



IN THIS ISSUE

This issue of the *Bulletin* summarizes the findings of the first products of two new series of 'monitoring reports', one dealing with the ECB, the other with regulation of European 'network' industries. It also reports on a joint CEPR/World Bank conference on contagion in financial markets, a conference on the sources and consequences of financial crises, a joint CEPR/BIS conference on asset prices and monetary policy, and a conference on the Japanese economy in international perspective. Also reported are discussion meetings on the risks of a currency crisis under EMU, the relationship between the United Kingdom and EMU, the WTO's agenda, and the EU's role in promoting regional trade agreements.

- 3 Assessing the ECB**
The first report in a new series on *Monitoring the European Central Bank* suggests that the ECB has not yet evolved to the point of being fully prepared to meet its responsibilities. Even in relatively benign circumstances, this could pose dangers; in a full-blown international financial crisis, the ECB's serious design flaws would be exposed.
- 4 Deregulating European Telecoms**
The first *Monitoring European Deregulation* report focuses on the telecommunications sector. The first part of the report includes a detailed discussion of the underlying principles governing competition and regulatory policy for 'network' industries in general. The second part examines the specific challenges posed by the telecoms sector to both national- and EU-level regulators.
- 8 Financial-market Contagion and Volatility**
A joint CEPR/World Bank conference examined competing explanations for the recent financial and economic instability in East Asian countries, and for the 'contagion' effects transmitted to other economies.
- 15 Japan Network**
The fifth conference of CEPR's European Network on the Japanese Economy, held jointly with ISES/O, considered four major aspects of the Japanese economy in an international perspective: trade issues; foreign-exchange markets; regulation and industrial structure; and institutions and the role of the state.
- 19 World Capital Markets and Financial Crises**
A CEPR conference, held in conjunction with the ESRC's Global Economic Institutions programme, set out to examine the origins and policy implications of the recent East Asian financial crisis, paying particular attention to the role played by global capital markets.
- 23 Asset Prices and Monetary Policy**
A joint CEPR/BIS conference considered issues relating to inflation targeting in open economies, interest-rate rules, the predictive qualities of interest rates, assessment of market views on monetary policy, international comparisons of monetary-policy rules, and the monetary-policy transmission mechanism in Europe.
- 28 Discussion Meetings**
At recent discussion meetings Richard Portes cautioned against exaggerating the risks of a currency crisis under EMU; Joseph Francois warned that some of the new agenda items for the WTO could put at risk much unfinished trade-liberalization business; Willem Buiter predicted that EMU would be successful and that the United Kingdom would join sooner rather than later; and André Sapir examined Europe's evolving role in promoting regional trade agreements.
- 32 Abstracts of Recent Discussion Papers**
- 96 Forthcoming Activities**
Workshops on the future of financial services (in Helsinki), the policy aspects of business cycle theory (in Hydra) and the annual transition economics workshop for young academics are among CEPR's planned events in April and May 1999.

CEPR NEWS

CEPR has been awarded a number of project grants, including three studies for Directorate-General II of the European Commission: 'Factors Affecting the Location of Activities within the EU', 'EMU and the Integration of European Product Markets' and 'Impact of EMU on Portfolio Adjustment'.

Funding has been secured from the Fondation de la Banque de France for two projects. The first, led by Marco Pagano, is entitled 'Where to List: the Geography of Equity Issuance and Trading' and the second, 'Judicial Enforcement and Information Sharing in Credit Markets' is led by Tullio Jappelli. Phare ACE has agreed funding for the 1999 Annual Transition Economics Summer Workshop for Young Academics, organised by Mark Schaffer. It is also supporting two research projects, 'Monetary Policy and Accession to the European Union' and 'Corporate Governance and Disclosure in the

Accession Process', led by Lorand Ambrus Lakatos and Eric Berglöff respectively.

Klaus Zimmermann and Thomas Bauer will carry out a study for the UK Department for Education and Employment on the possible migration pressure and its labour market impact following EU enlargement to central and eastern Europe.

CEPR is delighted to welcome Bank Austria as a new corporate member. In addition, we are very pleased to announce that Commerzbank has decided to upgrade its level of membership. Information about CEPR's corporate membership programme can be obtained from Joan Concannon, External Relations Officer, CEPR, 90-98 Goswell Road, London EC1V 7RR. Tel 44 171 878 2917, Fax 44 171 878 2999, Email jconcannon@cepr.org



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The CEPR *Bulletin* (ISSN 0256-7996) is issued to inform academic, business and government policy communities of the current and forthcoming activities of the Centre. It also summarizes Discussion Papers produced under the auspices of the Centre. The Centre's Executive Committee does not give prior review to the *Bulletin*. Summaries of Discussion Papers and reports of meetings, conferences and workshops attempt to convey the sense and substance of the papers presented and the discussions which took place. The summaries and reports have not been authorized by the authors and discussants concerned, nor does the Centre endorse the views expressed.

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RESEARCH

Monitoring the ECB

Not just Unproven, but also Unsafe?

As one of the world's key central banks, the European Central Bank (ECB) is destined to become a formidable institution both in Europe and in the wider international financial system. With the Bank taking up its policy responsibilities in January 1999 and, in so doing, confronting unexplored territory and facing a host of important, but unresolved policy issues, CEPR made provision for regular examination of the ECB's policies from an independent, pan-European perspective. This will be done via twice-yearly reports in a *Monitoring the European Central Bank (MECB)* series. The reports, which will be written by economists known internationally for their work on macroeconomics and monetary policy, will fill a major gap in the scrutiny of the ECB: although the ECB exists for all EMU countries, it 'belongs' to no particular member state, and is accountable only to the European Parliament, which has no tradition of oversight of monetary policy.

The inaugural *MECB* report was published in October 1998. Entitled *The ECB: Safe at any Speed?*, the report was written by **David Begg** (Birkbeck College, London, and CEPR), **Paul De Grauwe** (Katholieke Universiteit Leuven and CEPR), **Francesco Giavazzi** (Università Bocconi, Milan, and CEPR), **Harald Uhlig** (CenTER, Tilburg University, and CEPR) and **Charles Wyplosz** (Graduate Institute of International Studies, Geneva, and CEPR). The authors argue that the ECB is not yet fully prepared to meet its responsibilities and challenges and that many operational issues remain to be settled. Even in a benign global climate, these shortcomings could prove problematical; a deteriorating climate could well expose the flaws in the design of the institution and undermine its ability to manage a major financial crisis.

The report notes that the design strategy for the ECB intentionally sought to emphasize its similarities to the Bundesbank. Despite a decade of planning for EMU, however, many crucial decisions have been left unresolved; and among the decisions actually made, a number contained compromises that have weakened the Bank from the outset. Five basic difficulties exist. First, much of the relationship between the ECB and the European System of Central Banks has been left unclear. With the existing central bank governors remaining in charge of their own national institutions, but simultaneously controlling the ECB Council, national perspectives are likely to persist and lines of authority to remain ambiguous. Second, the monetary-policy strategy also has been left (deliberately) ambiguous, which means that the transparency necessary for accountability will be difficult to accomplish. Third, the process by which monetary policy will be conducted – whether via money-stock or inflation targets – has still to be determined. Fourth, who is to speak for the 'EuroXI'

in global institutions (such as the G-7) in which both fiscal- and monetary-policy coordination issues may arise both within Euroland and between Euroland and other major actors? And fifth, like any central bank, the ECB will have substantial discretionary powers – for example, in its regulatory and its lender-of-last-resort roles. Yet the basis on which discretion will be exercised is unclear.

In short, as with most previous moves to integrate European markets, and contrary to the ECB's own expressed beliefs, the monetary integration process has led to weak central institutions reflecting national disagreements and political compromise. In the authors' view, its flawed and incomplete design leaves the ECB both weak and unprepared, especially where the flaws and incompleteness are symptomatic of deeper disagreements. They therefore urge that steps be taken to strengthen the ECB in relation to national central banks, whose governors will otherwise retain too much power, inhibiting development of a truly European perspective. Ideally, there should be more centralized operating procedures, and the balance of voting power between the ECB's executive board and the national central bank governors should be tilted in favour of the former.

The report acknowledges that such changes cannot happen immediately. None the less, without them, there is a danger that the ECB will simply repeat the mistakes made by the early Federal Reserve as a result of its (the Fed's) decentralized and disputed authority. Two early practical steps could mitigate some of the danger. First, the resources available to the ECB should be increased, so that it can develop its own research and other support services in healthy competition with its national counterparts; and second, a number of national central bank governors should relocate to Frankfurt rather than continue to be based in their national institutions.

Turning to the monetary policy issue, the authors argue that in seeking to prove its mettle, the ECB will do itself no favours if it embarks on its role in 'foggy' conditions. On the contrary, the Bank would benefit from helping its many constituencies to watch and appraise its conduct. In this respect, the report seeks first to debunk the myth that central banks do care (or should care) about price stability to the exclusion of all other goals. There is ample evidence that, in practice and on average, most central banks follow a 'Taylor rule', in terms of which interest rates are changed whenever either inflation or output depart from set targets. *Ex post*, it is clear that not even the Bundesbank has assigned a zero weight to the output gap. There is thus no need for the ECB to display total stubbornness in relation to price stability in order to establish its reputation.

Furthermore, because monetary policy affects prices with a long lag, there is considerable latitude in interpreting a mandate to pursue price stability. For the same reason, the ECB cannot be held instantly accountable for inflation. Consequently, it will have some discretion about how quickly to achieve inflation targets. On the assumption that the ECB inevitably will end up behaving like other responsible central banks, economists will, in due course, uncover from the data its

average behaviour. In the interim, the ECB will gain nothing from seeking to hide its normal behaviour.

The Bank should therefore adopt and announce the rule that it intends will govern its normal behaviour towards interest rates when inflation and output deviate from their target or trend paths. This would have three advantages: it would help ensure systematic and consistent internal decision-making; it would act as an important external communication device; and it would act as a commitment device in the Bank's strategic interaction with both fiscal authorities and wage setters in the EuroXI. The authors reject, as 'unconvincing', the three arguments that have been advanced to justify reluctance to announce a policy rule, namely that secrecy offers scope for 'creative ambiguity'; that, since the launch of the euro represents a 'break in history' and a change in the policy environment, the consequent structural uncertainty will render it more difficult for markets to extract information signals from the Bank's actions; and that the world is 'too complex' for simple rules. Nor would there be any danger that, in announcing the rule, the ECB would be limiting its capacity to exercise discretionary powers in response to specific and temporary circumstances that warrant departing from the rule. The public would expect no less, just as it would expect the ECB to avoid capricious or erratic behaviour.

Announcement of a rule would thus provide a benchmark against which to check that discretion had no hidden systematic components. Since policy takes time to work, however, announcement would also involve making public the ECB's forecast inflation and output growth rates for Euroland, which would indicate in turn the expected deviations of these variables from their targets. But the report also suggests that, on the basis of the published forecasts, the ECB should go one step further and explain what its normal rule would then imply for interest rates, and whether or not it considered that any deviation from this normal reaction was required.

In essence, the report contends that there is no serious conflict between transparency and effectiveness. On the contrary, transparency would assist markets, and improve both the ECB's accountability and the quality of its decision-making. Changes in interest rates should be accompanied by a public explanation of why rates were changed, including any evolution in the forecasts of economic conditions. Votes cast by individual members of the Governing Council should be made public after a short time. On the question of the policy rule itself, the report comes down firmly in favour of an inflation-rate, rather than a money-stock growth-rate target. Whatever the chosen target, however, the imperative of communicating the strategy to the public remains.

The report also deals at some length with some of the more specific challenges that will face the ECB in its first year under two alternative scenarios: (1) if the economic climate in Europe remains relatively benign; and (2) if the global environment deteriorates significantly. The authors note first that the ECB will face two problems not encountered by the US Fed: labour markets are

more rigid, potentially giving rise to more persistent recessions; and fiscal policy is in the hands of 11 uncoordinated authorities, giving rise to potential free riding by each fiscal authority. The ECB should strive to avoid hard landings, but it cannot succeed if any monetary tightening becomes the excuse for fiscal expansion by individual member states. Since politicians care even more about recession than the ECB, labour-market rigidities may actually enhance the Bank's threat to create recession if fiscal discipline breaks down. It may be possible to sustain some cooperation between fiscal and monetary authorities. The EuroXI committee would then play a key role in coordinating fiscal policies among EMU members.

Second, there is no guarantee that the expensive TARGET payments system will actually be used for large-value transactions. Alternative private settlement systems will be vulnerable in a crisis, however, and may force the ECB to act as lender of last resort. More generally, financial regulation within EMU is at present unsafe. No secure mechanism exists for creating liquidity in a crisis, and there remain flaws in proposals for dealing with insolvency during a large banking collapse. Asymmetric national exposure to risky foreign loans may lead to conflicts about the appropriate response. In the longer run, centralization of regulation is essential.

Third, a global crisis would set off the deflation already evident in Japan. Although deflation is a symptom of deeper causes, such as failures in bank regulation, it is also damaging in its own right since it escalates the real burden of debt repayment. It is therefore important that the ECB should pay as much attention to avoiding undershoots of its target inflation range as it pays to avoiding overshoots.

The ECB: Safe at Any Speed?, *Monitoring the European Central Bank 1*
David Begg, Paul De Grauwe, Francesco Giavazzi,
Harald Uhlig and Charles Wyplosz
ISBN 1 898128 39 1
xii + 46. £20/\$30/30 euros
Please contact CEPR for details

Regulation of Network Industries

The European Telecommunications Sector

The regulation of 'network' industries – such as telecommunications, energy, transport and water – has emerged as a key issue on the European policy agenda. Yet there has been very little high-quality economic analysis capable of guiding European policy-makers. A new CEPR series, *Monitoring European Deregulation (MED)*, is intended to rise to that challenge. Produced in collaboration with the Swedish Center for Business and Policy Studies (SNS), MED will offer the results of new policy-oriented research on the key questions surrounding the liberalization of Europe's major network industries.

European Summer Symposium in Macroeconomics

CEPR's annual European Summer Symposium in Macroeconomics was held in Tarragona on 27/31 May 1998, with Banco de España acting as hosts. The symposium organizers were **Daniel Cohen** (CEPREMAP and CEPR), **Francesco Giavazzi** (IGIER, Università Bocconi, Milano, and CEPR) and **Philippe Weil** (ECARE, Université Libre de Bruxelles and CEPR), and the proceedings were opened by **Jose Luis Malo de Molina** (Banco de España), who outlined his views on the main problems still facing European Monetary Union. The following papers were presented:

'Current Account Reversals and Currency Crises: Empirical Regularities', **Gian Maria Milesi-Ferretti** (IMF and CEPR) and **Assaf Razin** (Tel Aviv University and CEPR)

'The Macroeconomic Effects of German Unification: Real Adjustments and the Welfare State', **Fabio Canova** (Universitat Pompeu Fabra, University of Southampton, Università di Modena and CEPR) and **Morten Ravn** (Universitat Pompeu Fabra and CEPR)

'Current Accounts in Debtor and Creditor Countries', **Aart Kraay** (The World Bank) and **Jaume Ventura** (MIT and CEPR)

'Informational Speculative Attacks: Good News is No News', **Roberto Rigobon** (MIT Sloan School of Management)

'The Preferences of the Representative American', **Roger Farmer** (European University Institute, Firenze, and CEPR) and **Lee Ohanian** (University of Minnesota)

'Ruling out Indeterminacy: the Role of Heterogeneity', **Berthold Herrendorf** (University of Warwick and CEPR), **Akos Valentinyi** (University of Southampton) and **Robert Waldmann** (Università Bocconi, Milano)

'Why Do New Technologies Complement Skills? Directed Technological Change and Wage Inequality', **Daron Acemoglu** (MIT and CEPR)

'Wage Inequality and Technological Change', **Andreas Hornstein** (Federal Reserve Bank of Richmond), **Per Krusell** (University of Rochester) and **Gianluca Violante** (University College London)

'Fluctuations, Bilateral Trade and Exchange Rate Regime', **Jean Imbs** (New York University and Université de Lausanne)

'Fiscal Policy and Economic Growth: the Role of Financial Intermediation', **Gilles Saint-Paul** (Universitat Pompeu Fabra and CEPR)

'The Evolution of Modern Educational Systems', **Graziella Bertocchi** (Università di Modena and CEPR) and **Michael Spagat** (Royal Holloway College, London)

'IQ, Social Mobility and Growth', **John Hassler** (Institute for International Economic Studies, Stockholm, and CEPR) and **José V Rodriguez Mora** (Universitat Pompeu Fabra)

'Why Vote for Losers?', **Micael Castanheira** (IGIER, Università Bocconi)

'Mass Media Competition, Political Competition and Public Policy', **David Stromberg** (Princeton University and Institute for International Economic Studies, Stockholm)

'Growth Cycles and Market Crashes', **Michele Boldrin** (Universidad Carlos III, Madrid, and CEPR) and **David Levine** (UCLA)

'Moral Hazard and Non-Exclusive Contracts', **Alberto Bisin** (New York University) and **Danilo Guitoli** (Universitat Pompeu Fabra and CEPR)

'Irreversible Investment and Changes in Regime', **John Driffill** (University of Southampton and CEPR) and **Martin Sola** (Birkbeck College, London, Universidad Torcuato di Tella, Buenos Aires, and London Business School)

'Political Risk and Irreversible Investment', **Sumru Altug** (Koç University and CEPR), **Fanny Demers** (Carleton University) and **Michel Demers** (Carleton University)

'Employment and the Distributional Effects of Restricting Working Time', **Ramon Marimon** (European University Institute, Firenze and CEPR) and **Fabrizio Zilibotti** (Universitat Pompeu Fabra, Barcelona, and CEPR)

'Federalism and Distributional Conflict', **David Spector** (MIT)

'What are the Effects of Monetary Policy? Results from an Agnostic Identification Procedure', **Harald Uhlig** (CentER, Tilburg University, and CEPR)

'Transparency and Credibility: Monetary Policy with Unobservable Goals', **Jon Faust** (Board of Governors of the Federal Reserve System) and **Lars Svensson** (Institute for International Economic Studies, Stockholm, and CEPR)

'Measuring the Effects of Fiscal Policy', **Antonio Fatás** (INSEAD and CEPR) and **Ilian Mihov** (INSEAD and CEPR)

'Insurance, Moral Hazard and the Stability and Growth Pact', **Roel Beetsma** (Rijksuniversiteit Limburg and CEPR) and **Henrik Jensen** (University of Copenhagen)

'A Coalition Theory of Social Security', **Vincenzo Galasso** (Universidad Carlos III, Madrid, and CEPR)

The first report in the MED series, entitled 'Europe's Network Industries: Conflicting Priorities: Telecommunications', was published in July 1998. The report is written by **Lars Bergman** (Stockholm School of Economics), **Chris Doyle** (London Business School), **Jordi Gual** (IESE, Universidad de Navarra, and CEPR), **Lars Hultkrantz** (Dalarna University, Borlänge), **Damien Neven** (Université de Lausanne and CEPR), **Lars-Hendrik Röller** (WZB, Berlin, and CEPR) and **Leonard Waverman** (London Business School), and edited by **Romesh Vaitilingam** (CEPR). The report is divided into two parts. In the first part (chapters 1–7), the general principles governing competition and regulatory policy for the network industries are discussed in detail. The second part (chapters 8–13) focuses on the telecommunications industry – a sector in which shifting patterns of ownership and market structure, in combination with extraordinary technological change, are creating enormous challenges for regulators at both the EU and national levels. An appendix provides details of some key European legislation and procedures.

The report notes that the establishment of a single market, and the promotion of competition in Europe's network industries – air, electricity, maritime, natural gas, postal services, telecommunications and rail – have been at the forefront of economic and industrial policy in Europe in recent years. These industries traditionally have been sheltered from competition and operated within national or regional boundaries, but deregulation in the late 1980s and 1990s has greatly changed their structure. Whereas at one time most European consumers had little or no choice over the supplier of a network service, today there is an increasing number of firms operating in most of these industries, none more so than in the airline services and telecommunications industries.

Although deregulation has brought competition to Europe's network industries, regulation is still at the centre stage of activity. Indeed, the conflicts between competition and monopoly, and market forces and regulation, give rise to many challenging policy problems. The report addresses these problems by exploring ten conflicting priorities that European policy-makers face in defining an appropriate competition- and regulatory-policy framework for the network industries. The report stresses throughout that appropriate policy should take due account of dynamic considerations, for otherwise investment and innovation, and therefore consumer well-being and employment, may be adversely affected.

While competition has been or is being introduced into Europe's network industries, several factors, if left unchecked, will constrain its effectiveness: a history of monopoly control; widespread public ownership and state aids; political and institutional diversity; public-service objectives; and the need for network interconnections between rival firms. For these reasons, regulatory scrutiny perhaps is needed more in the network industries than in most other European industries.

The opening chapter identifies three phases of market structure as crucial to the network industries. Here it is shown that deregulation means that the network industries in Europe are evolving along a path from monopoly (phase 1), to monopoly and competition (phase 2), and possibly to competition (phase 3). Today, most European network industries lie in phases 1 or 2. This combination of monopolistic and competitive elements, however, gives rise to many problems. Somewhat paradoxically, when a network industry is opened up to competition at the beginning of phase 2, more – rather than less – regulation is required. Over time, however, competition should become more effective during phase 2 and the need for regulation should diminish.

Chapters 2 and 3 look at the vertical structure of network industries, outline the significance of these industries to the European economy, describe the economic characteristics of network industries, and explore the importance of natural monopoly, oligopoly, interconnection, externalities, coordination, standards and convergence. In chapter 4, ten conflicting priorities are identified as characterizing the regulatory environment in European network industries in phase 2. These are: short-term versus longer-term objectives; efficiency versus equity; competition versus monopoly; slow versus fast liberalization; public versus private ownership; sector-specific regulation versus general competition law; rules versus discretion; permanent versus temporary regulation; centralized versus decentralized regulation; and light-handed versus heavy-handed regulation. Each conflicting priority is examined in detail and the implications for policy are discussed.

Chapter 5 offers a detailed description of deregulation in the network industries in Europe. This commences by looking at the relevant articles in the European Treaty guiding European deregulation policy. This includes a discussion on state aids, followed by a detailed exposition on European deregulation in each of the industries. The chapter also contains a discussion on country-level deregulation, which includes an assessment of the experience in the United Kingdom.

Chapter 6 provides a thorough account of the economic principles that shape policy in phase 2. This includes a discussion of policies designed to prevent monopoly abuse in both retail and interconnect markets. In addition to considering policy that is directed towards achieving economic efficiency, the chapter also looks at equity and the role of universal service.

This assessment of the principles of economic policy and the way in which deregulation has occurred is followed, in chapter 7, by a normative account of the role played by regulators and regulatory institutions. Both the form and level of regulation are discussed in detail. The report suggests that a two-tier regulatory structure, which builds on existing practice in Europe, would be likely to yield a more robust regulatory environment. In particular, it highlights the need for more central authority in some areas of competition and regulatory policy. This could be achieved by strengthening existing institutions in Europe, rather than

through the establishment of new European regulatory authorities.

The second part of the report focuses specifically on the telecommunications industry. The first four chapters set out to establish and discuss the nature of the industry, the existing regulatory framework and the chief areas of concern for policy-makers. Chapter 8 describes how the industry is still shifting in various directions. It argues that it is no longer straightforward to define what is meant by 'the telecommunications industry', as convergence and other factors are blurring traditional market boundaries. In chapter 9, European deregulation in the telecommunications industry, and the role of the European Commission, are discussed. The report points out that there is not yet a single market for telecommunications in Europe, as there is still considerable diversity in policy implementation and other areas among the EU member states.

In chapter 10, the key policy issues surfacing as the industry moves into phase 2 are examined. The authors identify the obstacles to effective competition and discuss the problem of regulating prices. They pay particular attention to interconnection and unbundling. Chapter 11 assesses the social impact of telecommunications with a detailed analysis of policy on universal service.

The last two chapters are forward looking, addressing the required institutional, regulatory and other policy frameworks. Three options are considered for the institutional and regulatory framework: (1) A European Communications Commission; (2) Self-regulation through an affiliation of national regulators; and (3) Two-tier regulation aimed at greater harmonization. The report argues that the third option, which implies building on the existing two-tier system of regulation, is the preferred way forward.

Finally, the authors present a variety of policies as suitable for taking the European telecommunications industry forward towards a competitive market structure. They examine the risk that new national or Europe-wide regulation will tilt the playing field in favour of some competitors with potentially detrimental consequences both for consumers and for the long-term development of the industry. The recommendations emphasize the need to ensure that policy is designed and implemented so that objectives are attained, while still preserving desirable investment incentives. One proposal is for symmetric regulation between incumbents and entrants. Universal service is seen as a problem area and the report suggests that issues like internet access for schools properly belong in education policy, and not in telecommunications policy. The need to establish two-tier regulation, and to achieve greater consistency in European competition and regulatory policy, is also reiterated.

Europe's Network Industries: Conflicting Priorities:
Telecommunications, *Monitoring European Deregulation*
Lars Bergman, Chris Doyle, Jordi Gual, Lars Hultkrantz,
Damien Neven, Lars-Hendrik Röller and Leonard
Waverman
ISBN 1 898128 37 5 xxiii + 258
£50/\$80/75 euros

£15/\$24/22.50 euros (academics)
Please contact CEPR for details

Competition and Trade Policy

A CEPR workshop on 'Competition and Trade Policy' was held in Barcelona on 19/20 December 1997. The workshop was hosted by the Institut d'Anàlisi Econòmica and the organizers were **Richard Baldwin** (Graduate Institute of International Studies, Geneva, and CEPR), **Jordi Gual** (Universitat de Navarra and CEPR), **Massimo Motta** (Universitat Pompeu Fabra, Barcelona, and CEPR) and **Pierre Regibeau** (Institut d'Anàlisi Econòmica (CSIC), Barcelona, and CEPR).

The following papers were presented:

'Union Wage Bargaining and European Anti-dumping Policy', **Reinhilde Veugelers** (Katholieke Universiteit Leuven), **Jozef Konings** (Katholieke Universiteit Leuven and CEPR) and **Hylke Vandenbussche** (UFSIA, Antwerp, and CEPR)

'The Equilibrium Ownership of an International Oligopoly', **Lars Persson** (Institute for International Economic Studies, Stockholm), **Henrik Horn** (World Trade Organization, Geneva, and CEPR) and **John Fingleton** (Trinity College Dublin and CEPR)

'Mergers and Trade Policy Under Oligopoly', **David R Collie** (Cardiff Business School)

'Beat 'em or Join 'em?: Export Subsidies versus International Research Joint Ventures in Oligopolistic Markets', **J Peter Neary** (University College Dublin and CEPR) and **Paul O'Sullivan** (St Antony's College, Oxford)

'Anti-dumping and Competition Policy in Regional Agreements', **Bernard Hoekman** (World Bank and CEPR)

'Market Definition for Media Mergers', **Bruce R Lyons** (University of East Anglia, Norwich)

'Strategic Trade and Industrial Policy Towards Dynamic Oligopolies', **Dermot Leahy** (University College Dublin and CEPR) and **J Peter Neary** (University College Dublin and CEPR)

'European Anti-dumping Policy and the Profitability of National and International Collusion', **Reinhilde Veugelers** (Katholieke Universiteit Leuven) and **Hylke Vandenbussche** (UFSIA, Antwerp, and CEPR)

CONFERENCES

Financial Crises

Contagion and Market Volatility

'Financial Crises: Contagion and Market Volatility' was the title of a conference organized jointly by CEPR and the World Bank and held in London on 8/9 May 1998. The organisers were **Pierre-Richard Agénor** (World Bank), **Manmohan Kumar** (Credit Suisse First Boston), **David Vines** (Institute of Economics and Statistics, Oxford, and CEPR) and **Axel Weber** (Universität Bonn and CEPR). The conference received support from Credit Suisse First Boston and the Global Institutions Program of the ESRC.

All 11 papers presented at the conference were concerned with explanations for the recent financial and economic instability in the East Asian economies, and the contagion effects which led to crises being transmitted throughout the region, beginning with Thailand in the summer of 1997.

The opening paper, 'Volatility and Contagion in a Financially-Integrated World: Lessons from East Asia's Recent Experience', was presented by **Stijn Claessens** (World Bank) and written with Amar Bhattacharya, Swati Ghosh, Pedro Alba and Leonardo Hernandez. The paper provided an overview of financial vulnerability in East Asia, showing that structural inadequacies, more than inadequate macroeconomic fundamentals, played a major part in the build-up to crisis. In particular, insufficient supervision of financial sectors and lack of transparency in reporting were aggravated by undisciplined and uncontrolled foreign lending, leading to an unexpectedly large accumulation of short-term unhedged debt. These structural failings served to enhance the severity of the crisis, when it was eventually triggered, resulting in an impact on each individual economy that far exceeded the effect of the Mexican peso crisis of 1994–95.

The actual trigger appeared to be increasing pressure from external factors, when investors began to focus on the misalignment of the Thai exchange rate. An inadequate response by the domestic authorities eventually precipitated the first crisis, which spread further afield via bank-run-type behaviour in other economies in the region. The nature of the contagion effect was difficult to distinguish. Asset prices showed high correlations across the region over certain periods, but there was no clear evidence of whether these were the result ultimately of pure spillover, or of region-wide similarities in changes in fundamentals. The authors drew clear policy prescriptions from their analysis: to prevent the occurrence of crisis, structural reforms, together with diversified sources of external financing, are needed. Should a crisis be triggered, such

measures will also help to speed up the process of recovery.

Michael Dooley (University of California, Santa Cruz) argued that most stories about the genesis of crisis were untestable and therefore irrefutable. Unrecorded financial flows were a historic feature of economies, such as that of Indonesia, and substantial expatriation of capital led to vulnerability to crisis. Japan, however, was a high-saving, high-growth economy whose government was unwilling to recapitalize. A question to be addressed was whether these economies were capable of recovering on their own, or whether substantial infusions of foreign capital were required to mend them. **Sule Ozler** (Koç University and UCLA) reiterated the lack of testable models of crisis, adding that the current debate replicated that following the debt crisis of the 1980s. The main difference was that the present situation involved large numbers of private borrowers and lenders rather than the government borrowing of the 1980s, leading to increased difficulties in monitoring of information and coordination of action. More theoretical and empirical work was needed on the nature and behaviour of crisis triggers.

'Determinants of Emerging Market Currency Crises and Contagion Effects' was presented by **Manmohan Kumar** (Credit Suisse First Boston) and written with William Perraudin and Uma Moorthy. The paper undertook an empirical analysis of monthly data on 32 emerging markets over the period January 1985–March 1998, seeking to determine whether the probability of occurrence of crisis could be predicted by the behaviour of macroeconomic fundamentals. Most existing empirical studies were either case studies of single-crisis episodes, 'signalling' models where the behaviour of a fundamental – such as the real effective exchange rate or the ratio of debt to GDP – is seen as a signal of entry into crisis, or qualitative-response models using annual data.

The authors used a logistic regression model to determine the probability of crisis. Two distinct specifications were used to generate the dichotomous dependent variable, in order to evaluate the robustness of the model with respect to the definition of crisis as 'sudden sharp depreciation', against the definition of 'unanticipated depreciation'. The regressors were chosen from among macroeconomic fundamentals, financial variables comprising both stocks and flows, policy-indicator dummies and regional dummies. The paper explicitly modelled contagion both as correlated-crisis effects and as regional-spillover effects. The model was evaluated by calculating profits accruing as a result of trading on markets for which a high probability of crisis was forecast.

