. In these types of model exchange rate uncertainty is usually exogenous in an environment that is otherwise deterministic. Those models that do take a general equilibrium approach commonly adopt the PPP assumption, so that the real exchange rate is constant.

The case for using a general equilibrium framework is obvious, since the exchange rate cannot be examined in isolation. There is now a substantial body of literature showing a close relationship between exchange rates and easily observable fundamentals at horizons of at least one year. The same fundamentals that drive exchange rate fluctuations (e.g. monetary, fiscal and productivity shocks) affect the overall macroeconomic risks faced by firms and households. Given the large observed fluctuations in real exchange rates, the case for allowing deviations from PPP should also be obvious. The law of one price is grossly violated even for traded goods, and deviations from the law of one price are closely related to nominal exchange rate volatility.

Recently, a 'New Open Economy Macroeconomics' literature has emerged and progress has been made towards developing general equilibrium models that capture some of the key stylized facts about exchange rates. A now popular approach is to assume pricing to market in conjunction with Keynesian price rigidity. Under this assumption markets are segmented

so that there is no arbitrage. Firms set their prices before the exchange rate is known and are able to price discriminate between domestic and foreign markets. A change in the exchange rate will then directly affect the price of a good in one country relative to that in another country. This results in a close relationship between nominal and real exchange rates.

An important hypothesis underlying much of the previous literature is the idea that the exchange rate is the only source of uncertainty. However, firms typically face other sources of risk – although these are potentially correlated with exchange rate fluctuations. If exchange rates are related to fundamentals, then the same variables that drive fluctuations in the exchange rate are also responsible for uncertainty about the wage rate, the level of aggregate demand, and technology. Thus, in order to understand the implications of different exchange rate regimes for price setting and trade flows, the authors assess the overall macroeconomic risks that firms face. For this purpose, they extend the 'New Open Economy Macroeconomics' literature in several directions.

In the benchmark model the authors consider the case where uncertainty comes only from stochastic monetary shocks. They develop a two-country general equilibrium model with price rigidity and pricing to market. The world is composed of households, firms and a government in each country. Households decide their optimal level of consumption, labour supply and money holdings, where money is held through a simple cash-in-advance constraint. Each government provides random money transfers to its residents. And trade takes place as a result of monopolistic competition in differentiated goods. In particular, they initially consider only a one-period version of the model, do not allow for capital accumulation, and assume utility is separable in consumption and leisure.

A crucial channel for the impact of the exchange rate regime is the price-setting behaviour of firms. Firms set their price in both markets (home and abroad) before the uncertainty about either country's money supply is resolved. They do not change their prices after becoming aware of each country's money supply because this would be too costly. Owing to the symmetric structure of the model, the nominal exchange rate is equal to the ratio of the two countries' money supplies. Although this is clearly a very simplistic exchange rate equation, it captures the basic idea that the exchange rate is connected to underlying fundamentals, thus illustrating the importance of the general equilibrium analysis. Hence, uncertainty about the fundamentals (i.e. the money supplies) not only leads to uncertainty about the exchange rate firms face, but also about the wages they pay and the demand for their goods.

By comparing prices and trade flows under both fixed and floating exchange rates, the authors show that in a world of

only monetary shocks trade is not necessarily higher under a fixed exchange rate system. In the benchmark model the level of trade is unaffected by the type of exchange rate regime when utility is separable in consumption and leisure. This finding is consistent with conclusions that have been drawn from the empirical literature. If the assumption that utility is separable in consumption and leisure is dropped then trade is found to be higher (lower) under a flexible than under a fixed exchange rate system when consumption and leisure are complements (substitutes).

In a partial equilibrium analysis the above result would have been very different. In a general equilibrium framework, the monetary shocks that drive the exchange rate fluctuations also lead to uncertainty about wages and the quantity of goods sold, both of which affect total labour costs. Hence, even though the exchange rate is more volatile under a flexible regime, the movements in it are offset by relative demand shocks. In addition, the shocks to costs perceived by firms are the same under both types of system.

Bacchetta and van Wincoop extend their benchmark model in a number of ways. First, they include productivity and government spending shocks. Again, preferences are assumed to be separable in consumption and leisure. The inclusion of these types of shock results in lower trade under a floating regime when macroeconomic policy is used to exert a stabilizing role in the home market. Second, the model is extended so that agents trade assets before the uncertainty about the money supply in each country is resolved. None of the above findings are qualitatively affected by the inclusion or structure of an international asset market. This stems from the deviation from PPP, which makes it impossible to equate consumption across countries in all states of the world – i.e. to obtain full insurance. Thus, the presence of complete asset markets cannot eliminate risk.

Finally, the authors develop a two-period version of the model in order to examine the effects that different exchange rate regimes have on the size of net capital flows. They find that the flows tend to be lower under a floating regime when there is a preference for domestic bonds. This prediction is consistent with the high correlation that is observed between domestic saving and investment rates. There is also some preliminary empirical evidence that net capital flows may be negatively affected by exchange rate volatility.

*Discussion Paper No.1962: 'Does Exchange Rate Stability Increase Trade and Capital Flows?' by Philippe Bacchetta (Studienzentrum Gerzensee, Université de Lausanne, and CEPR) and Eric van Wincoop (Federal Reserve Bank of New York).*

# Is the Level of Unemployment Insurance Self-Perpetuating?

The generosity of unemployment insurance systems differs substantially across countries. According to a summary measure provided by the OECD, during the last decade unemployment benefits in Western Europe (with the exception of Italy and the UK) have been about three times as large as those in Japan and the US. A growing literature has argued that the level of benefits is a major factor in explaining the large differences in unemployment rates and income inequality observed in Europe and the US. Yet the majority of this work treats unemployment insurance as an exogenous variable and very few authors have attempted to explain the existence of the different levels. So why do countries choose such dramatically different levels of unemployment insurance?

One possible answer is that agents simply have different preferences in different countries. Or, more subtly, agents have different perceptions of the effects of different institutions on the economic performance of their country. However, a *Discussion Paper* by John Hassler, José V Rodríguez Mora, Kjetil Storesletten and Fabrizio Zilibotti argues that different societies populated with identical rational agents who differ only in their initial distribution of human capital may still choose very different unemployment insurance levels that can be sustained as stable equilibria.

The process through which unemployment benefits affect search behaviour in the labour market is well documented. The main contribution of Hassler et al's paper is that it explains how search behaviour can alter society's preferences towards unemployment benefits, thus giving rise to multiple steady-state equilibria with different levels of unemployment insurance. In particular, a European-type steady state with high unemployment, low employment turnover and high unemployment insurance can coexist with a US-type steady state with low unemployment, high employment turnover and low unemployment insurance. The authors present a calibrated version of their model, featuring two distinct steady-state equilibria with unemployment levels and duration rates resembling those of Europe and the US.

The paper develops a dynamic general equilibrium model that is characterized by search frictions in the labour market and populated by a continuum of overlapping generations of non-altruistic agents. Workers acquire sector-specific

skills through learning-by-doing on the job. Job destruction is stochastic and the probability of losing a job depends on the worker's human capital in the sector where they are working. Agents are risk averse and can self-insure through precautionary saving.

Depending on their current labour market conditions, some agents attach more value than others to unemployment insurance and this results in divergent political views about the amount of income taxation used for financing unemployment benefits. The unemployed generally prefer more generous levels of benefits, but their political influence is limited due to their relatively small numbers. But preferences over unemployment insurance also differ across groups of employed workers. In particular, and central to the paper's results, more 'specialized' workers (i.e. those with a pronounced comparative advantage for working in a particular activity) will tend to value insurance more highly than workers whose skills are of a more general nature.

There is a large body of empirical evidence documenting how wages change when displaced workers are forced to switch industries. Workers switching industries after losing their previous job usually suffer much larger losses than equivalent workers remaining in the same industry. This evidence supports the view that there is a significant accumulation of human capital on the job and part of this is lost if a worker switches industries. Hence, when a specialized worker is displaced, they face a trade-off between accepting any job and suffering a wage cut with respect to their pre-displacement wage, or waiting for a job offer where they have a comparative advantage, which implies a longer unemployment spell.

Specialized workers, therefore, tend to pursue relatively more selective search strategies, which entail a greater risk of long durations of unemployment. In order to hedge this risk, they prefer more generous unemployment insurance. And the more generous level of unemployment insurance reinforces the degree of specialization among workers. Hence, it is this reinforcing interaction between specialization and preference for insurance that can give rise to multiple steady-state equilibria. In particular, two economies with small or even no differences in preferences or technology may exhibit very different political choices over unemployment insurance and therefore large differences in their economic performance.

The central mechanism of this theory is that workers who suffer large wage losses when accepting certain job offers

would reject these offers if unemployment benefits were more generous. It is therefore a key empirical prediction that post-displacement wage losses should, in equilibrium, be lower in Europe than in the US. This implication is confirmed by the data: a number of empirical studies suggest that displacement leads to wage losses of 10–25% in the US and 0–4% in Europe.

It would seem that the accumulation of sector-specific skills can generate a two-way causality where social insurance affects economic behaviour, which in turn feeds back to preferences for social insurance. But the notion of specialization goes beyond human capital accumulation. The schooling system could be an alternative channel: when unemployment benefits are high a specific (risky) educational system – such as the European vocational schools or college degrees aimed at a specific profession – becomes more attractive. If a large number of workers have acquired these skills then the willingness to pay for unemployment insurance is likely to be high. Geographical mobility, which is lower in Europe than in the US, is another potential channel since buying a house serves as a region-specific capital investment.

The authors extend the paper by introducing the concept of hysteresis – i.e. the human capital of specialized individuals depreciates during spells of unemployment. For reasonable rates of loss of human capital the initial result of multiple steady-state equilibria remains, although the range of parameter values for which this is possible is reduced. Finally, the paper shows that a calibrated version of the model has two sustainable steady-state equilibria: a 'European' equilibrium with an unemployment rate of 12.7%, an average duration of unemployment of 23 months and a replacement ratio of 76%; and a 'US' equilibrium with an unemployment rate of 6.4%, an average duration of unemployment of 4.5 months and a 24% replacement ratio.

It is therefore possible to explain the large differences in institutions and economic performance observed in Europe and the US without resorting to exogenous structural differences, other than different initial distributions of agents. The paper is able to justify the strong political support for generous unemployment insurance in Europe, despite a growing consensus that it causes high unemployment. It would seem that Europeans are willing to accept a high-unemployment, high-unemployment-insurance scenario, as this may best represent Europe's high proportion of specialized workers.

A general conclusion from the results is that strong inertia in changing social institutions may emerge endogenously, even if no exogenous cost of change is involved. However, although policy reform may be met by strong initial opposition, the political support for this should fade over

time as the new levels of unemployment insurance change the distribution of the labour force. This would seem to give some credence to the idea of pushing ahead with welfare reforms despite their unpopularity. But the paper draws a slightly different conclusion. The results from the social welfare maximization case suggest that it may be socially optimal for Europe and the US to retain their respective levels of unemployment insurance. Since their labour market institutions have been sustained over a long period of time, they have led to distributions of voters where many would lose from changes in the status quo.

*Discussion Paper No. 2126: 'Equilibrium Unemployment Insurance' by John Hassler (Stockholm University and CEPR), José V Rodríguez Mora (Universitat Pompeu Fabra, Barcelona), Kjetil Storesletten (Institute for International Economic Studies, Stockholm University, and CEPR) and Fabrizio Zilibotti (Institute for International Economic Studies, Stockholm University, and CEPR).*

## Industrial Organization Workshop

The third CEPR/ESRC Industrial Organization Workshop, entitled 'Potpourri 2000', was held in London on 19 May 2000. As the title suggests, the Workshop covered a broad range of issues in Industrial Organization. Organized by Pierre Régibeau (University of Essex and CEPR), the programme contained the following papers:

'Applying Auction Theory to Economics', Paul Klemperer (Nuffield College, Oxford, and CEPR)

'On the Incidence and Variety of Low-Price Guarantees', Maria Arbatskaya (University of Rochester), Morten Hviid (University of Warwick) and Greg Schaffer (University of Rochester)

'Market Foreclosure and Exclusivity Contracts when Consumers Have Switching Costs', Tommaso Valletti (London School of Economics and CEPR)

'Entry Mistakes, Entrepreneurial Boldness and Optimism', Isabelle Brocas (ECARES, Université Libre de Bruxelles) and Juan Carrillo (ECARES, Université Libre de Bruxelles, and CEPR)

The above papers can be downloaded from [www.cepr.org/meets/wkcn/6/668/](http://www.cepr.org/meets/wkcn/6/668/)

# Could an Active Monetary Policy Create a Liquidity Trap?

John Taylor's seminal 1993 paper illustrated how US monetary policy could be described by an interest rate feedback rule, whereby the short-term interest rate is set as an increasing function of both inflation and output. An extensive literature has since developed that explores the efficiency and dynamic properties of such feedback rules, with particular attention being paid to their supposedly stabilizing properties. The central policy recommendation that has emerged from this literature is that monetary authorities should conduct an 'active' monetary policy, in the sense that they should increase the nominal interest rate by more than one-for-one when the inflation rate increases. These active interest rate feedback rules have come to be known as Taylor rules and, given the amount of controversy that usually surrounds macroeconomic policy, the degree of consensus that has emerged regarding their desirability is remarkable.

Subsequent empirical studies have confirmed that Taylor rules are not specific to the US: for the past two decades, the central banks of Japan, France and the UK all seem to have followed an active monetary policy rule. In fact, even the Bundesbank, which consistently emphasised its adherence to monetary targets, was shown to follow a simple Taylor rule. All of this would seem to imply that actual monetary policy has been contributing to macroeconomic stability. But are Taylor rules always stabilizing? A *Discussion Paper* by Jess Benhabib, Stephanie Schmitt-Grohé and Martin Uribe suggests not.

Using the same theoretical framework as the previous literature, the authors demonstrate that for both flexible- and sticky-price models and for simulations of calibrated economies, an active monetary policy will generally lead to indeterminacy and multiple equilibria. Central banks that follow such a policy around a given inflation target may well lead the economy into a deflationary spiral similar to the one observed in Japan and, as some have argued, Europe. The reason for this multiplicity of equilibria stems from one simple fact: the impossibility of negative nominal interest rates.

The above box formalises a simple Taylor rule. Specifically, an active monetary policy (i.e.  $\alpha > 1$ ) can be defined as one that aggressively fights inflation by raising(lowering) the

nominal interest rate by more than the increase(decrease) in inflation. This is generally thought to stabilize the real side of the economy by ensuring the uniqueness of the equilibrium. A passive monetary policy (i.e.  $\alpha < 1$ ), defined as one that underreacts to inflation by raising(lowering) the nominal interest rate by less than the increase(decrease) in inflation, is generally thought to destabilize the economy by giving rise to expectation-driven fluctuations. By constraining the nominal interest rate to be non-negative, the authors are able to illustrate that if there exists a steady state with an active monetary policy then there must also exist another steady state with a passive monetary policy.

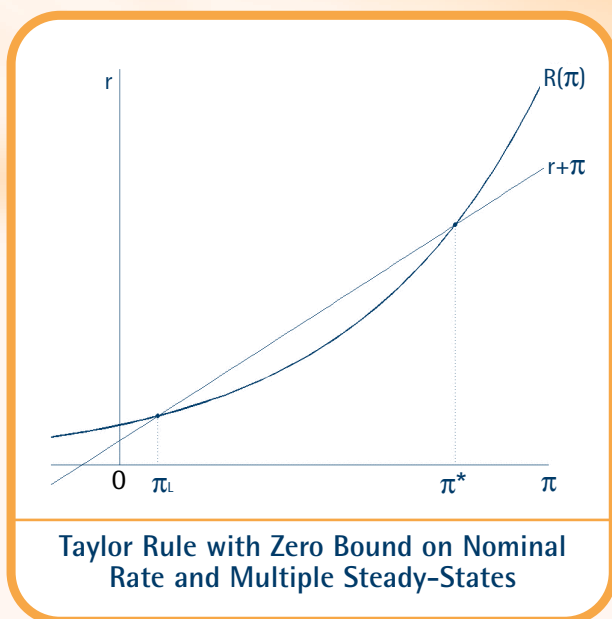
## A Simple Taylor Rule

$$r_t = r^* + \pi^* + \alpha(\pi_t - \pi^*) + \beta x_t$$

Where  $r_t$  is the nominal interest rate that the feedback rule defines;  $r^*$  is the long-run equilibrium real interest rate;  $\pi^*$  is the target inflation rate;  $\pi_t$  is the current inflation rate; and  $x_t$  is the output gap, essentially current output minus potential output.  $\alpha$  is the weight ascribed to the inflation gap and  $\beta$  is the weight ascribed to the output gap. Active monetary policy is defined as  $\alpha > 1$ ; passive monetary policy as  $\alpha < 1$ .

To intuitively illustrate the source of multiplicity, consider a simplified monetary policy rule whereby the monetary authority sets the nominal rate as a non-decreasing function of inflation:  $R=R(\pi)$ , where  $R$  denotes the nominal interest rate and  $\pi$  denotes the rate of inflation. Combining this rule with the Fischer equation,  $R = r + \pi$ , where  $r$  is the real interest rate, yields the steady-state Fischer equation  $R(\pi) = r + \pi$ . Suppose that there exists a steady state with active monetary policy, that is a value of  $\pi$  that solves the steady-state Fischer equation and satisfies  $R'(\pi) > 1$ . If the policy rule respects the zero bound on nominal rates, then there must also exist another steady state in which monetary policy is passive, that is a steady state in which  $R'(\pi) < 1$ .

The graph below demonstrates the existence of multiple solutions to the steady-state Fischer equation and establishes the possibility of at least two steady-state equilibria: one, an active equilibrium (i.e.  $R'(\pi^*) > 1$ ) at the inflation target (i.e.  $\pi^*$ ); the other, a passive equilibrium (i.e.  $R'(\pi_L) < 1$ ) at a level of inflation below the inflation target (i.e.  $\pi_L$ ) that is possibly negative and a nominal interest rate close to zero. It immediately follows from this that a central bank cannot have a globally active monetary policy, in that for inflation rates sufficiently below the inflation target, the bank can no longer respond to declines in inflation by cutting the nominal interest rate by more than the observed fall in inflation.



Previous authors have limited their analysis to the local stability properties of interest rate feedback rules in which inflation is constrained to remain forever near the central bank's long-run inflation target. One of the justifications for such a strategy is the implicit assumption that all inflation paths which move far enough away from the inflation target are explosive and will therefore not be able to be supported as equilibrium outcomes. Benhabib et al demonstrate that the zero bound on nominal rates implies that paths for the inflation rate in which inflation moves further and further below the inflation target do not become explosive and can indeed be supported as equilibrium outcomes.