Paolo Pesenti (Federal Reserve Bank of New York and NBER) regarded the paper as empirically useful in that the model took an 'agnostic' view of crisis but confirmed a key result: that careful examination of macroeconomic fundamentals can help forecast financial instability. The paper's other contributions were in the use of high-frequency data, and in showing that economic growth and fiscal imbalance, such as budget deficit or public dissaving, were correlated with the occurrence of crisis.

Andreas Fischer (Schweizerische Nationalbank and CEPR) saw the paper more as an investigation of exchange-rate risk management from the point of view of a US investor than as an explanation of contagion or crisis. The dataset was impressive, but the analysis could be extended by, for example, allowing the definition of crisis to be endogenously determined. The role of conditionality between crises could also usefully be examined. Fischer also commented on the strikingly positive nature of the results, and suggested that parallels with other empirical work could be drawn more explicitly. Other contributions to the discussion pointed out the need for examination of the time-series properties of the flow variables and for more extensive out-of-sample estimation: for example, which crises did the model fail to predict?

Pierre-Richard Agénor (World Bank) and **Joshua Aizenman** (Dartmouth College) jointly presented 'Volatility and the Welfare Costs of Market Integration'. Their paper examined the short-term costs incurred when increased foreign access to a country's domestic financial system leads to increased vulnerability on the part of that country to financial-market volatility. Although such openness may be beneficial in the long run, welfare costs can be incurred in the short term through domestic market inefficiencies, notably inefficient intermediation, inadequate lending practices, large unhedged short-term foreign borrowing, inaccurate disclosure and ineffective supervision. In previous work, the authors had demonstrated how such imperfections could magnify an initial exogenous shock into a crisis in the domestic financial market. In this paper, they extended their model to consider the impact of volatility on financial-market integration.

The basic framework employed was one in which risk-neutral banks provide credit intermediation services to domestic agents. The authors contrasted the behaviour of borrowers and lenders under financial autarky, where domestic banks were the only source of credit, with their behaviour under financial openness. Greater openness was assumed to result in more intense competition among lenders; foreign lenders were also assumed to be more efficient than domestic credit sources as a result of greater experience in lending and of economies of scale. These efficiencies were reflected in lower costs of intermediation and lower mark-up. Opening up a market to capital inflow, however, can magnify the welfare cost of domestic distortions, thus overwhelming the existing capital infrastructure and leading ultimately to collapse. This insight was illustrated by the recent Asian experience of crisis: an economy that worked well while financially self-contained may fail to adjust quickly enough to sudden inflows of foreign capital, and, as a result of congestion externalities and domestic financial distortions, be precipitated into crisis by the shock of a relatively small capital inflow. It was therefore necessary to ensure that domestic distortions were dealt with before integration was sought.

David Begg (Birkbeck College, London, and CEPR) expressed the view that most of the theory in the paper was questionable, in particular, the use of the backward-bending interest rate/cost of credit curve. The paper

should be extended to include consideration of incentive-compatibility and participation constraints. Borrowers' and lenders' expectations should also be incorporated explicitly into the model. **Anne Sibert** (Birkbeck College, London, and CEPR) added that domestic credit markets were characterized by asymmetric information, since an entrepreneur was likely to be better informed than the bank about the likelihood of default. Hence moral hazard and adverse selection were also important considerations. The role of legal restrictions on borrowing and lending likewise would be a useful addition to the model. The authors replied by saying that the backward-bending supply curve was not crucial to their argument. Their previous paper had explicitly modelled credit rationing and enforcement and agency costs, and these were also present in the current model. **Marcus Miller** (University of Warwick and CEPR) summarized the considerable ensuing discussion by saying that the authors had presented serious arguments against financial liberalization. Their paper had focused on 'second-best' arguments and opened up debate on their accuracy.

Ishac Diwan (World Bank) and **Bernard Hoekman** (World Bank and CEPR) presented 'Competition, Complementarity and Contagion in East Asia', in which they sought to examine the genesis of the series of crises affecting East Asian countries. These countries could be viewed either as competitors, by virtue of export similarity, or as complements, who exhibited similar – but not necessarily synchronous – patterns of economic development. These two factors acted as transmission channels for the spread of crisis within the region. It was possible that both factors had operated simultaneously: for example, the increasing regional importance of China and the weaknesses in the Japanese economy had each played their part in East Asia. However, it was necessary to disentangle them, as the ensuing ripple effects and stabilizing policy prescriptions were factor-dependent.

The paper identified three kinds of effects as possible channels for crisis transmission: an income effect and an investment effect, which were most affected by complementarity, and a substitution effect, which was most affected by competition. The authors then explored competitive and complementary behaviour empirically, looking at correlations in the growth of fundamentals such as GDP, investment, consumption and exports in East Asia with Japan and China and the role of foreign direct investment in the region, particularly its sources and composition.

Jenny Corbett (Nissan Institute of Japanese Studies, Oxford, and CEPR) said that the paper was important in emphasizing the role of trade as a channel for contagion. She questioned the evidence of similarity between Asian economies, however, pointing out that the group of countries which underwent the first crisis were distinct from those in the second wave. Trade shocks originating in China had a considerable impact on competitor countries, but real-side shocks were also important. The paper could usefully explore further channels of contagion as suggested by other contributions to the conference, and undertake further

Industrial Structure and Input Markets

A joint CEPR/DFG/ZEW conference on 'Industrial Structure and Input Markets' was held in Mannheim on 21/23 May 1998. The conference focused on the interrelationships between output market structures and input market imperfections. The papers were organized around three broad themes: industrial structure and financial markets; industrial structure and labour markets; and industrial structure and other input markets. The conference organizers were **Hans Juergen Ramser** (Universität Konstanz) and **Konrad Stahl** (Universität Mannheim).

The following papers were presented:

'Union Power and Product-Market Competition: Evidence from the Airline Industry', **Zhentang Zhang** (WZB Berlin), **Damien Neven** (Université de Lausanne) and **Lars-Hendrik Röller** (WZB Berlin)

'Workers' Skills, Product Quality, and Industry Equilibrium', **Jean Jaskold Gabszewicz** (Université Catholique de Louvain) and **Alessandro Turrini** (Université Catholique de Louvain)

'Market Size and Vertical Disintegration: Stigler's hypothesis reconsidered', **Walter Elberfeld** (Universität Köln)

'The Demand for Heterogeneous Labour in Germany', **Martin Falk** (ZEW Mannheim) and **Bertrand Köbel** (Universität Magdeburg)

'Wages and Productivity Growth in a Competitive Industry', **Emmanuel Petrakis** (University of Cyprus) and **Helmut Bester** (Humboldt-Universität Berlin)

'Agency Costs, Firm Behavior, and the Nature of Competition', **Philippe Aghion** (University College London), **Mathias Dewatripont** (Université Libre de Bruxelles) and **Patrick Rey** (Université de Toulouse I)

'Investment, Fundamentals and Finance', **Simon Gilchrist** (Boston University) and **Charles Himmelberg** (Columbia University)

'Is the Growth of Small Firms Constrained by Internal Finance?', **Bruce Petersen** (Washington University) and **Robert Carpenter** (Emory University)

'Do Banks Crowd in or out Business Ethics? An Indirect Evolutionary Analysis', **Werner Güth** (Humboldt-Universität Berlin)

'Allowing for Risk Choices in Diamond's "Financial Intermediation as Delegated Monitoring"', **Martin Hellwig** (Universität Mannheim)

'Lending Relationships and the Pursuit of Innovation - Evidence on the Financing of Small and Medium-Sized Firms in Germany', **Dietmar Harhoff** (ZEW Mannheim and WZB Berlin) and **Timm Körting** (ZEW Mannheim)

'Bank-Firm Relationships and Competitiveness', **Horst Albach** (WZB Berlin)

'Investment Banking Costs as a Measure of Access to External Finance', **Charles Himmelberg** (Columbia University) and **Charles Calomiris** (Columbia University)

'Does Firms' Financial Status Affect Plant Level Investment and Exit Decisions?', **Joachim Winter** (Universität Mannheim)

empirical analysis of the role of correlations and rank correlations. David Vines pointed out that falls in growth seemed to occur as a result of declining exports. He suggested a model that could explain the empirical features discussed in the paper, which sought to explain correlations as marginal effects rather than as direct correlations. **Gabriel Galati** (Bank for International Settlements) suggested the use of more disaggregated data. **Reuven Glick** (Federal Reserve Bank of San Francisco) mentioned the difficulties of distinguishing between Chinese and Hong Kong exports as a result of transshipment. Paolo Pesenti pointed out that the nature of trade between Japan, Korea and the United States was very different from that between China, Malaysia, Indonesia and the United States.

Giancarlo Corsetti (Yale University and Università di Roma Tre) presented 'What Caused the Asian Currency

and Financial Crisis?', a paper in two parts written with Paolo Pesenti and Nouriel Roubini. The first part of the paper, subtitled 'A macroeconomic overview', comprised a survey of East Asian indicators taking in fundamentals, such as current account imbalances, GDP growth, investment, saving and reserves, as well as the role of the banking system and moral hazard, and the role of political instability and uncertainty about economic policy.

The second part of the paper, subtitled 'Interpreting and modelling the crisis', began by analysing the 1995–6 lead-up to the crisis. A detailed discussion of the 1997 crisis period, encompassing the initial financial distress, the spillover and contagion effects, the role of Japan and the state of current debate about the crisis, followed. Even though current explanations of crisis – the 'first-' and 'second-generation' models – might not

appear to be able to explain the events in East Asia, it could be argued that these theories, if appropriately reformulated, still had explanatory power. The authors provided two extensions to these models: one looking at moral hazard in the context of bail-out promises and the behaviour of banks; the second focusing on currency crisis and contagion in a region comprising several countries. They discerned the roots of crisis in the combination of inconsistent government policy and an underdeveloped financial sector. These resulted in unsustainable patterns of investment; ensuing government mismanagement of a worsening situation did the rest.

Richard Portes (London Business School and CEPR) noted that financial crisis – which is generally marked by interactions between the foreign-exchange market, bank failures and debt default – was distinct from currency crisis. These effects had already been extensively modelled, especially in the case of speculative attacks. Portes asked how the models presented could be extended to identify and measure the effects of moral hazard and to model hyperinflation. What was the effect of pegging an exchange rate, and what were the safe limits on the exchange rate and the real exchange rate? He also noted that not even the IMF had correctly predicted this episode of crisis, and that the danger signs had been ambiguous, to say the least.

Jacques Olivier (HEC School of Management, Jouy-en-Josas, and CEPR) felt that clarity was needed in the definition of the model: for example, the authors proposed a deterioration in fundamentals as a mechanism for crisis, but also invoked multiple equilibria via a shift in expectations. The question of (un)sustainability also needed investigation. Olivier was not convinced by the figures presented in the paper that the deterioration of macrofundamentals had actually occurred. Finally, with respect to the second model presented in the paper, the assumption of perfect substitutability between exports from countries affected by the first and second waves of crisis and the absence of trade links within the region were not credible. Joshua Aizenman and Stijn Claessens pointed out that there were substantial differences in the economies and in the nature of financing in Japan, Korea and Thailand, which led to differences in the types of crisis endured by each country. **Paul Masson** (IMF) mentioned that a study of IMF advice to South East Asian countries was shortly to be published.

Holger Wolf (Stern School of Business, New York University and NBER) presented ‘The Spatial Properties of Capital Flows is Location Destiny?’ written with Swati Ghosh. Rational investor decisions have been invoked as determinants of the direction and magnitude of financial flows. In this paper, the authors sought to augment this set of predictors with geographical and spatial factors. They noted that, even though the volume of new private flows had increased enormously in the last decade, their destinations were highly concentrated within South East Asia and Latin America. Sub-Saharan Africa attracted very little.

The relevant spatial factors appeared to be cultural familiarity, distance and existing trade links. The result

would be an alternative description of regional contagion effects, in that the negative dependence of flows on distance would affect all countries in a region in a similar fashion. A cross-sectional probit model was estimated, using as the dependent variable an access score defined as a ranking, based on a weighted average of access to bank lending, access to short-term finance and access to capital markets. A second measure of access was a ranking based on the average absolute net inflow of private capital as a percentage of GDP over the period 1990–5.

The explanatory variables used were relative population size, relative market size, real development stage and growth. Additional regressors were openness (export to GDP ratio for 1989), distance to the nearest G-7 economy, GDP-weighted average distance to the closest G-7 economy and continental dummies for Africa and Latin America. A series of probit regressions demonstrated that, even though location factors were correlated with access, the real development stage was the most important determinant of access; if this was controlled for, location effects did not add significantly to the model.

A classification tree approach was used to test for the presence of threshold effects, showing that location was a good predictor of access – hence Africa and Latin America had much lower access to world financial markets. Income per head provided a (slightly) better indicator of access than distance to the G-7 economies. The authors pointed out that the causal links between income per head and location were far from clear, although previous work in the empirical growth literature had shown significant negative continental effects on per head growth. Finally, the sources of capital flows were examined in an attempt to determine the characteristics that defined the choice of country of investment. The presence of ‘home bias’ was tested using regression in a modified gravity model framework. The elasticities of exports, foreign direct investment (FDI), loans, debt and equity were all negative with respect to distance and positive with respect to remoteness, market size of the recipient and development level. The cultural affinity variables were generally positive in effect but not as influential as the above variables.

Ian Marsh (University of Strathclyde and CEPR) considered that the assumed link between investment and information was correct, and that barriers to investment arising out of little or no information had been well documented. The authors were also correct in specifying location, rather than geographical distance, as a determinant of access, but the actual role of location was unclear. This raised some related questions: Why did Latin America have access in the nineteenth century, but no longer? What role does proxy investing play? And does the model provide a mechanism for the spread of ‘Asian flu’ from the ASEAN countries to the newly industrialized countries? Sule Ozler pointed out that former patterns of colonization were probably important determinants of access and had been well documented in the development literature.

'Contagion and Trade: Why are Currency Crises Regional?' was presented by **Reuven Glick** (Federal Reserve Bank of San Francisco) and written with Andrew Rose. Currency crises tended to be regional, yet neither the 'first-' nor 'second-generation' models explained this clustering pattern. Since trade patterns were regional, trade linkages offered an important natural source of explanations for currency contagion. The authors substantiated this hypothesis by examining the histories, and ensuing contagion effects, of three recent major crises: the 1992 EMS crisis, the 1994 Mexican peso crisis and the Asian crisis. They also drew on data from the currency-instability episodes surrounding the breakdown of Bretton Woods in 1971 and the collapse of the Smithsonian Agreement in 1973. In all, they used annual data from 161 countries, many of which were involved in none of the crisis episodes.

Glick and Rose simulated a cross-sectional binary probit model, whose dependent variable was defined to be unity when a country underwent a given crisis episode. In each episode, the first country to be hit (the 'ground-zero' country) was identified. The regressors were a set of macroeconomic control variables and a 'total' trade index, which quantified the importance of the trade links between a country and the rest of the world, relative to its trade with the 'ground-zero' country. A 'direct' trade measure was also constructed to measure trade flows between each country and the ground-zero country. The usual 'first-generation' model macroeconomic indicators were supplemented by a measure of the degree of currency undervaluation, constructed as the export-share weighted sum of bilateral real exchange rates in relation to the currencies of all trading partners. Initial analysis showed that the difference in trade linkages between crisis and non-crisis countries was statistically significant, but that this was not true of the macroeconomic controls. These results were confirmed both when the analysis was extended using a multivariate probit model and when a wide variety of model checks were undertaken.

Finally, two continuous measures of crisis were calculated to examine the determinants of exchange-market pressure. The first measure was defined as the cumulative percentage change in the nominal devaluation rate with respect to the ground-zero currency for three, six and nine months following a crisis; and the second was a weighted average of the devaluation rate and the percentage decline in international reserves over the same time period. Regression of these measures on the same regressors as before supported the hypothesis that trade was a significant explanatory factor in the incidence of crisis. The policy implications clearly provided support for some form of international monitoring of trade.

Mark Taylor (University College, Oxford, and CEPR) agreed that the extent to which two countries competed in a third market was clearly a significant predictor of crisis. The policy implication, that surveillance should incorporate a regional factor, was also clear. The authors' well-executed econometric analysis would benefit, however, from some extensions: inclusion of other macroeconomic and financial variables, and explicit modelling of moral hazard and asset bubbles, as well as

poor corporate governance and other developmental and cultural factors. There were also problems of identification: how to distinguish between a common shock, such as the ERM crisis, in which countries within a customs union were affected, and contagion. Gravity models could also provide useful insights. As a final point, why was the Australian dollar not affected by the Asian crisis, given the importance of Australian trade linkage with Asia?

Javier Suarez (CEMFI, Madrid, and CEPR) argued that, despite the paper's clarity of exposition, the empirical challenge of identifying a 'trade channel' for contagion could not be based on the distinction between trade linkages and similar macroeconomic fundamentals. Strong fundamentals might serve as a defence against attack, but they were not necessarily the channel for the spread of crisis. Empirical identification of the contribution of these fundamentals to crisis was a different question from whether regional crises are caused or amplified by the operation of a contagion channel. Alternative possibilities were financial channels, via cross-border borrowing and lending, and information channels, based on agents' observations of the behaviour of comparable countries. Indeed, the trade effects might be proxying regional dummies. The authors' proposed empirical model was also difficult to interpret. Some kind of loss-function approach might be useful in imposing a structural context on the model. The chronology of crisis was fundamental to the model, leading to further problems with interpretation in the light of simultaneity and omitted-variable bias. More direct reference to both theoretical and structural models was thus called for.

'A Theory of the Onset of Currency Attacks' was presented by **Hyun Song Shin** (Nuffield College, Oxford and CEPR) and written with Stephen Morris. Multiple-equilibrium models of crisis incorporate as given the self-fulfilling nature of belief in the imminence of attack, but they do not seek to explain why switching occurs between equilibria, nor do they predict the timing of attack. The model presented in this paper sought to deal with these omissions. It relaxed the assumption of perfect observation of macroeconomic fundamentals by speculators, substituting differential information in its place. Fundamentals evolved according to a Brownian motion process, which speculators observed with noise, which was itself normally distributed.

The current state of the economy was observed perfectly only by the monetary authority. A continuum of speculators observed this as a noisy signal, but had perfect information about the past state of the economy. The willingness of the authorities to defend a currency peg was proportional to the state of the economy: a healthy economy was likely to be defended more strongly than an ailing one. The ferocity of the speculative attack needed to induce abandonment of the peg was therefore also directly proportional to the economy's strength. If the peg were removed, the currency would depreciate by a known amount and would never revert to its original value. The behaviour of speculators was modelled as an incomplete information game. It was shown that even a slight deviation from perfect common knowledge of the fundamentals, i.e. a

small amount of noise, would result in outcomes substantially different from those arising out of perfect common knowledge. The authors also demonstrated that multiple equilibria could arise only out of an extreme lack of common knowledge among speculators.

Harald Uhlig (CenTER, Tilburg University, and CEPR) thought the paper was bound to become a classic. The key result was that, in a 'second-generation' model, the addition of even a small amount of noise in speculators' information could lead multiple equilibria to collapse into a single equilibrium – a surprising and non-trivial result. The underlying intuition was that, with asymmetric information, speculators lost common knowledge of the underlying fundamental uncertainty and, hence, the possibility of coordination. Multiplicity of equilibria might perhaps be restored by some other mechanism, such as sunspots or a crisis in a neighbouring country. There was a possible connection with Krugman's 1996 suggestion that multiplicity could be ruled out with deteriorating fundamentals. Finally, the paper should be viewed as a perturbation analysis for small noise levels, rather than as a stochastic theory of the onset of speculative attack. For **Paolo Vitale** (LSE) the paper's objective was to clarify the link between differential information and speculative attack and to study the timing of attack. One of the pieces of differential information that could emerge was the 'type' of the monetary authority and its response to attack. The policy implications were that authorities needed to be less clear about their objectives, and must also be ready to regulate the degree of uncertainty and differential information by means of signalling devices, such as 'cheap talk'.

'The Portfolio Flows of International Investors' was presented by **Paul O'Connell** (Emerging Markets Finance, LLC) and written with Kenneth Froot and Mark Seasholes. This was an empirical paper, investigating the effects on prices when international investors were net buyers of equities in domestic markets. The existing literature suggested that the net impact of foreign investors on local markets was to push up prices. The data used to test this hypothesis comprised daily international portfolio flows of client institutions of a single major US custodian bank, covering 46 countries over the period 1994–8. Cross-country correlations revealed that the data exhibited stronger positive correlation across regions than across individual countries, and that there was a considerable degree of trend-chasing behaviour. Differences were apparent in the behaviour of emerging and developed markets: in the former, inflows could forecast positive returns, whereas in the latter, returns could become negative.

Principal component analysis found that a regional factor – the 'common-flow' component – accounted for a considerable proportion of the co-movement, but that a country-specific effect was also at work. Variance ratios were used to examine persistence in flows. There appeared to be high persistence in emerging markets, with shocks being associated with increased levels of future inflows over a considerable period of time. The US market, however, demonstrated little or no persistence. Finally, a two-equation vector autoregression was used to test for the value of returns

in predicting flows in the future, over and above the contribution of lagged flows. There was little support overall for the hypothesis that emerging-market inflows were a result of an informational disadvantage among foreign investors.

Mark Salmon (City University, London, and CEPR) commented that the paper was difficult to read because it compressed a huge amount of work. The dataset was also very large, but only incorporated equity flows. The statistics were mostly descriptive, and would benefit from incorporation of conditional distributions of the data. The 'heat map' used to summarize information on the correlations warranted the use of structure-seeking algorithms to elicit further patterns in the correlations. The 'common-flow' component did not seem to account for enough of the correlation. Co-integration analysis was a possible alternative to principal component analysis. The persistence of order flow was not an easy result to interpret – again, study of the integration structure of the data or of autocorrelation functions could provide clues. The VAR model was also heavily restricted, but without offering justifications.

Manmohan Kumar found the paper a useful investigation of the relationship between flows and returns. The dataset had considerable value, but should be extended to include information on debt as well as equity. Useful work had been done by the authors on definitions of settlement. Kumar asked what proportion of the data related to emerging markets and how the net flows were scaled by market capitalization. It was possible, however, that generalizations made across emerging markets could lead to misleading results, and that more disaggregation might be desirable. The analysis should be extended to cover the portfolio aspects of, and institutional constraints on, investment.

Paul Masson (IMF) presented his paper on 'Contagion: Monsoonal Effects, Spillovers and Jumps between Multiple Equilibria', in which several concepts of contagion were defined and distinguished. First, policies undertaken by industrialized countries may have similar effects across several emerging markets. These Masson termed 'monsoonal effects'. Second, a crisis in one emerging market could affect others via changes in macroeconomic fundamentals, e.g. devaluation could trigger changes in competitiveness. These were 'spillovers'. Third, a crisis in one country might trigger a crisis in another, for reasons not explainable by fundamentals. This was 'true' contagion, which requires the existence of self-fulfilling expectations and multiple equilibria.

Most previous work on multiple equilibria or sunspots had considered countries in isolation. Here Masson developed a model of two emerging markets to illustrate the role of multiple equilibria and contagion in the transmission of crisis. Given simple assumptions, he derived conditions for the existence of multiple equilibria in the first ('home') country, which depend on expectations of the future levels of the trade balance, external debt and reserves. Jumps between these equilibria were stochastic, with a simple Markov probability structure. Contagion was defined as an increased probability of moving to a 'bad' equilibrium in

the 'home' country following a crisis in the other country. This definition of contagion permitted the explanation of a move between equilibria to be drawn from microeconomic reasons, such as the revision of expectations or the investment behaviour of financial institutions. The model could be extended to demonstrate 'monsoonal' and 'spillover' effects, as well as by the introduction of trade interactions.

The paper considered the empirical evidence of recent crisis episodes and suggested extensions to the basic model, in particular, the role of rollover risk, banking-sector distortions and risk-averse investors. The model could be useful in constructing early-warning indicators of balance-of-payments crises and to identify countries vulnerable to multiple equilibria. Issues connected with the stochastic nature of jumps, and with jump probabilities, were subjects for future research.

Axel Weber commented that the model was simple but rich in possibilities, opening up the possibility of time-series approaches to the study of speculative attack. Another innovative feature was the Bayesian approach used to model the evolution of probabilities. The model would be easy to generalize to three or more countries. More clarity was needed, however, about whether shocks were permanent or transitory in nature. Other possibilities for extension included investigation of the parts played by FDI and the capital account, together with intertemporal aspects. Marcus Miller distinguished between crises which were contemporary in effect, and contagion effects and the mechanisms generating them. The appeal of multiple equilibrium models lay in the fact that they could account for crises not anticipated by the market. Masson's model resembled Obstfeld's 1994 model of a 'bad' market, but was more appropriate to emerging-market economies. Miller remarked on the role of interest rates as a crisis trigger, and on the relationship with bank-run models. The paper by Morris and Shin, already presented at the conference, showed that collapse was inevitable.

Peter Brandner (Oesterreichische Nationalbank) pointed out that there could be problems in distinguishing between the three kinds of effects defined in the paper. Bad fundamentals were essential to the occurrence of crisis, in addition to monsoonal and spillover effects. The link to the trade balance, and issues of interest-rate parity, could also usefully be explored. The choice of equilibrium, and memory effects on this choice, could be of interest: for example, was there asymmetric movement between equilibria? Modelling of transition probabilities could be performed by means of Markov-switching methods.

Marcus Miller (University of Warwick and CEPR) presented 'Asset Bubbles, Domino Effects and 'Lifeboats': Effects of the East Asian Crisis', written with Hali Edison and Pongsak Luangaram. The paper began by describing the historical and economic background to the crises in Korea, Indonesia and Thailand, showing that crisis was triggered by speculative attacks on overvalued currencies and extended into a downward spiral in other financial markets. The paper employed the framework suggested by Kiyotaki and Moore (1997) to analyse how a scramble for liquidity in credit-

constrained markets could move a financial system from boom to bust. Following Krugman (1998), the role of financial intermediaries, and the prices of land and other assets, were seen as crucial to an understanding of the Asian crisis.

The Kiyotaki-Moore model comprised two sectors: a credit-constrained, highly-leveraged small-business sector, and an unconstrained big-business sector. Small businesses relied on land for collateral; big businesses did not allow their total debt to exceed the value of land. The equilibrium was very fragile, in that the small-business sector was wiped out when land prices dropped even fractionally. The authors used this framework to examine land allocation and land prices after the bursting of an asset-price bubble, which originated in underregulated financial institutions, and after an unanticipated devaluation. The result of both of these phenomena proved to be a downward spiral in land prices. It might be possible to stabilize the equilibrium by temporary financing, designed to ensure the post-shock survival of borrowers and to avoid the 'domino effects' arising when the failure of 'imprudent' firms triggered failure of their 'prudent' counterparts. Such domino effects could operate cross-sectorally as well as across frontiers, resulting in a possible channel for contagion.

The policy implications of the model all concerned ways of preventing wholesale collapse, with its negative externalities, by keeping threatened firms afloat. The possibilities suggested included temporary financing, take-over by 'prudent' firms of their failing counterparts, transfers or debt write-offs, nationalization, and a temporary freeze or suspension of operation which acted as a 'circuit breaker'.

Joshua Aizenman said that an as-yet-unresolved question was whether a bubble was really a boom-bust cycle. It was important to resolve this distinction, as financing done unconditionally could worsen a crisis. The 'black box' of financial intermediation needed to be modelled, as well as openness in an economy. An interesting example of the interaction between political and economic factors was afforded by Korea through its *chaebol* and domestic bank cartels. In general, political economy could offer many useful insights into financial behaviour. **Rebecca Emerson** (Natwest Markets) agreed that very high levels of gearing and overinvestment had been features of the economies studied, but disagreed that they were only quasi-open. The model could be extended to make endogenous the probability of a bubble bursting, and the ability to borrow could be related to the discounted expected cashflows. Miller replied to the discussion by acknowledging the need for conditionality in temporary financing, as moral hazard was a particularly severe problem. The role of bubbles in the paper was to demonstrate the effects of a major shock, and moral hazard could be the actual mechanism for the creation of a bubble. The case of Japan, which had not taken decisive action to support firms wounded by the bursting of a massive asset-price bubble, would repay further study.

Mike Dooley summed up the proceedings of the conference. He noted first that the opening paper (by

Stijn Claessens *et al*) had summarized situations – such as foreign-exchange, banking or insurance crises – where a government ran out of money. An insolvent government had only one way to respond: by closing down banks and insolvent financial institutions. There were many – possibly too many – ways of modelling this simple fact.

The absence of clear fundamentals had led to the growth of multiple equilibrium models, of which there were many, but none were properly testable, not least because they did not ‘model’ the data. A return to fundamentals would be advisable in order to recheck whether any existing model would fit the data. Multiple equilibrium models may be mathematically interesting, but were probably unnecessary.

Taking up the issues of propagation of crisis and the policy implications, Dooley considered it likely that the problem in East Asia was of a similar magnitude to that in the United States in the 1930s. It was also likely to have long-lasting effects. Resolution of this problem could not be handled by the private sector alone. Higher levels of intervention were required to plug the huge unallocated economic losses within the affected economies. There was no market mechanism in place that could perform this task, as evidenced by the Latin American crisis, and the private sector would avoid any attempt to make it shoulder the burden.

In summary, it had to be admitted that the nature of crisis still eluded understanding and that governments could sink into bankruptcy for any number of reasons. It was not possible to identify culprits or to allocate blame, and it might be unwise to try. It was necessary to move on from asking ‘what happened?’ to ‘what to do?’ as the crisis was still happening. Perhaps the ‘best’ next step would be the construction of a new generation of ‘first-generation’ models.

Japan Network

The Japanese Economy in International Perspective

The fifth conference of CEPR’s European Network on the Japanese Economy was held jointly with the Istituto di Studi Economico-Sociali per l’Asia Orientale (ISESAO) on 16/17 January 1998. The conference, which was organized by **Jenny Corbett** (Nissan Institute of Japanese Studies, Oxford, and CEPR) in conjunction with ISESAO, concentrated on four major topics on the Japanese economy: trade issues; foreign-exchange markets; regulation and industrial structure; and institutions and the role of the state. Financial support for the conference was received from the Keizai Koho Center in Tokyo and the ESRC Resource Centre, which was established in 1993 to provide networking, dissemination, support and training services to the UK economics community.

The conference was opened by **Tomoyoshi Uranishi** (Embassy of Japan, London), who stated that there was a gap between domestic and overseas perceptions of the Japanese economy. The Japanese people were more interested in the unemployment level and in

wages than in stock-price fluctuations. They were, however, also worried about the future of the Japanese financial system, because Japanese financial institutions had lost the confidence of depositors and investors. Money had shifted slowly to the more stable financial institutions, while the banks’ efforts to maintain their capital ratios had led to a cut in loans to companies. The Japanese government had therefore decided to use public money, amounting to 30 trillion yen, in an attempt to stabilize the Japanese financial system, as a result of which all deposits would be protected until March 2001.

Five papers were presented on trade issues. **Rodolfo Helg** (Università Bocconi, Milano, and LIUC, Varese) presented ‘An Analysis of Japanese Intra-industry Trade and of its Pattern of Specialization in an East Asian Context’, in which he set out to assess the possible allocative consequences of increasing regional integration. After reviewing the evolution of the revealed comparative advantages of the East Asian countries, he tested for intra-industry trade (IIT) in the region and sought to identify some regularities behind the trade flows. **Andrea Boltho** (Magdalen College, Oxford) suggested that the paper’s empirical results warranted further investigation, especially concerning the rank correlations of RCAs among the regional countries. Boltho also considered that the results of the application of the Davis-Weinstein model to Japan seemed counter-intuitive, and that the ‘home-market-bias’ effect might well explain a good deal of Europe’s international trade.

Andras Nagy (Institute of Economics, Hungarian Academy of Sciences) presented ‘Twenty Five Years of Japanese Trade with Europe’. The paper employed a trade-flow model to investigate the long-term structural changes in trade relations between Japan and three European regions (Western Europe, Eastern Europe and the European CIS countries). Nagy concluded that it was hard to say in what direction future trade policies would move Japanese-West European trade: there was certainly a possibility of increasing trade intensities, especially in those products for which transportation costs were not important and where hidden barriers had been used to restrain trading.

Lucia Tajoli (Politecnico di Milano) commented on the instrument Nagy used to measure the ‘proximity’ – or the relative degree of integration in terms of trade flows – between Japan and other areas of the world. The measure was used to understand the extent to which trade between two areas differed from its ‘normal intensity’. The definition of normality, however, was puzzling. By rearranging the terms used to construct the indicator, this could be read as the ratio between the market share of the exporter in a given market and the world market share. In this way, any reference to a ‘normal’ flow of trade could be avoided, and the indicator interpreted as a measure of the relative importance of a given market for an exporter. Looking at these indicators, it emerged that Japan had a surprisingly low trade intensity towards Eastern Europe. A possible interpretation of this fact was that other European countries had moved into Eastern European markets at an earlier stage, leaving little room for Japanese goods. If this were true, it did not seem likely

that Japanese involvement in Eastern Europe would change much, at least in the short run.

Marcus Rebick (Nissan Institute of Japanese Studies, Oxford) presented a paper on 'Trade and the Wage Structure in the Presence of Price Discrimination in the Product Market: The Japanese Labour Market 1965–90'. The paper offered an empirical analysis of the theoretical proposition according to which international trade would be responsible for some of the growing inequality and/or unemployment in the OECD countries. In particular, the paper estimated the impact of domestic demand and exports on industrial wages and employment dynamics in Japan, within a model of price discrimination in the product market. The evidence suggested that export growth had less of an impact on Japanese workers' compensation than the equivalent growth in domestic demand. This result was quite different from those of similar studies for the United States, and was consistent with the view that price discrimination between the domestic and export product markets was greater in Japan. **Giorgio Brunello** (Università degli Studi di Udine) noted that import penetration had led to higher inequality in the United States and higher unemployment in Europe, but that there seemed to be no evidence of similar changes in Japan. He wondered whether this could be construed as evidence that import penetration in Japan was not causing changes in the distribution of wages.

Jean-Pascal Bassino (Paul Valéry Université (CEAE), Nîmes, and CEFI-CNRS, Paris) presented a paper on 'Japanese FDI in East Asia and Job Destruction in Japan's Manufacturing'. The author argued that the effects of Japan's direct investments in East Asia on the level of domestic employment appeared to have changed dramatically after 1991. Uniquely among OECD countries, Japan had enjoyed steady economic growth, combined with massive FDI, flows towards both East Asian and other developed countries and net job creation in most branches of manufacturing. During the 1990s recession, however, the persistence of FDI flows was associated with a decline in employment in almost all manufacturing sectors. The optimistic view was that Japan's industrial structure would adapt smoothly in the coming decade, and that job creation in services would compensate for job destruction in manufacturing. The latter phenomenon was seen as a necessity, allowing domestic firms to keep up with the pace of technological change and productivity growth in other countries, while expanding the production of their overseas subsidiaries. Under these circumstances, Japanese manufacturing would remain strongly competitive and diversified even if the domestic labour force was severely reduced. These changes in industrial structure did not imply that Japan would face mass unemployment (as had happened in Europe), since market forces would facilitate the transfer of manpower to the new service industries. The increase in unemployment in the mid-1990s should therefore be seen as a transitional phenomenon occasioned, not by a shortage of new opportunities, but rather by temporary rigidities, including the reluctance of middle-aged workers to accept lower-quality jobs in services.

Joop Stam (Erasmus Universiteit Rotterdam) questioned the hypothesis that the changing structure of

employment in the 1990s was the result of major changes in the investment strategies of Japanese companies. Employment erosion had been concentrated in low-value-added sectors and in component manufacturing, and had a strong regional character. Thus semi-industrialized rural areas in Japan's northern and western prefectures had witnessed an exodus of industries and an increase in unemployment. To facilitate a soft landing in employment terms, Shimada Haruo had proposed a combination of structural reforms, industrial deregulation and more open domestic markets to improve competitiveness and domestic investment, while at the same time increasing public investment in (re)training and infrastructure.

'Anti-dumping and Tariff Jumping: Japanese Firms' FDI in the European Union and the United States' was the subject of a paper presented by **René Belderbos** (Maastricht University). This paper developed a microeconomic model to establish the extent to which EU and US anti-dumping measures had induced tariff-jumping inward investments. Since Japan had been the most important single target of such anti-dumping actions, and since the electronics industry had been one of those most frequently involved, the analysis focused on the investment decisions of Japanese electronics firms. The empirical results suggested that both anti-dumping and other trade-policy measures substantially increased the incidence of inward investment by Japanese electronics firms in the two regions. The relatively large number of plants set up in the EU was partly attributable to the higher tariff walls, which provided greater incentives for tariff jumping than in the United States. The results suggested that anti-dumping measures were ineffective in combating potential anti-competitive behaviour by foreign firms and could even result in increased market concentration.

Corrado Molteni (ISESAO, Università Bocconi, Milano) was impressed by Belderbos's database, which had been built up from industrial associations' data – the best available sources. He also pointed out that FDI was not the only available mode of entry into a market – joint ventures were another possibility. This raised the question of whether antidumping measures had implications for modes of entry, ownership patterns and location decisions. Moreover, although protection was a relevant factor in determining FDI, other firm- and sector-specific determinants were also likely to play an important role.

Three papers dealt with foreign-exchange market issues. **Eric Girardin** (LARE–Université Montesquieu-Bordeaux IV) presented a paper on 'The Neglect of the Yen in East Asian Exchange Rate Pegs: Some Evidence on the Roots of Recent Currency Crises'. In this paper, which was written with Velayoudom Marimoutou, the authors examined the common movements between each of ten East Asian currencies and either the US dollar or the Japanese yen, using monthly data over the period 1980–97. The common movements were either in the trend (level or slope) or in the cyclical part of the series. The results were unambiguous. The co-movements with the US dollar were overwhelming: almost all cases exhibited unit

correlation in both the trend and the cyclical components. The implication was twofold: not only had the East Asian countries set themselves a target of pegging to the dollar in the long run, but they had also deprived themselves of any flexibility by following the movements of the dollar even in the short run. In contrast, there was no evidence of a common trend component with the Japanese yen and only occasional evidence of a common cycle. In the Korean and Thai cases, however, even this common cycle appeared to mimic that between the dollar and the yen.

Beate Reszat (HWWA, Institut für Wirtschaftsforschung, Hamburg) presented 'Japan's Big Bang Stage One: Risks and Prospects of Foreign Exchange Market Liberalization'. The paper compared the characteristics of the Tokyo foreign-exchange market with those of London and New York, and analysed the nature of risks looming ahead for the Japanese market with financial liberalization. This process was due to start without the accompanying regulatory strengthening which seemed an indispensable prerequisite for success. The dangers were twofold. First, it seemed almost certain that the banks' situation would deteriorate further as a direct consequence of increasing competitive pressures. This would encourage them to take higher risks in search of profits, particularly in a market where their activities remained widely unnoticed and unreported and where the turbulence associated with periods of change would make it difficult to judge them from outside. Second, firms that had only limited experience of access to the market also could be tempted to take excessive risks in currency trading to compensate for a poor performance in their core business. Both dangers might result in new failures and uncertainties, which would add unnecessarily to existing – and unresolved – financial sector strains. Reszat concluded that Japan was embarking on its 'big bang' at a most unfavourable moment, and that liberalization would present an extraordinary challenge to both the Japanese authorities and the international financial community.

The 'big bang' was also the subject of a paper by **Mikayo Suda** (Nissan Institute of Japanese Studies, Oxford, and Gakushuin University), entitled 'Japan's Big Bang and the Foreign Exchange Policy'. Suda noted that the prime minister had characterized the three underlying principles of the structural reform as being 'free, fair and global'. The implication was that the reforms were intended to liberalize entry, products and prices; to clarify and enhance the transparency of rules and to protect investors' interests; and to establish legal, accounting and supervisory systems consistent with globalization. The Bank of Japan (BOJ) Law was being revised at the same time as the Foreign Exchange Law, in order to strengthen the independence of the BOJ: the BOJ's main purpose was specified as price stability; the policy board was being strengthened; and the factors suggesting subordination to the government eliminated. This revision of the law had resulted from the widespread perception that one of the reasons for the emergence of the 'bubble economy' had been the failure of monetary policy which, in turn, was owing to the BOJ's lack of independence from government. One of Suda's major conclusions was that future reforms would

increase both capital inflows and capital outflows, but with the latter predominating at first.

Moreno Bertoldi (Delegation of the European Commission in Japan and ISESIO, Università Bocconi, Milano) was concerned about the timetable for the reforms, noting that even with sound institutions and appropriate skills for coping with liberalization, poor timing would create the risk that the totality of virtuous, but uncoordinated, actions could become a problem in itself.

Two of the conference papers dealt with regulation and industrial structure. **Danes Brzica** (Institute of Economics, Slovak Academy of Sciences) presented 'Japanese Model of Corporate Governance and Horizontal and Vertical *Keiretsu* Structures: Are there any Features of them in Slovakia or in the Czech Republic?'. This paper contained partial results from broader research on the relationships between corporate groupings and governance structures. Using a selection from the 100 biggest firms in the Czech Republic, Japan and Slovakia, Brzica found that several features of the Japanese model of corporate governance were present in both the Czech Republic and Slovakia. This was evident in the growing number of *keiretsu*-type corporate groupings, especially in industry; the nature of the relationships between banks and companies; and the weakness of capital markets. The Czech Republic and Slovakia differed, however, in terms of ownership structure, structure of corporate financing and regulation issues.

Eva Osvald (Institute of Economics, Hungarian Academy of Sciences) noted that, in Hungary, the German model of corporate governance was followed (i.e. a structure which was still dominated by insiders). In her view, however, the Japanese experience was completely different from that of the Czech Republic, which seemed not to have imitated the Japanese tendency towards strong competition among different groups. **Paolo Piacentini** (Università di Cagliari) suggested that a 'dyachronic' comparison between industrial organization and governance structure would be complementary to the 'synchronic' (a now-to-now comparison) approach adopted in the paper. This might perhaps have suggested more similarities in the problems of national industrial restructuring. The current problems of Eastern and Central Europe, for example, might look more like those faced in earlier phases of Asian economic development (e.g. Japan after the war, Korea in the 1960s). Piacentini also suggested a more useful comparison could be made, if a much clearer distinction were drawn between vertical and horizontal *keiretsu*.

Klaus Wallner (SITE, Stockholm School of Economics) presented 'Implicit Contracts between Regulator and Firms: The Case of Japanese Casualty Insurance'. Wallner developed a dynamic model of regulatory protection, in which the regulator grants the industry rents in exchange for cooperation in an asymmetric environment as part of an implicit contract enforced by a trigger strategy. At a corner solution, this contract may be stable under gradual changes of society's preference parameters, whereas beyond a threshold level further

changes may result in extreme deregulation. Both predictions were found to hold in the case of Ministry of Finance regulation in the Japanese casualty insurance industry.

Adrian van Rixtel (De Nederlandsche Bank) emphasised that the relationship between financial regulators and regulated institutions was highly pertinent in Japan, and that the problems of the Japanese banking industry could be partly explained by the ineffectiveness of informal levels of regulation and too-close relationships between supervisors and banks (which presented moral hazard problems). Yet the paper seemed not to pay attention to intragroup differences, i.e. to firm-specific characteristics which could have important consequences for the level of cooperation among firms. Van Rixtel also cast some doubt on the appropriateness of a Stackelberg game (which assumes passive behaviour on the part of the follower, who can only react to the strategy of the leader) for describing the process of trade-off between regulatory protection and industry expectation in Japan. First, Japanese financial institutions had exerted great influence on financial deregulation, often determining the direction and outcome of the process. Second, since the Japanese state was not characterized by a weak bureaucracy, an increasing number of studies were departing from the perception that, in political economy terms, Japan represented a 'neutral' state. This raised the question of who (i.e. which actor) was really determining the course of the regulatory process.

The last three papers concerned institutions and the role of the state. **Yishay Yafeh** (The Hebrew University, Jerusalem) presented 'Institutions and Country Risk: Evidence from Japanese Government Debt in the Meiji Period', which was written with Nathan Sussman. The authors set out to examine the effect of the establishment of modern state institutions on the risk premium associated with government debt, drawing on the Japanese experience in the Meiji period. If institutions matter for country risk, then interest rates should decline in response to the establishment of institutions that protect property rights, establish the rule of the law, etc. Using hitherto unexplored monthly data on sovereign debt traded in London between 1870 and 1914, the paper investigated the impact of major reforms on the yields of Japanese government debt. It showed that the risk premium on Japanese debt did decline during the period, and that the amount of debt issued increased. Significantly, however, the establishment of modern, Western-style institutions – such as a central bank and a constitution – had no impact on debt yields. The only event that significantly reduced the perceived risk on Japanese bonds was the adoption of the gold standard in 1897. Other reforms that may have had some impact on yields were the agrarian reform of the early 1870s, and the introduction of convertible-to-silver notes in 1886. Political events, such as the wars with China and with Russia, affected yields in the short run, whereas the Anglo-Japanese Treaty and the war with Russia seemed to have improved Japan's longer-run 'credit rating'.

Marco Da Rin (IGIER, Università Bocconi, Milano) thought that, in contrast with the authors' own

conclusion, the evidence they had gathered suggested that institutions did matter. First, the fact that the institutional reforms did not have an impact on yields, whereas the adoption of the gold standard did, was consistent with the results of studies of currency crises. These showed that small, incremental changes in fundamentals do not have an effect on prices until a 'critical threshold' is reached. The gold standard would naturally seem to play the role of such a threshold. Second, adoption of the gold standard was itself an institutional reform.

Costas Lapavistas (School of Oriental and African Studies, London) presented 'State and Finance in Economic Development: Analytical Issues Relevant to the East Asian Miracle'. The paper, which was written with Sedat Aybar and Ben Fine, examined the main claims of two different currents in the literature: the 'bank-based' versus the 'market-based' financial systems approaches. The paper claimed that, though both currents had contributed significant insights, the lack of recognition of the broader context within which financial systems operate was a serious weakness of the contemporary literature. It suggested that the 'radical political economy' approach afforded further insight by treating the financial system as a system of supplying finance to the economy that arises spontaneously on foundations provided by the economy itself. The theoretical distinction between bank-based and market-based systems was incapable of capturing this process. Moreover, the financial system itself developed as the demands made upon it changed in the course of economic development. Finally, analysis of state intervention, and of the conflicts of interest generated both within the financial system and between finance and industry/trade, ought explicitly to acknowledge the broader political and social context within which economic activity takes place.

Jenny Corbett (Nissan Institute of Japanese Studies, Oxford, and CEPR) presented 'Japan's Banking Crisis in International Perspective', in which she sought to assess the view that the scale of the Japanese crisis, and the extent of the consequent moral hazard, was particularly large. Corbett made explicit international comparisons between certain features of the most pronounced financial crisis of the 1980s and the early 1990s. Although no formal tests were presented, the paper concluded that the Japanese banking crisis was in the middle of the range of international experience, and had not been as severe as that experienced in the Nordic countries, when measured in terms of the impact on profits and the probable scale of non-performing loans. The attempt to construct internationally comparable data, however, highlighted the fact that there was remarkably little consistency in the presentation of banking statistics, and that the range of data collected by the international agencies was limited. At the macroeconomic level, the scale of the credit crunch which followed the crisis, although large relative to Japan's past experience, was also not extreme by international standards. The Japanese system had been marked by a relatively smooth, slow response to the development of a quite extreme asset-price cycle.

Gabriella Chiesa (Università di Bologna) pointed out that, though data on asset prices was reliable, the same was not true of data on loan provisions and bad loans and, hence, on bank profits. It was likely that governance issues were involved, on account of managers' incentives. With a utilitarian 'bank objective function', bank shareholders wanted managers to maximize overall profits, and this was likely to cause a dangerous over-lending bias.

Financial Crises

World Capital Markets to Blame?

A conference on 'World Capital Markets and Financial Crises' was held at the University of Warwick, Coventry, on 24/25 July 1998. The conference was organized by CEPR, in conjunction with the Economic and Social Research Council's Global Economic Institutions (GEI) programme. The organizers were **Marcus Miller** (University of Warwick and CEPR), **William Perraudin** (Birkbeck College, London, and CEPR) and **Jonathan Thomas** (University of Warwick). There were ten papers, together with a roundtable discussion on crisis prevention and management in global capital markets.

The aim of the conference was to discuss the origins and implications of the recent East Asian financial crisis. The crisis involved neither the fiscal profligacy, nor the political temptations to devalue (to reduce unemployment), which had lain at the root of 'first- and second-generation' models of speculative attack. Instead, the source of the turmoil seemed to lie in excessive short-term dollar liabilities, and over-optimistic bank lending in an under-regulated environment.

This theme was developed in 'Paper Tigers?' presented by **Giancarlo Corsetti** (Università di Roma Tre and Yale University) – joint work with Paolo Pesenti and Nouriel Roubini. The authors offered a 'preliminary' assessment of the Asian crisis in two stages. First, they analysed the effects of promised government bail-outs; and second, they provided empirical evidence on the roles played by fundamentals in the build-up to the crisis. Although fiscal deficits were low in East Asia, the authors argued that government bail-outs could be expected to help translate current external private debt into future public liabilities. Assuming perfect foresight, therefore, speculative attacks could be expected to take place when the stock of external debt was sufficiently high to induce expectations of a sustained money expansion. Using data from 24 emerging economies, including those in East Asia, the authors concluded that both the magnitude of current account deficits (which were a measure of external imbalance), and the share of non-performing loans (which were a measure of the fiscal costs of financial bail-out), would be crucial in determining the likelihood and severity of a crisis.

But do people really look ahead to the future cost of government bail-outs prior to a crisis? **Richard Portes** (London Business School and CEPR) was sceptical about the degree of foresight implied in this behaviour. He also questioned the robustness of the empirical support claimed by the authors, and wondered why there was no explicit role in their model for the real

exchange rate, which was one of the key elements in determining the domestic burden of external debt.

In 'Asian Currency and Financial Crises: Lessons from Vulnerability, Crisis, and Collapse', **David Vines** (Institute of Economics and Statistics, Oxford, and CEPR) and **Jenny Corbett** (Nissan Institute of Japanese Studies, Oxford, and CEPR) explored the interactions between currency and financial crises, and argued that it was these interactions that led to collapse. The critical feature was the prior build-up of massive unhedged foreign borrowing, which meant that, when the currency initially devalued, foreign depositors no longer trusted the government's guarantees. Fears of sovereign insolvency thus triggered capital flight and currency collapse. The paper ended with a discussion of the implications for crisis management and the lessons for global economic institutions. **Christopher Bliss** (Nuffield College, Oxford) noted that a slowdown of rapid economic growth by itself could easily expose financial weaknesses. The existence of implicit bail-out promises, so much emphasized in the Asian context, was too widespread to be the principal explanation. Whether East Asia would recover as quickly as Mexico had done in 1995 was uncertain. **Vinod Aggarwal** (University of California, Berkeley) pointed out that the United States's role had had very important signalling effects in terms of debt renegotiation, which had helped Mexico to regain access to private capital markets more quickly.

Two papers focused on the role of credit-market imperfections in causing instability. First, **Philippe Aghion** (University College London, EBRD and CEPR) presented 'Capital Markets and the Instability of Open Economies', written jointly with Philippe Bacchetta and Abhijit Banerjee. The authors constructed a model of a small open economy in which a firm's creditworthiness depends on its current cash flow. With credit-constrained firms, a rise in the price of non-traded inputs (such as land) squeezes profits and brings the boom to an end; conversely, a price fall helps recovery. The authors argued that premature liberalization could set in train a repeated cycle of this nature. They also suggested that a policy of never bailing out insolvent banks (or of closing down a large number of banks) might be counterproductive, because it would run the risk of inhibiting firms from borrowing and, hence, of prolonging the slump. By contrast, FDI during a slump could help limit output volatility.

Noting that, in emerging economies, land's role as collateral for loans was more relevant than the cash flow costs of paying rent, **Gianluca Femminis** (Università Cattolica del Sacro Cuore, Milano, and CEPR) observed that land prices in East Asia had started falling some time before the crisis, and that this was contrary to the sequence suggested by the authors. David Vines noted that unlimited foreign investment might not stabilize the economy, if the markets for non-traded goods were not allowed to clear. **Manmohan Kumar** (Credit Suisse First Boston) wondered about the timing: why not allow FDI before the onset of the crisis? Giancarlo Corsetti contrasted the authors' approach with Krugman's model in which the moral hazard problems arose in the banking sector. In response, Aghion warned that a no

bail-out policy could induce banks to hide their bad loans by refinancing non-performing customers.

The second paper on credit-market imperfections was 'Asset Bubbles, Domino Effects and Lifeboats', presented by **Marcus Miller** (University of Warwick and CEPR) and co-authored by Hali Edison and Pongsak Luangaram. Following the 'credit cycles' approach developed by Kiyotaki and Moore, the authors argued that rising land prices added to a boom by enhancing the collateral that firms can pledge against loans. It is a fall in land prices that leads to a slump, with negative shocks being greatly magnified as credit relations collapse. The authors suggested that these credit-market effects had played an important role in East Asia, especially in Thailand. They gave a brief account of the policy interventions proposed in the literature – such as temporary financing, lifeboats (i.e. mergers with healthy banks) and nationalization – before analysing the measures adopted by the Thai government to prevent financial collapse.

Jagjit Chadha (Bank of England) suggested that the transversality condition for the existence of an asset bubble be examined, and that its bursting be endogenized. He also suggested incorporating bank behaviour. The paper had suggested a financial stabilization policy whereby finance houses would provide temporary financing to property companies. Manmohan Kumar, however, stressed that changes in market sentiment can have powerful effects, as happened when the operation of finance houses in Thailand was suspended. Had these finance houses continued to operate, the contingent government liabilities would have been even greater, and stabilization of market sentiment could have been rendered more difficult.

In 'Financial Crises and Financial Intermediation with Reference to the Asian Crisis', **Jorge A Chan-Lau** and **Zhaohui Chen** (both IMF) presented a theoretical model of emerging markets with imperfect financial systems. The model was designed to capture recent events in Asia, where a period of relatively low capital flows was followed by a fast build-up of capital inflow, and ended in crisis with a large capital outflow. The authors suggested that, in circumstances of rapid and sustained capital inflows, policy should try to ensure that domestic fundamentals were sound, while credit-market interest rates needed to be monitored (and influenced). **Kenneth Kletzer** (University of California, Santa Cruz) noted that the results of the paper depended crucially on the assumed structure of monitoring cost. He suggested that the model be extended by using imperfect information to derive the cost structure of the intermediary. Kletzer also considered that endogenizing interest rates would be useful – for example, in studying the effects of financial liberalization. Chen replied that the reason for assuming fixed prices had been that interest rates in East Asian economies were typically either controlled by the government or fixed by monopolistic banks. **John Driffill** (University of Southampton and CEPR) thought it would be interesting to aggregate the micro model for macro analysis.

Although multiple equilibrium models of speculative attacks have gained acceptance among many commentators, in their paper, 'A Theory of the Onset of Currency Attacks', **Hyun Song Shin** (Nuffield College, Oxford) and **Stephen Morris** (University of Pennsylvania) criticized this approach for leaving unexplained the shift in beliefs which moves the system from one equilibrium to another. The authors presented a model in which, given full knowledge, there may be multiple equilibria. Consequently, for any given set of fundamentals, there are two equilibria – either crisis or no-crisis – around which speculators might coordinate. They then demonstrated how, if each speculator has a small amount of uncertainty regarding others' information sets, the possibility of such multiple equilibria can be removed by virtue of the fundamentals acting as a coordinating device. They also concluded that, in contrast with other second-generation models of speculative attacks, the exact timing of the shift in expectations could be found 'inside' the model. **Jonathan Thomas** (University of Warwick) suggested that the authors examine the robustness of the unique equilibrium, for example, when the scale of depreciation is dependent upon the magnitude of the attacks. He doubted the relevance of the uniqueness result in explaining the crisis in East Asia, since this was perceived to have come as a surprise. **Kevin Chang** (University of Southern California and CSFB) suggested incorporating contagion effects.

In 'Korean Financial Crisis: A Price for a Miracle', **In-Ho Lee** (University of Southampton) argued that, although the Asian financial crisis involved several countries, a unique background existed for each country. He chronicled the Korean economy's moves from a 'miraculous' trajectory of fast growth to financial-market turmoil in the real-sector disruption, massive lay-offs and wholesale economic restructuring. Lee's explanation of the Korean crisis relied on self-fulfilling expectations and attributed a key role to short-term debt. The author noted that, during Korea's period of rapid economic growth, the similar foreign-account problems had arisen in the early 1980s, but without generating the crisis that had followed in 1997. The difference lay in the proportion of short-term debt, which was higher in 1997, causing reluctance among foreign lenders to roll over short-term debt and leading, in turn, to further depreciation of the Korean won. (On the reasons for firms' greater reliance on short-term debt, Lee noted that the allocation of funds was mostly decided by political, rather than economic, considerations.) One policy implication of Lee's 'self-fulfilling' approach was that alarm signals and the release of economic data played an important role during a crisis.

Olli Castren (Bank of Finland) remarked that the short-term Korea-US interest rate differential had been quite stable up until 1997, despite the Korean economy's large borrowing needs. It was not surprising, therefore, that Korean firms and banks had found it attractive to borrow abroad. Richard Portes noted that the short-term debt position of Korean firms had deteriorated rapidly, suggesting that the devaluation had been unexpected. Lee's opinion was that the possibility of devaluation had been considered, but that Korean banks had expected the government to guarantee their loans. Philippe

Aghion argued that Korea's boom-and-bust cycle was typical of the growth process: during booms, bank competition increases and banks try to pre-empt one another; this leads to less monitoring and thence to a deterioration of the loan portfolio.

In an empirical paper on 'Predicting Emerging Market Currency Crises', **William Perraudin** (Birkbeck College, London, and CEPR) and his co-authors, **Manmohan Kumar** (CSFB) and **Uma Moorthy** (Birkbeck College, London), looked at the value of lagged information on financial and macroeconomic variables in the forecasting of crises. The authors levelled two criticisms against the utility for macroeconomic policy-makers, private investors and financial regulators of the existing empirical literature. First, these studies use contemporaneous variables in mainly descriptive frameworks. Second, in the few studies where forecasts exist, these are generally 'in sample'. The authors set out to remedy both these drawbacks by using a large dataset for 32 emerging countries, comprising over 40 variables at monthly frequencies from 1985 to 1998. They concluded that, with the use of lagged monthly data, simple logit models possessed significant explanatory power. In particular, major crisis episodes were correctly forecast, and out-of-sample trading strategies yielded profits.

Giancarlo Corsetti expressed surprise that, given the authors' aim of analysing trading strategies, they focused only on depreciations of the exchange rate and ignored periods of appreciation. Analysis of both periods would reduce the profitability of the reported trading strategy. **Paul Mizen** (University of Nottingham, Bank of England and CEPR) doubted whether a country's vulnerability to a crisis could really be quantified. Mizen was also unsure whether the reported information about crises could be timely enough for policy-makers to be able to react. Richard Portes noted that the authors' definition of a crisis (which did not include foreign-exchange reserves, for example) left out many relevant events, and that they also ignored successful defences of the currency. Another limitation was that their data overlooked the importance of forward positions. Kumar replied that the authors were seeking to determine whether, in spite of the forward positions, the available data could still be used to predict crises.

Alessandro Missale (IGIER, Università Degli Studi di Brescia, and Bank of England) presented 'High Public Debt and Currency Crises: Fundamentals versus Signalling Effects', written with Benigno Pierpaolo. In a complex analysis, the authors sought to determine how public debt, policy-makers' credibility and external circumstances all affected the probability of exchange-rate devaluations. Their fully specified model enabled them *inter alia* to measure the credibility of the foreign-exchange regime following a devaluation, and to assess the probabilities of both imminent and long-run devaluations (using the short-term interest rate and the forward rate respectively). Key features of their model were the 'debt burden' and 'signalling' effects.

Berthold Herrendorf (University of Warwick and CEPR) thought that several of the authors' main results could well hold in a more parsimonious version of their

model. As the paper offered many precise predictions, it would be worthwhile to test them with data. In this connection, Herrendorf also questioned the robustness of the results with respect to a change in the time horizon, and particularly with an infinite horizon (Missale and Pierpaolo's model had three periods). Marcus Miller noted that, whereas the authors' model had been developed with the Italian experience in mind, its analysis of the interest rate as a signalling device might prove useful also in relation to the Asian crisis. Manmohan Kumar added that the model yielded interesting propositions about the currency-composition issue (i.e. local- versus foreign-currency denominated debt). Kevin Chang thought the model could also be quite useful with regard to the convergence criteria in the European Monetary Union.

Jim Rollo (Foreign and Commonwealth Office) chaired a roundtable discussion of the policy implications of financial crises. Richard Portes opened the discussion by addressing the issues of early-warning indicators and lender-of-last-resort functions. He argued that, via its rescue packages, the IMF was creating a considerable moral-hazard problem and that it had played the role of international lender-of-last-resort without having the necessary supporting structures. He therefore favoured a market-based solution. Portes also expressed strong doubts about the validity and usefulness of the empirical literature on early-warning indicators. **Philip Turner** (Bank for International Settlements) spoke about risk in financial markets and the public sector's role in that context. Although the recent crises had led to more quantitative analyses of risk, such studies still needed improving. If countries wanted to benefit from capital flows, it was necessary to price risk correctly.

Charles Goodhart (London School of Economics) discussed the impact of external events on the exchange rate, as well as the treatment of foreign-currency debt (which had implications for IMF programmes). Comparing the Asian financial crises with those of the nineteenth century, Goodhart argued that they had numerous factors in common. A key difference, however, was on the external side. In the nineteenth century, when the exchange-rate peg was abandoned, the change was believed to be only short-term, and the expectation of a quick reversion to an underlying anchor led to a virtuous circle. Credibility issues meant that this phenomenon did not occur during the Asian crisis. David Vines discussed the problem of minimizing vulnerability, for which he argued that two preconditions were necessary. First, better kinds of financial structures were required to be in place prior to liberalization; second, it was necessary to have a macroeconomic strategy appropriate to open international capital markets. In Vines's view, this did not imply fixed exchange rates: he favoured some form of inflation target. Vinod Aggarwal closed the roundtable by considering the implications of the United States' role as a political actor in the Asian crisis. Reflecting on the resolution of past debt crises, he argued that the IMF itself had never been able to resolve such crises without the backing of a strong government. A country's government, however, was bound to reflect its domestic economic, financial and political interests. A necessary

European Summer Symposium in Financial Markets

CEPR's European Summer Symposium in Financial Markets was held at the Studienzentrums Gerzensee on 13/24 July 1998. The organizers were **Philippe Bacchetta** (Studienzentrums Gerzensee, Université de Lausanne and CEPR), **Marco Pagano** (Università di Salerno and CEPR), **Rafael Repullo** (CEMFI, Madrid, and CEPR) and **Ernst-Ludwig von Thadden** (Université de Lausanne and CEPR). The papers covered, *inter alia*, issues of credit risk, asset management and pricing, price discovery and market design, and internal capital markets.