Of course, it does not necessarily follow that active monetary policy rules are destabilizing solely because they

give rise to multiple steady-state equilibria. Observed inflation dynamics are quite smooth, giving little support to a model in which movements in inflation are due to jumps from one steady state to another. The authors argue, however, that Taylor rules are destabilizing because the multiplicity of steady-state equilibria that they induce opens the door to a much larger class of equilibria. Specifically, the paper illustrates, through both flexible- and sticky-price models, that in general there exists an infinite number of equilibrium trajectories originating in the vicinity of the active steady state that converge either to the passive steady state (via a saddle connection) or to a stable limit cycle around the active steady state.

Simulations of calibrated versions of the sticky-price model indicate that saddle connections from the active steady state to the passive one exist for empirically plausible parameterizations and are indeed the most typical pattern as they are robust to a wide variety of parameter values. This type of equilibrium is of particular interest as it sheds light on the precise way in which economies may fall into liquidity traps. Interestingly, owing to the nature of the saddle connection that links the active steady state to the passive one, an economy may seem to be fluctuating around the inflation target when in actual fact it is spiralling down towards a liquidity trap. Hence, the recent rise in Euroland inflation, to a figure above the ECB's 2% inflation ceiling, is not inconsistent with the theory of an economy moving towards a liquidity trap.

Recent work on liquidity traps by Paul Krugman has also focused on the zero bound on nominal interest rates. An additional element in Krugman's model of the liquidity trap (that has received some criticism) is the assumption of negative equilibrium real interest rates. By contrast, in Benhabib et al's model liquidity traps arise even when the real interest rate is positive. They emerge as a consequence of the central bank's commitment to an active monetary policy rule, which in combination with the zero bound on nominal rates, prevents the monetary authority from credibly threatening to follow an inflationary policy at near zero interest rates.

*Discussion Paper No. 2314: 'The Perils of Taylor Rules' by Jess Benhabib (New York University), Stephanie Schmitt-Grohé (Rutgers University and CEPR) and Martin Uribe (The University of Pennsylvania).*

## Monetary and Exchange Rate Policies for Transition Economies

Ten years into transition, the choice of an exchange rate regime remains nearly as controversial as it was at the outset. Sharply different regimes continue to coexist, from currency boards in Estonia, Lithuania and Bulgaria to (relatively) free floating in the Czech Republic, Poland and Russia, to a narrowly fixed rate in Hungary, Latvia and the Slovak Republic. Economic performance also remains heterogeneous. Most countries had returned to positive growth rates by 1998 but only a handful had restored their real GDP level of 1989. Although there is no clear link between growth and the exchange rate regime, it is obvious that exchange rate policy remains a vexing and crucially important problem.

Initially, exchange rate policy was largely dominated by the trade-off between disinflation and external competitiveness. With few exceptions (Romania and Russia, mainly) inflation is no longer dominating the policy agenda. International pressure (IMF, OECD and EU) has contributed to keep low inflation as an important objective of policy, but it is not clear that such a preoccupation is warranted. The countries that have achieved the best growth performance since 1989 are those that have settled for an inflation rate in the 10–15% range. Once the exchange rate is no longer exclusively guided by its role as a nominal anchor, a number of complex issues arise.

The fifth, and final, report in CEPR's *Economic Policy Initiative* addresses the macroeconomic challenges faced by the Associated Countries (ACs) as they prepare to join the European Union and eventually its single currency. Specifically, the report addresses a number of key questions for the transition economies: what approach should policy-makers adopt with regard to developments in their real exchange rate? What, if anything, can these countries do to avoid external crises? To what extent must any credible monetary policy be underpinned by sound fiscal policy? And what nominal anchor should be adopted?

### What is the Equilibrium Exchange Rate?

Irrespective of the exchange regime chosen, the authorities must have a view of the appropriate exchange rate level. With few exceptions, after an initial fall at the time when

markets were established, the real exchange rates in the transition economies have undergone massive real appreciations. This is due to both a catch-up, following the initial exchange rate collapse, and an equilibrium real appreciation, which results from the rapid gains in efficiency that the transition process implies. So when is the equilibrium level reached?

The report provides estimates of equilibrium real exchange rates for the following transition economies: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Slovak Republic, Slovenia and the Ukraine. The authors regress a number of variables on monthly US dollar wages using low-frequency cross-country data drawn from all five continents – 85 countries with observations taken every five years from 1970–95. The infrequency of the data and the large sample size provide justification that the result from this regression can be interpreted as representing a benchmark equation that estimates the equilibrium value of the real exchange rate. This approach rests on the assumption that the same process drives the dollar wage worldwide and is tested, and subsequently validated, by the use of regional dummy variables.

In the regression, dollar wages are used as they avoid the index problem that is associated with prices – i.e. price indices cannot be compared across countries but wages can once they are converted into the same currency. The dollar wage is explained by the following variables: GDP per capita, age dependency ratio, openness to trade, government consumption, non-bank and bank net foreign assets, credit to the private sector and regional dummies. These variables explain 86% of the total variance of dollar wages across time and countries.

The benchmark regression is then used to produce estimates of the evolution of the equilibrium real exchange rate over the period 1990–97. The results show that in most of the ACs the estimated equilibrium dollar wage rises during the transition period. However, this is not the case in Bulgaria, Hungary, Russia and the Ukraine where it is actually declining, often sharply. These reductions reflect the sharp fall in public spending, the deterioration of the net external asset position and falling credit to the private sector. Deeper structural problems (declining GDP per capita and a deterioration in the age dependency ratio) are also found to play an important role in Russia and the Ukraine.



More important for policy purposes is the value of the actual exchange rate in relation to its equilibrium level. Until 1996, there is little evidence of overvaluation in any of the countries studied, despite fear frequently expressed in the wake of the massive real appreciation witnessed since 1990. By 1996, however, the equilibrium real exchange rate estimates suggest that Hungary, Poland, Romania and Slovenia may well have reached a situation where they are close to overvaluation.

## Capital Inflows and Crises Prevention

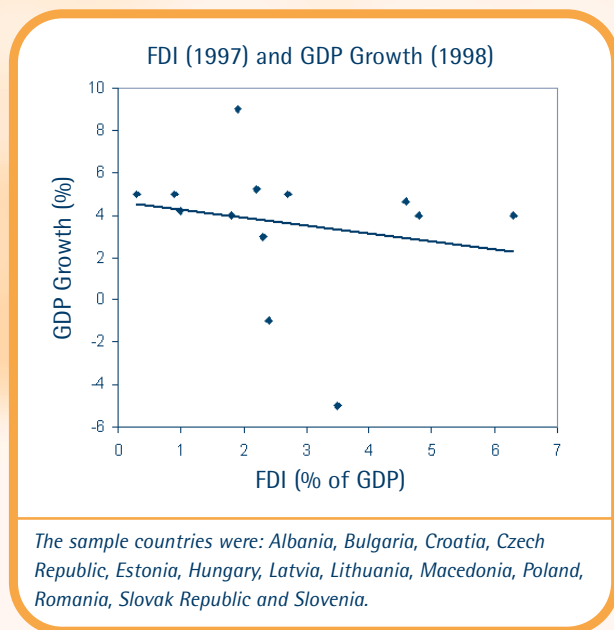
The aftermath of a currency crash has become a familiar scene. Monetary authorities blame financial markets for devious behaviour, while financial markets accuse the authorities of mistaken policies. Popular economists blame both authorities and markets for poor judgement and soon develop interpretations which explain the crisis that they failed to anticipate. In the aftermath of the Asian and Russian crises, much effort is being devoted to the quest for early warning indicators. Yet there are good grounds to believe that this effort is unlikely to succeed.

Currency crises often correspond to clear policy mismanagement. These crises, termed 'first generation' crises in the literature, are usually clearly foreseen by careful observers: Mexico in 1994, the Czech Republic and Thailand in 1997, Russia in 1998 and Brazil in 1999 are all thought to belong to this category. Sometimes, however, currency crises are self-fulfilling. These 'second generation' crises (i.e. self fulfilling, multiple equilibria crises) seem to characterize the 1997 crises of Indonesia, Malaysia and Korea as well as much of the after-effect of the Russian crisis, including what happened in Poland and Hungary. They are, almost by definition, unforeseeable.

The Report presents evidence that supports the view that currency crises are inherently difficult to detect with any degree of accuracy and that efforts to construct early warning indicators may be misguided. A conservative indicator will fail to signal most crises while occasionally provoking false alarms, which could be enough to precipitate a run. Lighter triggers will detect upcoming crises more often, but would even more often send unjustified warning signals.

This conclusion certainly applies to the transition economies that are starting to undergo the boom-bust cycles of capital inflows, real appreciation and sudden withdrawals of foreign capital. It is much more desirable to refocus policy on the fundamentals: fixed exchange rate regimes do not seem to coexist very easily with full capital mobility. A number of countries (the Czech Republic, Estonia, Poland and Russia) have quickly moved to full capital mobility, often under external pressure. An admittedly casual look at the evidence

fails to unearth the growth-enhancing effects of full integration in the world financial markets. Using the EBRD index of capital liberalization, the graph below shows that growth tends to be higher where FDI, as a percentage of GDP, is lower (the correlation coefficient is -0.19). There is just no apparent link between growth and capital liberalization in the transition economies (the correlation coefficient is 0.02).



Moreover, the emphasis on liberalization has not been matched by adequate regulation of the financial sector. Financial markets have inherent weaknesses (born out of unavoidable information asymmetries) which call for prudential regulation. Currency markets are the only financial markets not subject to elaborate regulation, but this does not mean that it is impossible to control them. Chile has shown how a country can use prudential rules to sort out capital inflows. By adopting *encaje*, a system of compulsory non-remunerated deposit requirements on all capital flows, Chile has considerably lengthened the maturity of its external liabilities. Although long maturity is not necessarily a guarantee of stability, the Chilean experience deserves close scrutiny in the transition countries.

## Fiscal Policy and the Exchange Rate

Unless fiscal policy is sufficiently prudent, any fixed exchange rate policy will be unsustainable. Fiscal stabilization must be achieved before any type of exchange rate policy will work effectively. A useful distinction when thinking about fiscal stabilization is as follows. Fiscal dominance can be defined as a policy regime where

monetary policy will always be called upon to solve fiscal unsustainability, through the monetization of government debt. In contrast, monetary dominance corresponds to the case where a debt build-up will have to be dealt with by fiscal means, through either a closing of the deficit or a debt default. In a monetary dominance regime the central bank cannot be coerced into bailing out an undisciplined government. Thus, fiscal stabilization can be defined as the move from fiscal dominance to monetary dominance. Once this is achieved, the central bank can control the price level and the exchange rate.

The link between fiscal policy and the exchange rate regime must be taken into account when considering the accession path. The tighter is the exchange rate commitment (e.g. adherence to an ERM 2 with narrow bands) the more fiscal policy must take on responsibility for its own sustainability, and for dealing with shocks and the costs of restructuring. Unless fiscal policy is under control, the central bank is likely to face strong pressure to monetize government debt. Central bank independence is part of the response to this, but the economies of Western Europe concluded that central bank independence alone was insufficient and imposed macroeconomic convergence criteria under the guise of the Stability and Growth Pact. According to the Report, incentives for responsible fiscal policy should be given at least as much weight as formal exchange rate agreements and nominal convergence criteria.

### Exchange Rate Regimes

The question of why countries undergoing a similar shock (i.e. the transition shock) have adopted so widely differing exchange rate regimes remains a challenging puzzle. Country-specific factors have to be a large part of the explanation, but this raises a new and difficult question: what should the accession countries do in the run-up to EU and EMU membership? Will they be able to sustain these differences during the transition to the EU or should they converge on a single exchange rate regime? This is a question that needs to be tackled as part of the current discussions over accession.

A good starting point is the choice of an inflation rate, more precisely the speed of disinflation and the longer-run target. Compared with mature economies, lower inflation in transition economies may be more beneficial because of induced effects on financial deepening, inadequate inflation accounting (which is biased upwards) and uncertainty reduction. But a number of arguments pull in the opposite direction. Early in transition the social return on investment should be abnormally high. With acute capital market imperfections and poor tax compliance, the cost of raising

public funds is high and the benefit is large. This suggests that the inflation tax may be of a higher social value than in mature economies. In addition, relative price adjustments are likely to be sizeable as the economic structure is rapidly being modified. Given downward nominal rigidities, some inflation may facilitate more rapid real adjustment.

It is hard to argue that a single speed for disinflation fits all countries. When unemployment is initially high, the marginal gain to slower disinflation is low, so rapid disinflation is desirable; when unemployment is initially low, slow disinflation is preferable since it avoids unnecessary persistence of recession. Except for the Czech Republic, transition economies now have high unemployment rates. Other things being equal, these countries should be encouraged to disinflate quickly.

For transition economies reputation building is a serious matter, therefore it is important that they announce targets that are achievable. Essentially, the ACs have the choice between a domestic nominal anchor (a monetary or inflation target) or an external nominal anchor (an exchange rate target). The question of which is best remains unresolved; different regimes have a comparative advantage in responding to different shocks. An exchange rate peg accompanied by unsterilized intervention may be suitable for coping with shocks to domestic money demand (money supply is automatically and endogenously supplied through the balance of payments), whereas domestic anchors may be better at coping with competitiveness shocks (the exchange rate can adjust). Transition economies face both kinds of shock, and the diagnosis of these shocks is never easy.

The general lessons learned from the experience so far seem to be that rigid monetary targets cannot be upheld while the determinants of money demand are changing. Inflation targets are unattractive until price liberalization and structural adjustment are more fully completed, the transmission mechanism of monetary policy is more reliable and adequate fiscal support exists. Exchange rate targets, in the absence of adequate fiscal support, invite substantial financial inflows that increase vulnerability to a subsequent speculative attack. No regime is a clear winner; otherwise, the debate over nominal anchoring in OECD countries would have been resolved decades ago.

Full adherence to the Stability and Growth Pact will be a requirement for entry into EMU. Against the background of this incentive for responsible fiscal policy, the report concludes that there are three possible transitional regimes for the years leading up to EU entry:

- Domestic anchoring via an inflation target, in which a monetary indicator is one of several indicators used to assess the stance of policy; accompanied by a floating, albeit managed, exchange rate.

## FDI and the Multinational Corporation

A CEPR/LdA Workshop on 'Foreign Direct Investment and the Multinational Corporation' was held in Turin on 19/20 May 2000. Organized by Giorgio Barba Navaretti (Università di Ancona and Centro Studi Luca d'Agliano), Riccardo Faini (Università degli Studi di Brescia, IMF and CEPR), Anna Falzoni (Università di Bergamo and Centro Studi Luca d'Agliano) and Anthony Venables (London School of Economics and CEPR), the programme contained the following papers:

'Vertical Production Networks', Anthony Venables (London School of Economics and CEPR)

'Trade, FDI, and Congestion - The Small and Very Open Economy', Kristof Dascher (University College Dublin)

'The District Goes Global: Export vs Delocation', Giorgio Basevi (Università di Bologna) and Gianmarco I P Ottaviano (Università di Bologna, Università Bocconi, Milano, and CEPR)

'Ownership, Information Technology, and Multinational Activities', Jean-François Ruhashyankiko (CEP, London School of Economics and CEPR)

'Exit, Downsizing or International Relocation of Production', Enrico Pennings (Universitat Pompeu Fabra, Barcelona) and Leo Sleuwaegen (Erasmus Universiteit, Rotterdam)

'Technological Leadership and the Choice of Entry Mode by Foreign Investors', Beata K Smarzynska (World Bank)

'Inward Direct Investment in Greece: Home Country Determinants', Raymond Loufir (Athens Institute of Economic Policy Studies (IMOP)), Helen Louri (Athens University of Economics and Business) and Marina Papanastassiou (Athens University of Economics and Business)

'Firm Interdependence in Foreign Production: Leading UK Firms in 1986 and 1993', Stephen Pavelin (University College Dublin)

'Multinationals and Wage-Competition between Different Locations', Henrik Braconier (IUI, Stockholm) and Karolina Ekholm (IUI, Stockholm, and CEPR)

'Multinational Firms: Easy Come, Easy Go?', Jan Haaland (Norwegian School of Economics and Business Administration, Bergen, and CEPR) and Ian Wooton (University of Glasgow and CEPR)

'For Whom is MAI? A Theoretical Perspective on Multinational Agreements on Investment', Alessandro Turrini (Università di Bergamo, Università Bocconi, Milano, and CEPR) and Dieter Urban (Centro Studi Luca d'Agliano, Università Bocconi, Milano)

A full report of the Workshop is available at [www.cepr.org/pubs/bulletin/meets/2291.htm](http://www.cepr.org/pubs/bulletin/meets/2291.htm)

The above papers can be downloaded from [www.cepr.org/meets/wkcn/2/2291/](http://www.cepr.org/meets/wkcn/2/2291/)

- Unilateral crawling band, initially wide, whose rate of parity depreciation is preannounced for a period in advance but is expected to fall over time.
- A currency board that maintains a fixed nominal parity by a commitment to allow unsterilized reserve flows to be fully reflected in the domestic money stock.

Which of these regimes is most appropriate may well vary from country to country.

Debates about monetary regimes need to be kept in perspective. The first and second priorities for transition economies should be structural adjustment and fiscal responsibility. Unless both exist, any rigidly set monetary policy will eventually fail. In the process, care should be taken to avoid establishing an uncompetitive real exchange

rate. This requires a heavy dose of flexibility as well as, possibly, restrictions to capital inflows, which have repeatedly created unmanageable policy dilemmas, as South-East Asia and Latin America keep reminding us.

*Economic Policy Initiative No. 5, 'Monetary and Exchange Rate Policies, EMU and Central and Eastern Europe' by David Begg (Birkbeck College, London, and CEPR), László Halpern (Hungarian Academy of Sciences, Budapest, and CEPR) and Charles Wyplosz (Graduate Institute of International Studies, Geneva, and CEPR).*

The report was launched at Lunchtime Meetings held in London in October 1999 and Brussels in November 1999.

# Stuck in Transit: Rethinking Russian Economic Reform

On 17 August 1998, Russia's economy was finally punished for its delay in economic reform. The lack of fiscal discipline and an overvalued exchange rate forced the government to devalue the rouble and default on its debt. In the immediate aftermath of the crisis, many forecasters predicted hyperinflation and a large and rapid fall in production. Victor Gerashchenko, dubbed 'the world's worst central banker' by Jeffrey Sachs, had been reappointed as governor of the Central Bank of Russia (CBR), and was expected to resort once again to printing money.

Fortunately, this scenario has not materialized. Instead, the Russian economy has been on a path of recovery with impressive growth rates in industrial production, albeit from a low base and mainly in import-substituting activities. Inflation has come down, and Gerashchenko's actions have been very different from those in 1992–4, with monetary growth kept at a reasonable level. But the other side of Gerashchenko's record is equally telling: there has been a failure to take action on restructuring the failed banking sector. To put it simply, Russia experienced economic growth without structural reform.