The following papers were presented:

'Term Structure, Non-neutral Inflation and Economic Growth: A Three-factor Model', **Andrea Berardi** (London Business School)

'Fickle International Investors: An Impediment to Growth?', **Andrew Scott** (London Business School and CEPR) and **Harald Uhlig** (CentER, Tilburg University, and CEPR)

'Bidder Behaviour in Multiple Unit Auctions: Evidence from Swedish Treasury Auctions', **Kjell G Nyborg** (London Business School), **Krystian Rydqvist** (Universitetet i Oslo) and **Suresh Sundaresan** (Columbia University)

'Modelling Term Structures of Defaultable Bonds', **Darrell Duffie** (Stanford University) and **Kenneth Singleton** (Stanford University)

'Term Structures of Credit Spreads with Incomplete Accounting Information', **Darrell Duffie** (Graduate School of Business, Stanford) and **David Lando** (Københavns Universitet)

'Pricing Credit Risk Derivatives', **Philipp J Schönbucher** (Universität Bonn)

'A Comparative Study of Structural Models of Corporate Bond Yields', **Ronald Anderson** (IRES, Université Catholique de Louvain, and CEPR) and **Suresh Sundaresan** (Columbia University)

'Pricing the Gamble for Resurrection and the Consequences of Renegotiation and Debt Design', **Jean-Paul Décamps** (GREMAQ-IDEI, Université de Toulouse) and **Antoine Faure-Grimaud** (London School of Economics and CEPR)

'The Dynamics of Equity Prices in Fallible Markets', **Peter Bossaerts** (California Institute of Technology)

'Performance Measures for Dynamic Portfolio Management', **Lars Tyge Nielsen** (INSEAD, Fontainebleau, and CEPR) and **Maria Vassalou** (Columbia University and CEPR)

'Portfolio Selection with Randomly Time-Varying First and Second Moments: The Role of the Instantaneous Capital Market Line', **Lars Tyge Nielsen** (INSEAD, Fontainebleau, and CEPR) and **Maria Vassalou** (Columbia University and CEPR)

'Optimal Consumption and Portfolio Selection with Stochastic Differential Utility and Stochastic Investment Opportunity Set', **Mark Schroder** (Michigan State University) and **Costis Skiadas** (Northwestern University)

'How Does Information Quality Affect Stock Returns? Results from a Dynamic Model of Learning', **Pietro Veronesi** (University of Chicago)

'Who Should Buy Long-Term Bonds?', **John Y Campbell** (Harvard University) and **Luis M Viceira** (Harvard University)

'Evaluating Portfolio Performance with Stochastic Discount Factors', **Magnus Dahlquist** (IIES, Stockholm School of Economics, Duke University and CEPR) and **Paul Söderlind** (Stockholm School of Economics and CEPR)

'Why Do Markets React to Bank Loans? A Theory of Managerial Choice between Public and Private Financing', **Andres Almazan** (University of Illinois) and **Javier Suárez** (CEMFI, Madrid, and CEPR)

'Is Relationship Lending Special? Evidence from Credit-File Data in Germany', **Ralf Elsas** (Universität Frankfurt) and **Jan Pieter Krahen** (Institut für Kapitalmarktforschung, Johann Wolfgang Goethe – Universität Frankfurt)

'Information Production, Dilution Costs, and Optimal Security Design', **Paolo Fulghieri** (INSEAD, Fontainebleau, and CEPR) and **Dmitry Lukin** (INSEAD, Fontainebleau)

'IPO Auctions', **Bruno Biais** (Université des Sciences Sociales de Toulouse and CEPR) and **Anne Marie Faugeron-Crouzet** (Université de Toulouse)

'Price Discovery in Auction Markets: A Look Inside the Black Box', **Ananth Madhavan** (University of Southern California, Los Angeles) and **Venkatesh Panchapagesan** (University of Southern California, Los Angeles)

'Market Rules and Order Strategies in the Context of the Preopening, Opening and Trading Day', **Chester S Spatt** (Carnegie Mellon University)

'Portfolio Considerations in Inventory Risk Management in Dealership Markets: Evidence from London Stock Exchange', **Narayan Y Naik** (London Business School) and **Pradeep K Yadav** (University of Strathclyde)

'The More You See, The Less You Get: Price-Competing Insiders Under Different Trading Mechanisms', **Mark Flood** (University of North Carolina, Charlotte), **Ronald Huisman** (LIFE, Universiteit Maastricht), **Kees Koedijk** (LIFE, Universiteit Maastricht), **Mathijs A van Dijk** (LIFE, Universiteit Maastricht) and **Irma W van Leeuwen** (LIFE, Universiteit Maastricht)

'Indexation and Insurance: A Stochastic Model of Credit Cycles', **Nobuhiru Kiyotaki** (London School of Economics) and **John Moore** (London School of Economics and CEPR)

'The Dark Side of Internal Capital Markets: Divisional Rent-Seeking and Inefficient Investment', **Jeremy Stein** (Sloan School of Management, MIT)

'Corporate Focusing and Internal Capital Markets', **Frederik P Schlingemann** (University of Pittsburgh), **René M Stulz** (Ohio State University) and **Ralph A Walking** (Ohio State University)

'The Cost of Diversity: The Diversification Discount and Inefficient Investment', **Raghuram Rajan** (University of Chicago), **Henri Servaes** (University of North Carolina, Chapel Hill) and **Luigi Zingales** (University of Chicago and CEPR)

'Banking (Conservatively) With Optimists', **Michael Manove** (Boston University and CEMFI, Madrid) and **A Jorge Padilla** (CEMFI, Madrid, Boston University and CEPR)

'A Near-Rational Model of Persuasion – With Implications for Financial Markets', **Peter M DeMarzo** (University of California, Berkeley), **Dimitri Vayanos** (Massachusetts Institute of Technology) and **Jeffrey Zwiebel** (Stanford University)

precondition for improved 'design' of international institutions, therefore, was a proper understanding of the respective roles that creditor governments and institutions would play.

The conference ended with a presentation by **Joshua Aizenman** (Dartmouth College) of his paper on 'Capital Mobility and Crises in a Second Best World'. The aim of the paper was to study the welfare effects of financial integration in the presence of moral hazard. In Aizenman's model, entrepreneurs faced a trade-off between risk and return, while banks could mitigate the resultant excessive risk by costly monitoring. The author showed that a drop in banks' cost of funds increased the risk they tolerated. (Likewise, a less efficient intermediation technology, higher macroeconomic volatility, and a more generous deposit insurance scheme all raised the riskiness of projects.) A key result was that, with relative scarcity of funds, financial integration was welfare-reducing if financial intermediation was relatively inefficient. This led to an important policy recommendation: if a country started with a highly inefficient banking system, then a precondition for beneficial financial integration was reform and improvement of the banking system.

John Driffill was puzzled by the connection made with Bhagwati's 'immiserizing growth', given that the Asian economies were still growing incredibly fast, even if there was too much investment and it was too risky. Manmohan Kumar, while agreeing with Aizenman's main point, asked whether the introduction of political considerations into the process of financial liberalization could affect the analysis. Aizenman responded by saying that his paper questioned, in an important way, the orthodox view that the opening of financial markets was a good thing. A key practical policy implication was that, instead of opening financial markets, linking the inflow of capital to proper capital-adequacy ratios that were contingent on the sophistication of the domestic financial system might be considered. Thus his analysis was especially relevant for the international financial institutions and the policies they advocated.

BIS/CEPR Conference

Asset Prices and Monetary Policy

On 26/27 January 1998, the Bank for International Settlements (BIS) and CEPR organized a conference on 'Asset Prices and Monetary Policy'. The conference, which was hosted by the BIS in Basel, was organized by **Renato Filosa** (BIS) and **Francesco Giavazzi** (IGIER, Università Bocconi, Milano, and CEPR). Six papers were presented and the conference ended with a panel discussion on some of the key issues.

In his paper on 'Open-economy Inflation Targeting', **Lars Svensson** (Institute for International Studies, Stockholm, and CEPR) extended the analysis of inflation targeting to a small open economy with forward-looking aggregate supply and demand. This allowed Svensson to discuss the role of the various exchange-rate channels in inflation targeting, the use of a monetary conditions index (MCI), the choice between CPI and domestic inflation targeting, and the appropriateness of simple instrument rules such as the closed-economy Taylor rule. Svensson found that strict CPI inflation targeting resulted in considerable real exchange-rate variability, owing to heavy reliance upon the direct exchange-rate channel. Flexible CPI targeting appeared as an attractive alternative when the policy objective was to stabilize both inflation and real variables. As the Taylor rule excluded any direct response to the exchange rate or foreign disturbances, it was less attractive in this open economy set-up. Finally, Svensson found some support for the notion of an MCI, although the index derived in his model differed from the commonly used concept.

Charles Freedman (Bank of Canada) observed that separate analysis of the effects of introducing forward-looking behaviour and an exchange-rate channel on the appropriateness of various forms of inflation targeting would be useful. On the question of which price index should be targeted, he noted that central banks also had good practical reasons for using the CPI (rather than, for example, the GDP deflator). Freedman considered that inclusion of the long real rate in the aggregate demand

function was an empirical issue. For example, in Canada and the United Kingdom, empirical research had shown that it was mostly the short-term rate that was important for spending decisions. Finally, Freedman thought that the way inflation targeting was implemented in practice – whereby the policy rate responds gradually to an inflation forecast six to eight quarters out – was very much akin to what Svensson calls flexible CPI targeting.

Jürgen von Hagen (ZEI, Universität Bonn, and CEPR) raised three issues. First, he questioned the statement that inflation targeting was characterized by a high degree of transparency. In particular, monetary targeting as used by the Bundesbank was more precise about the inflation objective (2%), but was less precise about the time horizon. Most inflation-targeting regimes, on the other hand, were specific about the horizon but allowed for a wider inflation band. He also questioned whether inflation reports made the inflation-targeting regimes very transparent, as these reports did not specify the weights attached to the different pieces of information that had a bearing on inflation. Second, von Hagen wondered what the micro foundations were for the shocks in the model. He asked why changes in the exchange rate had immediate effects, whereas changes in domestic costs had only lagged effects. Third, he argued that a Taylor rule with domestic inflation did almost as well as flexible domestic inflation targeting.

Carlo Favero (IGIER, Università Bocconi, Milano, and CEPR) observed that in the VAR literature there was not much evidence in favour of a direct exchange-rate effect on inflation. **Creon Butler** (Bank of England) asked about the impact of the noisiness of the exchange rate on its role in CPI inflation targeting. **Mark Gertler** (New York University) thought the framework of the paper was not suitable for dealing with the concept of transparency. Moreover, if transparency was related to the concept of credibility, then equilibria with commitment should also be looked at. In the same vein, **Paul Söderlind** (Stockholms Universitet and CEPR) observed that it was hard to compare the performance of a Taylor rule, which assumes commitment, with the discretionary rules considered in the paper. Svensson agreed that accountability and transparency were difficult to discuss within his model as there was full transparency. Replying to von Hagen, he added that posting the inflation forecast as a summary statistic of the relevant information concerning future inflation was an effective way of increasing transparency as it was not so easy to doctor a forecast. **Michael Woodford** (Princeton University) replied to von Hagen that a money-demand equation could easily be added to the model without altering the equilibrium. There was a nominal anchor as long as the reaction function included a nominal variable. **Ignazio Visco** (OECD, Paris) wondered how nominal income targeting would compare with flexible CPI targeting, and **Alexander Swoboda** (Graduate Institute of International Studies, Geneva) questioned how robust the results were with respect to differences in the loss function and model parameters.

In his paper with **Julio Rotemberg** (Harvard University) on 'Interest-rate Rules in an Estimated Sticky Price Model', **Michael Woodford** (Princeton University) used

a small model of the US economy to discuss three topics. First, what must be the constraints on policy in order for a rational expectations equilibrium to be determinate? Second, how would different rules affect the variability of inflation, output and interest rates? Third, how would these rules perform in terms of expected utility? The paper's main finding was that low and stable inflation, together with stable interest rates, could be achieved by letting the funds rate respond positively to inflation, while also responding – with a coefficient greater than one – to the lagged funds rate itself. Such a rule did almost as well as the optimal rule, in the sense of maximizing the expected utility of the representative household.

Hans Genberg (Graduate Institute of International Studies, Geneva) compared the Woodford-Rotemberg approach with the traditional Poole analysis, in which the interest-rate reaction function would depend on the weights in the loss function and the relative variance of the shocks. The advantage of Woodford and Rotemberg's analysis was that their model was less sensitive to the Lucas critique, although this often came at the cost of oversimplification. Turning to the calibration of the model, Genberg wondered whether the results were sensitive to alternative VAR specifications. He was also worried that the optimal rules described were dangerously close to the unstable regions. He suggested looking at alternative theoretical structures, such as RBC models and open-economy extensions.

Marvin Goodfriend (Federal Reserve Bank of Richmond) observed that, by advocating a policy rule whereby the central bank promised ever-greater interest rate increases in response to deviations of inflation from target, Rotemberg and Woodford leaned a little too heavily in the direction of perfect credibility. The idea of a delayed monetary-policy response contrasted sharply with the recent emphasis on pre-emptive policy. On a theoretical level, the promise of ever-greater interest rate increases was not observable, and Goodfriend doubted whether it was realistic to assume that such out-of-equilibrium possibilities were able to constrain the equilibrium.

Lars Svensson pointed to a difference in modelling strategy between his and Woodford's paper. Woodford had good micro foundations, but no inertia. To fit the data, the inertia was built into the shocks, whereas he (Svensson) had obtained inertia through partial-adjustment mechanisms. Might this explain why there was more scope for pre-emptive monetary policy in his model? And were rules like the one proposed incentive-compatible? **Arturo Estrella** (Federal Reserve Bank of New York) asked whether, given the wide confidence bands in the VARs, Woodford had done any sensitivity analysis with respect to this uncertainty. Charles Freedman said optimal rules, like the one suggested by Woodford, would always depend on the structure of the model and the nature of the historical shocks. In this sense, a forward-looking rule was more robust as it could more easily take such changes into account. In reply, Woodford acknowledged the need to consider incomplete credibility but did not agree that the policy rule was unobservable. The public observed variations in the Fed funds rate and could estimate the feedback rule. Parameter uncertainty was important, but the

authors had experimented with different parameters which had not thrown the model into the unstable regime. As a general point, Woodford said that, in terms of instability, forward-looking rules were much more sensitive to specific parameters than backward-looking rules.

In 'Why do Interest Rates Predict Macro Outcomes?', **Arturo Estrella** (Federal Reserve Bank of New York) used a small theoretical rational-expectations model to analyse the role of monetary policy in determining the empirical relationships between, on the one hand, the term structure of real and nominal interest rates and, on the other hand, future real output and inflation. Estrella found that a policy reaction function, whereby the central bank's policy rate responded gradually to output and inflation, could explain the empirical regularities. These empirical relationships were not structural, however, and alternative monetary-policy regimes could lead to very different outcomes. For example, under a regime of strict inflation targeting, interest rates became uninformative with regard to future output and inflation.

Peter Kugler (Universität Basel) focused on the model's stability under various reaction functions, and particularly the need for a strong policy response to output. There was potential for unstable dynamics in the output equation, which could be avoided only if real interest rates rose strongly to stabilize output. Kugler conjectured that one reason for this strong result might be that inflation expectations did not enter the aggregate supply curve; introducing them might have a stabilizing impact. **Axel Weber** (Universität Bonn and CEPR) was critical of Estrella's model in four respects: the microfoundations of the reduced-form equations should have been worked out to provide a theoretical foundation for the inertia; in view of the arbitrary lag structure, it would have been useful to fit the model to the data; the assumption that bond-market participants knew the reaction function of the central bank was questionable; and the implications of non-linearities in the Phillips curve had not been addressed.

For Lars Svensson, Estrella's general conclusion that the empirical relationships between the slope of the yield curve and future macro variables were not structural but endogenous had important policy implications. A regime of strict inflation targeting, under which the yield curve gap had no predictive power for output, was an extreme interpretation of actual inflation targeting regimes. These regimes could be better described by flexible inflation targeting, whereby output stabilization also entered the central bank's objective function. Such a regime would probably look similar to the one Estrella had found to be compatible with the empirical regularities. **Ignazio Angeloni** (Banca d'Italia) asked whether the author had looked into the consequences of allowing for risk aversion. The behaviour of a risk premium might be important in explaining some of the stylized facts. Ignazio Visco wondered about open-economy extensions. Several participants suggested that the paper's results be tested empirically by comparing the predictive content of the term structure across different policy regimes. Michael Woodford wondered why the results of his and Estrella's stability analyses had differed.

Estrella replied that his paper was intended to show that the predictive content of the slope of the term structure depended on the monetary-policy regime. Although it would be more elegant to do this in a fully specified model with microfoundations and model-consistent expectations, this main result would not be much affected. Similarly, allowing for a risk premium in the term structure would enrich the model, but was not necessary to explain the relationship between the term spread and the first moments of the economy. He agreed, however, that an obvious next step was to test the predictions of the analysis across different regimes.

Creon Butler (Bank of England) presented 'Assessing Market Views on Monetary Policy: The Use of Implied Risk Neutral Probability Distributions', which was written with Haydn Davies. According to Butler, policy-makers are interested in assessing financial-market expectations of future policy rates for two reasons. First, it may provide information as to whether the markets expect a planned policy move or not. Second, it can provide a check on the central bank's credibility. In his paper, Butler presented a method for estimating time series of implied risk-neutral probabilities, based on prices of exchange-traded options and futures contracts. He then examined whether the estimated higher moments from these probability distributions could improve the predictive power of forward rates. For short-term sterling interest rates, the results suggested that the mode of the risk-neutral density function was a better predictor of future short-term interest rates than the forward rate, and that adding in the standard deviation and kurtosis improved the fit further. A likely interpretation of the latter results was that the standard deviation and kurtosis captured a variable risk premium. Butler also illustrated the potential use of the adjusted forward rate for policy purposes.

Pierre Sicsic (Banque de France and CEPR) offered four observations: (1) most of the results in the paper could be shown by using implied volatilities directly in the prediction regressions; (2) the use of linear interpolation to filter out the time-to-maturity effect was debatable, since – Sicsic conjectured – this effect should not be linear; (3) the finding of stationarity depended on the inclusion of a trend, but no trend appeared to be included in the prediction regressions; and (4) there was a serious errors-in-variables problem, as the Melick-Thomas method used in the paper often led to big shifts in parameters that were hard to interpret. Paul Söderlind thought it might be easier to interpret the results if the analysis was performed within an appropriate asset-pricing theory in which the risk premium could be modelled. Very similar results could be obtained by adding the level of interest rates into the usual prediction regression. He also pointed to a small-sample problem: the overlapping structure of the data series meant there were really only 13 independent observations.

Robert McCauley (BIS) suggested that there might be institutional reasons why the difference between the forward and realized short rates was related to volatility in the United Kingdom, but not in Germany. One reason was that, in the United Kingdom, more floating-rate notes were issued and thus the demand for hedging

against interest-rate risk was greater. Alternatively, there could be differences in the respective central banks' operating procedures. Ignazio Angeloni wondered whether the skewness effect in Germany could be related to the effect of US monetary policy in 1994 and to the question about decoupling. **Henri Pagès** (BIS) wondered why the authors had not made use of prices of options on swaps. Butler's response was that work at the Bank of England had started to look at asset-pricing models (such as the consumption CAPM model) to explicitly model risk premia. The main problem with using options on swaps was how to deal with credit risk. Butler repeated that substituting the mode for the forward rate did a lot of the work, thereby suggesting that the 'peso problem' may be an important issue. But more work clearly needed to be done to make this information useful in policy-making.

Mark Gertler (New York University) presented 'Monetary Policy Rules in Practice: Some International Evidence', which was co-authored by Richard Clarida and Jordi Galí. Their paper reported estimates of monetary-policy reaction functions for two sets of countries: the G-3 (Germany, Japan and the United States) and the E-3 (France, Italy and the United Kingdom). The paper found that, since 1979, the behaviour of each of the G-3 central banks could be described by a forward-looking version of the Taylor rule with interest-rate smoothing. As for the E-3, even prior to the emergence of the 'hard ERM', their central banks were heavily influenced by German monetary policy. Using the Bundesbank's policy rule as a benchmark, the authors found that, at the time of the collapse, interest rates in each of the E-3 countries were much higher than domestic macroeconomic conditions warranted.

Otmar Issing (Deutsche Bundesbank) argued that the use of a rule facilitated communication with the public, and had the potential for anchoring expectations. The policy rule estimated in the paper appeared to be a nice *ex post* description of the G-3 central banks' interest-rate policy, but what was important was the *ex ante* perception that a rule existed. What form the rule should take depended on the structural features of the economy. The Bundesbank had pursued monetary targeting for 24 years for a number of reasons: the long lags and uncertainties in the transmission mechanism had made the medium-term focus afforded by a money-growth target appropriate; monetary aggregates had clear advantages in terms of transparency and accountability; there was quite a lot of evidence on the stability of the demand for German M3; and the trend growth of money had clear predictive power for future inflation. A clear indication of the Bundesbank's resolve to pursue a policy oriented towards price stability – as soon as it was released from its task of pursuing exchange-rate stability in 1973 – was that the special Lombard rate had risen to 13% in 1974. Issing agreed that one of the secrets of successful central banking was to be forward-looking, i.e. focusing on the medium-term trend of inflation. In the paper, however, this had been translated into a one-year-ahead inflation forecast. Given that the transmission lag from policy to inflation was at least two years (and probably longer), he found the evidence not completely convincing in this respect. Issing further thought that the fact that monetary variables were found insignificant in the estimated

reaction function did not imply that monetary targeting was not followed – the targets were not pursued for their own sake, but because of their relationship with future inflation. Exactly for that reason, the estimation methodology did not allow for discrimination between inflation targeting and monetary-growth targeting.

Ignazio Visco applauded the ingenious estimation methodology, which consisted of using actual future inflation as a measure of expected inflation and using instrumental variables to estimate the feedback parameters. He had several queries, however. First, a little more sensitivity analysis – for example, with respect to the specification of the output gap – would have been useful. Second, in some cases, the appropriate policy rate would be the repo rate, rather than the overnight rate, and he wondered why the speed of adjustment towards the target rate was so slow. Third, he questioned the role played by the output gap and asked whether some form of lexicographic ordering could explain the results. Fourth, he asked whether the estimation results provided evidence that monetary policy had brought down inflation. Finally, he wondered why the implicit inflation target for the United States was so high (4%).

During discussion, Pierre Sicsic wondered how to explain the fall in the stress indicator for France in 1993 (after a strong rise in 1992). Axel Weber suggested using a threshold model, instead of the partial-adjustment model, to capture the adjustment of the policy rates to their target. Michael Woodford questioned the assumption underlying the estimation methodology, namely that the correlations between available information and future inflation were not only understood but also constant over the sample period. The robustness of the results should be tested by using actual forecasts or rolling regressions. **Stefan Gerlach** (BIS and CEPR) raised doubts about the stationarity of the interest rates and wondered about the impact on the estimation methodology. Also, would the results concerning the effect of M3 growth still hold if some low-frequency filter were used to get rid of the short-term volatility in the M3 series? Ignazio Angeloni thought inflation differentials should enter the specification for the E-3 countries. **William White** (BIS) asked whether it was reasonable to use the Bundesbank's policy rule as a benchmark for the United Kingdom, where interest rates had a more rapid effect. Finally, Charles Freedman noted that the estimated short-run response to inflation and the output gap was not very strong.

'A Red Letter Day?', presented by **Carlo Favero** (IGIER, Università Bocconi, Milano, and CEPR) and co-authored with Rudi Dornbusch and Francesco Giavazzi, concentrated on the monetary-policy transmission mechanism in the European economies. The authors found significant differences across countries in the response to a common monetary-policy shock. In Germany, France and Spain, the range of the impact was 1.4–1.5%; in Sweden and Italy, the impact was much larger; and the effect in the United Kingdom was the smallest. The authors discussed the sources of these differences and their implications for a common European monetary policy. **Luigi Spaventa** (Università degli Studi di Roma, 'La Sapienza', and CEPR),

referring to a BIS study on the transmission mechanism, noted that in terms of the effects of monetary policy, the relative country rankings in the paper did not correspond to the received wisdom. For example, most indicators concerning financial structure would suggest that monetary policy was most effective in the United Kingdom.

José Viñals (Banco de España and CEPR) acknowledged the authors' fears that differences in national preferences or national structures might compromise the European Central Bank's policy focus on price stability, and that regional differences could lead to adverse popular reactions. Policy would only be affected, however, if national preferences played a role in the Governing Board. Viñals also commented on the paper's estimated reaction functions, pointing to the low estimated feedback parameters on inflation in many of the countries. He argued further that country-specific factors might create cross-country differences, and conjectured that a convergence of financial structures was likely to contribute to a convergence of the transmission mechanisms.

Ignazio Visco agreed with Spaventa that the estimated output effects were counter-intuitive. The calculated MCI weight was also doubtful, and the source of the differences in the relative importance of the exchange-rate channel in the various European countries was unexplained. Axel Weber pointed to the potential for both a generated regressor and a simultaneity problem in the estimated output equations. Charles Freedman thought that the focus on national differences was misplaced. In Canada, there were still many regional differences, but these did not prevent the Bank of Canada from pursuing a Canadian monetary policy. Mark Gertler argued the need for care in estimating reaction functions over very short samples. He suggested using IV techniques for resolving the simultaneity problem in the output equations; and, pointing to the presence of regional differences in the United States, he suggested that these divergences might be attributable to many factors other than monetary policy.

Mark Gertler, Marvin Goodfriend, Otmar Issing and Luigi Spaventa participated in the concluding panel discussion. The panellists concentrated on two important questions. First, should monetary policy focus solely on price stability, or should it aim also at achieving asset-price stability in order to reduce the risk of financial crisis? Second, do asset prices provide reliable information about future economic conditions, such as inflation and real growth, which could be used in the setting of monetary policy? The views of the panellists have been published separately in a joint CEPR/BIS publication, details of which are given below.

Asset Prices and Monetary Policy: Four Views

Mark Gertler, Marvin Goodfriend, Otmar Issing and Luigi Spaventa

ISBN 1 898128 40 5

xii + 27. £10/\$14.95/15 euros

Please contact CEPR for details

Financial Econometrics Workshop

A CEPR/ESRC/IFR finance network workshop in financial econometrics was held in London on 19 March 1998. The meeting was organized by **Mark Salmon** (Financial Econometrics Research Centre, City University Business School, and CEPR) and **Martin Sola** (Birkbeck College, London). It was held under the auspices of the ESRC Resource Centre, established at CEPR in 1993 to provide networking, dissemination, support and training services to the UK economics community, and with the support of the Institute for Financial Research.

The following papers were presented:

'Identifying Regimes in Financial Times Series: A Mixtures Modelling Approach', **Robert Hillman** (Financial Econometrics Research Centre, City University Business School) and **Mark Salmon** (Financial Econometrics Research Centre, City University Business School, and CEPR)

'Value-at-Risk and Extreme Returns', **Jon Danielsson** (London School of Economics) and **Casper G de Vries** (Tinbergen Institute and Erasmus Universiteit Rotterdam)

'What Level of Fixed Costs Can Reconcile Asset Returns and Consumption Choices?', **Erzo G J Luttmer** (London School of Economics)

'Semi-Parametric Modelling of the Term Structure', **Marco Bianchi** (Barclays Capital), **Michael Orszag** (Birkbeck College, London) and **Jim Steeley** (Bank of England)

'Efficient Estimation of the Stochastic Volatility Model by the Empirical Characteristic Function Method', **John L Knight** (University of Western Ontario), **Stephen E Satchell** (Trinity College, Cambridge) and **Jun Yu** (University of Western Ontario)

'Density-embedding Functions', **Karim M Abadir** (University of York) and **Michael Rockinger** (Groupe Hautes Études Commerciales, Jouy-en-Josas, and CEPR)

DISCUSSION MEETINGS

EMU

Currency Crisis Risks Exaggerated

In advance of the January 1999 launch of Economic and Monetary Union (EMU) between 11 EU states, some UK and US economists were raising the spectre of a currency crisis in which either the euro or a national currency might come under speculative attack. At best, this supposed risk supported the 'wait and see' aspect of current UK and Swedish policy at the time; at worst, it generated predictions that the EMU project would end in tears. At a lunchtime meeting sponsored by The Royal Bank of Scotland on 28 April 1998, CEPR's president, **Richard Portes** (London Business School and CEPR), argued forcefully that these fears lacked any economic foundation.

Portes acknowledged the existence of a theoretical risk that, in the transition period up to January 1999, the currency of any country intending to enter the euro area could be forced up or down by the markets. This was highly unlikely, however. The conversion rates due to be announced on 2 May 1998, almost certainly would be the current ERM central parities, and these parities were widely accepted as 'reasonable', i.e. close to their equilibrium values. The forward markets, moreover, had already priced in these parities for the euro's 4 January 1999 market launch. The markets also knew that the central banks would be able to intervene without limit just before close of business on 31 December to ensure that the closing rates equalled their chosen conversion rates. Thus, although exchange rates could vary between 2 May and 31 December, a speculative attack could not succeed in changing either parities or policies. Such an attack would not be profitable, and therefore would not happen.

After the launch, and until January 2002, 'national currencies' would continue to exist in the form of notes and coins. Effectively, however, they would just be units of the euro. There could not therefore be a run against any one of them: this would not be a fixed exchange-rate system, but a single currency, and hence its 'parities' could not be subject to speculative attack. If holders of Italian lire (say) wanted Deutsche marks instead, the Bundesbank would be willing to purchase as much as the entire Italian money supply, if necessary, at the fixed accounting rate. It would accumulate claims denominated in euros, with an explicit 'exchange-rate guarantee' from governments. Failure to honour the guarantee would amount to abrogation of the Maastricht Treaty, with huge political costs – not an option for any central bank. Moreover, the monetary operations necessary to neutralize the

consequences of such 'currency substitution' would be straightforward.

Taking the argument a step further, if depositors in (say) Italian banks did want to move all their funds into German banks, and they were not reassured (and hence deterred from such a move) by the willingness of the monetary authorities to execute these transactions without limit, then Italian banks clearly would be in trouble. The Italian government, however, could fill the hole in their balance sheets if it wished to do so. Of course, there could be a run on the government debt of a country in the euro region – just as New York had got into trouble some years ago (and Italy had come close in 1996). But these circumstances would involve a bank run or a debt crisis, not a currency crisis, and they need have no effect on the euro, into which most, if not all, government debt would be redenominated.

Portes also acknowledged the existence of risks of EMU breaking up owing to inexorably rising unemployment, pressures for fiscal transfers or protectionism. Strains could arise also from an 'asymmetric shock' with a powerful negative impact on individual EMU countries; from deep internal disagreements over whether the euro was too strong or too weak; or from the adoption by some countries of fiscal policies which appeared too lax to others. As one commentator had suggested, there might even be war within Europe itself. Not only were these risks greatly exaggerated, but their realization would constitute a political crisis, not a currency crisis, with consequences so catastrophic for the EU that its monetary effects would be secondary.