A new CEPR Report, 'Stuck in Transit: Rethinking Russian Economic Reform', explores the events of August 1998, their underlying causes and the deep flaws they exposed in the process of reform. Drawing on a series of major new research initiatives at the *Russian European Centre for Economic Policy* (RECEP) in Moscow, the Report discusses the policy options for rebuilding the Russian economy.

Russia's decline under an overvalued exchange rate and its revival since are not surprising. What is surprising is unlike many other countries that have followed this path in recent years – the UK, Mexico, Korea, Thailand – Russia has not gone through a major recession in the wake of the currency crisis and prior to recovery. On the contrary, the slump has been extremely short-lived. The explanation for this phenomenon is that, unlike other countries, Russia was not hit with a credit crunch. Before August 1998, Russian banks mainly channelled money from local depositors and abroad into short-term Treasury bills (GKOs) and the booming stock market. Lending money to the real sector was considered too risky, given the poor development of creditor rights, the dire state of industry and the enormous risk-free gains that could be made in and around the GKO

market. As a result, credit to the Russian real sector was unaffected by the crisis, since it had been largely non-existent beforehand.

## Arrears

Since the beginning of transition, the tide of arrears has been mounting relentlessly: from the state to its employees; from taxpayers to the state; and from firms to firms. Research documented in the report highlights the mechanisms of arrears growth and offers indirect evidence that non-payment of taxes reflects long-term corporate distress rather than temporary difficulties. This observation suggests that the arrears phenomenon is a feature associated with the fact that large segments of Russian industry have not yet been restructured. Put differently, an acceleration of the pace of industry-level reform is likely to reduce arrears to the budget and not to increase them, despite claims to the contrary.

The role of monetary policy in this process is not clear-cut. Higher real interest rates increase arrears but so does an increase in the real money supply. Causation between real money and increases in arrears runs both ways (after 1994) with two widely different interpretations. It may be that tight money hurts firms or it may be that firms run arrears to accumulate money because it is profitable to do so. Tight fiscal policy can also increase arrears if it takes the form of a reduction in expenditures, although the effect is relatively small. On the other side of the budget, reductions in tax collection do not affect arrears. Hence, tight macroeconomic policies may contribute to increasing arrears.

Russia has announced several tax amnesties in the hope of solving the problem once and for all. Unfortunately, each amnesty was followed by another jump in tax arrears as non-compliant taxpayers interpreted the amnesty as a promise of further forgiveness and subsequently the cost of non-compliance fell. By contrast, a tough approach to arrears works. Bankrupting firms that do not pay taxes is likely to be the most powerful tool for combating arrears to the budget.

## Taxes

Few analyses of the crisis have failed to highlight Russia's tax system as a key cause of the collapse. Revenue raising measures have dominated the government's discussions with the IMF, and on several occasions loan tranches were

withheld in order to punish Russia for failing to meet tax collection targets. But does Russia really collect an unusually small amount in taxes? Research documented in the report suggests not.

Since 1994, Russia's general government revenues have remained remarkably stable as a share of GDP, despite variations in government personnel (including five prime ministers, eight finance ministers and five heads of the state tax service), political circumstances (two elections and two wars), financial market conditions, tax legislation and IMF pressure. The research presented in the report seeks to predict how much Russia can expect to raise in taxes by identifying a steady-state level for Russia's budget using cross-country data. Based on the 49 developed, developing and transition countries for which data are available, Russia is predicted to collect 32–33% of GDP, compared with an actual value of tax collection of 33% of GDP.

These results suggest that the level of taxes in Russia is close to the level that would be expected of a country of its size, income and economic structure. Tax evasion and arrears are certainly rampant, but it seems that they should be understood as the result of the state's attempt to extract more from the private sector than is feasible for a country in Russia's position. Explanations for the fiscal crisis should be sought in the level of expenditure and the distribution of revenues among levels of government rather than in the performance of the tax system. An important cause of the federal government's default was an outflow of revenues from the federal budget to the regions.

## Fiscal Federalism

The main underlying principle of fiscal federalism (i.e. independence of different tiers of government) has been violated at both the regional and sub-regional level in Russia. Over the last decade the federal government has signed bilateral treaties with different levels of the federation that individually regulate its relationships with the regions. The terms of these treaties vary substantially, which creates a confusing and non-transparent system. In general, sub-federal (local) governments are responsible for provision of the most important and inelastic expenditures such as health, education and housing subsidies, while the most inelastic revenues accrue to the centre. This mismatch creates a need for an unreasonable amount of fiscal redistribution.

The Russian system of intergovernmental relations gives incentives to government officials at all levels for poor tax collection, rebellion against the federal centre (in the case of regions) and against the region (in the case of localities), and for inefficient overspending and subsidies. Lack of clarity in

the division of revenue and expenditure responsibilities leads to constant bargaining between regions and the federation. The main findings of research on sub-federal relations are that localities have still not gained independence from the regional governments. Local officials have not been given sufficient responsibility for their decisions on expenditures and have not been granted the right to raise their own revenues. In addition, the fiscal dependence of local governments affects the distribution of public spending over different budget items and has a negative effect on the efficiency of local public goods provision.

The report concludes that a federal law is needed that would clearly regulate the redistribution process between the federation and regions and localities. On both the federal and sub-federal levels, funds should be distributed according to a fixed, long-term formula based on objective criteria. Regions could themselves design the rules for redistribution between localities. The most important criterion for such rules should be that local tax revenues are not redistributed in a confiscatory manner, thus leaving incentives for efficient tax collection and fostering of the local tax base.

## Restructuring the Banking System

Despite various reform proposals, the collapse of the Russian banking sector has barely been addressed and numerous problems remain. Citizens' confidence in banks remains extremely low: CBR data indicate that there was a net outflow of household deposits from commercial banks between September 1998 and January 1999 towards cash and Sberbank (the state owned savings bank), with commercial banks' volume falling by 18%. It is essential to bring domestic private savings back into the financial system in order to reduce interest rates and fund restructuring and the state budget.

The report proposes a strategy of 'jump-starting' bank restructuring that has three main components. First, the establishment of a narrow bank sector that will ensure a country-wide retail operation network and the essential core payment system. Only in this sector would deposits be insured and then only partially. This provision will provide competition for the *de facto* monopoly of the retail sector enjoyed by Sberbank, which is the sole insured bank. Narrow banks would be able to invest only in safe assets, mostly government and CBR liabilities.

Second, the sequential closure of over 90% of all banks and the creation of a *de facto* concentrated commercial banking

segment, to be achieved via extremely strict bank licensing. And third, the creation of a more transparent bank supervisory institution, which must be able to impose asset freezes and force shareholders to dilute their control through recapitalization via new share issues well ahead of financial distress. This arrangement is critical to ensuring an exit route and an ultimate source of discipline.

### Financial-Industrial Groups

Related to the problems in the banking sector is the emergence of the Financial-Industrial Groups (FIGs). These groups involve close relationships between financial institutions and industrial enterprises, which allow firms access to capital without the need for arm's-length contracting with financial institutions and capital markets. West Germany and Japan relied on such structures to rebuild their post-war economies and similar entities appeared in the less developed countries of South East Asia and Latin America. But there is increasing scepticism about their efficiency, as the crises in the Asian economies and in Russia have cast a shadow over the benefits of such conglomerations.

The political power held by the FIGs played an important role in the process that caused the crisis. They offered a convenient route for tax evasion and capital flight via under-invoicing for exports and over-invoicing for imports. The recklessness of many banks' practices and the credibility granted to them by foreign investors can only be understood in terms of easy access to political and financial favours. The main drawback of conglomeration is that it often leads to the concentration of economic and political power in the hands of a few businessmen.

A bankruptcy threat is often not credible for a FIG and, as a result, its directors have fewer incentives to operate efficiently than the managers of small enterprises. The softness of the budget constraint can be manifested in many ways, ranging from subsidies to FIG enterprises and tolerance of FIG tax arrears to bailouts of bankrupt FIG banks. Other favours include cheap credits and import barriers. Although FIGs do contribute to growth in the early stages of their development, they can eventually lead to inefficiencies by promoting too close a relationship between businesses, banks and the government.

### Industrial Restructuring

In contrast with most Russian firms, firms in the Central European countries have restructured. Whether state-owned, corporatized or privatized, they reacted to

increased product market competition and a hardening of the budget constraint. Their adjustment was mainly defensive, but the survival-oriented strategy of the state-owned sector led to significant downsizing and asset sales. This facilitated the transfer of assets to more productive uses and contributed to the development of a new private sector.

What are the conditions that could trigger a similar process in Russia? Beyond obvious steps, such as the elimination of corruption and enforcement of contracts, the report advocates a number of measures that focus directly on the enterprise sector. First, competition should be increased in the product market. It must deal with the formation of new types of large and powerful organizations, such as FIGs. The creation of large private enterprises should not be forbidden but neither should they be encouraged by special fiscal advantages.

Second, the hardening of bank credit to firms. This must involve not only supervision and regulation of the financial sector, but also the creation of adequate incentives for commercial banks to enforce hard budget constraints on their borrowers and to initiate bankruptcy procedures. If banks became tougher on bad debtors and undertook measures to ensure the repayment of established enterprises' debts then the new private sector may find it easier to finance its growth.

Third, the enforcement of bankruptcy laws. The credible threat of bankruptcy may change the expectations of employees and managers and encourage them to adopt various measures, including scaling down production and employment to avoid insolvency. Non-enforcement of bankruptcy procedures often comes from the fear of massive, politically unsustainable waves of lay-offs. But even without official bankruptcies, employees can become *de facto* unemployed – e.g. by no longer receiving their wages.

### Barter Economy

One of the striking features of Russia's economic transition has been the enormous growth in the use of barter. What was a transitory phase of transition in Central Europe has become an endemic feature of the Russian situation. In 1992, barter accounted for around 5% of enterprise transactions; by 1997 this had increased to at least 47%. The proliferation of barter imposes huge externalities on the economy as a whole. By definition, barter transactions are much less observable and are therefore less taxable. But barter can also act as an entry barrier and therefore hinder both restructuring and competition.

## The Transparency of Monetary Policy

Simple monetary rules have been successful in tracking actual policy rates in a number of OECD countries. But the uncertainty surrounding econometric estimates may generate heterogeneous perceptions of the prevailing monetary rule. A CEPR/Bank of Finland Workshop entitled 'The Transparency of Monetary Policy: Theory and Empirical Evidence' addressed the macroeconomic consequences of such heterogeneity of expectations and the effectiveness of transparency-related institutional arrangements in solving the communication problems. Held in Helsinki on 6/7 April 2000 and organized by Carlo Favero (IGIER, Università Bocconi, and CEPR), the programme contained the following papers:

'Why Adopt Transparency? The Publication of Central Bank Forecasts', Petra M Geraats (University of California Berkeley)

'Optimal Degrees of Transparency in Monetary Policymaking', Henrik Jensen (EPRU, University of Copenhagen and CEPR)

'Transparency in ECB Monetary Policy', Matti Vanhala (Governor, Bank of Finland)

'Learning about Monetary Policy Rules', James Bullard (Federal Reserve Bank of St Louis) and Kaushik Mitra (University of York)

'Do Interventions Smooth Interest Rates?', Andreas M Fischer (Swiss National Bank and CEPR)

'A Monetary Explanation of the Great Stagflation of the 1970s', Robert Barsky (University of Michigan) and Lutz Kilian (University of Michigan and CEPR)

'Natural Rate Doubts', Roger E A Farmer (European University Institute, Firenze, and CEPR)

'Credibility, Transparency and Asymmetric Information in Monetary Policy', Andrew J Hughes Hallett (University of Strathclyde and CEPR) and Nicola Viegi (University of Strathclyde)

'The Value of Publishing Official Central Bank Forecasts', David Mayes (Bank of Finland) and Juha Tarkka (Bank of Finland)

'A Theory of Central Bank Accountability', Sylvester Eijffinger (CentER, Tilburg University, and CEPR)

The key results of the empirical research documented in the Report are that the likelihood that an enterprise will engage in barter is independent of its financial position; and that barter is more common in larger enterprises and in more concentrated industries. These findings imply that since the search costs of finding countertrade partners are very low, the Russian economy may be in a barter trap where barter is so common that it is less costly to carry out exchanges without money. The Report argues that printing more money will not solve the problem: an increase in the nominal money supply will merely result in inflation, and the real money supply will remain unchanged.

But why is barter prevalent in Russia, while it is virtually non-existent in other economies? One possible explanation for the peculiarity of the Russian experience is the existence of multiple equilibria. The Report's analysis suggests that at some level of competitiveness the barter equilibrium disappears and industry jumps to the no-barter equilibrium. Even if competition policy may have had little effect so far, barter may fall dramatically when a certain threshold level of competition is achieved. This multiple equilibria argument is one way of interpreting the so-called

'post-Washington consensus', which states that institutions that are essential for transition may fail to emerge spontaneously.

The Report concludes that both parliamentary and presidential elections have created a post-crisis environment in which politicians were taking a cautious approach to economic policy. This has both positive and negative consequences: positive in that policies have become predictable, but negative in that the political will to engage in large-scale institutional and structural reforms was still absent. Once Russia recovers from campaign fever, a new parliament and president will have to face the underlying structural problems and lack of institutional development.

*'Stuck in Transit: Rethinking Russian Economic Reform' is Edited By Erik Berglöf (Stockholm Institute of Transition Economics and East European Economics, RECEP and CEPR) and Romesh Vaitilingam.*

# Is There a Single European Market for Electricity?

Since the late 1980s, Europe has aimed to remove the internal barriers to trade and competition. Network industries, which were historically sheltered from competition, have experienced dramatic changes as a consequence. The factors precipitating this change have, to a large extent, been technologically and market driven, but inefficiency of supply has also prompted reform. It has been estimated that in the chemicals sector, European companies pay up to 45% more for energy than their US competitors. Apart from differences in tax regimes, the lack of competition has been identified as a key factor in explaining the cost differential.

The European Commission's 1997 Electricity Directive prescribes common rules for the progressive liberalization of national electricity markets within the EU. Extending the concept of the 1992 Single European Act, the Directive aims to create a European electricity market in which there will be effective competition within and across Europe for contracts to supply electricity. So can Europe create a single market for electricity? The second report in the *Monitoring European Deregulation* series explores the obstacles to this objective and the policy choices facing regulators at both the national and EU level. The report combines analyses of key issues in electricity market integration and liberalization with evaluations of the practical experiences in the UK, the Nordic countries, Germany, Spain, France and Hungary.

Electricity is produced and delivered in a four-stage, vertically interdependent process involving generation (the production of electrical energy), transmission (transportation of this energy along high-voltage cables), distribution (transportation at lower voltages to final customers) and retailing (advertising, branding, contract bundling and billing for final customers). Electricity transmission and local electricity distribution involve large sunk capital costs. These stages of electricity production are considered to be natural monopolies and there is little scope for actual competition: typically, each European country has one company operating its national transmission network and a number of regional local monopolies operating its distribution networks.

In the past, most national electricity industries in Europe were vertically integrated. To prevent these companies from discriminating in favour of their own generation and retailing businesses, the Directive requires at least a minimum degree of unbundling of generation and

transmission, based on separate management and accounts. Most member states have chosen to go one step further and legally separate transmission and generation. But two of the largest countries, France and Germany, have not.

France has argued that transmission and nuclear generation need to be tightly coordinated to maintain safety and integrity of supply. But the evidence from the UK and Scandinavia is that, even in the presence of significant nuclear power, there are few efficiency losses from vertical unbundling. The report, however, goes further. It advocates separating ownership between the natural monopoly elements of the system and other activities, concluding that accounting or even legal separation is simply insufficient.

The rationale for separating the vertical links of the industry is not equally strong at every stage. Separation of the ownership of the transmission and distribution lines in small countries, such as Northern Ireland, is not necessary since both activities have strong natural monopoly elements. The separation of the distribution and retail activities does, however, seem to be desirable and is something that the Directive fails to tackle. Electricity retailing has traditionally been bundled with distribution, but recent liberalization efforts have demonstrated that it is actually separable from distribution and hence competitive. Retail companies can purchase generated electricity and transportation services and compete on the basis of least cost purchasing, metering and billing costs and quality of customer service. In the Nordic countries, customers pay two bills: one for energy from traders and another for energy transport. Retail competition may encourage vertical integration between generators and retailers as it reduces wholesale price risk. If combined with market power in generation, this could be a cause for concern and would require close monitoring by the competition authorities.

The current market structure for electricity generation is highly concentrated. A concentrated market structure need not be a problem for the delivery of competitive prices in the presence of low entry barriers. But where significant entry barriers exist, as they do in Europe, actual competition not potential competition is what determines prices within a market. The experience of the UK and Spain strongly suggests that competitive outcomes cannot be reached without sufficient dispersion of the ownership of generation assets. It has been estimated that splitting the UK's Central Electricity Generating Board into five rather than two generation companies would have yielded benefits to consumers of around £262 million a year.



There are two main approaches to the reduction of concentration in generation. The first consists of breaking up existing companies into smaller ones. This is achieved more easily when there is significant public ownership in generation but divestment of privately owned assets can be obtained through the use of competition laws. Alternatively, market power can be diluted by extending the market itself. This was the route chosen in Sweden, where the relevant market share of Vattenfall was significantly decreased by the removal of all institutional barriers to trade across the Norwegian, Swedish and Finnish borders. This effectively doubled the size of the market that Vattenfall operated in and has had a significant downward effect on prices.

The nature of electricity means that its supply and demand must always be physically in equilibrium, otherwise the system will fail. This requires a Transmission System Operator (TSO), which oversees the process of instructing plants on required availability and physically balances the system in situations where actual supply and demand deviate from planned supply and demand. System operation is a natural monopoly and there is strong evidence from the UK that it benefits from incentives to reduce 'uplift' costs (i.e. the difference between the pool purchasing price and the pool selling price). Incentives, including penalties, pose financial risks for the TSO, and variations in income arising from incentives could be large.

This suggests that the TSO will need a capital adequacy requirement, of the kind that is naturally available to a regulated grid company, to avoid the risk of bankruptcy. Hence, where the whole transmission system is under one owner, there are advantages in having the owner of the transmission network as the TSO. Ownership of the transmission assets ensures the solvency of the TSO, which can then be subjected to powerful incentive schemes. In the case of several grids under separate ownership, transmission system operation should be independent.

Third party access to the transmission and distribution network is crucial to a competitive market for electricity. The Directive requires member states to implement third party access and offers a choice between three alternative methods: negotiated third party access (nTPA), regulated third party access (rTPA) and the single buyer model. Under nTPA, consumers and producers can contract directly with one another and then negotiate with the network operators for access to the network. Under rTPA, prices for access are published and not subject to negotiation. The single buyer model, where there is a single wholesale buyer of electricity, is functionally equivalent to rTPA but suffers from greater transaction costs.

The vast majority of countries have opted for rTPA, the notable exception to this being Germany, which has chosen

nTPA. Both theory and evidence suggest that nTPA may create some difficulties, and it is therefore not surprising that disputes over German transmission and distribution networks have already arisen – in 1998, Enron was denied access to the network. Given the objective of a single competitive market for electricity in Europe, the choice between nTPA and rTPA seems obvious. The latter is transparent, open and non-discriminatory in a way that is far less likely with nTPA.

If the single market for electricity is to become a reality, it must be as easy to trade electrical power between countries as between different parts of the same country. The pricing of access to the transmission system is the key to an integrated electricity market, but owing to the nature of the industry access pricing is not a simple matter. Electricity transmission does not conform to the simple linear laws that govern a standard vertically integrated stage of a production process. Electricity flows between two points via all potential routes in inverse proportion to the resistance along each of the routes – i.e. it will not travel by the shortest route, the so-called 'loop flow effect'. Hence, the transmission of electricity between a producer and a consumer can affect the flow, and therefore the costs, of all other producers and consumers in the system.

This has important implications for the pricing of transmission services. Prices based purely on energy input or output (postage stamp tariffs) or on distance and energy (contract path tariffs) are not efficient given loop flow effects. Node varying transmission prices where producers and consumers pay positive and negative congestion charges for producing or consuming power at different points on the network may be more economically efficient.

The Report argues that Europe needs a transmission pricing system with the following characteristics. First, access charges need to be simple, transparent and only dependent on the point of connection – i.e. nodal transmission pricing. Second, the allocation of charges between entry and exit points should be uniform across jurisdictions, but should allocate at least a small share to the entry point. Third, there should be some geographic differentiation of access charges to provide incentives to relieve congestion and reduce overall transmission loss. And fourth, a scheme for financial compensation between transmission system operators for transit and loop flows should be introduced.

Competition and free trade have proved to be formidable engines of economic growth and prosperity. The Electricity Directive has made a significant contribution towards opening up the national electricity markets for competition. Yet the Directive is not all that is needed even if fully

## New Approaches to Modelling Financial Transactions

A CEPR/FMG Workshop on 'New Approaches to Modelling Financial Transactions' was held in London on 25/26 February 2000. The Workshop addressed how the introduction of new approaches to decision-making and information processing can enrich the understanding of the working of financial markets and financial intermediation. Organized by Bruno Biais (Université des Sciences de Toulouse and CEPR), Antoine Faure-Grimaud (London School of Economics and CEPR), Erzo G J Luttmer (London School of Economics and CEPR), Marco Pagano (Università di Salerno and CEPR), Jean-Charles Rochet (Université des Sciences de Toulouse and CEPR), Xavier Vives (Institut d'Anàlisi Econòmica (CSIC), Barcelona, and CEPR) and David Webb (London School of Economics), the programme contained the following papers:

'Information and Geography: Evidence from the German Stock Market', Harald Hau (ESSEC and CEPR)

'The Influence of Options on the Time Series Properties of the Underlying Asset: An Experimental Investigation', Kees Koedijk (Erasmus Universiteit Rotterdam and CEPR), Cyriel de Jong (Erasmus Universiteit Rotterdam) and Charles Schnitzlein (University of Arizona)

'Option Prices with Uncertain Fundamentals: Theory and Evidence on the Dynamics of Implied Volatilities and Over-/Underreaction in the Options Market', Pietro Veronesi (Graduate School of Business, University of Chicago, and CEPR) and Alexander David (Federal Reserve Board)

'Option Pricing and Foreign Investment under Political Risk', Enrico C Perotti (Universiteit van Amsterdam and CEPR) and Joseph Cherian (School of Management, Boston University)

'Common Knowledge of Rationality and Information Revealed by Prices: An Example', Gabriel Desgranges (THEMA, Université de Cergy-Pontoise)

'Learning Equilibrium in Experimental Financial Markets: Does Microstructure Matter?', Bruno Biais (Université des Sciences Sociales de Toulouse and CEPR) and Sébastien Pouget (Université des Sciences Sociales de Toulouse)

'Learning-Induced Securities Price Volatility', Peter Bossaerts (California Institute of Technology and CEPR)

'The Equilibrium Implications of Time-Inconsistent Preferences', Erzo G J Luttmer (London School of Economics and CEPR) and Thomas Mariotti (London School of Economics)

'Entry Mistakes, Entrepreneurial Boldness and Optimism', Isabelle Brocas (ECARES, Université Libre de Bruxelles) and Juan Carrillo (ECARES, Université Libre de Bruxelles and CEPR)

A full report of the Workshop is available at [www.cepr.org/pubs/bulletin/meets/549.htm](http://www.cepr.org/pubs/bulletin/meets/549.htm)

implemented in all member states. The Report concludes with an agenda for the European Commission in 2000. It argues that the Commission should supplement the Electricity Directive with the following additional measures:

- A mandatory separation of ownership between generation and transmission/distribution.
- Strict competition policy oversight of integration between generation and retailing.
- Harmonizing non-tariff conditions for access to transmission and distribution networks.
- The promotion of international transmission pricing rules.
- The creation of a body in charge of identifying the need for new interconnection facilities, allocating the cost of

these facilities between participants and drawing up compensation schemes that ensure a fair and efficient recovery of these costs.

- The organization of a system of trading permits for emissions.

*Monitoring European Deregulation 2: 'A European Market for Electricity'* by Lars Bergman (Stockholm School of Economics and SNS), Gert Brunekreeft (Albert-Ludwigs Universität Freiburg), Chris Doyle (London Economics), Nils-Henrik von der Fehr (University of Oslo), David Newbery (University of Cambridge and CEPR), Michael Pollitt (University of Cambridge) and Pierre Regibeau (University of Essex and CEPR).

The Report was launched at a Lunchtime Meeting held in London in December 1999.

## Including Developing Countries in a Consensus for the WTO

The failure of the WTO Ministerial meeting in Seattle to initiate a new round of world trade talks represented a severe setback to those who hoped to harness the trading system as a stimulus for economic growth and development. The developing countries felt excluded from the process in Seattle, both procedurally and because they were unable to make their voices heard in the substantive debates and preparations. In CEPR *Policy Paper* No.4, Zhen Kun Wang and Alan Winters argue that tying the developing countries more securely into the trading system is a key priority in repairing the damage done in Seattle.

The authors begin by noting that the developing countries comprise a large majority of WTO members and account for an increasing share of world trade and most of its growth. But over the last few years these countries have become increasingly frustrated with the operation of the WTO. Given these frustrations it was always going to be a challenge to bind the developing countries into a new round of trade talks. Since Seattle, this task has become both more challenging and more important. The failure has given ammunition to the critics of open trade within developing countries and has led even sympathetic commentators to argue that what the developing countries need from the WTO is special treatment - exemptions from the WTO's liberalization disciplines.

Yet Wang and Winters argue that rebuilding the legitimacy of the world trading system is not a matter of charity but one of self-interest for developed countries, which still have much to gain from the further liberalization of world trade. With this in mind, the developed world must work to address the substantive needs of the developing countries. Even more so than before Seattle, any forthcoming round of trade talks must be a 'Development Round'. In recognition of the fact that each side needs to 'buy' the concessions it seeks from the other by making its own, Wang and Winters outline an eight-point plan that they believe balances the needs of both the developing and the developed worlds.

**Agriculture, Manufacturing and Services.** Agricultural liberalization is predominantly a job for developed countries - particularly the EU and Japan, which, according to the authors, went to great lengths in Seattle to shift the focus elsewhere. Developing countries have a significant stake in the process of farm policy reform: estimates suggest that a reduction of 40% in the barriers to world farm trade will generate economic gains of at least \$15 billion per year for developing countries and \$55 billion per year for OECD

countries by 2005. Specifically, the paper calls for the reduction of bound tariffs from their current 50-150% to the 0-15% range typical for manufactured goods; a complete ban on agricultural export subsidies that would bring agriculture into line with non-farm products; and the abolition of subsidies that expand agricultural output in developed countries, which wastes their resources and undermines efficient production and income generation in developing countries.

The share of manufactures in developing country exports has increased dramatically from around 30% in early 1980 to over 70% in 1995. Developed country tariffs on manufactured imports are quite low on average (1.5%), but they fall more heavily on exports from the developing world (3.4%) than on those from other developed countries (0.8%). However, of much more importance are the developing countries' own barriers to manufacturing imports - these average 10.9% for imports from developed countries and 12.8% for those from developing countries. Developing countries should liberalize these markets, this will provide immediate gains to consumers in developing countries and longer-term efficiency benefits as industry adjusts. This will stimulate growth in trade between developing countries and also create a position from which to 'buy' other concessions from developed countries in the forthcoming negotiations.

The developing world has been reluctant to liberalize services, fearing they have nothing to gain. This, say the authors, is simply wrong. As importers of services, a supply of reliable and cheap business services would aid efficiency in all sectors of their economies. As exporters of services, particularly through the temporary movement of workers to supply services in foreign markets, the potential gains are huge. The current success stories of developing countries exporting services, such as Indian software or Cuban health services, rely significantly on provider mobility, which at present is severely constrained. The fundamental problem is that developed countries make almost no distinction between temporary and permanent labour movement. With suitable provision for short-term mobility of workers (i.e. not migration), many more developing countries could export services to the great advantage of consumers and many businesses in the developed world. Preliminary estimates suggest that the gains from ordinary trade liberalization run into hundreds of billions of dollars per year.

**Credit for Past Unilateral Liberalization.** Developed countries should treat part of the developing countries' recent unilateral liberalizations as something to be reciprocated by their own concessions. This would not only recognize that developed countries have also benefited from these unilateral reforms, but would also reassure developing countries who feel that they often have to make concessions twice to persuade developed countries to liberalize. For their own sakes, developing countries should use this 'credit' not to avoid making cuts in actual tariffs but as a way to encourage deeper liberalization by developed countries.

**Reinventing Special and Differential Treatment.** Special and differential treatment, which excused the developing countries from many GATT obligations and offered them extended adjustment periods, has not been a constructive force in the past. It is in the best interests of developing countries that they stick with the basic rules of trade liberalization. There is, however, still scope for a new form of special and differential treatment that enhances effective liberalization. This entails recognizing that developing countries need cheap and effective institutional routes to allow them to implement liberalization and give them greater procedural flexibility in some areas.

**Legally Binding Technical Assistance.** The Uruguay Round is replete with promises of technical assistance to developing countries to help them undertake the agreed reforms, but most of these promises were not binding and many have not been delivered. Given their limited human resources and institutional capacity, many developing countries have had significant difficulties implementing the round and integrating themselves into the world trading system. The next round needs to find a means of making these promises of technical assistance binding - i.e. justiciable and subject to complaint and retaliation through the WTO. One solution might be to establish a fund from which developing countries could draw agreed amounts by right.

**Phasing out the MFA.** The Uruguay Round agreed to phase out by the end of 2004 the quantitative restrictions on textile and clothing trade (the Multi-Fibre Arrangement (MFA)). Citing the developed world's poor record in liberalizing this sector in the past and China's likely accession to the WTO, Wang and Winters voice doubts as to whether this would actually be achieved. They recommend that developing countries should make it clear that there will be no settlement to the next round unless the textiles and clothing agreement negotiated in the Uruguay Round is implemented in good faith. This means that quantitative barriers must be removed and not replaced by alternative

restrictions such as anti-dumping duties. The intention of a three-year round that was floated in Seattle was never very plausible, but developing countries have a clear interest in postponing its conclusion well into 2005, well after the MFA quotas should have been removed.

**Labour and Environmental Standards.** The fear that introducing labour and environmental clauses into the WTO would foster protectionism is well founded. According to the authors, developing countries are right to resist these additions to the agenda. They argue that one of the reasons for the Seattle collapse was Bill Clinton's call for the adoption of labour standards with trade sanctions. It may be more constructive for developing countries and international organizations such as UNCTAD and the World Bank to invite their developed country partners to discuss the issue in the International Labour Organization (ILO). The ILO's lack of teeth makes it less attractive than the WTO to developed countries, but the agenda could include discussions on enforcement. Environmental trade policy should be permitted on the WTO agenda only when multilaterally sanctioned by an appropriate multilateral environmental agreement.

**Investment and Competition Policy.** Investment and competition policy will be contentious and will divert attention from the more straightforward and rewarding business of trade liberalization. Comprehensive rounds are desirable because they increase the opportunities for trade-offs, but in the aftermath of Seattle, it seems better not to burden developing countries with threatening and complex issues. The last thing the developing world needs is the external imposition of another set of institutions that they cannot operate effectively.

**The Governance of the WTO.** The negotiating sessions in Seattle were restricted to 30 participants, chosen from among the largest traders in each sector. Some countries attended all sessions; most attended none. By excluding most of the developing world from every single negotiating session, opposition to any deal was virtually assured. Means have to be found to involve developing countries more effectively in the WTO without allowing pressure of numbers to transform the organization into a mere 'talking shop'. This clearly involves strengthening developing country capacity to deal with WTO issues. In the WTO itself more streamlined governance would be desirable. This could be based on a smaller body with multi-country constituencies or revolving membership. However, given the high value that governments place on sovereignty and the domestic sensitivity of trade issues, such smaller bodies could only have exploratory and preliminary roles. Governments will accept only trade agreements that they have signed themselves.

## Economic Policy

Economic Policy contains papers that are specially commissioned by the editors to provide timely and authoritative analysis of the choices confronting policy-makers. The articles use the best of modern economic analysis, but are also easily accessible to a wide audience and highly readable. Each paper is discussed by a rotating Panel of distinguished economists whose comments are published to provide the reader with alternative interpretations of the evidence and a sense of the liveliness of the current debate.

**Economic Policy 29, published in October 1999, contains the following papers:**

'Risk sharing and transition costs in the reform of pension systems in Europe', David Miles (Imperial College, London, and CEPR) and Allan Timmermann (London School of Economics and CEPR)

'The future of pensions in Europe', Michael Boldrin (Universidad Carlos III, Madrid, and CEPR), Juan J. Dolado (Universidad Carlos III, Madrid, and CEPR), Juan F Jimeno (FEDEA, Madrid, and CEPR) and Franco Peracchi (Tor Vergata University)

'Tradable deficit permits: efficient implementation of the Stability Pact in the European Monetary Union', Alessandra Casella (Columbia University and CEPR)

'Regulation and efficiency in European insurance markets', Ray Rees (Universität München) and Ekkehard Kessner (Universität München)

'The economic crisis of the 1990s in Finland', Seppo Honkapohja (Academy of Finland, University of Helsinki and CEPR) and Erkki Koskela (University of Helsinki)

**Economic Policy 30, published in April 2000, contains the following papers:**

'One money, one market: the effect of common currencies on trade', Andrew K Rose (University of California Berkeley and CEPR)

'Unemployment, growth and taxation in industrial countries', Francesco Daveri (IGIER, Università Bocconi) and Guido Tabellini (IGIER, Università Bocconi, and CEPR)

'Labour market implications of EU product market integration', Torben M Anderson (Universitet Aarhus and CEPR), Niels Haldrup (Universitet Aarhus) and Jan Rose Sorensen (Universitet Aarhus)

'The Netherlands and the United Kingdom: a European unemployment miracle', Steve Nickell (London School of Economics and CEPR) and Jan van Ours (Center, Tilburg University, and CEPR)

'Economic reforms and labour markets: policy issues and lessons from Chile', Sebastian Edwards (University of California Los Angeles) and Alejandra Cox Edwards (California State University, Long Beach)

Economic Policy can only be purchased from Blackwell Publishers - [www.blackwellpublishers.co.uk](http://www.blackwellpublishers.co.uk)

The authors concede that there are no easy answers to the governance problem, but conclude with two observations. First, the answer probably lies in creating greater capacity for technical and non-negotiating discussions to map out alternatives and probe the boundaries of feasibility. Decision-taking seems likely to remain based on consensus among all members. Second, while there is plainly a case for wide debate on many issues and for hearing the views of many parties, there seems little virtue in allowing non-governmental actors into decision-making or adjudication, nor of allowing them to observe the Council or intergovernmental negotiating sessions.

*CEPR Policy Paper No.4 'Putting Humpty Together Again: Including Developing Countries in a Consensus for the WTO' by Zhen Kun Wang (The Royal Institute of International Affairs, London) and L Alan Winters (University of Sussex and CEPR).*

The report was launched at a Lunchtime Meeting held in London in April 2000.

# The Eurosystem: Transparent and Accountable Or 'Willem in Euroland'

In CEPR *Policy Paper* No.1, 'Alice in Euroland', Willem Buiter argues that the ECB is not sufficiently open, transparent and accountable, and that its strategies and objectives need clarifying. In CEPR *Policy Paper* No.2, 'Willem in Euroland', Otmar Issing of the Executive Board of the ECB presents his rebuttal.

Issing argues that observers of the European Central Bank (ECB) often start from an inappropriate premise, in that the perception of many commentators is still heavily coloured by different national frames of reference. In particular, transparency and accountability need to be discussed against the background of the stability-oriented monetary policy strategy that the ECB has actually adopted and not as if it were pursuing some other strategy such as direct inflation targeting.

Issing stresses that from the very outset the ECB has aspired to be among the most transparent and accountable central banks in the world. How to achieve this under the basic institutional set-up of both the Maastricht and Amsterdam Treaties and under the conditions of a multi-country monetary union, however, is not as straightforward a task as is commonly assumed in the public debate. For this purpose it is important to distinguish between accountability and transparency, both of which are crucial for the effectiveness of monetary policy and for the success of European Monetary Union over the longer term.

Transparency can never be complete, according to Issing. Achieving the maximum degree of transparency is not simply a question of making the maximum amount of information available. For more words do not necessarily mean more information, and more information does not necessarily by itself contribute to greater clarity. What matters for transparency is therefore both clarity (the public's need to understand) as well as openness (the public's right to know). From this perspective transparency can best be understood not as an attribute *per se*, but the degree to which the bank 'says what it does' and 'does what it says'.

The ECB's accountability is based on its clear mandate, in particular by the overriding primary objective to obtain

price stability, and by the quantitative definition of price stability that the Eurosystem has since provided. The key channels for accountability are the statutory reporting requirements of the ECB to the European Parliament, the Council of Ministers and the Commission, which take the form of annual and quarterly reports. The President of the ECB presents these reports to, and discusses them in, the relevant committee of the European Parliament, which can also question other members of the ECB's Executive Board. In the interest of further increasing accountability and transparency, and going beyond the requirements of the Treaty, the ECB has decided to publish a monthly Bulletin and to hold a press conference at least once a month.

Buiter had made specific proposals in his paper, which he believed were necessary changes that could be made overnight at the discretion of the ECB's Executive Board. These included an end to the culture of collective responsibility and the publication of an inflation target, an inflation forecast, individual voting records and minutes from the meetings. Issing addresses Buiter's proposals as follows.