Richard Portes and Hélène Rey, 'The Emergence of the Euro as an International Currency', Economic Policy No. 26, April 1998

WTO Agenda

Out with the New, In with the Old?

The current agenda of the WTO includes not only traditional matters inherited from the GATT, but also several new issues, including trade and competition, trade and investment, and trade and the environment. According to **Joseph Francois** (Erasmus Universiteit Rotterdam and CEPR), however, these new issues should not be permitted to divert attention from the more traditional issues already under negotiation. Speaking at a lunchtime briefing, organized under the auspices of CEPR's corporate membership programme on 7 March 1998, Francois noted that the raising of the new issues at a recent ministerial meeting in Singapore had attracted considerable media attention. In his view, however, this constituted a critical challenge to WTO members over how to strike a balance in the allocation of the organization's scarce negotiating resources.

Francois argued that a great deal of important work remained to be completed in the traditional GATT/WTO areas for negotiation. These included further industrial tariff liberalization (especially outside the OECD), related aspects of agricultural trade liberalization (including a number of scheduled negotiations), the information technologies agreement (ITA) and an

expanded Agreement on Government Procurement (AGP), along with the expected benefits of full implementation of the Uruguay Round agreements. Although many of the new areas were important, the potential benefits of further progress in these market-access areas were also substantial. For OECD members, significant benefits would follow from further trade liberalization in the rapidly growing markets of Asia. Even after the Uruguay Round, substantial tariff-induced trade distortions still covered much of the world's trade in industrial products. Empirical analysis confirmed that further reductions in trade protection would result in substantial economic welfare gains.

Governments had a limited supply of trade-negotiating capital; of necessity, therefore, there was a trade-off between the resources devoted to the two sets of issues. There was a real danger that the potential benefits from further moves towards freer trade would be put at risk if the negotiating agenda was changed too radically.

Joseph Francois, Bradley McDonald and Håkan Nordström, 'Trade Liberalization and Investment in a Multilateral Framework', CEPR Discussion Paper No. 1411, June 1996

Joseph Francois, Doug Nelson and N David Palmeter, 'Public Procurement: A Post-Uruguay Round Perspective', CEPR Discussion Paper No. 1412, June 1996

The United Kingdom and EMU

The Risks of Being an Outsider

Will EMU be a success? Will the United Kingdom join and, if so, when? What will be the costs, both to the United Kingdom itself and to the members of EMU, of the country not being in the first wave? And, if the United Kingdom were to join EMU in due course, should it adopt (or be required to adopt) an ERM-style narrow exchange-rate band for some period prior to joining? These were the questions considered by **Willem Buiter** (University of Cambridge, Bank of England and CEPR) at a CEPR lunchtime meeting hosted by Morgan Stanley Dean Witter in London on 2 July 1998.

On whether EMU would be a success, Buiter considered that it almost certainly would survive. The only threat to its continued existence would be the popular perception that the European Central Bank (ECB) lacked political legitimacy. The lack of openness, transparency and accountability written into the statutes of the ECB, and apparently about to be reinforced by the ECB's own 'common law' operating procedures, could yet undermine the viability of the whole enterprise. It was to be hoped that a culture of openness nevertheless would be established. The '17-year rule' for the publication of the Bank's minutes – as close to 'not now, not ever, never' as it could be – did not bode well, however. The ECB would have to learn that independence, far from being inconsistent with openness and accountability, cannot survive without these two awkward customers in a democratic society. The UK arrangements for central bank independence, although far from perfect, were far superior to those likely to be operated by the ECB.

CEPR/ESRC Macroeconomic Workshop

A CEPR/ESRC Macroeconomics Workshop, organized jointly with the University of York, was held in York on 20 March 1998. The workshop was organized by **Michael Wickens** (University of York and CEPR) under the auspices of the ESRC Resource Centre established at CEPR in 1993 to provide networking, dissemination, support and training services to the UK economics community.

The papers presented were as follows:

'Monetary Union and Economic Reform', **Anne Sibert** (Birkbeck College, London, and CEPR) and **Alan Sutherland** (University of York and CEPR)

'No Credit for Transition: Efficiency Wages, the Maastricht Treaty and German Unemployment', **John Driffill** (University of Southampton and CEPR) and **Marcus Miller** (University of Warwick and CEPR)

'An Analysis of the 'Stability Pact'', **Roel M J W Beetsma** (University of Maastricht and CEPR) and **Harald Uhlig** (CentER, Tilburg University, and CEPR)

'Asset Bubbles, Domino Effects and 'Lifeboats': Elements of the East Asian Crisis', **Hali J Edison** (Federal Reserve System), **Pongsak Luangaram** (University of Bristol) and **Marcus Miller** (University of Warwick and CEPR)

'Financial Crises with Application to Asia', **Richard Portes** (London Business School and CEPR)

The ECB, however, would deliver low inflation. The belief that a broad EMU meant a weak euro was always a nonsense. Especially in the short run, the ECB's policies were likely to support a strong euro. In the longer run, the fact that Euroland was as closed (as regards trade) as the United States, would encourage a policy of benign neglect of the euro's external value, not unlike the policy of the Fed and the US Treasury towards the dollar. At the same time, coordination between monetary and fiscal policy in Euroland was likely to be a problem. The German-Dutch wing of the ECB mistrusted EuroXI as an attempt to undermine the independence of the central bank. This concern was certainly not without merit, but there appeared to be little awareness within the ECB's upper echelons that independent agents can choose to coordinate and cooperate.

Buiter argued that a key issue for the continental EMU members was whether the impetus for structural reform of labour, product and financial markets – so noticeable in the run-up to EMU – would fizzle out now that the prize had been won. EMU did not create a technical economic case for a greater degree of harmonization of regulatory, tax and subsidy policies, or for a larger federal European budget. The greater market integration that would follow from the gradual implementation of the Single European Act, however, would force national policy-makers to harmonize taxation and regulation of highly mobile factors of production. To the extent that EMU was indeed the next step in the European federalist agenda, it might create

a political momentum towards a greater degree of centralization or harmonization of certain aspects of economic and social life.

Buiter was clear in his view that the United Kingdom would join EMU, and that it would do so as soon as a referendum on the issue could be won, following the next general election, and as soon as the existing EMU members were willing to let the country join. In this connection, the 'famous five' economic tests – convergence of business cycles and economic structures, flexibility, long-term inward foreign investment, the future role of the City (of London), and higher growth, stability and a lasting increase in employment – had no real operational content. When the day came, proponents of EMU would argue that all the criteria had been met; opponents would assert that the United Kingdom had flunked all five.

The costs to the United Kingdom of being outside EMU were numerous. First, there would be no UK voice in the ECB and EuroXI. Until the country became a member of EMU, it would have only second-fiddle status in the political concert of Europe. Second, there would be transaction costs. Since membership was going to ensue eventually, and the transition costs would therefore be incurred in any case, the country would lose out on the benefits of lower transaction costs for a number of years.

Third, there was likely to be some damage to London's position as an international financial centre. This was likely to be minor at first (for example, the need to keep accounts in two currencies rather than one), but could become more serious if the United Kingdom's outsider status were to be perceived as more enduring. International financial centres could be located just about anywhere: many financial transactions no longer required a physical market place. The employment created by the financial services industries, however, tended to be geographically concentrated because of conglomeration and face-to-face networking externalities. Other factors such as language, infrastructure and quality of life also played a role. These locational preferences were quite tenuous, and therefore should not be taken for granted.

Fourth, there was the threat of a gradual demonetization of sterling and the complications this would create for monetary management in the United Kingdom. Both the numeraire and invoicing function of sterling, and its means of payment (or medium of exchange) function, would be gradually eroded. Finally, there was the risk that when the UK government eventually wanted to join, the existing EMU members would not let it or, at least, would impose delays or create other inhibitions or obstacles.

Existing EMU members would also incur some costs. The adoption of an ECB model and *modus operandi* that perpetuated some of the worst continental features of central bank secrecy, lack of openness and absence of collective and individual accountability was not in the long-term interests of Euroland. With closer UK involvement at the outset, the statute law of the Treaty of Maastricht and the Treaty of Amsterdam could have been refined and improved with the assistance of a

healthy dose of British 'real-time constitutional design'. By the time the United Kingdom was brought on board, the operating practices, conventions and procedures of the ECB were likely to be much harder to change in a direction of greater openness and accountability. Thus the United Kingdom's outsider status would weaken the liberal, market-oriented coalition in the EU to the benefit of the *dirigiste* front.

Turning to the question of whether the United Kingdom would (or should) have to participate in a 'narrow-band ERM II'-type arrangement prior to joining EMU, Buiter observed that the letter of the law was ambiguous. The old membership criterion (2-year ERM participation with good behaviour prior to EMU) applied to the first-wave decision, but not necessarily to the latecomers. The United Kingdom's EMU derogation created further ambiguity. The old criterion, moreover, had been violated by Italy and Finland. If it were to be extended to the latecomers, it was unclear what the relevant ERM bands would be: 2.25% or 15%.

Lawyers could be left to discuss these constitutional niceties. From the point of view of sensible macroeconomic management in the United Kingdom, it was important that any move to reimpose a narrow-bands ERM regime should be resisted. A fixed-but-adjustable peg under free international capital mobility was an accident waiting to happen. The story of the collapse of the ERM in 1992–3 could be re-read with profit.

If an ERM II-type arrangement were adopted for the United Kingdom, the inflation target set for the Bank of England by the UK government would have to be abandoned, to be replaced by an exchange-rate target. Only if the defence of the currency peg (or narrow band) were given absolute priority over all domestic objectives could such a policy be credible. The benefit from credibility would be that a given impact on the exchange rate could be achieved with a smaller change in interest rates.

An alternative – and, in Buiter's view, a superior – strategy would be to maintain the existing inflation objective until the date that the UK government decided it wished to join EMU and the existing EMU members decided to accede to this wish. This decision would involve two key elements: a date and a rate. Once these had been decided, they would become irrevocable and credible. When a date and a rate had been set, the priority of an independently chosen UK inflation target would inevitably become compromised. The closer the accession date became (and the closer the spot rate to the accession rate), the more UK interest-rate management would be constrained by the post-accession interest-parity condition with the other EMU members. One option for a relatively painless accession would be to adopt the inflation target of the EMU members (assuming the ECB decided to have one) as soon as the date and the rate were chosen.

Willem H Buiter and Anne C Sibert, 'Transition Issues for the European Monetary Union', CEPR Discussion Paper No. 1728, November 1997

Willem H Buiter, 'Notes on 'A Code for Fiscal Stability'', CEPR Discussion Paper No. 1831, March 1998

Regional Trade Agreements

Europe's Emerging Role

At a lunchtime meeting held in Brussels **André Sapir** (Université Libre de Bruxelles and CEPR) examined the extent, as well as the causes and consequences, of regional trade agreements (RTAs) centred in or on Europe. The meeting, which was jointly organized by ECARE and CEPR and hosted by ECARE, was chaired by **Luciana Castellina** (Committee on External Economic Relations, European Parliament).

Sapir argued that, although the EU had a substantial history of regionally based trade arrangements and was actively considering a number of extensions, there was a lack of long-term vision about the consequences of regionalism which needed to be redressed with urgency. He noted that, from its inception, the EU had operated a complex, three-tier system of trade relations with third countries. The first tier included countries enjoying preferential access to the EU market. The second contained countries treated purely on a most-favoured-nation (MFN) basis. The last tier consisted of countries granted access on a less-than-MFN basis. Currently, the MFN tier consists of only six countries (Australia, Canada, Japan, New Zealand, Taiwan and the United States), and the less-than-MFN tier contains only one country (North Korea). All the other countries belong to the preferential tier.

Surprisingly, however, despite maintaining preferential trade arrangements with virtually all countries of the world, preferential trade accounted for no more than 25% of total EU trade. Sapir argued that this low share of preferential trade was attributable to two factors. The first was the high proportion of non-dutiable trade: 30% of the total value of EU imports was accounted for by products with zero MFN rates. The second explanation lay in administrative rules. All EU preferential trade arrangements were subject to three types of administrative regulation which limited their preferential value: product exclusion, origin rules and tariff quotas.

Sapir noted that EU regionalism appeared to come in waves. Until recently, new developments had involved exclusively potential EU members, including EFTA countries, Central and East European countries, and Turkey. By contrast, a new wave was now underway, involving recent or prospective agreements either with non-European countries, such as the Mediterranean countries, Mexico, South Africa and MERCOSUR, or with CIS members, such as Russia and Ukraine, which were unlikely to join the EU in the foreseeable future.

None the less, these successive waves of regionalism shared the same economic determinants, albeit to a different extent. First there was a demand in non-EU countries for such arrangements. This demand arose partly from the 'domino effects' associated with the deepening and the widening of the EU and partly from the economic reforms undertaken by the non-EU countries themselves. Second, there was a willingness on the part of the EU to supply RTAs. This stemmed partly from a desire for preferential access to third

markets and partly from a wish to promote regional stability.

In Sapir's view, the potential extension of RTAs to non-candidate countries constituted a radical departure from past EU behaviour. He questioned whether this new trend reflected some grand design, however, and submitted instead that the EU's thrust towards regionalism stood at a crossroads with three possible options. The first would involve the construction of an EU-centred free-trade area, which might comprise at some stage 20–25 nations from Eastern Europe, the Mediterranean and Africa, in addition to the 25–30 EU members. Going down this track might result in the demise of the multilateral trading system. The second option consisted of seeking global free trade by a given year, say 2010. The third would combine elements of the first two options, seeking to facilitate harmonious coexistence between regionalism and multilateralism. This would imply a substantial strengthening of GATT Article XXIV, aimed at minimizing the discriminatory aspect of RTAs.

Sapir considered that the existence of these options underlined the urgent need for the EU to reflect on the regionalism process and to formulate a long-term vision regarding its consequences. This urgency was not lessened by the failure of President Clinton to secure 'fast-track' legislation, which would have facilitated plans to create a Free Trade Area of the Americas.

André Sapir, 'The Political Economy of EC Regionalism', CEPR Discussion Paper No. 1739, November 1997

Credit Risk Research Group Workshop

CEPR's Credit Risk Research Group held a workshop in London on 15 December 1997. At the workshop, which was organized by **William Perraudin** (Birkbeck College, London, Bank of England and CEPR), the following papers were presented:

'Corporate Hedging: The Relevance of Contract Specifications and Banking Relationships', **Ian A Cooper** (London Business School) and **Antonio S Mello** (University of Wisconsin-Madison and CEPR)

'Credit Risk Modelling', **Andrew Smith** (KPMG)

'Debt Design and Incentives', **William Perraudin** (Birkbeck College, London, Bank of England and CEPR)

DISCUSSION PAPERS

European Unemployment

Labour Taxes to Blame?

To the layperson, the upward trend in European unemployment is related to the slowdown in economic growth. In Discussion Paper No. 1681, **Guido Tabellini** and **Francesco Daveri** argue that this lay view is correct. The increase in European unemployment and the slowdown in economic growth are related because they stem from a common cause: an excessively high cost of labour. In Europe, labour costs have gone up for many reasons, but one is particularly easy to identify: higher taxes on labour. If wages are set by strong and centralized trade unions, an increase in labour taxes is shifted on to higher real wages. This has two effects. First, it reduces labour demand, and thus creates unemployment. Second, as firms substitute capital for labour, the marginal product of capital falls; in turn, over long periods of time, this diminishes the incentive to accumulate and thus to grow. High unemployment is therefore associated with low growth rates. The authors' model also predicts that the effect of labour taxation differs sharply in countries with different labour-market institutions. They test these predictions on data for 14 industrial countries between 1965 and 1991, and find striking support for them. In particular, labour taxes have a strong positive effect on unemployment in Europe but not in other industrial countries. The observed rise of about 9 percentage points in labour tax rates can account for a reduction of the EU growth rate of about 0.4 percentage points per year – about one-third of the observed reduction in growth between 1965–75 and 1976–91, and a rise in unemployment of about 4 percentage points.

Unemployment, Growth and Taxation in Industrial Countries

Guido Tabellini and Francesco Daveri

Discussion Paper No. 1681, August 1997 (IM)

Auctions

Impact of Asymmetries between Bidders

In Discussion Paper No. 1682, **Paul Klemperer** uses a classroom game – the 'Wallet Game' – to show that in standard ascending (i.e. English) auctions of close-to-common-values objects, even slight asymmetries between bidders can have very large effects on prices. Examples of small asymmetries are a small value advantage for one bidder, or a small ownership of the object by one bidder. The effects of these asymmetries are greatly exacerbated by entry costs or bidding costs. Klemperer discusses applications to airwaves auctions and takeover battles, including the Glaxo-Wellcome merger.

Almost Common Value Auctions: The 'Wallet Game' and its Applications to Takeover Battles and Airwaves Auctions **Paul Klemperer**

Discussion Paper No. 1682, August 1997 (FE/IO)

Forward Markets

Explaining the Mark-Dollar Bias

In Discussion Paper No. 1683, **Nicos Christodoulakis** and **Sarantis Kalyvitis** re-examine the standard 'unbiasedness' hypothesis in foreign-exchange markets, according to which the forward premium should be an unbiased predictor of the future change of the spot exchange rate. If traders are heterogeneous, they may consist of 'fundamentalists', who correctly forecast future spot-rate changes, and 'chartists', who use a different information set and pay attention to past exchange-rate changes. In this case, the coefficient on the forward premium will deviate from its theoretical value, and will converge to one only if past spot rates are taken into account for the calculation of exchange-rate changes and forward premia. The magnitude of the deviation and the speed of convergence are found to depend both on the proportions of each type of trader in the market, and on the memory length of chartists. The analysis is used to explain the bias in the Deutsche mark/US dollar exchange rate in the early 1990s, and to estimate the proportion of traders that is found to be consistent with the deviation from the unbiasedness hypothesis.

Heterogeneous Traders and the Unbiasedness Hypothesis: Explaining the Mark-Dollar Bias **Nicos M Christodoulakis and Sarantis C Kalyvitis**

Discussion Paper No. 1683, August 1997 (IM)

Integrating the Production-Theory Approach

In Discussion Paper No. 1684, **Ulrich Kohli** integrates the production-theory approaches to import determination and to immigration. The aggregate technology is described by a four-input translog cost function, from which the demand for imports and the demand for foreign labour services can be jointly derived. Empirical estimates are reported for Switzerland. Special care is taken to describe the substitution and complementarity relationships between the four inputs under alternative hypotheses. The issue of flexibility with respect to time is also examined.

Trade and Migration: A Production-Theory Approach
Ulrich Kohli

Discussion Paper No. 1684, August 1997 (HR)

EMU

Reviewing the Rationale

In Discussion Paper No. 1685, **Charles Wyplosz** reviews the history, economic rationale and main components of the project of establishing a monetary union in Europe by 1999. The adoption of a single currency is shown to have been the best available option, following the liberalization of capital movements. Much of the institutional design – central bank independence and objectives, and fiscal restraint – reflects Germany's fears of inflation as it is asked to give up its currency. The fiscal restraints are excessive, however, and a source of contractionary bias. The paper also presents the timetable for the final countdown.

EMU: Why and How It Might Happen
Charles Wyplosz

Discussion Paper No. 1685, August 1997 (IM)

Inter-War London Poverty

Impact of Welfare System

In Discussion Paper No. 1686, **Roy Bailey** and **Timothy Hatton** re-examine poverty among working class households in inter-war London, using the newly-computerized records from the New Survey of London Life and Labour (NSLLL), a survey of living standards in London undertaken in 1929–31. First, the authors examine how the use of different poverty lines

affects the number of households found to be in poverty. They then analyse the effects of the inter-war social security system in relieving poverty. Finally, they estimate what difference it would have made to the extent and incidence of poverty if the post-Beveridge social security system had been in place during the inter-war period. Their main conclusion is that the inter-war social security system played a greater role in averting poverty than it has sometimes been given credit for, even though substantial poverty remained. The post-Beveridge social security system, had it been applied in the inter-war period, would have reduced poverty still further, but would not have eliminated it.

Poverty and the Welfare State in Inter-War London
Roy E Bailey and Timothy J Hatton

Discussion Paper No. 1686, August 1997 (HR)

Currency Speculation

Unique vs Multiple Equilibria

Although self-fulfilling currency attacks lead to multiple equilibria when fundamentals are common knowledge, when speculators face a small amount of noise on their signals about the fundamentals, the ensuing equilibrium is unique. This result is demonstrated in Discussion Paper No. 1687, in which **Stephen Morris** and **Hyun Song Shin** show that the uniqueness of the equilibrium depends not only on the fundamentals, but also on financial variables, such as the quantity of hot money in circulation and the costs of speculative trading. In contrast to multiple equilibrium models, their model allows analysis of policy proposals directed at curtailing currency attacks.

Unique Equilibrium in a Model of Self-Fulfilling Currency Attacks
Stephen Morris and Hyun Song Shin

Discussion Paper No. 1687, August 1997 (FE)

EMU

Motivating the Stability Pact

The 'Stability Pact' agreed at the Dublin Summit in December 1996, and concluded at the Amsterdam European Council in June 1997, prescribes sanctions for countries that breach the Maastricht deficit ceiling in stage three of European Economic and Monetary Union. In Discussion Paper No. 1688, **Michael Artis** and **Bernhard Winkler** explore possible motivations for the Stability Pact as an incentive device for fiscal discipline, and as a partial substitute for policy coordination and a common 'stability culture'.

EMU

Identifying the Core

In Discussion Paper No. 1689, **Michael Artis** and **Wenda Zhang** report strikingly high correlations of the cyclical components of industrial production between the participant countries in the ERM. Supplementing these correlations with criteria based on real exchange-rate volatility, trade and monetary policy conformity, the authors use cluster analysis to identify a core group of countries for which monetary union with Germany seems less controversial, and to define other groups for which monetary union might be less advisable.

On Identifying the Core of EMU: An Exploration of Some Empirical Criteria

Michael J Artis and Wenda Zhang

Discussion Paper No. 1689, August 1997 (IM)

Regional Integration

Optimal Response To Security Concerns?

Security threats have often moved neighbouring countries to form regional integration arrangements (RIAs). Examples include the European Coal and Steel Community (ECSC, 1951), the EEC (1957) and various RIAs among developing countries. In Discussion Paper No. 1690, **Maurice Schiff** and **Alan Winters** show that an RIA – together with domestic taxes – is an optimal response to security concerns among neighbouring countries. The authors show that: (1) optimum external tariffs are likely to decline over time; (2) deep integration implies lower optimum external tariffs if it is exogenous; (3) if deep integration is endogenous, optimum external tariffs will be higher pre-integration and lower thereafter; and (4) enlargement of bloc size has an ambiguous impact on external tariffs, although enlargement does raise welfare, and has some form of domino effect.

Regional Integration as Diplomacy
Maurice Schiff and L Alan Winters

Discussion Paper No. 1690, October 1997 (IT)

Corporate Growth

Exploring Differences in Firm Size

Cross-section or short-panel econometric techniques, typically used to examine Gibrat's 'law of proportionate effect', suggest that some degree of mean reversion exists, but may exaggerate the apparent randomness of corporate growth. In Discussion Paper No. 1691, **Giovanni Urga**, **Chris Walters** and **Paul Geroski** argue that a more natural way to explore the long-run distribution of firm sizes is to examine data on the growth of particular firms over long periods of time. Using a sample of 77 UK firms' real total net assets data, observed continually for more than 30 years, the authors conclude that growth rates are highly variable over time, but that differences in growth rates between firms do not persist for very long. Furthermore, firms show no tendency to converge to either a common size or a pattern of stable size differences over time. These results are compared and contrasted with standard approaches using the same data, which suggest that firms reach and maintain stable positions in a skewed size distribution.

Are Differences in Firm Size Transitory or Permanent?

Giovanni Urga, Chris F Walters and Paul A Geroski

Discussion Paper No. 1691, October 1997 (IO)

Pegged Exchange Rates

Explaining the Structural Consequences

There is a well-known set of empirical regularities that describes the experience of countries that peg their exchange rate as part of a macroeconomic adjustment programme. Following-the-peg economies tend to experience an increase in GDP, a large expansion of production in the non-tradable sector, a contraction in tradables production, a current-account deterioration, an increase in the real wage, a reduction in unemployment, a sharp appreciation in the relative price of non-tradables and a boom in the real-estate market. In Discussion Paper No. 1692, **Sergio Rebelo** discusses how the changes in the expected behaviour of fiscal policy that tend to be associated with the peg can contribute to explaining these facts.

What Happens When Countries Peg Their Exchange Rates? (The Real Side of Monetary Reforms)
Sergio Rebelo

Discussion Paper No. 1692, August 1997 (IM)

Achieving Consistency with Structural-Change Dynamics

One of the most striking regularities of the growth process is the massive reallocation of labour from agriculture into industry and services. Balanced growth models are commonly used in macroeconomics because they are consistent with the well-known Kaldor facts about economic growth. Unfortunately, these models are inconsistent with the structural change dynamics that are a central feature of economic development. In Discussion Paper No. 1693, **Piyabha Kongsamut**, **Sergio Rebelo** and **Danyang Xie** discuss models with generalized balanced growth paths. These paths retain some of the key features of balanced growth, but are consistent with the observed dynamics of labour reallocations. The conventional explanation for the observed patterns of structural change is that the rate of technical progress has been higher in agriculture than in services. The authors show that this pattern of technical progress is neither necessary nor sufficient to account for the observed dynamics of structural change. The key to producing these reallocation dynamics is differences in the income elasticity of the demand for the goods produced by the different sectors.

Beyond Balanced Growth
Piyabha Kongsamut, Sergio Rebelo and Danyang Xie

Discussion Paper No. 1693, August 1997 (IM)

Industrial Organization

Defining Markets

Market definitions are an abstraction: they are useful only to the extent that they help people to organize the way they think about certain types of economic activity. In Discussion Paper No. 1694, **Paul Geroski** critically examines three different methods of identifying market boundaries, stressing the link between substantive content and the needs of the user of the definition. Most traditional definitions have focused on identifying trading markets (defined by the 'law of one price') or anti-trust markets (identified by reference to the ability of a group of firms artificially to elevate prices). A third market concept – that of the strategic market – focuses more directly on the needs of corporate users.

Thinking Creatively About Markets
Paul A Geroski

Discussion Paper No. 1694, October 1997 (IO)

German Trends

In Discussion Paper No. 1695, **Tim Jenkinson** and **Alexander Ljungqvist** use clinical evidence to show how the German system of corporate control and governance is both more active and more hostile than has previously been suggested. The authors provide a complete breakdown of ownership and takeover defence patterns in German listed companies, and find highly fragmented (but not dispersed) ownership in non-majority controlled firms. They document how the accumulation of hostile stakes can be used to gain control of target companies, given these ownership patterns. The paper also suggests an important role for banks in helping predators accumulate, and avoid the disclosure of, large stakes.

Hostile Stakes and the Role of Banks in German Corporate Governance
Tim Jenkinson and Alexander Ljungqvist

Discussion Paper No. 1695, October 1997 (FE)

Credit-Rationed Firms

The Role of Innovation

Informational frictions between borrowers and lenders differ across classes of borrowers. Innovative firms undertake high-risk, high-return projects which are likely to be little understood by financial intermediaries. Consequently, they may end up allocating too large a share of funds to traditional, low-risk, low-return projects. In Discussion Paper No. 1696, **Luigi Guiso** finds some support for this proposition in a cross-section of Italian manufacturing firms. Using several proxies to classify firms into high-tech and low-tech groups, and direct information on each firm's access to bank credit, Guiso finds that high-tech firms are more likely to be credit-constrained than low-tech firms. The results suggest that the responsiveness of R&D expenditure to cash flow, as found in the literature, is likely to be owing to pervasive credit constraints on innovative firms, rather than to cash flow acting as a proxy for future expectations. The paper also sheds light on the main factors affecting the probability of a firm being rationed in the credit market.

High-Tech Firms and Credit Rationing
Luigi Guiso

Discussion Paper No. 1696, October 1997 (IM)

Investigating Cost Functions

In Discussion Paper No. 1697, **Fabio Schiantarelli**, **Marzio Galeotti**, **Brian Sack** and **Luigi Guiso** present estimates of inventory models based on firm-level panel data, and investigate whether an over-simplified specification of the production technology may account for the failure to find that technological incentives smooth production in the context of the standard linear-quadratic model of inventory behaviour. In particular, the authors argue that if the role of quasi-fixed factors is not modelled properly, this may lead to inconsistent estimates of marginal costs and, therefore, to erroneous conclusions about the convexity/concavity of the cost function. Accordingly, they extend the model to allow for a general restricted quadratic cost function, on the assumption that capital is costly to adjust. The evidence obtained by estimating the standard inventory model on a panel of Italian manufacturing firms suggests that marginal costs are decreasing. This result is overturned, however, when allowance is made for the general quadratic cost function with capital as a quasi-fixed input. The implication is that the firm's technology provides incentives to smooth production. The conclusion that the cost function is convex in output is robust in that it holds also when allowance is made for adjustment costs for both capital and labour.

Inventories, Production Smoothing and the Shape of the Cost Function

Fabio Schiantarelli, Marzio Galeotti, Brian Sack and Luigi Guiso

Discussion Paper No. 1697, October 1997 (IM)

Greenhouse Gases

Designing Effective Reduction Policies

International negotiations for an agreement to reduce the emission of greenhouse gases are unlikely to produce concrete and comprehensive policies for effective emission reductions in the near term. This is not least because the policy measures being considered are economically very costly to major industries in rich countries, and are unlikely to prevent 'leakage' through a relocation of carbon-intensive activities to poorer countries. An alternative or supplementary approach, which is more likely to achieve carbon and methane emission reductions and, at the same time, generate national and global economic benefits rather than costs, involves lowering coal subsidies and trade barriers. Past coal policies – which encouraged excessive production of coal in a number of industrial countries and excessive coal consumption in numerous developing and transition economies – are currently under review. In some cases, they are being reformed.

In Discussion Paper No. 1698, **Kym Anderson** and **Warwick McKibbin** document the distortions, and outline the circumstances under which their reform could not only improve the economy, but also lower greenhouse gas emissions globally. The paper also provides modelling results which quantify the orders of magnitude that could be involved in reducing the distortions. The effects on economic activity, as well as on global carbon emissions, are examined using the G-Cubed multi-country general equilibrium model of the world economy. Both the gains in economic efficiency, and the reductions in carbon dioxide emissions, that could result from such reforms are found to be substantial – a 'no-regrets' outcome, or a win-win Pareto improvement for the economy and the environment, that contrasts markedly with many of the costly proposals currently being advocated to reduce greenhouse gases.

Reducing Coal Subsidies and Trade Barriers: Their Contribution to Greenhouse Gas Abatement **Kym Anderson and Warwick McKibbin**

Discussion Paper No. 1698, October 1997 (IT)

New Economic Geography

Globalization and Agglomeration

In Discussion Paper No. 1699, **Gianmarco Ottaviano** and **Diego Puga** review recent contributions about the effects of global integration on industrial location. Several common conclusions are revealed. First, where trade costs are high, the need to supply markets locally encourages firms to spread across different regions. Second, integration weakens the incentives for self-sufficiency and, for intermediate values of trade costs, pecuniary externalities induce firms and workers to cluster together, thus turning location into a self-reinforcing process. Third, agglomeration raises the price of immobile local factors and goods, so for low transport costs, firms may spread to regions where those prices are lower.