**An End to the Culture of Collective Responsibility.** A substantial degree of individual accountability within a collective decision-making body would not be desirable in principle nor would it be practically feasible. It may, to a limited extent, be possible in a smaller decision-making body and in the far more favourable circumstances of a single nation state, but expecting it to work for the Eurosystem appears to be highly unrealistic in Issing's view. Excessive focus on individual personalities, rather than on the institution as a whole, may render the public's signal extraction problem more, not less, difficult. Developing a common culture and speaking a common 'language' for external communication is especially important for a new institution and under the conditions of a multi-country monetary union.

**Clarify the Operational Inflation Target.** The ECB does not have an operational inflation target. It does not pursue a strategy of direct inflation targeting (or one of pure monetary targeting) and to pretend otherwise would do nothing for transparency. The ECB Governing Council has provided a quantitative definition of price stability, which

is the objective it has been assigned by the Maastricht Treaty. This provides a clear basis for accountability and a benchmark against which its performance can, and should, be judged. Its stability-oriented strategy in attaining its objective over the medium term rests on two pillars: a prominent role for money, as reflected in a quantitative reference value for monetary growth, and a broadly based assessment of the outlook for price developments and the risks to price stability.

**Publish the Inflation Forecast.** In contrast to direct inflation targeting, the ECB strategy does not attempt to condense and present all relevant information through a single inflation forecast. Although inflation forecasts do have a role to play in the ECB's assessment of price development, they are only one element alongside a wide array of indicators. In weighing the case for publishing any form of inflation forecast, their (limited) role within the Eurosystem must be clearly understood. Otherwise, publishing forecasts could be misleading if it leads the public to attach more significance to them than they have in the decision-making process. Furthermore, forecasts are subject to considerable uncertainty, even over relatively short horizons. In the Eurosystem this problem is exacerbated by the uncertainty surrounding the economic environment and the structural changes associated with the transition to stage three of Monetary Union. Issing argues that it is particularly important in the initial phase of the euro's life that inaccurate forecasts do not undermine the credibility, accountability and transparency of monetary policy with respect to its price stability objective. As forecasts become more accurate and as the public become more familiar with the Eurosystem's monetary policy strategy, the arguments against the publication of inflation targets will diminish.

**Publish Minutes from the Meetings.** At the monthly press conference, held immediately after the Governing Council's meeting, the President of the ECB summarizes and explains the decisions of the Governing Council and the reasoning behind them. Both the President and the Vice-President are available for extensive questioning, transcripts of which are made available on the ECB's website. This practice, in conjunction with the comprehensive information provided by the ECB's Monthly Bulletin, comes very close to providing summary minutes. It combines the requirement of clarity in interacting with the public with an unprecedented degree of instantaneous and direct 'hands-on' accountability, literally within minutes after the meeting. This may well be preferable to publishing 'official' minutes, which are carefully drafted and edited documents

that have normally been checked and approved by individual members and are often subject to considerable delay.

**Publish Individual Voting Records.** Issing argues that the publication of members' voting records would be damaging. It would not be sufficient for substantive individual accountability, which would also require revealing the arguments, assumptions and view of the world underlying individual votes. Few people go as far as advocating the publication of attributed minutes or verbatim transcripts and individual forecasts/models, since the effectiveness and coherence of internal discussions would suffer. Thus the potential benefits of publishing votes are limited, even under the questionable model of individual accountability, while the risk of confusing policy signals is not negligible. Under the conditions of a multi-country monetary union the perception of policy will inevitably continue to be coloured by national frames of reference. The public would focus excessively on the opinions of individual members and it would be impossible for them to demonstrate that their voting behaviour had not been influenced by national considerations.

Returning to the literary framework of the debate, Issing concludes that the perception of reality depends on how one looks at it. According to Issing, Lewis Carroll's 'Alice in Wonderland' makes this point and Willem Buiter's 'Alice in Euroland' demonstrates it.

*CEPR Policy Paper No.1 'Alice in Euroland' by Willem Buiter (University of Cambridge and CEPR).*

*CEPR Policy Paper No.2 'The Eurosystem: Transparent and Accountable or Willem in Euroland' by Otmar Issing (European Central Bank).*

*Policy Paper No.1 was launched at a Press Lunch and a Lunchtime Meeting in London in April 1999.*

## European Monetary Union: A Trojan Horse to Liberalize Labour Markets

Many commentators conclude that real rigidities in European labour markets threaten the success of EMU. Yet forecasts of the future success of European monetary union based solely on the past characteristics of the countries of Euroland are misplaced: the Lucas Critique demonstrates that major shifts in policy regime can fundamentally alter the structure of economic relationships. So how will the introduction of the euro affect European labour markets? This was the question posed by Michael Burda at a lunchtime meeting held in London on 26 January 2000.

The conventional wisdom used to be that the US is characterized by nominal price rigidities but flexible real wages, whereas the nations of Europe have real wage rigidities but flexible prices. The standard assumption being that the large role of centralized collective bargaining, the use of indexation and a high degree of openness all make Europe more likely than the US to translate aggregate demand disturbances into inflation. But according to Burda, this situation is about to change. He believed that the introduction of the single currency would result in a decrease in real rigidities in the labour market and an increase in nominal rigidities in the goods market. In effect, Euroland will begin to look more like the US and Japan and less like France and Germany.

Burda began by noting that many commentators argue that inflexibility in the labour market will spell the death of EMU. Yet these arguments become less relevant if labour market rigidities are endogenous. So could the lack of labour market flexibility in continental Europe be affected by the introduction of a common currency? According to Burda, the major assault on real wage rigidities will be the weakening of union power in wage determination. Although unions are already in retreat in much of the OECD, in Europe this decline is largely restricted to the UK; membership losses in France and Italy belie an ever-stronger influence on central wage setting institutions, while membership in Germany has declined primarily only in the East.

The Marshall-Hicks rule of labour demand suggests that market integration will tend to increase the elasticity of

the demand for labour at any given level (local, regional or national). In the context of EMU, three of the four elements of the Marshall-Hicks rule will be operative. First, product market competition among companies operating with quasi-rents will increase dramatically; this translates into an increase in the elasticity of product demand and subsequently into an increase in the elasticity of labour demand. Second, the acceleration of intra-European corporate mergers and takeovers opens up the possibility of easy substitution of capital and cheaper labour for more expensive labour within the Euroland area, which in turn weakens the bargaining strength of national unions. Third, for any given national labour market, the rest of Euroland is large (and possibly getting larger) and subsequently the supply elasticities of competing factors are likely to be high. Hence, the integration of product and factor markets, driven by EMU, means that unions' ability to monopolize the supply of labour will be severely weakened by the increase in the demand elasticity that they face.

Of course, unions could significantly mitigate the effects of this process if they were able to 'pan-Europeanize' their collective bargaining structures. However, Burda believed that the potential for coordinated bargaining strategies is presently incompatible with union structures across countries: already fragmented along industrial, political or religious lines, union structures represent decades of gradual evolution and, at present, there is little evidence of an effective pan-European labour movement. National unions that insist on aggressive wage settlements will be faced with higher unemployment. Only if the social safety net accommodates higher unemployment will unions be able to ignore these factors, and given the hard budget constraint of monetary union, they may well find this increasingly difficult to achieve. So increasing capital mobility, trade integration and competition will force wages for a given quality of labour to converge (i.e. the factor price equalization theorem) as well as to react more flexibly to changing local real conditions. This suggests that EMU will affect labour market flexibility in the direction of more efficiency, but without more detailed information on preferences it is impossible to say whether this increase in efficiency will lead to overall welfare gains.



Burda believed that EMU would not only affect the functioning of labour markets but that it would also have a profound impact on the monetary transmission mechanism. He highlighted three reasons why nominal price rigidities would increase in Euroland. First, the introduction of a common currency will effectively convert a Europe of many small, open economies into one large economy, roughly as closed as Japan and the US. As a consequence, a large share of industry will be moved into the 'home goods' sector and will therefore no longer be exposed to nominal exchange rate and international demand fluctuations. In a small, open economy, exchange rate changes are rapidly reflected in both input and output prices; monetary union removes this aspect as inputs become increasingly non-traded goods invoiced in euros. Thus, cost pressure will increasingly be restricted to domestic (Euroland) labour markets, marginalizing the importance of exchange rate changes for pricing decisions.

The second reason is more subtle (and possibly less relevant). For producers, EMU implies both a decrease in the relevance of the external market and an increase in the relevance of the domestic market, with subsequently more pricing power on balance – i.e. the market using euros increases relative to that using foreign currencies. Increased exposure to the sheltered domestic market will mean greater incentives to set nominal prices in advance for longer periods, as customer relations become more important and the net benefits of charging stable nominal prices increases. In addition, local market power will increase further as the pace of mergers and acquisitions within Euroland accelerates, again raising monopolistic power in price setting.

The third and potentially most important effect derives from the perceived ability of the ECB to base its decisions on the euro zone as a whole, not on economic conditions in individual countries. If the ECB really is the most independent central bank in the world then agents will expect low inflation and will not attribute short-term fluctuations in inflation to policy changes. This important source of inertia should be distinguished from the usual wage-price mechanism; it is derived from the anchoring of inflationary expectations and the effect this has in raising the willingness of agents to negotiate contracts in nominal terms.

Hence, Burda concluded, future aggregate demand shocks, both internal and external, will have less of an impact on prices and show up more strongly in output variations: the European short-run aggregate supply curve will be flatter post-EMU. This will fundamentally change the macroeconomics of Europe as monetary policy gains a new

potency. But the effectiveness of monetary policy is largely dependent on it not being used in a predictable way to inflate the economy. Therefore, these arguments should not be construed as endorsing a domestic demand strategy, but rather as a warning that the temptation to employ such a strategy will increase in future years.

*Discussion Paper No. 2217: 'European Labour Markets and the Euro: How Much Flexibility Do We Really Need' by Michael Burda (Humboldt Universität zu Berlin and CEPR).*

## Empirical Studies of Innovation

The second CEPR/ESRC Industrial Organization Workshop focused on the topic of 'Empirical Studies of Innovation'. Held in London on 10 March 2000, the programme was organized by Pierre Régibeau (University of Essex and CEPR) and featured the following papers:

'Stylized Facts of Patent Litigation', Mark Schankerman (London School of Economics, EBRD and CEPR) and Jean O Lanjouw (Yale University and NBER)

'Mapping the Two Faces of R&D: Productivity Growth in OECD Industries', John Van Reenen (University College London, IFS and CEPR), Stephen Redding (London School of Economics and CEPR) and Rachel Griffith (Institute for Fiscal Studies and CEPR)

'External Technology Sources: Embodied or Disembodied Technology Acquisition', Reinhilde Veugelers (Katholieke Universiteit Leuven and CEPR) and Bruno Cassiman (Universitat Pompeu Fabra, Barcelona)

'Determinants of Opposition against EPO Patent Grants - The Case of Biotechnology and Pharmaceuticals', Dietmar Harhoff (Universität München and CEPR) and Markus Reitzig (Ludwig-Maximilians Universität Munich)

The above papers can be downloaded from [www.cepr.org/meets/wkcn/6/667/](http://www.cepr.org/meets/wkcn/6/667/)

# The Reliability of Credit Risk Models

Banks have recently developed new techniques for gauging the credit risk associated with portfolios of illiquid, defaultable instruments. These techniques could revolutionize banks' management of credit risk and could, in the longer term, serve as a more risk-sensitive basis for prudential regulation than the current 8% capital requirement. At a lunchtime meeting held in London, William Perraudin considered the reliability of the two main types of credit risk model developed so far. Using price data on large Eurobond portfolios, Perraudin assessed, on an out-of-sample basis, how well these models track the risks they claim to measure.

The systematic application of Value at Risk (VaR) models by large international banks has significantly enhanced their ability to measure and hedge their trading book risks. A valuable side-effect of the new emphasis on VaR modelling (where the VaR estimates the loss that will be exceeded on some given fraction of occasions if the portfolio in question is held for a particular period) is that regulators have been able to reduce the distortionary impact of prudential capital requirements for banks' trading portfolios.

Perraudin began by explaining the self-reinforcing nature of the developments in credit risk models. Regulators are considering changes because banks are using securitization and credit derivative transactions to arbitrage capital requirements, thus eroding the capital cushion necessary to maintain financial stability. Much of the liquidity in the new markets is being supplied by capital arbitrage, encouraging the emergence of these new markets. Hence, the prospect that regulators may allow banks to use model output (in some form yet to be announced) in regulatory capital calculations is spurring the development of these models. By using these models, banks are better able to identify which parts of their portfolio require low economic capital and are therefore candidates for capital arbitrage under current rules.

The fundamental difficulty in assessing credit risk is that most credit exposures have no easily observed market price. This lack of information means that credit risk estimates must be based on other kinds of data. The two approaches in current use are ratings-based methods (e.g. J P Morgan's Creditmetrics) and equity-based models (e.g. KMV's Merton-style model).

Ratings-based techniques attribute a rating to each defaultable investment in a portfolio and then estimate the probability of upward or downward moves in ratings using historical data on ratings transitions for different traded bond issues. These probabilities are then combined with the average spreads for bonds from different ratings categories so as to derive mean and volatility estimates for the return on each credit exposure. By assuming approximate joint normality of the returns, a VaR for the total credit risk can be derived by using the portfolio volatility and the expected return.

The alternative equity-based approach starts from the observation that, under limited liability, a firm's equity value is a call option written on the firm's underlying assets. By using standard option pricing formulae, it is possible to infer from the equity and liability values of a firm the level and distribution of the firm's underlying assets. And assuming some trigger level for bankruptcy, the probability of default can be estimated. Hence the means, variances and covariances of pairs of bonds can be calculated by integrating numerically over the estimated distribution of changes in the underlying assets. As in the ratings-based approach, by assuming approximate normality of the portfolio value, a VaR can be derived from the portfolio mean and variance.

Each of these two methods has advantages and disadvantages in coverage of 'obligors', since some borrowers are unrated but have equity market quotes, whereas other borrowers are rated but not quoted. More broadly, which method works best is likely to reflect the information content of agency ratings versus that of equity market values.

Perraudin had carried out out-of-sample back testing in order to assess the relative performance of each of these models. He had implemented the two models month by month, calculating in each period a credit risk VaR for the following year. Only lagged data, which would be available to an analyst implementing the model in the given period, were employed so that the evaluation was genuinely out-of-sample. To assess the models' performance Perraudin compared the estimated VaRs with the actual output of the portfolio in question one year later. If the models had supplied unbiased VaR estimates then the fraction of occasions in which losses exceed the VaRs would roughly equal the VaR confidence level.

The credit exposures which Perraudin had examined were large portfolios of dollar-denominated Eurobonds. This

unusually rich dataset included 1,430 bond price histories observed in the period 1988–98. All the bonds were straight bonds with no call or put features. In order to implement ratings- and equity-based credit risk models on the same data, Perraudin constructed datasets of equity and liability values for the bond obligors in the sample and their ratings history.

Perraudin's main finding was that both ratings-based models and equity-based models benchmarked to default probabilities tended to underestimate the riskiness of the bond portfolios. Most of the portfolios examined experienced significantly more losses in excess of the VaR estimates supplied by the models. In the case of the ratings-based model, the problem originates from the model's underestimation of the risks associated with non-US and non-industrial obligors. However, if the equity-based model is benchmarked using bond spreads rather than default probabilities then it yields much more conservative and possibly unbiased risk estimates. Perraudin noted that the current industry practice is to benchmark against default probability, and that benchmarking against spreads is simply not feasible in the case of loan portfolios as there are no mark-to-market values available.

Perraudin stated that these findings should not be regarded as too negative. They show that models must be used cautiously and particular care must be taken when models are applied to exposures that fall outside the set of credit risks which have been studied and are reasonably well understood (i.e. US industrials). A major problem with credit risk models is that they are difficult to back test since the holding periods are long and the data available are very limited. Nevertheless, Perraudin's study shows that models based on publicly available data are testable. This underlines the fact that there are big advantages to using quantifiable models based as much as possible on public data. The current push by banks to develop their own internal rating systems, which are often entirely qualitative and not tied to specific ranges of expected loss or default probabilities, is not ideal as such approaches will not be testable for a very long time, if at all.

In conclusion, Perraudin returned to his original question and the title of the meeting: are credit risk models reliable? If implemented in a simple, uncritical way then the answer is clearly no. They yield too many exceptions. But if credit risk models are used conservatively then they may be a useful tool and even a basis for capital allocation. It is important to try to design models that have testable implications so that their output can be checked.

*Perraudin presented research produced under the auspices of an ESRC 'Reaching Our Potential Award'.*

## Exchange Rates and Prices

A CEPR/CREI Conference, entitled 'Exchange Rates and Prices in General Equilibrium: Theory, Evidence and Policy Implications', was held in Barcelona, 29/30 May 2000. Organized by Jordi Galí (Universitat Pompeu Fabra, Barcelona, New York University and CEPR) and Andrew K Rose (University of California, Berkeley, and CEPR), the Conference provided a forum for new research on open economy macro-economics. The paper presented were as follows:

'Exchange Rate Volatility and Economic Openness: Theory and Evidence', Harald Hau (ESSEC and CEPR)

'Currency Unions', Alberto Alesina (Harvard University and CEPR) and Robert J Barro (Harvard University)

'Optimal Monetary Policy in a Currency Area', Pierpaolo Benigno (Princeton University)

'Optimal Monetary Policy in an Open Economy: An Application to the Euro Area', Frank Smets (European Central Bank and CEPR) and Rafael Wouters (Banque Nationale de Belgique)

'The Transfer Problem Revisited: Net Foreign Assets and Real Exchange Rates', Philip R Lane (Trinity College, Dublin, and CEPR) and Gian Maria Milesi-Ferretti (International Monetary Fund and CEPR)

'Monetary Policy in the Open Economy Revisited: Price Setting and Exchange Rate Flexibility', Michael B Devereux (University of British Columbia and CEPR) and Charles Engel (University of Washington)

'On the Fundamentals of Self-Fulfilling Speculative Attacks', Craig Burnside (World Bank), Martin Eichenbaum (Northwestern University) and Sérgio Rebelo (Kellogg Graduate School of Management, Northwestern University, and CEPR)

A full report of the Conference is available at [www.cepr.org/pubs/bulletin/meets/1457.htm](http://www.cepr.org/pubs/bulletin/meets/1457.htm)

The above papers can be downloaded from [www.cepr.org/meets/wkcn/1/1457/](http://www.cepr.org/meets/wkcn/1/1457/)

*'Ratings- Versus Equity-Based Credit Risk Modeling: An Empirical Analysis' by Pamela Nickell (Bank of England), William Perraudin (Birkbeck College, London, Bank of England and CEPR) and Simone Varotto (Bank of England).*

# Defusing the Pension Timebomb: What are the Policy Options?

Public pension programmes in many OECD countries are in difficulties. With an ageing population existing pension arrangements may be untenable. How should we prepare for the looming crisis – the so-called pensions timebomb? At a CEPR/Royal Economic Society discussion meeting sponsored by Morgan Stanley Dean Witter and held in London on 3 February 2000, a panel of researchers (Tito Boeri, Axel Börsch-Supan, Richard Disney, Kevin Gardiner and David Miles) explored the policy options.

Tito Boeri began the meeting by stating that European governments could not afford to underestimate the challenge of the demographic transition currently taking place. Public pension systems can no longer bear the full burden of providing pensions and, where necessary, efforts must be made to achieve a more balanced pension programme with a sufficiently large funded component.

Boeri highlighted three major factors that are essential in achieving this goal. First, social partnerships should be promoted by involving workers, government and industry in the provision of income for retirement. Second, individual responsibility for retirement saving should be encouraged. And third, the role of public pension systems should be confined mainly to redistributing resources from the lifetime rich to the lifetime poor, and the responsibility for full old-age insurance provision for workers should be shifted to the other social partners.

In addition, pension programmes should no longer encourage early retirement nor should they hamper labour mobility. Boeri stressed that global investment is the key to achieving flexible pension programmes vis-à-vis demographic and political crises. But a global diversification of resources can only be achieved if there are no barriers to capital movements, in terms of arbitrary constraints on the international diversification of the portfolio of pension funds.

Finally, Boeri outlined three areas that required immediate action from the European Commission. First, the development of a European household panel survey, possibly linked to administrative data. This would provide timely information on trends in contributors to the pension system and on the determinants of retirement decisions. Second, the harmonization of methodologies used in the various countries to report pension outlays and forecast future pension liabilities. And third, a definition of common standards as to

the frequency of expenditure forecasts and the length of the forecast horizons. Boeri concluded that all generations can benefit from a more balanced (i.e. more funded) pension programme if the costs and the benefits of pension reforms are shared. In particular, compensation mechanisms can and should be designed to avoid the middle generations bearing any extra burden caused by changes in the system. This, he felt, would contribute to winning public support for reform.

Richard Disney began his presentation by comparing the current costs of public pension programmes with their projected costs for the year 2030. The following figures state public pension payments in 1995 as a percentage of GDP, the figures in parentheses are the OECD's projected costs for 2030: Japan 4.1% (13.4%), Germany 11.1% (16.5%), France 10.6% (13.5%), Italy 13.3% (20.3%), UK 4.5% (5.5%). So what has caused these adverse trends? According to Disney, the demographic transition to an aged society is only one factor among many. Forecasts of the consequences of demographics and of labour supply have often been much too optimistic. Improvements in longevity have been far faster than official actuaries projected. And the reduction in labour supply of older men has been much more rapid than was predicted in many countries.

Disney explored three possible options for reforming the pensions programme: parametric reforms, actuarially fair unfunded reforms and privatisation. For parametric reforms, the standard approach to financing an unfunded pension scheme uses the following identity:  $c = (B/L)(p/w)$ , where  $c$  = contribution rate,  $B$  = number of beneficiaries,  $L$  = number of workers,  $p$  = average pension and  $w$  = average wage rate. Therefore, in order to reduce  $c$  you must reduce  $B$  and/or  $p$ , and/or increase  $L$  and/or  $w$ . In practical terms this can be achieved by raising the retirement age, cutting benefits, or increasing labour force participation. This reduces the pain of change but is susceptible to political interference and reversal, and relies on behavioural responses that may not happen. For example, if the state pension age is raised from 65 to 70, will people really work for an extra five years? This, said Disney, is the short-run solution, and will be adopted in many countries.

A second broad strategy for reform of an unfunded scheme is to link entitlements to amounts paid in contributions. This is the reform route adopted in Italy, Sweden and Poland. Although it may avoid the excessive generosity of previous schemes, it cannot guarantee fiscal sustainability as the government can still interfere with the rules governing

contributions and benefits. Furthermore, the return on an unfunded scheme is intrinsically related to the growth of the labour force and its productivity, whereas a funded scheme can generate much higher returns on the capital market.

This leaves the third route of introducing a funded component to pensions, usually by privatising some of the scheme. The attractions are that assets are created to match liabilities, the scope for government interference is limited and investors can benefit from high returns on the world capital market. The drawback is simple: the transition costs fall heavily on certain generations as they will have to honour most of the existing liabilities and pay for their own future pensions. But, one way or another, somebody will have to pay to eliminate these growing liabilities.

The German public pension programme was not only the first but also the most successful pension scheme of the last 100 years. But times have changed. In his presentation, Axel Börsch-Supan stated that although the system may be able to limp through the coming decades in its present form, it will cease to provide generous retirement incomes at reasonable tax rates. He argued that the current policy proposals are insufficient but that a few decisive changes to its design and some degree of prefunding could rescue the present system's many positive aspects.

In particular, Börsch-Supan outlined several policy recommendations. First, the present system should minimize the tax portion of contributions by making the system as actuarially fair as possible. Cross-subsidies towards early retirement should be abolished; by increasing the tax burden, they increase the negative labour supply incentives and therefore only shift unemployment from one sector (i.e. elderly) to another (i.e. low income and self-employed).

Second, owing to the limited magnitude of labour supply and the even more limited labour market adsorption, the German pension system has no choice but to reduce benefits and to prefund the resulting pension gap. It is important to make this policy explicit as even a small degree of prefunding requires time. Workers need clear and steady policy signals to plan ahead and save, not modifications and reforms that create additional uncertainty.

Third, a decisive step towards prefunding could exploit the large differences in rates of return between 'pay-as-you-go' (PAYG) and a fully funded system. Since the German system is much less redistributive than other systems, a relatively large share of the PAYG system is actual insurance and can thus be privatised. Of course, there are reasons to be conservative in the degree of prefunding. PAYG systems have a built-in insurance against inflation and secular capital market failures. Since Germany has experienced the disastrous effects of hyperinflation and stock market crashes

in a rather dramatic way, Germans are probably willing to pay a high price for this insurance.

The transition costs to a degree of prefunding that is palatable to the German public, say 50%, are relatively modest, even if the burden lands on a single generation. Germany is in a situation that makes such a transition particularly attractive. The extent of population ageing makes the difference in returns between PAYG and funded schemes very large, thus reducing relative transition costs.

The first three speakers had advocated a move to a funded system, partly for the reason that funded schemes are able to take advantage of the high rates of returns in equity markets. However, the main theme of the penultimate speaker, David Miles, was that although funded schemes give higher returns on average, they are accompanied by significantly higher risk. Using estimates of real stock returns in Europe, Miles presented his results of measuring the risk for investors with a 30-year investment horizon. He had simulated the returns for 1 million non-overlapping 30-year equity portfolios. Although the mean return was relatively high at 6.25% per year, the probability of negative returns could be as high 3%, while as many as 0.6% of the simulations generated returns of -2%. Repeating this procedure so as to measure the distribution of returns on a hypothetical fund that earns a return of real GDP growth (effectively the returns from a PAYG system) results in a mean return of 2.5% but a far lower dispersion. Hence, the results suggest that a funded system will generate higher pensions on average than a PAYG system, but at the cost of taking on extra risk.

A government could choose to ensure a minimum annual return by issuing a put option written on the average return of the underlying assets in the fund. But how costly would this be? Miles estimated that the cost of a put option that would guarantee a long-run average real return of at least 2% a year might be as high as 20% of the value of the fund. Of course this does not mean that the alternative unfunded schemes are riskless. There is uncertainty about the desire and ability of future governments to deliver on the implicit promises of earlier governments. The risks with unfunded pensions may be no lower than with funded systems, but they are certainly different. Hence, Miles concluded, one prudent solution may be to mix funded and unfunded systems, as currently occurs in the Netherlands.

In addition, Miles highlighted the problems associated with the burden of cost for making the transition from unfunded to funded schemes. Some have argued that a switch to a funded system might generate a sufficient surplus that could be used to buy out the costs of transition. Miles argued that

## European Summer Symposium in Macroeconomics

The eighth annual CEPR 'European Summer Symposium in Macroeconomics' was held in Tarragona on 31 May/4 June 2000. Organized by Jordi Galí (Universitat Pompeu Fabra, Barcelona, New York University and CEPR), Lucrezia Reichlin (ECARES, Université Libre de Bruxelles, and CEPR) and Charles Wyplosz (Graduate Institute of International Studies, Geneva, and CEPR), the programme contained the following papers:

'The Transfer Problem Revisited: Net Foreign Assets and Real Exchange Rates', Philip Lane (Trinity College, Dublin, and CEPR) and Gian Maria Milesi-Ferretti (International Monetary Fund and CEPR)

'Business Creation and the Stock Market', Claudio Michelacci (CEMFI, Madrid, and CEPR) and Javier Suárez (CEMFI, Madrid, and CEPR)

'Risk and Intermediation in a Dual Financial Market Model', Gaetano Bloise (CORE) and Pietro Reichlin (Università di Roma La Sapienza and CEPR)

'Quantifying the Half-Life of Deviations from PPP: The Role of Economic Priors', Lutz Kilian (University of Michigan and CEPR) and Tao Zha (Federal Reserve Bank of Atlanta)

'Global Equilibrium Exchange Rates: Euro, Dollar, "Ins", "Outs" and Other Major Currencies in a Panel Cointegration Framework', Enrique Alberola (Banco de España), Susana G Cervero (Deutsche Bank), H Lopez (World Bank) and Angel Ubide (International Monetary Fund)

'Competition and the Capital-Labor Conflict', David Spector (Massachusetts Institute of Technology)

'Hiring and Firing Costs, Adverse Selection and the Persistence of Unemployment', Adriana D Kugler, (Universitat Pompeu Fabra, Barcelona) and Gilles Saint-Paul (Universitat Pompeu Fabra, Barcelona, and CEPR)

'International Risk Sharing and the Real Exchange Rate', Morten O Ravn (London Business School, Universitat Pompeu Fabra, Barcelona, and CEPR)

'Exchange Rate Systems, Macroeconomic Stability and Welfare', Fabrice Collard (CNRS-CEPREMAP) and Harris Dellas (Universität Bern and CEPR)

'Equilibrium Unemployment Insurance', John Hassler (IIES, Stockholm University, and CEPR), José V Rodríguez Mora (Universitat Pompeu Fabra, Barcelona), Kjetil Storesletten (IIES, Stockholm University, and CEPR) and Fabrizio Zilibotti (IIES, Stockholm University, and CEPR)

this view is false, presenting simulations to show both the burden of transition and how it might be distributed across generations. He suggested that, unless governments are allowed to incur current budget deficits and accumulate sufficient debt to tax future generations, current voters would be unlikely to vote for funded pension schemes.

The premise for the entire meeting so far had been that changes in demography had resulted in the unsustainability of the unfunded system. Yet this idea was challenged by Kevin Gardiner in the final presentation. Gardiner noted that the ultimate determinant of average living standards and of real pensions is the rate at which the economy can grow. This in turn depends on the amount and utilization of labour and capital resources and the pace of technical progress. Gardiner argued that there is no necessary shortage of labour facing the UK or continental Europe. Plausible changes in participation and unemployment rates can deliver a rising supply of labour, even in Euroland, where the

population is projected to decline. This is before taking account of possible increases in retirement ages and working hours, let alone extra capital input or technical progress.

Specifically, US-style levels of labour utilization would permit existing levels of European pensions to be financed at lower average tax rates than at present. In the UK, economic dependency (carefully defined) has been higher on at least three occasions in the not-so-distant past (1981, 1986 and 1991) than would be the case in 2030 on unchanged participation and unemployment rates. Such episodes were brief, but their existence suggests that the territory ahead, even on the pessimistic assumption of 'no change' in labour utilization, is far from uncharted. But, Gardiner continued, more important than the supply of both labour and capital is the prospect of continuing growth in total factor productivity (TFP), or technical progress. Historically, TFP growth seems to have accounted for most output growth in the UK. If past trends continue and are supplemented by extra labour and capital input, per capita GDP growth could accelerate over the next three decades. The likelihood of an

## European Summer Symposium in Macroeconomics (continued)

'Technology, Policy and the Inequality Unemployment Trade-Off', Andreas Hornstein (Federal Reserve Bank of Richmond), Per Krusell (University of Rochester and CEPR) and Gianluca Violante (University College London and CEPR)

'Liquidity and Contagion in Financial Markets', David Backus (New York University)

'Currency Crises and Monetary Policy in an Economy with Credit Constraints', Philippe Aghion (University College London, EBRD and CEPR), Philippe Bacchetta (Studienzentrum Gerzensee, Université de Lausanne, and CEPR) and Abhijit Banerjee (Massachusetts Institute of Technology)

'Fiscal Costs of Debt Limits', Albert Marcet (Universitat Pompeu, Barcelona, CREI and CEPR) and Andrew Scott (London Business School and CEPR)

'The Monetary Transmission Mechanism: Is it Relevant for Policy?', Bernardino Adao (Banco de Portugal), Isabel Horta Correia (Banco de Portugal, Universidade Católica Portuguesa and CEPR) and Pedro Teles (Banco de Portugal and CEPR)

'Monetary Policy Committees: Individual and Collective Reputations', Anne Sibert (Birkbeck College, London, and CEPR)

'Targeting Nominal Income Growth or Inflation?', Henrik Jensen (Institute of Economics, University of Copenhagen, and CEPR)

'Sorting and Long-Run Inequality', Raquel Fernández (New York University and CEPR) and Richard Rogerson (University of Pennsylvania)

'The World Technology Frontier', Francesco Caselli (University of Chicago and CEPR) and John Coleman (Fuqua School of Business, Duke University)

'Macroeconomic Forecasting in the Euro Area: Country Specific versus Area-Wide Information', Massimiliano Marcellino (IGIER, Università Bocconi, Milano), Jim Stock (Harvard University) and Mark W Watson (Princeton University)

'A Multi Country Trend Indicator for Euro Area Average Inflation: Computation and Properties', Elena Angelini (European Central Bank), Jérôme Henry (European Central Bank) and Ricardo Mestre Zamarreno (European Central Bank)

'Information Spillovers and Factor Adjustment', Luigi Guiso (Università di Sassari, Ente Einaudi and CEPR) and Fabiano Schivardi (Banca d'Italia)

'Gross Credit Flows', Giovanni Dell'Arriccia (International Monetary Fund) and Pietro Garibaldi (Università Commerciale Luigi Bocconi and CEPR)

The above papers can be downloaded from [www.cepr.org/meets/wkcn/1/1458/](http://www.cepr.org/meets/wkcn/1/1458/)

aggregate supply constraint biting on GDP and average living standards in the UK and Euroland is slim.

Gardiner concluded that policy-makers should place less emphasis on measures designed to raise savings: a higher aggregate savings ratio is not necessary to fund future pensions, and could even prove counterproductive if unaccompanied by measures encouraging higher investment. Instead, policy should focus on improving labour market flexibility and fostering economic growth. Rather than focusing on the possibility of a future shortage of labour, European politicians should focus on making bigger inroads into today's excess supply.

*Tito Boeri's (Università Bocconi and CEPR) presentation drew on a report on pensions commissioned by the European Round Table of Industrialists.*

*Richard Disney (University of Nottingham and The Institute for Fiscal Studies): 'Crises in Public Pension Programmes in*

*OECD: What are the Reform Options?', published in the February 2000 issue of the Economic Journal.*

*Axel Börsch-Supan (University of Mannheim): 'A Model Under Siege: A Case Study of the German Retirement Insurance System', published in the February 2000 issue of the Economic Journal.*

*David Miles (Imperial College, London, and CEPR): 'Risk-Sharing and Transition Costs in the Reform of Pensions Systems in Europe', written with Allan Timmermann (London School of Economics and CEPR) and published in the October 1999 issue of Economic Policy.*

*Kevin Gardiner (Morgan Stanley Dean Witter): 'Defusing the Demographic Timebomb', a report written for Morgan Stanley Dean Witter and published in October 1999.*

# Trade or Technology: Which is Responsible for UK Wage Inequality?

UK workers in the bottom 10% of the income distribution have seen almost zero real growth in their wages over the last 20 years. In contrast, workers in the top 10% of the income distribution have had real wage increases of around 50%. Two potential causes have been cited for this widening wage gap: international trade and technical change. But which really is to blame? At a lunchtime meeting held in London on 23 June 1999, Jonathan Haskel argued that the contribution of technical change has been exaggerated, and that the evidence suggests that globalisation is a more likely explanation.

The view that trade is the culprit is based on the fact that developing countries are rich in unskilled labour and can supply goods where production is unskilled-intensive at a fraction of developed country costs. Hence, unskilled wages in developed countries must fall if domestic producers are to remain competitive. The technology view argues instead that rapid technical change in recent decades, especially with the widespread introduction of computers, has been skill-biased, raising the relative productivity of skilled workers but reducing demand for unskilled workers and thereby lowering their wage. The main counter-argument to the trade view is that only a small fraction of goods in developed economies are internationally traded. The service sector makes up an increasingly significant part of production and although some services are traded, such as financial services, the bulk are not.

To illustrate why he believed this argument to be flawed, Haskel referred to what he termed 'the greatest labour market survey since Beveridge': the film 'The Full Monty'. At one point in the film, the character Dave takes a job as a security guard in the local supermarket. It may seem reasonable to assume that a security guard's wages are unaffected by trade. But the film shows why this reasoning is false. Dave is unemployed because the local steel industry has been forced to close because of increased competition from abroad. Such closures create a flow of 'Daves', unskilled workers potentially available as security guards, who drive down security guard wages. So even though supermarket output is non-traded, the wages of people who work there are still affected by trade.

The same reasoning is true for technology. The occupation of security guard is not subject to dramatic technical progress, so are security guard wages unaffected by it? Again, it depends on what is happening to comparable

workers in other sectors. If technical progress is moving faster elsewhere, and if it needs more skilled workers, this again creates a flow of 'Daves', reducing security guard wages in the non-traded sector.

This informal argument has an important empirical implication. What matters for wages, Haskel argued, is the potential flow of workers between sectors, so the question is whether the effects of technical change and globalization are felt more in some sectors than in others, that is, it is the differences across sectors that potentially cause wage adjustments. The finding that technical change is occurring within many sectors is not informative about changes in wages: it does not indicate whether technical change is occurring faster in some sectors than in others – i.e. whether there is sector bias. The many studies that find technical change within many sectors are simply uninformative about the effects on wages.

To see the effects of sector bias on wages, consider a fall in the price of T-shirts due to imports from abroad. This would cause a fall in prices in the unskilled-intensive sectors relative to the skilled-intensive sectors. The fall in price in these unskilled-intensive sectors means that such sectors are now unprofitable. These sectors release unskilled workers, who it is now unprofitable to employ, and therefore wages have to change to restore profitability.