Agglomeration in the Global Economy: A Survey of the 'New Economic Geography' **Gianmarco I P Ottaviano and Diego Puga**

Discussion Paper No. 1699, October 1997 (IT)

Tariffs and Growth

Positively Correlated in the Nineteenth Century

In Discussion Paper No. 1700, **Kevin O'Rourke** estimates the correlation between tariffs and economic growth in the late nineteenth century, in the context of three types of growth equations: unconditional convergence equations; conditional convergence equations; and factor accumulation models. The estimates are made for a panel of ten countries between 1875 and 1914. Tariffs are found to have been positively correlated with growth in these countries during this period.

Tariffs and Growth in the Late Nineteenth Century
Kevin H O'Rourke

Discussion Paper No. 1700, October 1997 (HR/IT)

Sovereign Debt

Designing Debt-Relief Deals

In Discussion Paper No. 1701, **Aydin Hayri** develops a model for pricing sovereign debt under continuous time uncertainty, allowing creditors to carry out debt reductions. Focusing on sovereign borrowers' willingness to pay, rather than on their ability to pay, Hayri models debt reductions as a non-cooperative game. The formulae derived from the model successfully predict the outcomes of the Brady debt-relief deals. The model also predicts that the sovereign debtor will get a positive share of the surplus generated by the debt reductions, and that the country will be on the 'wrong' side of its debt Laffer curve well before the debt reduction takes place.

Debt Relief
Aydin Hayri

Discussion Paper No. 1701, October 1997 (IM)

US Unemployment

Business Cycles and Compositional Variation

Several features of US unemployment dynamics have been investigated empirically in recent decades. The original focus of research was on the duration of unemployment. In later studies, the cyclicity of incidence and duration, the compositional effects and the duration-dependence of the exit rate out of unemployment have been investigated. These

previous studies all embodied a partial approach. In contrast, in Discussion Paper No. 1702, **Jaap Klemperer, Gerard van den Berg** and **Jan van Ours** take all elements of unemployment dynamics simultaneously into account. The authors find that cyclical fluctuations in unemployment are driven by variations in the incidence, individual exit probabilities and the composition of the inflow into unemployment. They also find negative duration-dependence of the unemployment exit rate, which can be attributed to employers ranking workers according to the length of their unemployment spell.

Business Cycles and Compositional Variation in US Unemployment

Jaap H Klemperer, Gerard J van den Berg and Jan C van Ours

Discussion Paper No. 1702, October 1997 (HR)

Korean Trade Flows

Assessing Determinants and Trends

In Discussion Paper No. 1703, **Lorenzo Giorgianni** and **David Milesi-Ferretti** investigate the behaviour of Korean trade flows during the last three decades, and present estimates of aggregate export and import equations. In particular, the authors consider different choices for scale and price variables, and assess the relative merits of these alternative specifications in terms of stability and forecasting performance. They also provide an assessment of the dramatic change in the geographical destination of Korean exports during the 1990s.

Determinants of Korean Trade Flows and their Geographical Destination

Lorenzo Giorgianni and David Milesi-Ferretti

Discussion Paper No. 1703, October 1997 (IM)

EMU

Dealing with Fringe Hangers-On

Like all major currencies, the euro will attract a fringe of hangers-on. Though this need not influence overall policy with regard to the value of the euro, important policy questions arise. Can EMU members gain from cooperative arrangements for influencing or supporting fringe currencies? If so, what kinds of arrangements can be envisaged? Discussion Paper No. 1704, by **Patrick Honohan**, offers a preliminary examination of these issues. It identifies potential scope for mutual gains from cooperative arrangements, and discusses the particular countries that might be candidates. The design of such

arrangements is also considered, especially including alternatives to the ERM-type of arrangement.

Miniblocs and Fringe Currencies of the EMU
Patrick Honohan

Discussion Paper No. 1704, October 1997 (IM)

Trade in Services

Whither Protectionism?

In Discussion Paper No. 1705, **Bernard Hoekman** and **Carlos Primo Braga** survey the literature on trade in services, focusing on the policies that are used to restrict such trade, the gains from liberalization, and the institutional mechanisms that have been adopted in the pursuit of liberalization. The authors argue that technological progress and international trade negotiations are likely to keep liberalization of trade in services a high-profile policy issue. They also suggest that the research agenda should focus on developing better estimates of the welfare costs of protectionism in the service sector. This will require the quantification of barriers to the international exchange of services.

Protection and Trade in Services: A Survey
Bernard Hoekman and Carlos A Primo Braga

Discussion Paper No. 1705, October 1997 (IT)

Wages and Bargaining Regimes

Dutch Evidence

In a corporatist country like the Netherlands, wages should not be distinguished by union membership status, but by bargaining regime. Acknowledging just the firms' bargaining regime, only small differences are found to exist between four regimes, with no distinction between 'covered' and 'uncovered' firms. These results are reported in Discussion Paper No. 1706. The authors, **Joop Hartog**, **Edwin Leuven** and **Coen Teulings**, distinguish – within covered firms – between workers covered and uncovered by collective bargaining. They also include a model with partially unobserved sector selection. They find somewhat larger bargaining-regime effects, and sometimes substantial coverage effects. Estimation of the latter, however, is seriously affected by unobserved heterogeneity.

Wages and the Bargaining Regime in a Corporatist Setting: The Netherlands
Joop Hartog, Edwin Leuven and Coen Teulings

Discussion Paper No. 1706, October 1997 (HR)

Wage Inequality

The Role of Directed Technical Change

In Discussion Paper No. 1707, **Daron Acemoglu** considers an economy where skilled and unskilled workers use different technologies. The rate of improvement of each technology is determined by a profit-maximizing R&D sector. When there is a high proportion of skilled workers in the labour-force, the market for skill-complementary technologies is larger, and more effort will be spent on upgrading the productivity of skilled workers. An implication of this theory is that, when the relative supply of skilled workers increases exogenously, the skill premium decreases in the short run. Subsequently, however, it increases, possibly even above its initial value, because the larger market for skill-complementary technologies alters the direction of technical change. This suggests that the rapid increase in the proportion of college graduates in the US labour-force may have been a causal factor, both in the decline in the college premium during the 1970s, and in the large increase in inequality during the 1980s. The paper also derives the implications of directed technical change for residual wage inequality, and shows that calculations of the impact of international trade on inequality that ignore the change in the direction of technical progress may be misleading.

Why Do New Technologies Complement Skills? Directed Technical Change and Wage Inequality
Daron Acemoglu

Discussion Paper No. 1707, October 1997 (IM)

Labour Markets

Regulation and Corporate Structure

In Discussion Paper No. 1708, **Daron Acemoglu** and **Andrew Newman** analyse the impact of labour demand and labour-market regulations on the corporate structure of firms. The paper finds that higher wages are associated with lower monitoring, irrespective of whether these high wages are caused by labour-market regulations, unions or higher labour demand. These comparative static results are in line with the broad trends in the data. The paper also finds that the organization of firms has important macroeconomic implications. In particular, monitoring is a type of 'rent-seeking' activity, and the decentralized equilibrium spends excessive resources on monitoring. Labour-market regulations that reduce monitoring by pushing wages up may increase net output, or reduce it by only a small amount, even though they reduce employment.

The Labour Market and Corporate Structure
Daron Acemoglu and Andrew F Newman

Discussion Paper No. 1708, October 1997 (IM)

Regional Differences in Italy

In Discussion Paper No. 1709, **Andrea Ichino** and **Pietro Ichino** document the existence of striking regional differences in the reported behaviour of employees working within the same firm, but in different Italian regions. In particular, the frequency of recorded and punished misconduct episodes is significantly higher among employees working in the south. Furthermore, migrants moving from the north to the south assimilate completely to the higher rate of misconduct in the receiving region, while migrants moving from the south to the north assimilate only partially to the lower local misconduct rate.

In principle, these differences can be attributed either to discrimination or to individual effort. The absence of any evidence of regional discrimination in the process by which misconduct episodes are signalled and brought to the attention of the personnel office, and in terms of careers and earnings, suggests that the second explanation is more likely to be true. This conclusion is also supported by the evidence on absenteeism, which replicates the findings on misconduct. The main contribution of this paper is to measure, in a novel way, regional productivity differentials due to individual effort; it does not, however, explore the ultimate causes of these differentials (e.g. individual characteristics or multiple equilibria).

Culture, Discrimination and Individual Productivity: Regional Evidence from Personnel Data in a Large Italian Firm
Andrea Ichino and Pietro Ichino

Discussion Paper No. 1709, October 1997 (HR/IM)

Sources of Growth

Entrepreneurial vs Managed Economies

In Discussion Paper No. 1710, **Roy Thurik** and **David Audretsch** suggest that in Europe, along with the other OECD countries, a fundamental shift is taking place from the managed economy to the entrepreneurial economy. Although politicians and policy-makers have made a plea for guidance in the era of entrepreneurship, scholars have been slow to respond. The authors attempt a first step towards identifying and articulating the differences by comparing the most fundamental elements of the two types of economies. They identify 15 trade-offs confronting these two polar worlds, all of them involving an increased role for new and small enterprises in the entrepreneurial economy. Particular emphasis is placed on the changes in economic policy demanded by the entrepreneurial economy. The authors also explore whether restructuring towards the entrepreneurial economy has been conducive to

economic growth and job creation. Their empirical analysis links the stage of transition to recent growth rates of European countries. They find that those countries that have introduced a greater element of entrepreneurship have been rewarded with additional growth.

Sources of Growth: the Entrepreneurial versus the Managed Economy
A Roy Thurik and David B Audretsch

Discussion Paper No. 1710, October 1997 (IO)

Job Tenure

Disaggregating the Determinants

Debate continues about whether the wide-scale adoption of new technologies, and the increasing intensity of competition through globalization of product markets, have led to significant changes in job-tenure distributions. In previous work, **Hedley Rees** and **Simon Burgess** showed that this was not the case at the level of the economy as a whole: there was a slight fall for men, but no change for women. In Discussion Paper No. 1711, Rees and Burgess extend that work by using individual data to investigate changes in the determinants of job tenure. They look first at the age-tenure profile for different birth cohorts of workers, ranging from those born before 1925 to those born in the 1960s. Little change is apparent in this profile for men; for women, a noticeable feature is the increasing likelihood of holding a long-term job in the 25–35 age range.

The authors then estimate probability models for two different cuts of the tenure distribution on the 200,000 observations in their dataset. They find that, controlling for a set of age, demographic, educational, industrial and occupational characteristics, the proportion of workers in short jobs and longer jobs has about the same path as in the aggregate (unconditional) analysis. Further, allowing for the effect of all these characteristics to vary with time does not uncover any evidence of deterioration for particular groups.

A Disaggregate Analysis of the Evolution of Job Tenure in Britain, 1975–93
Hedley Rees and Simon Burgess

Discussion Paper No. 1711, October 1997 (HR)

The Role of Labour-Market Regulation

Given a general belief that jobs last longer in tightly regulated labour markets, the presumption would be that jobs last longer in Italy than they do in the United Kingdom. In Discussion Paper No. 1712, **Simon Burgess, Lia Pacelli** and **Hedley Rees** use two large micro datasets to address this issue. Surprisingly, they find that a higher proportion of male workers in the United Kingdom than in Italy are in jobs that have lasted at least five years. The authors find the opposite result for women, but consider there are reasons for treating this with some scepticism. The conclusions suggest a complex relationship between labour-market institutions and the reallocation of labour.

Job Tenure and Labour-Market Regulation: A Comparison of Britain and Italy using Micro Data
Simon Burgess, Lia Pacelli and Hedley Rees

Discussion Paper No. 1712, October 1997 (HR)

Labour Reallocations

Impact of the Lifecycle of Firms

In Discussion Paper No. 1713, **Simon Burgess, Julia Lane** and **David Stevens** use a unique panel dataset of firms and workers to investigate the relationship between the firm's lifecycle and the reallocation of labour. The authors distinguish labour reallocation which is associated with job reallocation from reallocation of workers over a fixed configuration of jobs. They find that firms at the beginning and the end of their lifecycles contribute disproportionately to labour-market flow. Sorting between firms is particularly important among young firms, whereas sorting within firms is more important among mature firms. High churning flows are found to be associated with a lower probability of a young firm surviving.

The Reallocation of Labour and the Lifecycle of Firms
Simon Burgess, Julia Lane and David Stevens

Discussion Paper No. 1713, October 1997 (HR)

The Role of Labour Reallocation

The 'fractal' nature of the rise in earnings dispersion is one of its key features and remains a puzzle. In Discussion Paper No. 1714, **Simon Burgess, Julia Lane** and **David Stevens** offer a new perspective on the causes of changes in earnings dispersion, focusing on the role of labour reallocation. By dropping the assumption that a given worker is paid the same by all firms, the allocation of workers to firms is seen to matter for the dispersion of earnings. This perspective highlights two new factors that can affect the earnings dispersion: rates of job and worker reallocation; and the nature of the process allocating workers to jobs. The authors set out a framework capturing this idea, and they quantify the impact of reallocation on earnings dispersion, using a dataset which comprises almost the universe of workers and the universe of employers in Maryland. They show that these factors have potentially large effects in general on earnings dispersion. In 1985–94, the changing allocation of workers to jobs in Maryland played a significant role in explaining movements in the dispersion of earnings.

Jobs, Workers and Changes in Earnings Dispersion
Simon Burgess, Julia Lane and David Stevens

Discussion Paper No. 1714, October 1997 (HR)

Household Formation

Economic Factors in Marriage and Divorce Decisions

In Discussion Paper No. 1715, **Simon Burgess, Carol Propper** and **Arnstein Aassve** investigate the importance of economic factors in young Americans' decisions to form and dissolve households. The authors adopt a search-theoretic framework to analyse the decisions to leave the parental home, and to form or dissolve a marriage or partnership, focusing on the impact of economic factors. Using a 14-year panel dataset of young Americans (the NLSY), they find an important role for income in all these transitions. High income in the individual's present state reduces the chance of changing state, whereas high expected income in the destination state makes a move more likely.

'I Vont To Be Alone': Transitions to Independent Living, Marriage and Divorce Among Young Americans
Simon Burgess, Carol Propper and Arnstein Aassve

Discussion Paper No. 1715, October 1997 (HR)

Investigating Stationarity

The results of Discussion Paper No. 1716 complement the recent findings of real exchange rates as stationary processes. The authors, **Biing-Shen Kuo** and **Anne Mikkola** argue that the standard procedure of applying a battery of unit root tests can be problematic, since the tests are sensitive to the specifics of the time-series process. They apply a novel approach by emphasizing the information content of the data in distinguishing between the competing processes. They fit stationary and non-stationary ARIMA processes to the US/UK real exchange-rate series covering 134 years. Artificial data following these two processes are generated, and the small-sample distributions of the chosen test statistics (including the most powerful point optimal tests with both the unit root and the stationarity as a null) are computed under each of the two hypotheses. The values of the actual sample statistics are shown to be more likely to come from the stationary process than from the non-stationary one.

The Behaviour of the Real Exchange Rate: A Re-examination Using Finite Sample Approach
Biing-Shen Kuo and Anne Mikkola

Discussion Paper No. 1716, October 1997 (IM)

Investigating Quote Dynamics

In Discussion Paper No. 1717, **Thierry Foucault** and **Tito Cordella** analyse the impact of a minimum-price variation (tick) and time priority on the quote dynamics and on trading costs when competition for the order flow is dynamic. The authors find that convergence to competitive prices can take time, and that the speed of convergence is influenced by the tick size, the priority rule and the characteristics of the order arrival process. They also show that a zero minimum-price variation is never optimal when competition for the order flow is dynamic. The paper compares the trading outcomes with and without time priority. It shows that, for reasonable parameterizations, time priority reduces trading costs because it prevents equilibria in which uncompetitive spreads can be sustained. Finally, the paper relates (1) the trading costs to the speed with which liquidity suppliers react to their competitors' offers, and (2) the dynamics of the best price in the market to the state of the book.

Minimum Price Variations, Time Priority and Quote Dynamics
Thierry Foucault and Tito Cordella

Discussion Paper No. 1717, October 1997 (FE)

Post-Entry Performance in the Services Sector

A large literature has emerged on the post-entry performance of firms and, in particular, on the links between firm growth, survival, size and age. Although the findings are sufficiently consistent to constitute stylized facts, virtually all the studies have been based on manufacturing. In Discussion Paper No. 1718, **David Audretsch**, **Luuk Klomp** and **A Roy Thurik** seek to fill the gap in knowledge about the role of non-manufacturing in industrial organization and what happens to firms' performance subsequent to entering an industry. The authors suggest theoretical reasons why the relationships between firm age and size on the one hand, and survival and growth on the other, may not, in fact, be the same for services as for manufacturing. They use a longitudinal database for Dutch firms in the retail and hotel and catering sectors to identify new-firm start-ups and incumbents and to track them over subsequent years. They test to see whether the stylized results identified for manufacturing also hold for services. The results suggest that the most fundamental relationships are strikingly different for services and, hence, that the dynamics of industrial organization in services may not simply mirror those in manufacturing.

Do Services Differ From Manufacturing? The Post-Entry Performance of Firms in Dutch Services
David B Audretsch, Luuk Klomp and A Roy Thurik

Discussion Paper No. 1718, November 1997 (IO)

Underinvestment and Capital-Market Imperfections

Producing high technology output and supplying sophisticated services often involves costly investment in industry-specific skills. But the threat of poaching means that it is the individual 'stakeholder', not the firm, who must bear the cost. In Discussion Paper No. 1719, **Marcus Miller**, **Roberto Ippolito** and **Lei Zhang** investigate various mechanisms for funding human capital investment in an industry equilibrium framework where capital-market imperfections would (in the absence of intervention) result in underinvestment. The main result is that government provision of loan guarantees (conditional on no-bankruptcy) leads to wage hikes which (by forcing the exit of some firms and thus increasing monopoly power) raise profits in a socially inefficient manner. Income-contingent loans and levy subsidy schemes, however, can lead to a socially efficient outcome.

Shareholders and Stakeholders: Human Capital and Industry Equilibrium

Marcus H Miller, Roberto Ippolito and Lei Zhang

Discussion Paper No. 1719, November 1997 (HR)

Monetary Union

Entry Conditions and Economic Reform

In Discussion Paper No. 1720, **Gulcin Ozkan, Anne Sibert and Alan Sutherland** model the behaviour of a potential entrant into a monetary union where there is an inflation entry condition. In addition to making a monetary-policy decision during a qualifying period, the potential entrant must make a decision about structural reform. The paper shows that the entry condition can have two undesirable effects. First, it can lead to multiple equilibria, because inflationary expectations acquire a self-fulfilling property. Second, the entry condition can lead to a reduction in the amount of reform. This is because the entry condition reduces inflationary expectations and thus reduces the incentive to reform.

Monetary Union, Entry Conditions and Economic Reform

F Gulcin Ozkan, Anne Sibert and Alan Sutherland

Discussion Paper No. 1720, November 1997 (IM)

EU-East Europe Trade

Determinants of Intra-Industry Trade

The share of intra-industry trade (IIT) in total trade between Central and East European nations and the EU is among the highest of all the EU's bilateral trade flows. In Discussion Paper No. 1721, **Chonira Aturupane, Bernard Hoekman and Simeon Djankov** break this aspect of IIT down into its horizontal and vertical components and investigate the determinants of each component. Vertical IIT (exchange of similar goods of different quality) is found to account for 80–90% of total IIT, and is positively associated with product differentiation, labour intensity of production, economies of scale and foreign direct investment (FDI). Controlling for country effects, a statistically significant positive association is found between horizontal IIT (the exchange of close substitutes of similar quality) and FDI, product differentiation and industry concentration; a significant negative relationship is found for scale and labour intensity. These results do not hold if country effects are not controlled for, suggesting that country-specific factors are key determinants of horizontal IIT. The estimation results are more robust than those in previous studies, reflecting the specific characteristics of

the endowments of, and ongoing restructuring processes in, transition economies.

Determinants of Intra-Industry Trade between East and West Europe

Chonira Aturupane, Bernard Hoekman and Simeon Djankov

Discussion Paper No. 1721, October 1997 (IT/TE)

Arbitration

Adversarial or Inquisitorial?

Should arbitrators adjudicate on the basis of their own investigations, or invite the interested parties to make their cases and decide on the basis of the information so gathered? In Discussion Paper No. 1722, **Hyun Song Shin** calls the former arbitration procedure 'inquisitorial' and the latter 'adversarial'. The author conducts a welfare comparison of the two procedures by constructing a game-theoretic model of decision-making by an arbitrator in the face of self-interested reporting strategies by the interested parties. Even if it is assumed that the arbitrator is, on average, as well-informed as the two opposing parties, the adversarial procedure is strictly superior. The source of this superiority lies in a non-convexity in the adversarial procedure. There are increasing marginal returns to improvements in the information of an interested party. There are no analogous increasing returns to the arbitrator's information under the inquisitorial procedure.

Adversarial and Inquisitorial Procedures in Arbitration

Hyun Song Shin

Discussion Paper No. 1722, October 1997 (IO)

Competition Policy

Bulgarian Practice

In Discussion Paper No. 1723, **Bernard Hoekman and Simeon Djankov** investigate the activities of the Bulgarian competition office, the Commission for the Protection of Competition, during 1991–5. Descriptive statistics are provided on the industry incidence of investigations, the types of behaviour that were investigated, and the frequency with which violations were found and penalties imposed. Although the Commission has attempted to concentrate its efforts in non-tradable sectors, and to target both cartel and abuse-of-dominance cases, the remedies that are imposed appear rather ineffective. Moreover, instead of hard-core anti-competitive behaviour, much of the Commission's activities have centred on 'unfair' competition (e.g. false advertising, trademark infringement and the behaviour of ex-employees of

specific enterprises). Recently proposed amendments to the law should go some way towards allowing the Commission to focus more narrowly on anti-competitive practices and to strengthen the deterrent effect of the law.

Competition Law in Post-Central Planning Bulgaria
Bernard Hoekman and Simeon Djankov

Discussion Paper No. 1723, October 1997 (TE)

Collective Bargaining

Unemployment and the 'Labour-Management Conspiracy'

How does unemployment affect the tendency towards 'labour-management conspiracies' in collective bargaining? In Discussion Paper No. 1724, **Larry Karp** and **Thierry Paul** begin with the assumption that management and a union bargain sequentially, first choosing a contract which will later determine the level of employment, and then choosing a wage. Thereafter, the government chooses an output subsidy, following which the industry chooses employment according to the contract. The presence of a natural turnover rate in the unionized sector creates unemployment whenever the union wage exceeds the competitive wage. Government intervention can both increase the equilibrium amount of unemployment and worsen the intersectoral allocation of labour. Intervention can also reverse the relation between the equilibrium amount of unemployment and the flexibility of the labour market. Government intervention is especially damaging when labour markets are inflexible. Unemployment weakens, but does not eliminate, the possibility of a 'labour-management conspiracy'.

Unemployment and the 'Labour-Management Conspiracy'

Larry S Karp and Thierry Paul

Discussion Paper No. 1724, October 1997 (HR)

Credit Markets

Welfare Implications of Market Power

In Discussion Paper No. 1725, **Ramon Caminal** and **Carmen Matutes** study the welfare implications of market power in a model where banks choose between credit rationing and monitoring in order to alleviate an underlying moral-hazard problem. The authors show that the impact of banks' market power on social welfare is the result of two countervailing effects. On the one hand, higher market power increases

lending rates, worsens the borrower's incentive problem and reduces investment further below the efficient level. On the other hand, higher market power induces banks to exert higher monitoring effort and reduces the frequency of credit rationing. Whenever the second effect dominates, it is socially optimal to provide banks with some degree of market power.

Can Competition in the Credit Market be Excessive?
Ramon Caminal and Carmen Matutes

Discussion Paper No. 1725, October 1997 (FE)

Polish Transition

Large Firms' Reactions to Reform

In Discussion Paper No. 1726, **Irena Grosfeld** and **Jean-Francois Nivet** look at the behaviour of large industrial firms in Poland in 1988–94. Using a longitudinal enterprise-level data set, they are able to test systematically various hypotheses concerning firms' reactions to the change in their environment. The results confirm a structural break after the introduction of the package of reforms in 1990. Labour-market conditions and product-market competition exert important downward pressure on wages. After 1993, however, this initially strong response is weakened. Comparison of wage-setting behaviour across different types of firms confirms important differences in wage negotiation. In state-owned enterprises insiders capture an important part of productivity increases, whereas in privatized firms there is no positive relationship between firms' ability to pay and wage increases. Privatization appears important for the strategic dimension of enterprise restructuring. Privatized firms invest more and have greater capacity to ensure higher output growth.

Wage and Investment Behaviour in Transition: Evidence from a Polish Panel Data Set
Irena Grosfeld and Jean-Francois Nivet

Discussion Paper No. 1726, October 1997 (TE)

Credit Constraints

Impact on Consumption

If some consumers are liquidity-constrained, aggregate consumption should be 'excessively sensitive' to credit conditions as well as to income. Moreover, the 'excess sensitivity' may vary over time. In Discussion Paper No. 1727, **Philippe Bacchetta** and **Stefan Gerlach** analyse data for Canada, France, Japan, the United Kingdom and the United States, and find that credit aggregates have a substantial impact on consumption in all the countries considered. Moreover, the borrowing/lending wedge is a significant determinant of consumption in Canada, Japan and the United

States. Using extended Kalman filtering techniques, the authors show that excess sensitivity varies over time, with a clear tendency to decline in the United States.

Consumption and Credit Constraints: International Evidence

Philippe Bacchetta and Stefan Gerlach

Discussion Paper No. 1727, November 1997 (IM)

EMU

Transition Issues

In Discussion Paper No. 1728, **Willem Buiter** and **Anne Sibert** argue that the start of Stage Three of EMU on 1 January 1999 would still leave transition issues remaining on two timescales. Until 1 July 2002, national currencies and the euro will coexist as legal tender. The authors argue that intra-EMU currency risk exists in principle during that period, but that no EMU member can be forced out through speculative attacks. Cohabitation of Ins and Outs has an open-ended time scale. Buiter and Sibert discuss the effect of EMU on incentives for both Ins and Outs to undertake structural reform, and the coordination problems associated with the distribution of seigniorage revenue and the Stability and Growth Pact.

Transition Issues for the European Monetary Union
Willem H Buiter and Anne Sibert

Discussion Paper No. 1728, November 1997 (IM)

Entry Decisions

Explaining 'Mistakes'

Aspiring entrants frequently have only limited information about their potential rivals' entry decisions. As a result, the outcome of the entry game may be that more firms enter than the market can sustain; or, at least, that unnecessary entry investments are made. In Discussion Paper No. 1729, **Luis Cabral** refers to these outcomes as 'entry mistakes'. The author considers two models of non-coordinated entry. In these models, entry mistakes occur because of lags in observing rivals' entry decisions (grab-the-dollar entry) or because entry investments take time (war-of-attrition entry). The wide-body aircraft industry in the late 1960s is presented as supporting evidence for the models' assumptions. Cabral also discusses the welfare implications of non-coordinated free entry. Both models predict that entry incentives are excessive when duopoly profits are high, and insufficient when profits are low. If entry costs are high, however, entry incentives are excessive under war-of-attrition entry but insufficient under grab-the-dollar entry.

Entry Mistakes
Luis M B Cabral

Discussion Paper No. 1729, November 1997 (IO)

PPP

Confirmed by Floating Rates?

Tests for long-run purchasing power parity (PPP) may lack power with sample periods corresponding to the span of the recent float, thus leading researchers to use more powerful multivariate unit root tests. In Discussion Paper No. 1730, **Mark Taylor** and **Lucio Sarno** point out a potential problem with such tests: joint non-stationarity of real exchange rates may be rejected when only one of them is stationary. The authors suggest another test where the null hypothesis is violated only when all of the processes are stationary. This test is easily constructed and has a known limiting distribution. They investigate the finite-sample empirical performance of both tests using Monte Carlo techniques. Applying the tests to four major real exchange rates over the recent floating rate period, they find strong evidence of long-run PPP.

The Behaviour of Real Exchange Rates During the Post-Bretton Woods Period
Mark P Taylor and Lucio Sarno

Discussion Paper No. 1730, November 1997 (IM)

Structural Reforms

Monetary Regimes and Labour-Market Reform

Policy-makers' incentives to undertake costly reform depends on the international monetary system. In Discussion Paper No. 1731, **Anne Sibert** and **Alan Sutherland** consider the effect of monetary regimes on labour-market reform. They find international negotiation of monetary policy produces less reform than non-cooperation. Reform is lowest of all with monetary union. Because integration lowers reform, inflation is higher under monetary union than with national currencies. Inflation may be higher or lower with negotiation than with no coordination. Despite the negative impact on reform, negotiation produces higher welfare than non-coordination. Monetary union can produce higher or lower welfare than either negotiation or lack of coordination.

Monetary Regimes and Labour-Market Reform
Anne Sibert and Alan Sutherland

Discussion Paper No. 1731, November 1997 (IM)

Launching the Euro

In Discussion Paper No. 1732, **Maurice Obstfeld** analyses the constraints placed by EU law on the 1 January 1999 choices of irrevocably fixed conversion rates between the euro and the currencies of EMU member states. EU legislation, notably the Maastricht Treaty, requires that the bilateral currency conversion factors implied by the 1 January 1999 choices equal closing market exchange rates on 31 December 1998. Given that legal constraint, there still exist several strategies for choosing the relative prices of EMU member currencies against the euro. Unfortunately, most of these have potentially damaging side effects. One approach, based on official Stage 2 offers of contingent euro forward contracts with value dates at the start of Stage 3, allows a highly credible preannouncement of the bilateral currency conversion factors to be set at the start of EMU. This approach assumes, however, that no prospective EMU members can withdraw between their selection in May 1998 and the start of Stage 3.

A Strategy for Launching the Euro
Maurice Obstfeld

Discussion Paper No. 1732, October 1997 (IM)

Monetary Policy

Controlling High-Powered Money in Japan

It is sometimes argued that central banks influence the private economy in the short run through controlling a specific component of high-powered money, and not its total amount. In Discussion Paper No. 1733, **Etsuro Shioji** uses a structural VAR approach to evaluate this claim empirically, in the context of the Japanese economy. Shioji estimates a model based on the standard view that the central bank controls the total amount of high-powered money, and another model based on the alternative view that it controls only a specific component. It is shown that the former yields much more sensible estimates than the latter.

Identifying Monetary Policy Shocks in Japan
Etsuro Shioji

Discussion Paper No. 1733, October 1997 (IM)

Reforming Pay-As-You-Go Schemes

In Discussion Paper No. 1734, **Hans-Werner Sinn** shows that, in a pay-as-you-go-pension system endowed with individual accounts, the net fiscal externality created by an additional member equals the gross contributions of this member. In Germany, this equals about 175,000 Deutsche marks. Sinn uses this information to design a hybrid funded system that avoids this externality and improves the public pension system under equity and efficiency considerations.