Changes in technology work in a similar way. Technical progress in a sector will potentially raise profitability. If technical change occurs in the skill-intensive sector, then skilled wages must rise to restore relative profitability there. If it occurs in the unskilled-intensive sector, then unskilled wages must rise. All technical change matters since any advances might raise sector profitability. This suggests that researchers should look at skilled, unskilled and neutral technical change – i.e. total factor productivity (TFP) – to see if there is an impact on wages. Hence, the impact of sector bias can be summarized: if prices or TFP grow faster in the skill-intensive sectors, then skilled wages tend to rise relative to unskilled wages. But if prices or TFP grow faster in the unskilled-intensive sectors, then skilled wages tend to fall relative to unskilled wages. Thus, the appropriate empirical strategy is to examine whether price or TFP change is more concentrated in the skill- or unskilled-intensive sectors.

According to Haskel's findings for the UK, changes in TFP in the 1980s were not concentrated in skill-intensive sectors. Indeed, TFP changes were more or less uniform across all sectors. Thus, changes in technical progress could not have



## New Approaches to the Study of Economic Fluctuations

The second CEPR/IMOP Workshop in a series organized under the auspices of the TMR project on 'New Approaches to the Study of Economic Fluctuations', was held in Hydra on 5/6 May 2000. The purpose of these Workshops is to discuss macroeconomic and econometric research on aggregate business cycles; the dynamics of large cross-sections; and estimation and calibration techniques for the validation of equilibrium macroeconomic models. Organized by Juan José Dolado (Universidad Carlos III, Madrid, and CEPR) and Harris Dellas (Athens Institute of Economic Policy Studies (IMOP) and CEPR), the programme contained the following papers:

'Reference Cycles: The NBER Methodology Revisited', Mario Forni (Università di Modena), Marc Hallin (ECARES, Université Libre de Bruxelles), Marco Lippi (Università di Roma) and Lucrezia Reichlin (ECARES, Université Libre de Bruxelles, and CEPR)

'Testing for Common Patterns in European Business Cycle Chronologies', Michael J Artis (European University Institute, Firenze, and CEPR) and Juan Toro (European University Institute, Firenze)

'Co-ordination of Fiscal Policies Among Countries with Productivity and Public Expenditure Shocks', Paul Klein (Stockholm University), Vincenzo Quadrini (Fuqua School of Business, Duke University, and CEPR) and José-Víctor Rios-Rull (University of Pennsylvania and CEPR)

'From Wages to Consumption and Income Inequality: Tracking Shocks', Orazio Attanasio (University College London and CEPR), Gabriella Berloffa (University College London), Richard Blundell (University College London) and Ian Preston (University College London)

'The Dynamics of Car Sales: A Discrete Choice', Jerome Adda (University College London) Russell Cooper (Boston University)

'Maintenance, Utilization and Depreciation Along the Business Cycle', Fabrice Collard (CEPREMAP, Paris) and Tryphon Kollintzas (Athens University of Economics and Business (IMOP) and CEPR)

'Optimal Monetary Impulse-Response Functions in a Matching Model', Brett Katzman (University of Miami), John Kennan (University of Wisconsin) and Neil Wallace (Pennsylvania State University)

'Natural Rate Doubts', Roger E A Farmer (European University Institute, Firenze, and CEPR)

'Exchange Rate Systems, Macroeconomic Stability and Welfare', Fabrice Collard (CEPREMAP, Paris) Harris Dellas (Athens Institute of Economic Policy Studies (IMOP) and CEPR)

'Anatomy of a Recession: France 1993 and the Maastricht Hypothesis', Franck Portier (GREMAQ-LEERNA, IDEI and Université des Sciences Sociales de Toulouse)

'Competition and Prices in a Dynamic Trade Model with Comparative Advantage', Morten O Ravn (London Business School, Universitat Pompeu Fabra, Barcelona, and CEPR)

'Residual Log-Periodogram Inference for Long-Run Relationships', Uwe Hassler (Institute of Statistics and Econometrics, Humboldt Universität zu Berlin), Francesco Marmol (Universidad Carlos III, Madrid) and Carlos Velasco (Universidad Carlos III, Madrid)

caused the increase in wage inequality since it would have had to be concentrated in skill-intensive sectors to change relative profitability and hence set off a rise in skilled wages. This finding is robust to using different data sets with different measurements of skill. With regard to the movement in prices, Haskel found that price rises were concentrated in skill-intensive sectors whereas price falls were concentrated in the unskilled-intensive sectors, thus concluding that it was price changes that had led to the rise in wage inequality.

Haskel concluded by stating that these results cast considerable doubt on technology being the major cause of

the rise in wage inequality in the 1980s in the UK. The results strongly support the proposition that it was changes in prices. How much such price changes are due to trade is an open question for future work.

*DP2091 'Trade, Technology and UK Wage Inequality' by Jonathan Haskel (Queen Mary and Westfield College, London, and CEPR) and Matthew Slaughter (Dartmouth College, Hanover).*

## Inequalities, Labour Market Regulation and Redistribution

A CEPR/CEMFI Workshop on 'Inequalities, Labour Market Regulation and Redistribution' was held in Madrid on 28/29 April 2000. The Workshop looked at how different countries are coping with increasing inequalities and analysed how the operation of labour market policies and other institutions feeds back into the generation of wage and unemployment inequalities. Organized by Samuel Bentolila (CEMFI, Madrid, and CEPR) and Juan F Jimeno (FEDEA, Madrid, and CEPR), the programme contained the following papers:

'Breaking Down Married Female Nonemployment in France', Guy Laroque (INSEE, Malakoff) and Bernard Salanié (INSEE, Malakoff, and CEPR)

'Deunionization, Technical Change and Inequality', Daron Acemoglu (Massachusetts Institute of Technology and CEPR), Philippe Aghion (University College London, EBRD and CEPR) and Gianluca Violante (University College London and CEPR)

'The 35 Hour Week: How Much It Costs, How Much Employment It Creates', Victoria Osuna (Universidad Carlos III, Madrid) and José-Víctor Ríos-Rull (University of Pennsylvania and CEPR)

'Early Retirement', José I Conde Ruiz (Universitat Autònoma de Barcelona) and Vincenzo Galasso (Universidad Carlos III, Madrid, and CEPR)

'Using Search Theory to Compute Life-time Labor Values: Does This Change Our Knowledge About Labor Market Inequality?', Audra J Bowlus (University of Western Ontario) and Jean-Marc Robin (Ecole Normale Supérieure, Paris, and CEPR)

'From Wages to Income and Consumption Inequality: Tracking Shocks', Orazio Attanasio (University College London and CEPR), Gabriella Berloffia (Università degli Studi di Trento), Richard Blundell (University College London) and Ian Preston (University College London)

'Technology, Policy, and the Inequality-Unemployment Trade-Off', Andreas Hornstein (Federal Reserve Bank of Richmond), Per Krusell (University of Rochester and CEPR) and Gianluca Violante (University College London and CEPR)

'The Survival of the Welfare State', John Hassler (Stockholm University and CEPR), José V Rodriguez Mora (Universitat Pompeu Fabra, Barcelona), Kjetil Storesletten (Institute for International Economic Studies, Stockholm, and CEPR) and Fabrizio Zilibotti (Institute for International Economic Studies, Stockholm, and CEPR)

'Altruism with Endogenous Labor Supply', Ana Fernandes (CEMFI, Madrid)

'Endogenous Labor Market Participation in Equilibrium Search Unemployment', Pietro Garibaldi (Istituto di Economia Politica, Università Commerciale Luigi Bocconi and CEPR) and Etienne Wasmer (ECARES, Université Libre de Bruxelles, and CEPR)

'Informal Family Insurance and the Design of the Welfare State', Rafael Di Tella (Harvard University) and Robert MacCulloch (ZEI, Universität Bonn)

'Inequality and Poverty in Greece after the Restoration of Democracy (1974-1994)', Theodore Mitrakos (Athens University of Economics and Business and Bank of Greece) and Panos Tsakloglou (Athens University of Economics and Business)

A full report of the Workshop is available at [www.cepr.org/pubs/bulletin/meets/4513.htm](http://www.cepr.org/pubs/bulletin/meets/4513.htm)

# Recent Discussion Papers

## Discussion Papers Online at [www.cepr.org](http://www.cepr.org)

Complete abstracts of all CEPR *Discussion Papers* continue to be available free of charge at [www.cepr.org](http://www.cepr.org). New DPs are uploaded to our site as soon as they have been approved and you can search our entire database of *Discussion Papers* and their abstracts by number, title, author or 'keyword'. You can also access lists of all CEPR DPs published, those published in specific Programme Areas or recently published papers.

## Buying Single Copies of Discussion Papers

Single copies of *Discussion Papers* are available to purchase for £5 (approx. ₤8 or \$8) and are emailed to customers as electronic (PDF) files. To order a *Discussion Paper* please contact the Centre at [orders@cepr.org](mailto:orders@cepr.org) or telephone (44 20) 7878 2900. Please note that paper copies of DPs continue to be available from the Centre and can be posted to customers on request. For further details see [www.cepr.org](http://www.cepr.org).

## Subscribing to the Discussion Paper Series

It is also possible to subscribe to the *Discussion Paper* series. Subscriptions may be placed for all CEPR *Discussion Papers*; for papers appearing under one or more of the centre's seven Programme Areas (International Macroeconomics (IM), International Trade (IT), Industrial Organization (IO), Financial Economics (FE), Labour Economics (LE), Public Policy (PP) and Transition Economics (TE)); or for *Policy Papers*. Lists of newly approved DPs are emailed to subscribers every week providing direct links to the abstracts and full text (PDF) files of these papers. Subscribers can select an 'online only' subscription at a reduced rate or may opt to have 'paper copies' mailed to them each month as well. We are also able to offer special 'site-licence' subscriptions which give every member of a subscribing institution access to the downloadable versions of CEPR DPs in the areas to which they subscribe. To find out more about subscribing to the *Discussion Paper* series please see [www.cepr.org/subscribers](http://www.cepr.org/subscribers) or contact us at [orders@cepr.org](mailto:orders@cepr.org) / tel: (44 20) 7878 2900.

## Recent DPs

2492	Michèle Belot, Jan C van Ours	Does the Recent Success of some OECD Countries in Lowering their Unemployment Rates lie in the Clever Design of their Labour Market Reforms?	LE	06/00
2491	Pedro Pita Barros, Xavier Martinez-Giralt	Public and Private Provision of Health Care	IO/PP	06/00
2490	Simon Burgess, Hélène Turon	Unemployment Dynamics, Duration and Equilibrium: Evidence from Britain	LE	06/00
2489	Carol Propper, Bronwyn Croxson, Arran Shearer	Waiting Times for Hospital Admissions: the Impact of GP Fundholding	PP	06/00
2488	Ekatherina V Zhuravskaya, Constantin Sonin, Ariane Lambert-Mogiliansky	Capture of Bankruptcy: Theory and Evidence from Russia	TE	06/00
2487	Christian Dustmann, Francesca Fabbri	Language Proficiency and Labour Market Performance of Immigrants	LE	06/00

2486	Lorraine Dearden, Howard Reed, John van Reenen	Who Gains when Workers Train? Training and Corporate Productivity in a Panel of British Industries	IO/LE	06/00
2485	Alexia Fürnkranz-Prskawetz, Tomas Kögel	Agricultural Productivity Growth and Escape from the Malthusian Trap	IM/LE	06/00
2484	Tim Jenkinson, Alexander P Ljungqvist, William J Wilhelm Jr	Has the Introduction of Bookbuilding Increased the Efficiency of International IPOs?	FE	06/00
2483	François Degeorge, Dirk Jenter, Alberto Moel, Peter Tufano	Selling Company Shares to Reluctant Employees: France Télécom's Experience	FE	06/00
2482	Sajal Lahiri, Pascalis Raimondos-Møller	Special Interest Politics and Aid Fungibility	IT/PP	06/00
2481	Aaditya Mattoo, Marcelo Olarreaga	Reciprocity Across Modes of Supply in the WTO: A Negotiating Formula	IT	06/00
2480	Eric Bond, Costas Syropoulos	Deepening of Regional Integration and Multilateral Trade Agreements	IT	06/00
2479	Andreas M Fischer	Do Interventions Smooth Interest Rates?	IM	06/00
2478	Michael Dueker, Andreas M Fischer	Austria's Hard-Currency Policy: The Mechanics of Successful Exchange-Rate Peg	IM	06/00
2477	Fabrice Collard, Tryphon Kollintzas	Maintenance, Utilization, and Depreciation along the Business Cycle	IM	06/00
2476	Jonathan Haskel	The Trade and Labour Approaches to Wage Inequality	IM	06/00
2475	Filippo Altissimo, Giovanni L Violante	The Nonlinear Dynamics of Output and Unemployment in the US	IM	06/00
2474	Philippe Aghion, Peter Howitt, Giovanni L Violante	General Purpose Technology and Within-Group Inequality	IM/LE	06/00
2473	Jean Imbs	Sectors and the OECD Business Cycle	IM	06/00
2472	Marion Jansen, Alessandro Turrini	Job Creation, Job Destruction, and the International Division of Labour	IT	06/00
2471	Giovanni Bruno, Anna M Falzoni	Multinational Corporations, Wages and Employment: Do Adjustment Costs Matter?	IT	06/00
2470	Enrico Pennings, Leo Sleuwaegen	The Choice and Timing of Foreign Market Entry under Uncertainty	IT	06/00
2469	Henrik Braconier, Karolina Ekholm, Karen-Helene Midelfart Knarvik	Does FDI Work as a Channel for R&D Spillovers? Evidence Based on Swedish Data	IT	06/00
2468	Chiara Fumagalli	On the Welfare Effects of Competition for Foreign Direct Investments	IT	06/00

2467	Karen-Helene Midelfart Knarvik, Frode Steen	Vertical Industry Linkages: Sources of Productivity Gains and Cumulative Causation	IT	05/00
2466	Angel de la Fuente, Rafael Doménech	Human Capital in Growth Regressions: How Much Difference Does Data Quality Make?	IM	05/00
2465	Angel de la Fuente	Convergence Across Countries and Regions: Theory and Empirics	IM	05/00
2464	George-Marios Angeletos, Tryphon Kollintzas	Rent Seeking/Corruption and Growth: A Simple Model	IM	05/00
2463	Richard Disney, Jonathan Haskel, Ylva Heden	Restructuring and Productivity Growth in UK Manufacturing	LE	05/00
2462	Philippe Aghion, Mark Schankerman	A Model of Market-Enhancing Infrastructure	IO/TE	05/00
2461	Carsten Detken, Philipp Hartmann	The Euro and International Capital Markets	IM/FE	05/00
2460	Vivek H Dehejia, Nicholas Row	Macroeconomic Stabilization: Fixed Exchange Rates vs Inflation Targeting vs Price Level Targeting	IM	05/00
2459	Henrik Horn, James Levinsohn	Merger Policies and Trade Liberalization	IO/IT	05/00
2458	Paul Povel, Michael Raith	Liquidity Constraints, Production Costs and Output Decisions	IO	05/00
2457	Rachel Griffith, Stephen Redding, John Van Reenen	Mapping the Two Faces of R&D: Productivity Growth in a Panel of OECD Industries	IT/IO	05/00
2456	Vincenzo Galasso	The US Social Security: A Financial Appraisal for the Median Voter	PP	05/00
2455	Thierry Verdier, Yves Zenou	Racial Beliefs, Location and the Causes of Crime	LE/PP	05/00
2454	Michael B Devereux, Charles Engel	Monetary Policy in the Open Economy Revisited: Price Setting Rules and Exchange Rate Flexibility	IM	05/00
2453	Jenny Corbett, Janet Mitchell	Banking Crises and Bank Rescues: The Role of Reputation	FE	05/00
2452	Juan J Dolado, Florentino Felgueroso, Juan F Jimeno	The Role of the Minimum Wage in the Welfare State: An Appraisal	LE	05/00
2451	Jan C van Ours, Josef Zweimüller, Rafael Lalive	The Impact of Active Labour Market Policies and Benefit Entitlement Rules on the Duration of Unemployment	LE	05/00
2450	Vivek H Dehejia, Douglas W Dwyer	Output and Unemployment Dynamics in Transition	TE	05/00
2449	Sergei Guriev, Dmitry Kvassov	Barter for Price Discrimination?	TE	05/00
2448	Maria Vassalou	Exchange Rate and Foreign Inflation Risk Premiums in Global Equity Returns	FE	05/00

2447	Gerard J van den Berg, Bas van der Klaauw, Jan C van Ours	Punitive Sanctions and the Transition Rate From Welfare to Work	LE	05/00
2446	Roland Bénabou	Tax and Education Policy in a Heterogeneous Agent Economy: What Levels of Redistribution Maximize Growth and Efficiency?	IM/PP	05/00
2445	Thomas Bauer, John P Haisken-De New	Employer Learning and the Returns to Schooling	LE	05/00
2444	J David Brown, John S Earle	Competition and Firm Performance: Lessons from Russia	TE	05/00
2443	David Besanko, Pierre Régibeau, Katharine Rockett	A Multi-Task Principal-Agent Approach to Organizational Form	IO	05/00
2442	Georges Siotis, Roberto Hernán, Pedro L Marín	An Empirical Evaluation of the Determinants of Research Joint Venture Formation	IO	05/00
2441	Juan J Dolado, Ramón María-Dolores, Manuel Naveira	Asymmetries in Monetary Policy Rules: Evidence for Four Central Banks	IM	04/00
2440	Harald Gruber, Frank Verboven	The Evolution of Markets under Entry and Standards Regulation - The Case of Global Mobile Telecommunications	IO	04/00
2439	Michael Manove, A Jorge Padilla, Marco Pagano	Collateral vs Project Screening: A Model of Lazy Banks	FE	04/00
2438	Jerry Coakley, Ana-Maria Fuertes, Gylfi Zoega	Evaluating the Persistence and Structuralist Theories of Unemployment	LE	04/00
2437	Kym Anderson	Agriculture, Developing Countries, and the WTO Millennium Round	IT	04/00
2436	Tamim Bayoumi	The Morning After: Explaining the Slowdown in Japanese Growth in the 1990s	IM	04/00
2435	James Morsink, Tamim Bayoumi	A Peek Inside the Black Box: The Monetary Transmission Mechanism in Japan	IM	04/00
2434	Olivier Compte, Ariane Lambert-Mogiliansky, Thierry Verdier	Corruption And Competition in Public Market Auctions	PP	04/00
2433	Eliana La Ferrara	Inequality and Group Participation: Theory and Evidence from Rural Tanzania	PP	04/00
2432	Dalia Marin, Daniel Kaufmann, Bogdan Gorochofskij	Barter in Transition Economies: Competing Explanations Confront Ukrainian Data	TE	04/00
2431	Jennifer Hunt	Why Do People Still Live in East Germany?	LE	04/00
2430	Jörgen Hansen, Magnus Lofstrom	Immigrant Assimilation and Welfare Participation: Do Immigrants Assimilate into or out of Welfare?	LE	04/00

2429	Guido Friebel, Michael Raith	Strategic Recruiting and the Chain of Command	IO/LE	04/00
2428	Jörn-Steffen Pischke	Continuous Training in Germany	LE	04/00
2427	Barry Eichengreen, Christof Ruehl	The Bail-In Problem: Systematic Goals, Ad Hoc Means	IM	04/00
2426	Roger E A Farmer	Natural Rate Doubts	IM	04/00
2425	Mehmet Caner, Lutz Kilian	Size Distortions of Tests of the Null Hypothesis of Stationarity: Evidence and Implications for the PPP Debate	IM	04/00
2424	Francis X Diebold, Lutz Kilian	Measuring Predictability: Theory and Macroeconomic Applications	IM	04/00
2423	Gilles Saint-Paul, Samuel Bentolila	Will EMU Increase Eurosclerosis?	IM/LE	04/00
2422	Kaspar Richter	Government Cash Transfers, Household Consumption, and Poverty Alleviation - The Case of Russia	TE	04/00
2421	Steven N Kaplan, Per Strömberg	Financial Contracting Theory Meets the Real World: An Empirical Analysis of Venture Capital Contracts	FE	04/00
2420	Tito Boeri, Giuseppe Nicoletti, Stefano Scarpetta	Regulation and Labour Market Performance	LE	04/00
2419	Rob Euwals	Female Labour Supply, Flexibility Of Working Hours, and Job Mobility	LE	04/00
2418	John DiNardo, Kevin F Hallock, Jörn-Steffen Pischke	Unions and the Labour Market for Managers	LE	04/00
2417	Ulrich Hege, Pierre Mella-Barral	Collateral, Renegotiation and the Value of Diffusely Held Debt	FE	04/00
2416	Harrison G Hong, Sven Rady	Strategic Trading and Learning about Liquidity	FE	04/00
2415	Nick Bloom, Rachel Griffith, John Van Reenen	Do R&D Credits Work? Evidence from a Panel Of Countries 1979-97	PP/IO	04/00
2414	Gil S Epstein, Arye L Hillman	Social Harmony at the Boundaries of the Welfare State: Immigrants and Social Transfers	PP/LE	04/00
2413	Jean-Pierre Danthine, Francesco Giavazzi, Ernst-Ludwig von Thadden	European Financial Markets After EMU: A First Assessment	FE/IM	04/00
2412	Myrvin L Anthony, Andrew Hughes Hallett	Should Argentina Adopt the US Dollar?	IM	04/00
2411	Tamim Bayoumi, Barry Eichengreen, Paolo Mauro	On Regional Monetary Arrangements for ASEAN	IM	04/00

2410	Gilles Saint-Paul, Adriana Kugler	Hiring And Firing Costs, Adverse Selection and the Persistence of Unemployment	LE/IM	03/00
2409	Barbara Petrongolo, Christopher Pissarides	Looking into the Black Box: A Survey of the Matching Function	LE	03/00
2408	Alan Barrett, Philip J O'Connell	Is There a Wage Premium for Returning Irish Migrants?	LE	03/00
2407	Fabrizio Coricelli, Alex Cukierman, Alberto Dalmazzo	Monetary Institutions, Monopolistic Competition, Unionized Labour Markets and Economic Performance	IM	03/00
2406	Richard John Green	Can Competition Replace Regulation for Small Utility Customers?	IO	03/00
2405	Sumru Altug, Fanny S Demers, Michel Demers	Political Risk and Irreversible Investment: Theory and an Application to Quebec	IM	03/00
2404	Gavin Cameron, John Muellbauer	Earnings, Unemployment, and Housing: Evidence from a Panel of British Regions	LE	03/00
2403	Michael B Devereux	A Simple Dynamic General Equilibrium Model of the Tradeoff Between Fixed and Floating Exchange Rates	IM	03/00
2402	Francesco Caselli, Massimo Morelli	Bad Politicians	IM	03/00
2401	Mathias Thoenig, Thierry Verdier	Trade Induced Technical Bias and Wage Inequalities: A Theory of Defensive Innovations	IT	03/00
2400	Mario Forni, Marc Hallin, Marco Lippi, Lucrezia Reichlin	Reference Cycles: The NBER Methodology Revisited	IM	03/00
2399	Lars-Hendrik Röller, Leonard Waverman	Telecommunications Infrastructure and Economic Development: A Simultaneous Approach	IO	03/00
2398	Juan J Dolado, Florentino Felgueroso, Juan F Jimeno	Explaining Youth Labour Market Problems in Spain: Crowding-Out, Institutions, or Technology Shifts?	LE	03/00
2397	Jan K Brueckner, Yves Zenou	Space and Unemployment: The Labour-Market Effects of Spatial Mismatch	LE	03/00
2396	Patrick Legros, Andrew Newman	Monotone Matching in Perfect and Imperfect Worlds	IO	03/00
2395	Giorgio Barba Navaretti, Anna M Falzoni, Alessandro Turrini	The Decision to Invest in a Low-Wage Country: Evidence from Italian Textiles and Clothing Multinationals	IT	03/00
2394	Denis Fougère, Francis Kramarz, Thierry Magnac	Youth Employment Policies in France	LE	03/00
2393	Paul De Grauwe	Monetary Policies in the Presence of Asymmetries	IM	02/00
2392	Dennis Bams, Christian C P Wolff	Risk Premia in the Term Structure of Interest Rates: A Panel Data Approach	FE	02/00



2391	Andres Almazan, Javier Suarez	Optimal Corporate Governance Structures	FE	02/00
2390	Dan Ben-David, Ayal Kimhi	Trade and the Rate of Income Convergence	IM/IT	02/00
2389	Robert B Barsky, Lutz Kilian	A Monetary Explanation of the Great Stagflation of the 1970s	IM	02/00
2388	Juan J Dolado, Ramón María Dolores	Evaluating Changes in the Bank Of Spain's Intervention: An Alternative Approach Using Marked Point Processes	IM	02/00
2387	Andrea Ichino, Giovanni Maggi	Work Environment and Individual Background: Explaining Regional Shirking Differentials In A Large Italian Firm	LE	02/00
2386	Jürgen von Hagen, Rolf Strauch	East Germany: Transition with Unification - Experiments and Experiences	IM/TE	02/00
2385	Stefano Manzocchi, Gianmarco I P Ottaviano	Outsiders in Economic Integration: The Case of a Transition Economy	IT/TE	02/00
2384	Tito Boeri	Optimal Speed of Transition 10 Years After	TE	02/00
2383	Luigi Guiso, Paola Sapienza, Luigi Zingales	The Role of Social Capital in Financial Development	FE	02/00
2382	L Alan Winters	Trade, Trade Policy and Poverty: What Are the Links?	IT	02/00
2381	Timothy Besley, Stephen Coate	Elected Versus Appointed Regulators: Theory and Evidence	PP	02/00
2380	Lars E O Svensson	The First Year of the Eurosystem: Inflation Targeting or Not?	IM	02/00
2379	Peter Bofinger, Timo Wollmershaeuser	Options for the Exchange Rate Policies of the EU Accession Countries (and other Emerging Market Economies)	TE	02/00
2378	Kjell Erik Lommerud, Steinar Vagstad	Mommy Tracks and Public Policy: On Self-Fulfilling Prophecies and Gender Gaps in Promotion	PP	02/00
2377	Joseph F Francois, Ian Wooton	Trade in International Transport Services: The Role of Competition	IT	02/00
2376	Gilles Duranton, Diego Puga	Nursery Cities: Urban Diversity, Process Innovation, and the Life-Cycle of Products	IT	02/00
2375	Sylvester Eijffinger, Eric Schaling, Willem Verhagen	The Term Structure of Interest Rates and Inflation Forecast Targeting	IM	02/00
2374	Francesco Giavazzi, Tullio Jappelli, Marco Pagano	Searching for Non-Linear Effects of Fiscal Policy: Evidence from Industrial and Developing Countries	IM	02/00
2373	Stefan Lutz, Alessandro Turrini	Skills, Labour Costs and Vertically Differentiated Industries: A General Equilibrium Analysis	IT/LE	02/00
2372	Kevin H O'Rourke, Jeffrey G Williamson	The Heckscher-Ohlin Model Between 1400 and 2000: When It Explained Factor Price Convergence, When It Did Not, and Why	IT	02/00

2371	Tito Boeri	Social Europe: Dramatic Visions and Real Complexity	PP	02/00
2370	Dani Rodrik	Institutions for High-Quality Growth: What They Are and How To Acquire Them	PP	02/00
2369	David Miles	Funded and Unfunded Pensions: Risk, Return and Welfare	IM/PP	02/00
2368	Guido Friebel, Sergei Guriev	Why Russian Workers Do Not Move: Attachment of Workers Through In-Kind Payments	TE	01/00
2367	Marco Bianchi, Bjorn R Gudmundsson, Gylfi Zoega	Iceland's Natural Experiment in Supply-Side Economics	LE	01/00
2366	Willem H Buijter	Optimal Currency Areas: Why Does the Exchange Rate Regime Matter?	IM	01/00
2365	Willem H Buijter	Monetary Misconceptions: New and Old Paradigmata and Other Sad Tales	IM	02/00
2364	Tryggvi Thor Herbertsson, Marta Skuladottir, Gylfi Zoega	Three Symptoms and a Cure: A Contribution to the Economics of the Dutch Disease	LE/IM	01/00
2363	Jan C van Ours, Geert Ridder	Fast Track or Failure: A Study of the Completion Rates of Graduate Students in Economics	LE	01/00
2362	Bas van der Klaauw, Jan C van Ours	Labour Supply and Matching Rates for Welfare Recipients: An Analysis Using Neighbourhood Characteristics	LE	01/00
2361	Jan Boone, Jan C van Ours	Modelling Financial Incentives to Get Unemployed Back to Work	LE	01/00
2360	Torben M Andersen, Niels C Beier	Noisy Financial Signals and Persistent Effects of Nominal Shocks in Open Economies	IM	01/00
2359	Hedva Ber, Yishay Yafeh, Oved Yosha	Conflict of Interest in Universal Banking: Bank Lending, Stock Underwriting, and Fund Management	FE	01/00
2358	Bruno Crépon, Francis Kramarz	Employed 40 Hours or Not Employed 39: Lessons from the 1982 Mandatory Reduction of the Workweek	LE	01/00
2357	Sven-Olof Fridolfsson, Johan Stennek	Why Mergers Reduce Profits, and Raise Share-Prices	IO	01/00
2356	Harald Hau	Real Exchange Rate Volatility and Economic Openness: Theory and Evidence	IM	01/00
2355	Anke Kessler	Optimal Monitoring in Hierarchical Relationships	IO	01/00
2354	Sylvester Eijffinger, Marco Hoeberichts, Eric Schaling	A Theory of Central Bank Accountability	IM	01/00
2353	Helge Berger, Jakob de Haan, Sylvester Eijffinger	Central Bank Independence: An Update of Theory and Evidence	IM	01/00
2352	Raquel Fernandez, Richard Rogerson	Sorting and Long-Run Inequality	PP/IM	01/00

# CEPR News

CEPR is involved in six successful networks awarded under the EU's Research and Training Networks (RTN) Programme. These are 'The Economic Geography of Europe: Measurement, Testing and Policy Simulations' (Scientist-in-Charge: Victor Norman); 'Understanding Financial Architecture: Legal and Political Frameworks and Economic Efficiency' (Erik Berglöff); 'Product Markets, Financial Markets and the Pace of Innovation in Europe' (Philippe Aghion); 'Specialization Versus Diversification: The Microeconomics of Regional Development and the Spatial Propagation of Macroeconomic Shocks in Europe' (Lucrezia Reichlin); 'The Analysis of International Capital Markets: Understanding Europe's Role in the Global Economy' (Philip Lane); and 'New Techniques for the Evaluation of European Labour Market Policies' (Per-Anders Edin).

Two grants for High Level Scientific Conferences have also been awarded: 'Psychology and Economics' (Juan Carillo) and

'Dynamic Aspects of Taxation and Public Expenditure' (Thomas Renström). CEPR has also been awarded two project grants for EC studies. These are 'Merger Control and Enterprise Competitiveness: Empirical Analysis and Policy Recommendations' and 'Budgetary Consolidation in EMU'. Paul Geroski will lead a project entitled 'The Evaluation of Markets for New Products' funded by the ESRC under its Realising Our Potential Awards (ROPAs) programme.

CEPR is delighted to welcome Moore Capital Strategy Group, PricewaterhouseCoopers and the European Investment Bank as corporate members. Information about CEPR's corporate membership programme can be obtained from Rita Gilbert, External Relations Officer, CEPR, 90-98 Goswell Road, London EC1V 7RR. Tel (44 20) 7878 2917, Fax (44 20) 7878 2999, Email [rgilbert@cepr.org](mailto:rgilbert@cepr.org)



The Centre for Economic Policy Research was established in 1983 to promote independent analysis and public discussion of open economies and the relations among them. It is pluralist and non-partisan, bringing economic research to bear on the analysis of medium- and long-run policy questions. Institutional (core) finance for the Centre is provided through major grants from the Esmée Fairbairn Charitable Trust and the Bank of England. The Economic and Social Research Council also supports CEPR's networking and dissemination activities, in particular this Bulletin, under a grant financing an ESRC Resource Centre within CEPR. None of these organizations gives prior review to the Centre's publications, nor do they necessarily endorse the views expressed therein.

The Centre for Economic Policy Research is a registered charity with educational purposes. Contributions may be made in lump-sum form or by covenant spread over several years; they may support the institution itself and its full range of activities, or the donor may specify some particular programme areas or activities to which a donation should be directed. UK contributions may qualify for tax relief if made under a deed of covenant or under the Gift Aid regulations. Contributions to CEPR are also tax exempt under Section 501(c)(3) of the Internal Revenue Code, and CEPR comes within the definition of a publicly supported organization under Section 509(a) of the Internal Revenue Code.

The CEPR Bulletin (ISSN 0256-7996) is issued to inform academic, business and policy communities of the current and forthcoming activities of the Centre. It also lists Discussion Papers produced under the auspices of the Centre. The Centre's Executive Committee does not give prior review to the Bulletin. Reports of meetings, conferences and workshops attempt to convey the sense and substance of the papers presented and the discussions which took place. The reports have not been authorized by the authors and discussants concerned, nor does the Centre endorse the views expressed. The Bulletin is not copyrighted and may be reproduced with the appropriate attribution. Further information on the background, objectives and operations of CEPR is available on request. Edited by Niall Flynn.

## CEPR Officers:

Chairmen - Guillermo de la Dehesa\*  
President - Richard Portes  
Chief Executive Officer - Stephen Yeo  
Research Director - Mathias Dewatripont

## CEPR Executive Committee:

Jan Bielecki, Diane Coyle, Quentin Davies\*, Guillermo de la Dehesa\*, Mathias Dewatripont, Francesco Giavazzi\*, Denis Gromb, Philippe Lagayette, Bernard Dewe Mathews\*, Peter Middleton, Richard Portes, Rafael Repullo, Bridget Rosewell, Mario Sarcinelli, Kermit Schoenholtz, Philippe Weil, Stephen Yeo.

\*indicates members of Finance Committee

## CEPR Programme Directors:

Financial Economics (FE): Bruno Biais, Université des Sciences Sociales de Toulouse, and Marco Pagano, Università di Salerno.

International Macroeconomics (IM): Jordi Galí, Universitat Pompeu Fabra, Barcelona, Lucrezia Reichlin, ECARE, Université Libre de Bruxelles, and Charles Wyplosz, Graduate Institute of International Studies, Geneva.

Industrial Organization (IO): Philippe Aghion, University College London and EBRD, and Lars-Hendrik Röller, Wissenschaftszentrum Berlin für Sozialforschung (WZB).

International Trade (IT): Richard E Baldwin, Graduate Institute of International Studies, Geneva, and Anthony Venables, London School of Economics.

Labour Economics (LE): Juan J Dolado, Universidad Carlos III, Madrid, and Klaus F Zimmermann, IZA and Universität Bonn.

Public Policy (PP): Timothy Besley, London School of Economics, and Raquel Fernández, London School of Economics.

Transition Economics (TE): Gérard Roland, ECARES, Université Libre de Bruxelles, and Jan Svejnar, University of Michigan and CERGE-EI, Prague.

# Forthcoming Events

The following events will take place under the auspices of the Centre. For further information about CEPR meetings, contact: Monique Muldoon, tel: (44 20) 7878 2907.

Conferences and Workshops are indicated in blue and attendance is by invitation only. Lunchtime meetings, however, are open and are indicated in Orange.

A full list of forthcoming events is available at [www.cepr.org](http://www.cepr.org).

## 2000 ▼

08/10 SEPTEMBER

Dynamic Aspects of Taxation (hosted by Tilburg University), Tilburg.

15/16 SEPTEMBER

CEPR/ESI Annual Conference (organised in conjunction with the European Summer Institute (ESI) and hosted by Nederlandsche Bank), Amsterdam.

22/23 SEPTEMBER

Manresa Conference on Finance (with Caxia Manresa, the European Economic Review and IAE, Barcelona), Manresa.

22/23 SEPTEMBER

Public Policy Symposium, El Escorial.

26/30 SEPTEMBER

European Summer Symposium in Labour Economics (ESSLE) (hosted by IZA), Ammersee.

12 OCTOBER

Ireland and EMU, London.

13/14 OCTOBER

Economic Policy Thirty-Second Panel Meeting (organized in conjunction with Delta and CES), Paris.

27/28 OCTOBER

Evolution of Market Structure in Network Industries, Heidelberg.

03/04 NOVEMBER

Understanding Financial Architecture: Legal and Political Frameworks and Economic Activity (hosted by the Centre for Financial Studies, Frankfurt), Frankfurt.

26/27 NOVEMBER

The Analysis of International Capital Markets: Understanding Europe's Role in the Global Economy (hosted by the Bank of Israel and the Eitan Berglas School of Economics), Tel Aviv.

26/27 NOVEMBER

'Antitrust Issues in International Markets', 9th Annual WZB Conference on Industrial Organization (organized in conjunction with WZB), Berlin.

## 2001 ▼

23 MARCH

Corporate Governance and Financial Intermediaries (organized in conjunction with CERP, CNPDS and FEEM), Courmayeur.

06 APRIL

Economic Policy Thirty-Third Panel Meeting (organized in conjunction with Delta and CES).

24/28 APRIL

European Summer Symposium in Labour Economics (ESSLE) (hosted by IZA), Ammersee.

27/28 APRIL

The Economic Analysis of Political Institutions: Coalition Building and Constitutional Design (organized in conjunction with IMOP, and Athens University of Economics and Business), Hydra.