The Value of Children and Immigrants in a Pay-As-You-Go Pension System: A Proposal For a Partial Transition to a Funded System
Hans-Werner Sinn

Discussion Paper No. 1734, November 1997 (FE)

Venture Capital

The Relationship between Financier and Entrepreneur (1)

Venture capital financing is characterized by extensive use of convertible debt and stage financing. In Discussion Paper No. 1735, **Francesca Cornelli** and **Oved Yosha** show why convertible debt is better than a simple mixture of debt and equity in stage financing situations. When the venture capitalist retains the option to abandon the project, the entrepreneur has an incentive to engage in 'window dressing' or short-termism, i.e. to impart positive bias to the short-term performance of the project in order to reduce the probability that the project will be liquidated. With a convertible debt contract, such behaviour reduces the likelihood of liquidation, but increases the probability that the venture capitalist will convert debt into equity, thereby reducing the entrepreneur's profits. With convertible debt, therefore, the entrepreneur will not engage in as much short-term behaviour in terms of signal manipulation, in comparison to a situation where only straight debt-equity financing is used.

Stage Financing and the Role of Convertible Debt
Francesca Cornelli and Oved Yosha

Discussion Paper No. 1735, November 1997 (FE)

Voucher Privatization and Ownership Structures

In Discussion Paper No. 1736, **John Earle** and **Saul Estrin** analyse the ownership structure emerging from the Russian privatization process, using information from a 1994 sample survey of state and privately owned manufacturing companies, conducted just after the voucher programme was completed. The Russian ownership structure calls for a new approach to the analysis of corporate control because of the presence of multiple types of owners pursuing conflicting objectives and facing different constraints, and because of the weakness of other corporate governance mechanisms in the Russian economy. The authors distinguish four categories of owners – the state, workers, managers and outside investors – and their empirical results include findings on the distribution of ownership, on the implications of alternative privatization methods for ownership structure, on the incidence of non-voting and voting shares, and on the extent of concentration of ownership within groups. They investigate the determinants of ownership structure and its effects on enterprise performance, according to several criteria.

Earle and Estrin find evidence of positive, albeit varying, effects of private ownership on enterprise performance, with managerial and institutional investor ownership having the strongest and most robust impacts. Remarkably, the impact on performance of outsider blockholders appears to be strengthened in the instrumental variables (IV) estimates compared to the ordinary least squares (OLS) estimates, suggesting that the privatization process may have contained a negative selection bias with respect to ownership by outside investors.

After Voucher Privatization: The Structure of Corporate Ownership in Russian Manufacturing Industry

John S Earle and Saul Estrin

Discussion Paper No. 1736, November 1997 (TE)

Public Finance

Comparative Outcomes of Political Systems

In Discussion Paper No. 1737, **Gerard Roland**, **Guido Tabellini** and **Torsten Persson** present a model of electoral accountability to compare the public-finance outcomes under a presidential-congressional and a parliamentary system. In a presidential-congressional system, contrary to a parliamentary system, there are no endogenous incentives for legislative cohesion, but this allows for a clearer separation of powers. These

features lead to clear differences in the public-finance performance of the two systems. A parliamentary system exhibits redistribution towards a majority, less underprovision of public goods, more waste and a higher burden of taxation, whereas a presidential-congressional system exhibits redistribution towards a minority, more underprovision of public goods, but less waste and a smaller size of government.

Comparative Politics and Public Finance

Gerard Roland, Guido Tabellini and Torsten Persson

Discussion Paper No. 1737, November 1997 (IM)

Venture Capital

The Relationship between Financier and Entrepreneur (2)

In Discussion Paper No. 1738, **Dirk Bergemann** and **Ulrich Hege** consider the provision of venture capital in a dynamic agency model. The value of the venture project is initially uncertain and more information arrives by developing the project. The allocation of funds and the learning process are subject to moral hazard. The optimal contract is a time-varying share contract which provides intertemporal risk-sharing between venture capitalist and entrepreneur. The share of the entrepreneur reflects the value of a real option. The option itself is based on the control of the funds. The dynamic agency costs may be high and lead to an inefficiently early end to the project. A positive liquidation explains the adoption of strip financing or convertible securities. Finally, relationship financing, including monitoring and the occasional replacement of management, improves the efficiency of the financial contracting.

Venture Capital Financing, Moral Hazard and Learning

Dirk Bergemann and Ulrich Hege

Discussion Paper No. 1738, November 1997 (FE)

European Regionalism

Causes And Consequences

Many observers have noted a recent proliferation of regional trade agreements primarily centred in or on Europe. In Discussion Paper No. 1739, **André Sapir** analyses the causes and consequences of EC regionalism. The paper begins by examining the development and importance of the phenomenon. It finds that although the EC maintains preferential trade arrangements with virtually all countries, preferential trade accounts for no more than 25% of total EC trade. The paper investigates the causes of EC regionalism,

focusing on the determinants of both the demand by third countries and the supply by the EC. Lastly, it examines future options.

The Political Economy of EC Regionalism

André Sapir

Discussion Paper No. 1739, November 1997 (IT)

Trade Policy

Reconciling Theory and Practice

In Discussion Paper No. 1740, **Peter Neary** explores the links between international trade theory and the practice of trade and industrial policy in open economies, with special attention to three areas where theoretical lessons have been misunderstood in policy debates. Neary argues that the 'concertina rule' for tariff reform justifies reductions in high tariffs, but not moves towards uniformity and particularly not increases in low tariffs. He shows that the basic principles of tariff reform are the same in unilateral, multilateral and customs union contexts. Finally, Neary suggests that the theory of strategic trade policy does not justify subsidies to high-technology industries.

Pitfalls in the Theory of International Trade Policy: Concertina Reforms of Tariffs and Subsidies to High-Technology Industries

J Peter Neary

Discussion Paper No. 1740, November 1997 (IT)

EMU

The Euro's International Role

As the European Union enters Stage 3 of EMU in 1999, the development of euro financial markets and 'thickness externalities' in the use of the euro as means of payment will be the major factors determining the new currency's international importance. As euro securities markets become deeper and more liquid, and as transaction costs fall, euro assets will become more attractive, and the use of the euro as a vehicle currency will expand. As **George Alogoskoufis, Richard Portes** and **Helene Rey** demonstrate in Discussion Paper No. 1741, the two effects interact. The authors use a three-region world model as a framework for alternative steady-state scenarios. Using forex and securities market data, they assess the plausibility of the scenarios and the implications for economic efficiency (welfare).

The paper finds that the euro may take on some of the current roles of the dollar, but the extent to which it does will depend on policy decisions and on the beliefs of market participants. The welfare analysis reveals

potential quantitatively significant benefits for the euro area, at the expense of the United States and (to a lesser degree) Japan. During the transition to the new equilibrium, the main effect of the introduction of the euro will come through portfolio shifts that are likely to favour an appreciation of the new currency vis-à-vis the dollar (and the yen). Whatever the likely long-run outcome, the dollar will remain quantitatively dominant for some time because of inertia and hysteresis – with multiple equilibria and likely threshold effects, a quick transition to a new equilibrium would not be expected. The early period could see considerable instability, however, especially if the United States were to resist any decline in the international status of the dollar.

The Emergence of the Euro as an International Currency

George S Alogoskoufis, Richard Portes and Helene Rey

Discussion Paper No. 1741, November 1997 (IM)

Credit Markets

Modelling Competition Between Banks

In Discussion Paper No. 1742, **Hans Gersbach** and **Harald Uhlig** study a credit market with adverse selection and moral hazard where sufficient sorting is impossible. The crucial novel feature is the competition between lenders in their choice of contracts offered. The quality of investment projects is unobservable by banks, and entrepreneurs' investment decisions are not contractible, but output conditional on investment is. The paper explains the empirically observed prevalence of debt contracts as an equilibrium phenomenon with competing lenders. Equilibrium contracts must be immune against raising-picking by competitors. Non-debt contracts allow competitors to offer sweet deals to particularly good debtors, who will self-select to choose such a deal, while bad debtors distribute themselves across all offered contracts.

Competition between banks introduces three possibilities for a breakdown of credit markets which do not occur when a bank has a monopoly. First, average returns decrease since banks compete for good lenders, which may make lending altogether unprofitable. Second, banks can have an incentive to offer a debt contract and additional equity contracts to intermediate debtors, which is in turn dominated by a simple debt contract, only attractive for very good entrepreneurs. As a result, no equilibrium in pure strategies exists. Existence can be restored in this scenario if the permissible types of contracts are limited by regulation resembling the separation of investment and commercial banking in the United States. Finally, allowing for random delivery on credit contracts leads to a breakdown: all banks seek to avoid the contract with

the highest chance of delivery, since that contract attracts all bad entrepreneurs.

Debt Contracts, Collapse and Regulation as Competition Phenomena

Hans Gersbach and Harald Uhlig

Discussion Paper No. 1742, November 1997 (FE)

Monetary Policy

Evaluating VAR Models

In Discussion Paper No. 1743, **Carlo Favero** and **Fabio Bagliano** evaluate VAR models designed to analyse the monetary-policy transmission mechanism in the United States by considering three issues: specification, identification and the effect of the omission of the long-term interest rate. Specification analysis suggests that only VAR models estimated on a single monetary regime feature parameter stability, and do not show signs of mis-specification. The identification analysis shows that VAR-based monetary-policy shocks, and policy disturbances identified from alternative sources, are not highly correlated but yield similar descriptions of the monetary transmission mechanism. Lastly, the inclusion of the long-term interest rate in a benchmark VAR delivers a more precise estimation of the structural parameters capturing behaviour in the market for reserves, and shows that contemporaneous fluctuations in long-term interest rates are an important determinant of the monetary authority's reaction function.

Measuring Monetary Policy with VAR Models: An Evaluation

Carlo A Favero and Fabio Bagliano

Discussion Paper No. 1743, November 1997 (IM)

Strategic Firm Behaviour

Price Dynamics and Consumer Learning

In Discussion Paper No. 1744, **Ramon Caminal** and **Xavier Vives** study the price dynamics induced by strategic firm behaviour in the presence of consumer learning about the uncertain quality differential of the products offered by a duopoly. The authors find that consumers learn slowly and also that prices converge slowly to full-information levels. One consequence is that the incentives of firms to manipulate consumers' beliefs are relatively persistent. Although pricing tends to be aggressive in the early stages, and average prices eventually increase over time, price wars may occur at intermediate stages of the product lifecycle.

Price Dynamics and Consumer Learning
Ramon Caminal and Xavier Vives

Discussion Paper No. 1744, November 1997 (IO)

Growth Models

Explaining International Convergence Clubs

In Discussion Paper No. 1745, **Dan Ben-David** focuses on one possible explanation for two aspects of empirical evidence about world income distribution, namely (1) that income converges among the world's poorest countries and among its wealthiest countries, and (2) that income diverges among most of the remaining countries. The model incorporates the assumption of subsistence consumption into the neo-classical exogenous growth model, yielding outcomes that are consistent with the convergence-divergence empirical evidence. Although subsistence consumption can lead to negative saving and decumulation of capital, it can also coincide with positive saving and accumulation of capital. The model predicts that the poorer the country, the lower is its saving rate – a result that also appears to be borne out by the evidence provided.

Convergence Clubs and Subsistence Economies
Dan Ben-David

Discussion Paper No. 1745, November 1997 (IM)

Stock-Market Volatility

Setting Margin Requirements

EGARCH-M models, based on daily, weekly and monthly S&P-500 returns over the period October 1934 to September 1994, reveal that higher margins have a much stronger negative relation to subsequent volatility in bull markets than in bear markets. Higher margins are also negatively related to subsequent conditional stock returns, apparently because they reduce systemic risk. In Discussion Paper No. 1746, **Gikas Hardouvelis**, **Andreas Pericli** and **Panayiotis Theodossiou** argue that these empirical regularities are consistent with the pyramiding-depyramiding framework of stock prices that the US Congress had in mind when it instituted margin regulation in 1934. The authors suggest that a prudential rule for setting margins over time would be to raise them during periods of unwarranted price increases, and to lower them immediately after large declines in stock prices.

The Asymmetric Relation Between Margin Requirements and Stock-Market Volatility Across Bull and Bear Markets

Gikas A Hardouvelis, Andreas Pericli and Panayiotis Theodossiou

Discussion Paper No. 1746, November 1997 (FE)

EMU

Seigniorage Winners and Losers

European Economic and Monetary Union will involve the socialization of existing seigniorage wealth of national central banks. This socialization will create windfall gains for countries with relatively low monetary bases, such as France and the United Kingdom, and will be disadvantageous for countries like Germany, Spain, the Netherlands and Austria, which will suffer per head wealth losses of between ECU 406 and ECU 182. In Discussion Paper No. 1747, **Hans-Werner Sinn** and **Holger Feist** quantify the gains and losses in seigniorage wealth under alternative membership and bank-regulation scenarios.

Eurowinners and Eurolosers: The Distribution of Seigniorage Wealth in EMU
Hans-Werner Sinn and Holger Feist

Discussion Paper No. 1747, November 1997 (IM/FE)

International Trade

Exploiting Ethnic Ties Abroad

When trade involves differentiated products, preferential ties to a group settled abroad can facilitate an exporter's entry into a foreign market by providing information and access to distribution channels. This contrasts with the difficulties experienced by an unattached producer unfamiliar with the foreign environment.

In Discussion Paper No. 1748, **Alessandra Casella** and **James Rauch** are inspired by the role of co-ethnic ties and business groups in East Asia to build a general equilibrium model of trade that formalizes this simple idea. Output is generated through bilateral matching of agents spanning a spectrum of types. Domestic matching is perfect – every trader knows the type of all others and can approach any type; international matching, by contrast, is random – every trader lacks the information to choose a partner's type. Access to group ties, however, allows perfect matching abroad to a minority of individuals who can decide whether or not to exploit the links. The authors show that, in the absence of ties, the existence of informational barriers reduces the volume of trade. By increasing trade, group ties are beneficial to the economy as a whole, but have significant distributional effects. On average, group members benefit, although some may lose. Non-members lose almost without exception, whereas the

largest losses are concentrated among those with the poorest domestic market niches.

Anonymous Market and Group Ties in International Trade
Alessandra Casella and James E Rauch

Discussion Paper No. 1748, November 1997 (IM/IT)

Growth and Location

Integrating Endogenous Growth in the Core-Periphery Model

In Discussion Paper No. 1749, **Richard Baldwin** and **Rikard Forslid** present a model in which long-run growth and industrial location are jointly endogenous. Specifically, it introduces Romer-Grossman-Helpman endogenous growth into Krugman's core-periphery model with footloose labour. The paper focuses on stability of the symmetric equilibrium, showing that growth is a powerful destabilizing force. For instance, even with prohibitive trade barriers, the symmetric equilibrium is unstable as long as workers' discount rates are not too high. It also shows that interregional learning spillovers are a stabilizing force. Finally, the paper shows that agglomeration of industry is favourable to growth in both regions, so positive growth effects might offset the well-known static welfare loss that the periphery experiences when the core-periphery outcome occurs.

The Core-Periphery Model and Endogenous Growth
Richard E Baldwin and Rikard Forslid

Discussion Paper No. 1749, November 1997 (IT)

Monetary Policy

Inflation Targeting Superior to Fixed Exchange Rates as a Nominal Anchor?

In Discussion Paper No. 1750, **Mark Gertler**, **Jordi Gali** and **Richard Clarida** report estimates of monetary-policy reaction functions for two sets of countries: the G-3 (Germany, Japan and the United States) and the E-3 (France, Italy and the United Kingdom). The authors find that, since 1979, each of the G-3 central banks has pursued an implicit form of inflation targeting, which may account for the broad success of monetary policy in those countries over this time period. The evidence also suggests that these central banks have been forward looking: they respond to anticipated inflation, as opposed to lagged inflation. As for the E-3, even prior to the emergence of the 'hard

ERM', their central banks were heavily influenced by German monetary policy. Using the Bundesbank's policy rule as a benchmark, the authors find that, at the time of the EMS collapse, interest rates in each of the E-3 countries were much higher than domestic macroeconomic conditions warranted. Taken together, the results lend support to the view that some form of inflation targeting may be superior to fixing exchange rates, as a means of gaining a nominal anchor for monetary policy.

Monetary Policy Rules in Practice: Some International Evidence
Mark Gertler, Jordi Gali and Richard Clarida

Discussion Paper No. 1750, November 1997 (IM)

MCI

Asset-Price Changes and Optimal Monetary Responses

In Discussion Paper No. 1751, **Frank Smets** shows that, within the context of the central bank's objective of price stability, the optimal monetary response to unexpected changes in asset prices depends on how these changes affect the central bank's inflation forecast. This, in turn, depends on two factors: the role of the asset price in the transmission mechanism; and the typical information content of innovations in the asset price. In this context, the advantages and disadvantages of setting monetary policy in terms of a weighted average of a short-term interest rate and an asset price, such as the exchange rate – a Monetary Conditions Index (MCI) – are discussed. In a more empirical part, the paper uses an estimated policy-reaction function to document the short-term response to financial asset prices, including the exchange rate, in two countries with inflation targets (Australia and Canada). The results suggest that the different responses to exchange-rate changes in these countries can be explained in part by differences in their underlying sources.

Financial Asset Prices and Monetary Policy: Theory and Evidence
Frank Smets

Discussion Paper No. 1751, November 1997 (IM)

Fixed vs Floating Exchange Rates

The Predictability of Interest Rates

In Discussion Paper No. 1752, **Stefan Gerlach** and **Frank Smets** use weekly data on short-term euro rates for ten countries for the period 1979–96 to document two propositions: that the ability of the expectations hypothesis (EH) to account for movements

in the term structure is greater, and that short-term interest rates are more predictable under fixed, than under floating, exchange rates. The paper also shows that the higher predictability does not arise solely because of monetary-policy responses to speculative pressures in the foreign-exchange markets: although it is more difficult to reject the EH in periods of exchange-market turmoil, it is not rejected in tranquil periods.

Exchange Rate Regimes and the Expectations Hypothesis of the Term Structure
Stefan Gerlach and Frank Smets

Discussion Paper No. 1752, November 1997 (IM)

Growth and External Debt

Explaining the African and Latin American Tragedies

In Discussion Paper No. 1753, **Daniel Cohen** addresses two puzzles of the growth literature: the failure of standard growth equations to account for slow growth in Latin America and Africa; and the surprising failure of trade to explain growth when trade liberalization appears to play a significant role. The paper shows: (1) that African growth is readily explained by macroeconomic mismanagement and low investment; (2) that trade liberalization should be taken as a proxy for good 'macroeconomic' management, rather than a genuine measure of the effect of trade upon growth; and (3) that poor growth in Latin America (which does not seem to be explained by the preceding feature) is well-explained by a variable (constructed in the text) representing the likelihood of debt crisis.

Growth and External Debt: A New Perspective on the African and Latin American Tragedies
Daniel Cohen

Discussion Paper No. 1753, December 1997 (IM)

The Winner's Curse

When the Law of Demand Fails

It is commonly assumed that increases in supply, allocation by rationing and exclusion of potential buyers will never raise prices. But, as **Jeremy Bulow** and **Paul Klemperer** argue in Discussion Paper No. 1754, all of these activities raise the expected price in an important set of cases when common-value assets are sold. Furthermore, when the assumptions needed to rule out these 'anomalies' in situations where buyers are symmetric are made, small asymmetries among buyers necessarily cause the anomalies to reappear.

The Winner's Curse and the Failure of the Law of Demand

Fiscal Policy and Growth

Three Channels of Influence

In Discussion Paper No. 1755, **Angel de la Fuente** investigates the impact of public expenditures and taxation on economic growth, using panel data for a sample of OECD countries. The empirical results suggest that fiscal policy influences growth through three main channels. First, the government contributes directly to factor accumulation through public investment in infrastructure and other assets. Second, public expenditure tends to crowd out private investment by reducing disposable income and the incentive to save. Third, there is evidence of a sizeable negative 'externality' effect of government on the level of productivity. According to the estimates, the effective cost of \$1 of public expenditure is around \$1.3 once the relevant distortions are taken into account. Although this figure is viewed as an upper bound, it does suggest that taxes and public expenditures generate significant efficiency costs which should be taken into account when making budget decisions.

Fiscal Policy and Growth in the OECD
Angel de la Fuente

Discussion Paper No. 1755, December 1997 (IM)

Growth

Accounting for the 'Irish Miracle'

In Discussion Paper No. 1756, **Angel de la Fuente** and **Xavier Vives** explore the sources of Ireland's relative growth performance. Using panel data for a sample of OECD countries, the authors estimate a convergence equation and use it to conduct a growth accounting exercise which provides quantitative estimates of the immediate sources of Ireland's growth differential vis-à-vis the OECD average and the other 'cohesion' countries of the EU. Although they find that fiscal consolidation has contributed significantly to Ireland's improved performance, they are not able to account fully for the 'Irish miracle' in terms of the standard growth-theory variables. This finding supports the extended view that some peculiar features of the Irish economy – such as its success in attracting high-quality foreign direct investment – have played a crucial role in recent years. The paper concludes with some reflections on the need for structural reforms as a way to ensure the sustainability of Ireland's rapid growth.

The Sources of Irish Growth
Angel de la Fuente and Xavier Vives

Discussion Paper No. 1756, December 1997 (IM)

Post-Break-Up Performance of SOEs

In Discussion Paper No. 1757, **Lubomir Lizal**, **Miroslav Singer** and **Jan Svejnar** estimate the effects of the 1991 break-ups of Czechoslovak state-owned enterprises (SOEs) on subsequent performance of both the master enterprises and the spin-off units. The analysis is based on quarterly and annual data of Czechoslovak industrial enterprises. The authors estimate the performance effect of a spin-off by comparing the performance of enterprises that were present throughout the 1990–2 period, but did not experience any spin-offs, to that of: (1) master enterprises that experienced spin-offs; and (2) the new spin-off subsidiaries. The estimates suggest that the break-ups had a significant immediate (1991) effect on the productive efficiency and profitability of industrial firms. The effect was positive for small to slightly above-average size spin-offs, and negative for large ones. The hypothesis that the estimated effect of spin-offs on performance was identical for the spin-off subsidiaries and the master enterprises that experienced the spin-offs cannot be rejected. The 1991 estimates thus strongly suggest that the large firms created under the centrally planned system suffered from inefficiencies that were alleviated by the break-up of these firms into smaller units.

Enterprise Break-ups and Performance During the Transition
Lubomir Lizal, Miroslav Singer and Jan Svejnar

Discussion Paper No. 1757, December 1997 (TE)

Macroeconomic Predictions

The Predictive Content of the Yield Curve

In Discussion Paper No. 1758, **Frank Smets** and **Kostas Tsatsaronis** investigate why the slope of the yield curve predicts future economic activity in Germany and the United States. A structural VAR is used to identify aggregate supply, aggregate demand, monetary policy and inflation-scare shocks and to analyse their effects on the real, nominal and term premium components of the term spread and on output. In both countries, demand and monetary policy shocks contribute to the covariance between output growth and the lagged term spread, whereas inflation scares do not. As the latter are more important in the United States, they reduce the predictive content of the term spread in that country. The main reason for the stronger leading-indicator property in Germany, however, is the positive contribution of supply shocks, which – owing to a different monetary policy response – explains about half

of the positive covariance at lag four in Germany and almost nothing in the United States.

Why Does the Yield Curve Predict Economic Activity? Dissecting the Evidence for Germany and the United States

Frank Smets and Kostas Tsatsaronis

Discussion Paper No. 1758, December 1997 (IM)

Macroeconomic Policy

Political Constraints on the Policy-Making Process

In Discussion Paper No. 1759, **Guido Tabellini** and **Torsten Persson** survey the recent literature on the theory of macroeconomic policy. The authors study the effect of various incentive constraints on the policy-making process, such as lack of credibility, political opportunism, political ideology and divided government. The survey is organized in three parts. Part I deals with monetary policy in a simple Phillips curve model, and focuses on credibility, political business cycles, and optimal design of monetary institutions. Part II deals with fiscal policy in a dynamic general equilibrium set up; the main topics covered in this section are credibility of tax policy, and political determinants of budget deficits. Part III studies economic growth in models with endogenous fiscal policy.

Political Economics and Macroeconomic Policy
Guido Tabellini and Torsten Persson

Discussion Paper No. 1759, December 1997 (IM)

Global Modelling

East Asian-European Integration

East Asia has rapidly become the third centre of gravity for global economic activity. North America is relatively well integrated with East Asia, but Europe is not. In Discussion Paper No. 1760, **Kym Anderson** and **Joseph Francois** explore the extent to which economic growth and trade-policy developments over the next decade or so will strengthen European-East Asian economic integration, and the scope for facilitating that set of bilateral relationships. Use is made of a modified version of the global CGE model, known as GTAP, to project the world economy to 2010 under various scenarios including Uruguay Round implementation, a transatlantic free trade agreement, APEC liberalization, and a new WTO multilateral round. The bilateral trade consequences of economic growth and Uruguay Round implementation highlight the fact that as East Asia's relative importance in the world economy keeps growing, so too does its importance to

Europe. The relative importance of Europe to East Asia is projected to grow very little, however, although in absolute terms the volume of that trade still grows enormously.

Commercial Links Between Western Europe and East Asia: Retrospect and Prospects
Kym Anderson and Joseph F Francois

Discussion Paper No. 1760, December 1997 (IT)

New Technologies

Impact on Wages and Employment

In Discussion Paper No. 1761, **Horst Entorf**, **Michel Gollac** and **Francis Kramarz** study the impact of new technologies on wages and employment using a unique panel that matches data on individuals and on their firms. The authors confirm the results found by Krueger (1993) for the United States, namely that computer users are better paid than non-users (between 15% and 20% more). But they also show that these workers were already better compensated before the introduction of the new technologies. Total returns to computer use amount to 2%. Even when possible measurement errors are taken into account, total returns cannot exceed 4%, which is far from the cross-section estimates. Furthermore, computer users are protected from job losses as long as bad business conditions do not last too long. This result holds even after controlling for possible selection biases.

New Technologies, Wages and Worker Selection
Horst Entorf, Michel Gollac and Francis Kramarz

Discussion Paper No. 1761, December 1997 (HR)

Population Ageing

Implications for Savings, Asset Prices and Wages

It is well known that over the next few decades there will be significant changes in the demographic structures of nearly all developed countries. In the absence of massive immigration, or of catastrophic new fatal illnesses, by the middle of the next century the ratio of people of working age to those of retirement age will be only around one-half the current level in many countries. Such dramatic demographic change could have a powerful impact upon saving behaviour in both the public and private sectors, and upon asset prices and wages. But estimates of how great the effects will be differ substantially, depending on what kind of evidence is used. In Discussion Paper No. 1762, **David Miles** argues that simulations based on calibrated general equilibrium models are likely to provide the most

reliable evidence. Miles develops a model for assessing how ageing will affect the United Kingdom and the rest of Europe. How governments respond to shifts in saving and in the burden of state pensions is important, and the model is used to assess various public policy options.

Modelling the Impact of Demographic Change Upon the Economy
David Miles

Discussion Paper No. 1762, December 1997 (FE/IM)

Disinflation Dynamics

Adding Microfoundations

In Discussion Paper No. 1763, **Guido Ascari** and **Neil Rankin** study the output costs of a reduction in monetary growth in a dynamic general equilibrium model with staggered wages. As in John Taylor's approach, the money wage is fixed for two periods, but in Ascari and Rankin's model it is also chosen according to intertemporal optimization, as are consumption and money demand. Agents have labour-market monopoly power. The authors show that the introduction of microfoundations helps to resolve the puzzle raised by Laurence Ball, namely that disinflation in staggered pricing models causes a boom. In their model, disinflation – whether unanticipated or anticipated – unambiguously causes a slump.

Staggered Wages and Disinflation Dynamics: What Can More Microfoundations Tell Us?
Guido Ascari and Neil Rankin

Discussion Paper No. 1763, December 1997 (IM)

Competition Policy

Approval Rules for Sequential Mergers

Merger approval decisions lie at the heart of competition policies. Farrell and Shapiro (1990) presented a model stating safe-harbour rules for merger approval. In Discussion Paper No. 1764, however, **Pedro Barros** argues that, in the presence of sequential mergers, computation of the 'sufficient external effect' criterion for each merger may not be possible, as the second merger will be influenced by the equilibrium emerging from the first. If the mergers are close enough in time, the second merger must be evaluated without the knowledge of the equilibrium point after the first merger. Two alternatives are proposed: joint merger evaluation and independent merger evaluation. The decision errors (too many approvals or rejections) are identified for each of the alternative rules. It is shown that joint merger evaluations generate too

many rejections of mergers and independent evaluations lead to too many approvals.

Approval Rules for Sequential Horizontal Mergers
Pedro P Barros

Discussion Paper No. 1764, December 1997 (IO)

Labour Markets

Job Creation and Destruction in France

In Discussion Paper No. 1765, **Francis Kramarz**, **Patrick Corbel** and **John Abowd** use data that permit a distinction between flows of workers, directly measured, and job creation and destruction, again, directly measured, to develop employment and job flow statistics for a representative sample of French establishments for 1987 to 1990. Annual job creation can be characterized as hiring three persons and separating two for each job created in a given year. Annual job destruction can be characterized as hiring one person and separating two for each job destroyed in a given year. When an establishment is changing employment, the adjustment is made primarily by reducing entry and not by changing the separation rates. There is considerable simultaneous hiring and separation, even controlling for skill group. Two-thirds of all hiring is on short-term contracts and more than half of separations are a result of the ending of these short-term contracts.

The Entry and Exit of Workers and the Growth of Employment: An Analysis of French Establishments
Francis Kramarz, Patrick Corbel and John Abowd

Discussion Paper No. 1765, December 1997 (HR)

Monopoly Unions

Fiscal Devices for Increasing Employment

In Discussion Paper No. 1766, **Alain de Crombrughe** and **Gregory de Walque** analyse how a firm-level tax (or subsidy), calculated on the average wage relative to a pre-set norm, may promote employment. The authors assume a monopoly union setting wages at the firm level to maximize that part of the wage bill exceeding the reservation wage. The fiscal device affects union perception of labour demand and induces it to quote a lower wage and obtain a higher corresponding level of employment. Empirical tests are performed over a sample of 43 Polish firms in 1990 and 1991. They support the model assumptions, as well as the 'employment-enhancing' effect of the tax in Polish firms.

Fiscal Norming of Wages to Promote Employment with Monopoly Unions

Alain de Crombrughe and Gregory de Walque

Discussion Paper No. 1766, December 1997 (TE)

Polish Budget Crisis 1991–2

Role of Wage and Pension Pressures

In Discussion Paper No. 1767, **Alain de Crombrughe** examines the role of wage and pension pressures in explaining the budget-deficit crisis of 1991–2 after the remarkable 1990 Polish economic stabilization and liberalization. The author also explains the persistence of the high tax wedge that later helped overcome the budget crisis. The positive revenue effect of higher wages and higher tax rates could not compensate for both the inevitable profit-tax loss and the excessive growth of replacement income expenditure. Counterfactuals are constructed for revenue and expenditure. They show that the rising number of social benefit earners (pensions, unemployment) is responsible for a large part of the budgetary burden. Nevertheless, they also show that the better protection of social income, compared to other income, also explains part of the burden. Part of the employment loss and of the social expenditure can be ascribed to the excessive wage recovery of late 1990 and 1991. Insiders set wages, ignoring the unemployed and exploiting the pension system in a context of uncertainty about profits and productivity and of strong popular support for the protection of replacement income.

Wage and Pension Pressure on the Polish Budget **Alain de Crombrughe**

Discussion Paper No. 1767, December 1997 (TE)

Price Discovery

Strategic Behaviour

In Discussion Paper No. 1768, **Luis Angel Medrano** and **Xavier Vives** analyse the effects of strategic behaviour by an insider in a price discovery process, akin to an information *tâtonnement*, in the presence of a competitive informed sector. Such processes are used in the pre-opening period of continuous trading systems in several exchanges. The authors find that the insider manipulates the market using a contrarian strategy, in order to neutralize the effect of the trades of competitive informed agents. Furthermore, consistent with the empirical evidence available, they find that information revelation accelerates close to the opening; that the market price does not converge to the fundamental

value no matter how many rounds the *tâtonnement* has; and that the expected trading volume displays a U-shaped pattern. They also find that a market with a larger competitive sector (smaller insider) has an improved informational efficiency and an increased trading volume. The insider provides a public good (reducing the informativeness of the price) for the competitive informed sector.

Strategic Behaviour and Price Discovery **Luis Angel Medrano and Xavier Vives**

Discussion Paper No. 1768, December 1997 (FE)

Unemployment Insurance

Helping Workers to get Suitable Jobs

In Discussion Paper No. 1769, **Fabrizio Zilibotti** and **Ramon Marimon** develop an equilibrium search-matching model with risk-neutral agents and two-sided *ex ante* heterogeneity. Unemployment insurance has the standard effect of reducing employment, but also helps workers to get a suitable job. The predictions of the authors' model are consistent with the contrasting performance of the labour market in Europe and the United States in terms of unemployment, productivity growth and wage inequality. To show this, they construct two fictitious economies with calibrated parameters which differ only by the degree of unemployment insurance and assume that they are hit by a common technological shock which enhances the importance of mismatch. This shock reduces the proportion of jobs that workers regard as acceptable in the economy with unemployment insurance (Europe). As a result, unemployment doubles in this economy. In the *laissez-faire* economy (United States), unemployment remains constant, but wage inequality increases more and productivity grows less owing to larger mismatch. The model can be used to address a number of normative issues.

Unemployment versus Mismatch of Talents: Reconsidering Unemployment Benefits **Fabrizio Zilibotti and Ramon Marimon**

Discussion Paper No. 1769, December 1997 (HR)

Transition Economies

Competition and Productivity

In Discussion Paper No. 1770, **Jozef Konings** uses firm-level data to test whether competition affects productivity performance in three transition countries, Hungary, Romania and Slovenia. The data are based on interviews held in more than 300 state-owned, privatized and newly established private firms between September 1996 and April 1997. The paper finds

evidence that long-run competitive pressure has a positive impact on firm performance in Hungary and Slovenia, but not in Romania, whereas in Romania short-run competitive pressure has a positive impact on performance. The paper also finds evidence that ownership matters. Traditional firms (being state-owned and privatized enterprises) tend to perform worse than newly established firms in Hungary and Slovenia. In Romania, the results are somewhat mixed: state-owned enterprises do worse than employee-owned (privatized) and newly established private firms.

Competition and Firm Performance in Transition Economies: Evidence from Firm-Level Surveys in Slovenia, Hungary and Romania
Jozef Konings

Discussion Paper No. 1770, December 1997 (TE)

Beveridge Curves

Structural vs Business-Cycle Effects

In Discussion Paper No. 1771, **Howard Wall** and **Gylfi Zoega** use county-level data to estimate the timing and magnitude of shifts in aggregate and regional British Beveridge curves. The authors find that these shifts coincide with the business cycle, rather than with hysteresis effects or with changes in regional mismatch. This implies that the Beveridge curve is a flawed device for separating the effects of structural changes from those of the business cycle.

The British Beveridge Curve: A Tale of Ten Regions
Howard J Wall and Gylfi Zoega

Discussion Paper No. 1771, December 1997 (HR)

Price-level Determination

What Price Fiscal Solvency?

A new theory of price determination suggests that if primary surpluses are independent of the level of debt, the price level has to 'jump' to assure fiscal solvency. In this 'fiscal dominant' regime, monetary policy has to work through seigniorage to control the price level. If, on the other hand, primary surpluses are expected to respond to the level of debt in a way that assures fiscal solvency (a 'money dominant' regime), then the price level is determined in more conventional ways. In Discussion Paper No. 1772, **Robert Cumby**, **Behzad Diba** and **Matthew Canzoneri** develop testable restrictions that differentiate between the two regimes. Using post-war data, the paper presents what the authors consider to be overwhelming evidence that the United States is in a 'money dominant' regime – a contention supported even by the post-Reagan data (1980–95).

Is the Price Level Determined by the Needs of Fiscal Solvency?

Robert E Cumby, Behzad Diba and Matthew B Canzoneri

Discussion Paper No. 1772, January 1998 (IM)

Transition Economies

The Role of the Real Exchange Rate

Real exchange rates appear to present a specific behaviour in the early phase of transition: they are largely unaffected by nominal exchange-rate movements and they exhibit trend appreciation. In Discussion Paper No. 1773, **Charles Wyplosz** and **Clemens Grafe** present a model that describes the transition process as the emergence of two new (traded and non-traded good) sectors alongside the decline of an inefficient and subsidized state sector. The absence of financial markets means that firms accumulate capital through retained earnings. Labour markets are imperfect, giving rise to a wage gap. The model shows that the real exchange rate plays the crucial role of determining real wages. Through real wages, it sets the pace for the development of the new sectors as workers are attracted out of the state sector. The link between growth and real appreciation differs from the usual Balassa-Samuelson effect. The paper also explores the role of labour-market distortions and foreign financing.

The Real Exchange Rate in Transition Economies
Charles Wyplosz and Clemens Grafe

Discussion Paper No. 1773, December 1997 (TE)

Pension Systems

Risk-Sharing Properties

In an analysis of the risk-sharing properties of different types of pension systems, **John Hassler** and **Assar Lindbeck** show, in Discussion Paper No. 1774, that only fixed-fee pay-as-you-go (PAYG) pension systems can provide risk sharing for living individuals. Under some circumstances, however, other PAYG pension systems can enhance the expected welfare of all generations by reducing intergenerational income variability. The paper derives conditions for this to occur. It also analyses the stability of actuarially fair PAYG pension systems. It is shown that if an actuarially fair pension with a non-balanced budget system is dynamically stable, its accumulated surpluses will converge to the same fund as in a fully funded system. The paper also shows that the welfare loss owing to labour-market distortions will increase if the implicit marginal return in a compulsory system is raised above the average return.

Intergenerational Risk-Sharing, Stability and Optimality of Alternative Pension Systems

'New' Men and 'New' Women

Comparing Paid-Work Propensities

In Discussion Paper No. 1775, **Alison Booth**, **Stephen Jenkins** and **Carlos Serrano** use BHPS waves 1–5 (1991–5) to compare paid-work participation rates of men and women. Year-on-year persistence in paid-work propensities is high, but greater for men than women. Non-work persistence is higher for women. Using panel-data probit regression models, the paper also investigates why men's and women's participation rates differ, comparing the roles of differences in observable characteristics and differences in rates of return to these characteristics, while also controlling for unobserved heterogeneity. Most of the difference in participation rates is accounted for by the differences in returns associated with the presence of children, especially young ones.

New Men and New Women? A Comparison of Paid-Work Propensities from a Panel Data Perspective
Alison L Booth, Stephen P Jenkins and Carlos Garcia Serrano

Discussion Paper No. 1775, December 1997 (HR)

Democracy and Wage Rates

Voting for Higher Wages?

In Discussion Paper No. 1776, **Dani Rodrik** controls for labour productivity, income levels and other variables to demonstrate that there is a robust and statistically significant association between the extent of democratic rights and wages received by workers. The association exists both across countries, and over time within countries. The coefficient estimates suggest that non-negligible wage improvements result from the enhancement of democratic institutions: average wages in a country like Mexico would be expected to increase by 10–30% were Mexico to attain a level of democracy comparable to that prevailing in the United States.

Democracies Pay Higher Wages
Dani Rodrik

Discussion Paper No. 1776, January 1998 (IM/IT)

Assessing the Power of Ownership

Transactions take place in the firm, rather than in the market, because the firm offers power to agents who make specific investments. Past literature emphasizes the allocation of ownership as the primary mechanism by which the firm does this. In Discussion Paper No. 1777, **Raghuram Rajan** and **Luigi Zingales** operate within the contractibility assumptions of this literature to identify a potentially superior mechanism: the regulation of access to critical resources. Access can be better than ownership because: (1) the power agents get from access is more contingent on them making the right investment; and (2) ownership has adverse effects on the incentive to specialize. The theory explains the importance of internal organization and third-party ownership.

Power in a Theory of the Firm
Raghuram G Rajan and Luigi Zingales

Discussion Paper No. 1777, January 1998 (FE/IO)

Capital-Market Imperfections

Natural Selection in the Trucking Industry?

In Discussion Paper No. 1778, **Luigi Zingales** studies the impact that capital-market imperfections have on the natural selection of the most efficient firms, by estimating the effect of the pre-deregulation level of leverage on the survival of trucking firms after the Carter deregulation. Highly leveraged carriers are less likely to survive the deregulation shock, even after controlling for various measures of efficiency. This effect is stronger in the imperfectly competitive segment of the motor carrier industry. High debt seems to affect survival by curtailing investments and reducing the price per ton-mile that a carrier can afford to charge after deregulation.

Survival of the Fittest or the Fattest? Exit and Financing in the Trucking Industry
Luigi Zingales

Discussion Paper No. 1778, January 1998 (FE/IO)

Links with Consumer Confidence and the Business Cycle

The objective of Discussion Paper No. 1779, written by **Jean-Pierre Danthine, Thore Johnsen** and **John Donaldson**, is to provide, in the context of a dynamic general equilibrium model, an answer to the following five questions: (1) To what extent does an economy, subject to regular variations in labour-productivity growth, differ from one where labour productivity is constant? (2) What is the impact on major macroeconomic indicators of a one-time change in labour-productivity growth? (3) What are the business-cycle implications of autonomous (non-falsifiable) changes in growth expectations? (4) What is the potential of such expectation changes for explaining the volatility of the consumption-to-output ratio? (5) Can autonomous changes in growth expectations help us to understand recent business-cycle episodes?

Productivity Growth, Consumer Confidence and the Business Cycle

Jean-Pierre Danthine, Thore Johnsen and John B Donaldson

Discussion Paper No. 1779, January 1998 (IM)

Banking Crises

The TMTF ('Too-Many-to-Fail') Problem

In Discussion Paper No. 1780, **Janet Mitchell** analyses two aspects of banking crises: the choices that banks make to passively roll over loans in default rather than actively pursuing their claims; and the choices by regulators to 'punish' passive and insolvent banks rather than rescuing them. Banks may choose to roll over loans in order to hide their poor financial conditions or to gamble for resurrection. Regulators can reduce creditor passivity through their *ex ante* choice of monitoring capability and their *ex post* choice of policy for distressed banks. Yet, if too many banks are discovered to be passive or insolvent, a situation labelled 'too-many-to-fail' (TMTF) may arise, in which it is less costly to rescue than to close large numbers of banks. Banks may implicitly collude through their choice of actions in order to trigger TMTF. A principal result of the analysis is that when the regulator reacts to the threat of banks triggering TMTF, it is by 'softening'. One form of 'softening' involves lowering the *ex ante* monitoring capacity and 'punishing' a smaller number of banks *ex post*. More undetected passivity will thus exist in equilibrium than if TMTF could not be triggered.

Strategic Creditor Passivity, Regulation and Bank Bailouts

Janet Mitchell

Discussion Paper No. 1780, January 1998 (TE)

Measuring Sustainability

A central tenet of the Maastricht Treaty is that a successful European Monetary Union requires sustainable public finances of its member states. Yet there is no clear definition of sustainability. The economist's common use of the term builds on the concept of an intertemporal budget constraint over an infinite time horizon, which is of little practical use.

In Discussion Paper No. 1781, **Roberto Perotti, Rolf Strauch** and **Jürgen von Hagen** develop a concept of sustainability that focuses on the controllability of public finances. The authors adopt the approach of the Maastricht Treaty in assuming sustainability as long as a country does not violate the double standards of the deficit (3% of GDP) and the debt (60% of GDP) criteria. When the benign assumption does not hold, they distinguish between the symptoms of non-sustainability of public finances, which can be determined in a relatively straightforward way, and the underlying institutional causes, which are more difficult to identify. Correcting the symptoms requires a disaggregated view of the government budget. Successful consolidation requires that the fiscal-policy problem be addressed 'at the source', i.e. by adjustment of those items of the government budget that produced the build-up of a non-sustainable deficit in the first place. Lasting consolidation also requires a correction of the institutional weaknesses that are the ultimate causes of a non-sustainable deficit. After reviewing the theoretical and empirical arguments for a disaggregated and institutions-oriented approach to correcting non-sustainable deficits, the authors propose a practical procedure for assessing the sustainability of a country's public finances.

Sustainability of Public Finances

Roberto Perotti, Rolf Strauch and Jürgen von Hagen

Discussion Paper No. 1781, November 1997 (IM)

Agglomeration and Economic Development

Import Substitution vs Trade Liberalization

In Discussion Paper No. 1782, **Diego Puga** and **Anthony Venables** analyse a model of economic development in which international inequalities in the location of industry and income are supported by the agglomeration of industry in a subset of countries. Economic development may not be a gradual process of convergence by all countries, but instead may involve countries moving sequentially from the group of poor countries to the group of rich countries. The role of trade policy in promoting industrialization is explored. Although both import substitution and unilateral trade liberalization may be 'successful' in attracting industry,

they attract different sectors, and welfare levels are higher under trade liberalization.

Agglomeration and Economic Development: Import Substitution vs Trade Liberalization
Diego Puga and Anthony J Venables

Discussion Paper No. 1782, January 1998 (IT)

EMU

Stochastic Process Switching and Stage III

In Discussion Paper No. 1783, **Paul De Grauwe**, **Hans Dewachter** and **Dirk Veestraeten** solve a particular type of stochastic process switching problem where the terminal date is fixed, but the terminal price may depend on past prices. They apply this framework to the effect of various conversion modalities currently discussed on exchange rate dynamics in the transition phase towards Stage III of EMU. The conclusions from their analysis may provide guidelines not only for the initial EMU members, but also for the countries that join at a later stage.

Stochastic Process Switching and Stage III of EMU
Paul De Grauwe, Hans Dewachter and Dirk Veestraeten

Discussion Paper No. 1783, January 1998 (IM)

Strategic Trade Interventions

When Firms Try to Influence the Subsidy

In Discussion Paper No. 1784, **Gene Grossman** and **Giovanni Maggi** investigate whether a welfare-maximizing government ought to pursue a programme of strategic trade intervention or instead commit itself to free trade when, in the former case, domestic firms will have an opportunity to manipulate the government's choice of the level of intervention. Domestic firms may overinvest in physical and knowledge capital in a regime of strategic intervention, in order to influence the government's choice of subsidy. In the event, a commitment to free trade may be desirable even in settings where profit-shifting would be possible. The authors analyse the desirability of such a commitment when the government is well informed about firms' types and actions, and when it suffers from an informational disadvantage.

Free Trade vs Strategic Trade: A Peek into Pandora's Box

Gene M Grossman and Giovanni Maggi

Discussion Paper No. 1784, January 1998 (IT)

Monitoring Japanese Banks

The Role of Amakudari and Keiretsu

In Discussion Paper No. 1785, **Adrian van Rixtel** and **Wolter Hassink** investigate whether the Japanese monetary authorities use post-retirement employment of Ministry of Finance (MoF) and Bank of Japan (BoJ) officials (*amakudari*) as a policy instrument. The authors also investigate whether industrial groupings (*keiretsu*) and main banks have monitoring functions. They find that MoF and BoJ retirees do move into banks that perform badly in terms of profitability. Furthermore, they conclude that the movement of these retirees into the boards of private banks is positively related to specific main bank relationships. The hypothesis of monitoring by *keiretsu* is rejected, however. Finally, the paper finds that MoF/BoJ *amakudari* appointments have a positive impact on the development of lending to risky industries. In particular, this latter finding casts doubts on the credibility of the hypothesis that *amakudari* are used as an instrument of prudential policy.

Monitoring the Monitors: Amakudari and the Ex-Post Monitoring of Private Banks
Adrian A R J M van Rixtel and Wolter H J Hassink

Discussion Paper No. 1785, January 1998 (FE)

EU Enlargement

Costs and Benefits for Austria

In Discussion Paper No. 1786, **Wilhelm Kohler** and **Christian Keuschnigg** evaluate the potential costs and benefits of eastern enlargement of the EU, particularly from an Austrian perspective. In addressing the fiscal costs of enlargement, in addition to tariff and non-tariff barriers, the authors arrive at three important conclusions: (1) Overall, extending EU membership to eastern applicants is more than worth its price to Austria. The (dynamic) gains from integration clearly outweigh the budgetary costs. (2) Somewhat surprisingly, the wage spread between skilled and unskilled labour is narrowed rather than widened. (3) Significant sectoral and intergenerational redistribution may nevertheless render EU enlargement difficult to achieve on political grounds, with the agricultural sector and young people losing out.

Eastern Enlargement of the EU: How Much is it Worth for Austria?
Wilhelm Kohler and Christian Keuschnigg

Discussion Paper No. 1786, January 1998 (IT)

Monopoly Unions and Central Bank Independence

In Discussion Paper No. 1787, **Berthold Herrendorf** and **Manfred Neumann** study monetary policy-making in an economy with many sector-specific monopoly unions. It is assumed that the senior union members are in the majority and –owing to the practice of lay-offs by inverse seniority – face a lower unemployment risk than the junior members. Consequently, the unions' median voters are senior, and they set nominal wages that imply involuntary unemployment on the part of the juniors. Thus equilibrium unemployment is too high from a social welfare point of view. Nevertheless, an independent central bank is found not to produce an inflation bias, because it is accountable to the majority of the population, which is not involuntarily unemployed. In contrast, government-dependence leads to an inflation bias and a higher variability of inflation, but has an ambiguous effect on employment variability. The reason is that democratic elections are about more than one policy issue, which is shown to give rise to political uncertainty about the monetary policy preferences of the elected government.

The Political Economy of Inflation and Central Bank Independence

Berthold Herrendorf and Manfred J M Neumann

Discussion Paper No. 1787, January 1998 (IM)

Capacity and Product-Market Competition

Measuring Market Power in 'Fat-Cat' Industries

In Discussion Paper No. 1788, **Lars-Hendrik Roller** and **Robin Sickles** specify and estimate a structural model which accounts for competition in two variables: capacity and prices. The model has a two-stage set-up. In the first stage firms make capacity decisions, followed by a product-differentiated, price-setting game in the second stage. Since costs are endogenized through the first stage, this has important implications for the measurement of market power in the product market. In particular, simpler one-stage specifications would result in a bias in the measurement of market power, which can be linked to the taxonomy for two-stage games given in Fudenberg and Tirole (1984).

The authors estimate this model – demand, cost (short- and long-run) and conduct – for the European airline industry, using data for the period 1976–90. They perform a number of specification tests and reject a simple one-stage specification in favour of their two-stage set-up. In particular, they find that the game is

empirically consistent with a fat-cat strategy. In other words, European airlines overinvest in capacities in order to be less aggressive. Moreover, they find some degree of market power in the product market. Market power in the two-stage set-up is significantly lower than in the more widely employed one-stage specification, however, which is consistent with the direction of bias in fat-cat games. This illustrates the fact that firms' market power in the product market is significantly overestimated whenever capacity competition is not accounted for.

Capacity and Product Market Competition: Measuring Market Power in 'Fat-Cat' Industries **Lars-Hendrik Roller and Robin C Sickles**

Discussion Paper No. 1788, January 1998 (IO)

Post-1975 Growth Collapse

Social Conflict to Blame?

In Discussion Paper No. 1789, **Dani Rodrik** argues that domestic social conflicts are a key to understanding why growth rates lack persistence, and why so many countries experienced a growth collapse after the mid-1970s. Rodrik emphasizes, in particular, the manner in which social conflicts interact with external shocks on the one hand, and the domestic institutions of conflict-management on the other. Econometric evidence provides support for this hypothesis. Countries that experienced the sharpest drops in growth after 1975 were those with divided societies (as measured by indicators of inequality, ethnic fragmentation, etc) and with weak institutions of conflict management (proxied by indicators of the quality of governmental institutions, rule of law, democratic rights and social safety nets).

Where Did all the Growth Go? External Shocks, Social Conflict and Growth Collapses **Dani Rodrik**

Discussion Paper No. 1789, January 1998 (IM/IT)

Managing Corporate Earnings

Incentives, Governance and Thresholds

Investors are keenly interested in financial reports of earnings, because earnings provide important information for investment decisions. Thus executives who are monitored by investors and directors face strong incentives to manage earnings. In Discussion Paper No. 1790, **Francois Degeorge**, **Jayendu Patel** and **Richard Zeckhauser** introduce consideration of behavioural/institutional thresholds for earnings in this

mix of incentives and governance. A model illustrates how thresholds induce specific types of earnings management. Empirical explorations find clear support for earnings management to exceed each of the three thresholds considered: positive profits, sustain-recent-performance, and meet-market-expectations. The thresholds are hierarchically ranked. The future performance of firms that possibly boost earnings to just cross a threshold appears to be poorer than that of less suspect control groups.

Earnings Management to Exceed Thresholds
Francois Degeorge, Jayendu Patel and Richard Zeckhauser

Discussion Paper No. 1790, January 1998 (FE)

use private education, but cannot borrow to finance it. The results obtained are striking. The optimal education policy is elitist: it increases the spread between the educational achievements of the bright and the less bright children, compared with both private provision and the first-best policy. The education received by children also depends positively on their parental income, unless they are bright. Finally, the optimal education policy is input regressive, in the sense of Arrow (1971): households with higher income and brighter children contribute less towards the cost of the education system than households with lower income and less bright children.

The Design of Optimal Education Policies
Gianni De Fraja

Discussion Paper No. 1792, January 1998 (HR)

Immigrants' Labour-Market Performance

Swiss Evidence

Switzerland has experienced a substantial influx of immigrants over the 50 years since World War II, to the extent that it now has one of the highest shares of foreigners in its population among OECD countries. In Discussion Paper No. 1791, **Thomas Straubhaar** and **Stefan Golder** analyse Switzerland's experience of migration, focusing on two main issues: the economic effects of migration; and the labour-market performance of immigrants. Two main results emerge: first, as a result of shortcomings of Swiss migration policy, immigrants tend to have a negative impact on the Swiss economy; and second, the analysis of labour-market performance shows that there are substantial discrepancies in the performance of immigrants from different countries of origin. Immigrants from North European countries largely outperform immigrants from South European and non-European countries. On the basis of the empirical analysis, the study outlines some reform options for Swiss migration policy.

Migration to Switzerland: Some New Evidence
Thomas Straubhaar and Stefan M Golder

Discussion Paper No. 1791, January 1998 (HR)

Education Policies

When 'Optimal' Means 'Elitist and Regressive'

In Discussion Paper No. 1792, **Gianni De Fraja** considers the optimal education policy for a budget-constrained utilitarian government. Households differ in their income and in the intellectual ability of their children; income is observed by the government, but ability is private information. Households can choose to

Quality and Standards

Beating the Regulator

In many markets where governments set minimum quality standards, some sellers choose to compete on the basis of quality by exceeding the minimum standards. Such 'high-quality' strategies often win public acclaim, especially when 'environmental friendliness' is the dimension along which firms are differentiated. In Discussion Paper No. 1793, **Stefan Lutz**, **Thomas Lyon** and **John Maxwell** analyse this phenomenon using a duopoly model of vertical product differentiation. A minimum quality standard leads both the high-quality and the low-quality firm to increase product qualities, lower prices and increase quantities sold. As a result, total welfare increases. Industry profits fall, however, because reduced quality differentiation intensifies price competition. If the high-quality firm can commit to a quality level before regulations are promulgated, it induces the regulator to weaken standards, and welfare falls.

Strategic Quality Choice with Minimum Quality Standards
Stefan Lutz, Thomas P Lyon and John W Maxwell

Discussion Paper No. 1793, January 1998 (IO)

Analysing Income Convergence

Methodological Advances

In Discussion Paper No. 1794, **Angel de la Fuente** illustrates how convergence equations can be used to analyse the dynamics of the income distribution, thus overcoming some of the limitations of this methodology noted by Quah. Using panel data for a sample of OECD countries, de la Fuente estimates a growth equation that relates the growth rate of income per head to the rates

of accumulation of physical, human and technological capital, the share of government expenditures in GDP and the behaviour of the labour market, while allowing for the main convergence mechanisms identified in the literature. The estimated model and the underlying data are then used in a convergence accounting exercise, which yields quantitative estimates of the contribution of each of these variables to the relative growth performance of each country and to observed income convergence in the sample.

Convergence Equations and Income Dynamics: The Sources of OECD Convergence, 1970–95
Angel de la Fuente

Discussion Paper No. 1794, January 1998 (IM)

Idiosyncratic Risk and Volatility Bounds

Solving the Equity Premium Puzzle?

In Discussion Paper No. 1795, **Martin Lettau** evaluates models with idiosyncratic consumption risk, using Hansen and Jagannathan's (1991) volatility bounds. It is shown that idiosyncratic risk does not change the volatility bounds at all when consumers have constant relative risk aversion (CRRA) preferences and the distribution of the idiosyncratic shock is independent of the aggregate state. Following Mankiw (1986), Lettau shows that idiosyncratic risk can help to enter the bounds when idiosyncratic uncertainty depends on the aggregate state of the economy. Since individual consumption data are not reliable, he computes an upper bound of the volatility bounds using individual income data and assumes that agents must consume their endowment. He finds that the model does not pass the Hansen and Jagannathan test, even for very volatile idiosyncratic income data.

Idiosyncratic Risk and Volatility Bounds, or, Can Models with Idiosyncratic Risk Solve the Equity Premium Puzzle?
Martin Lettau

Discussion Paper No. 1795, January 1998 (FE/IM)

Immigration Policy

Employer Bonds for Discouraging Illegals?

Governments have rarely been successful in adhering to the intended consequences of temporary guest-worker policies. The conduit for legal entry of workers has resulted in a population of illegal workers, as the initially legal workers make the move to illegal employment. In Discussion Paper No. 1796, **Gil Epstein, Arye Hillman** and **Avi Weiss** examine the effectiveness of instituting a bond which

seeks to make the legal employer the enforcement agent of the government. Their model shows how the bond affects the wage differential between legal and illegal employment of migrant workers, and thereby the incentives for transfer from legal to illegal employment and the extent to which workers remain illegal.

Creating Illegal Immigrants
Gil S Epstein, Arye L Hillman and Avi Weiss

Discussion Paper No. 1796, January 1998 (HR)

Democracy and Growth

A Novel Explanation for the Kuznets Curve

During the nineteenth century most Western societies extended the franchise, a decision which led to unprecedented redistributive programmes. In Discussion Paper No. 1797, **Daron Acemoglu** and **James Robinson** argue that these political reforms can be viewed as strategic decisions by political elites, to prevent widespread social unrest and revolution. Political transition, rather than redistribution under existing political institutions, occurs because current transfers do not ensure future transfers, whereas the extension of the franchise changes the future political equilibrium and acts as a commitment to future redistribution. The theory offers a novel explanation for the Kuznets curve, whereby the fall in inequality follows redistribution because of democratization. The authors characterize the conditions under which an economy experiences the development path associated with the Kuznets curve, as opposed to two non-democratic paths: an 'autocratic disaster', with high inequality and low output; and an 'East Asian miracle', with low inequality and high output.

Why did the West Extend the Franchise? Democracy, Inequality and Growth in Historical Perspective
Daron Acemoglu and James A Robinson

Discussion Paper No. 1797, March 1998 (IM)

From Plan to Market

Reform Without Losers?

In Discussion Paper No. 1798, **Gerard Roland, Lawrence Lau** and **Yingyi Qian** develop a model to analyse the 'dual-track' approach to transition to a market economy as a mechanism for implementing efficient Pareto-improving economic reform, that is, reform achieving efficiency without creating losers. The approach, based on the continued enforcement of the existing plan while simultaneously liberalizing the

market, can be understood as a method for making implicit lump-sum transfers to compensate potential losers of the reform. The model highlights the critical role of enforcement of the plan and full liberalization of the market track. The authors examine how the dual-track approach has worked in practice in product and labour markets in China's economic reform.

Reform Without Losers: An Interpretation of China's Dual-Track Approach to Transition

Gerard Roland, Lawrence J Lau and Yingyi Qian

Discussion Paper No. 1798, March 1998 (TE)

Monetary Theory

Macroeconomics Made Simple?

In Discussion Paper No. 1799, **Willem Buiter** establishes the following four propositions. First, money is neutral even if there is a non-zero stock of non-monetary nominal public debt, because the government adjusts real taxes to satisfy its inter-temporal budget constraint. Second, Woodford's fiscal theory of the price level – according to which, for certain fiscal rules, the (initial) price level is independent of the nominal money stock – is invalid. It combines an overdetermined fiscal-financial programme with an unwarranted weakening of the government's inter-temporal budget constraint, requiring it to hold only in equilibrium, and only for arbitrarily restricted configurations of public spending, taxes and initial debt stocks. Third, there is price-level determinacy under an exogenous nominal interest-rate rule if the transactions technology has cash-in-advance features. The price level is hysteretic in this case. Fourth, it is not possible to draw inferences about the historical process of technological improvements in the transactions technology leading to a cashless economy by studying the limiting behaviour, as a transactions efficiency index takes on successively higher values, of a sequence of histories, each one of which is indexed for all time by a given level of efficiency.

The Young Person's Guide to Neutrality, Price Level Indeterminacy, Interest-Rate Pegs and Fiscal Theories of the Price Level
Willem H Buiter

Discussion Paper No. 1799, March 1998 (IM)

Monetary Union

Interactions between Ins and Outs

In Discussion Paper No. 1800, **Joseph Pearlman** and **Paul Levine** address the conduct of monetary and fiscal policy in a closed trading bloc consisting of 'ins' forming a monetary union, and 'outs' who retain

monetary sovereignty. All governments can opt for a particular choice of institutional arrangement for their central bank, however, and delegate monetary policy to it with varying degrees of independence or, equivalently, 'conservatism'. Pearlman and Levine examine the outcome when these decisions are individually rational for governments and are taken strategically, taking into account the intracountry interactions between fiscal authorities and their own central bank, and the intercountry interactions between the same players.

Monetary Union: The Ins and Outs of Strategic Delegation

Joseph Pearlman and Paul Levine

Discussion Paper No. 1800, March 1998 (IM)

Diversified Firms

Inefficient Investment?

In Discussion Paper No. 1801, **Raghuram Rajan**, **Henri Servaes** and **Luigi Zingales** employ a model of capital budgeting in a diversified firm, where headquarters have limited power, to show that funds are allocated towards the most inefficient divisions. The distortion is greater, the more diverse the investment opportunities of the firm's divisions. The authors test these implications on a panel of diversified firms in the United States during the period 1979–93. They find that: (1) diversified firms misallocate investment funds; (2) the extent of misallocation is positively related to the diversity of investment opportunities across divisions; and (3) the discount at which these diversified firms trade is positively related to the extent of the investment misallocation and to the diversity of investment opportunities across divisions.

The Cost of Diversity: The Diversification Discount and Inefficient Investment
Raghuram G Rajan, Henri Servaes and Luigi Zingales

Discussion Paper No. 1801, March 1998 (FE)

Comparative Advantage and Specialization

Persistence and Mobility

The theoretical literature on endogenous growth and international trade suggests that comparative advantage is endogenous. Sector-specific learning-by-doing and technology transfer respectively provide reasons why initial patterns of international specialization may persist or exhibit mobility over time. In Discussion Paper No. 1802, **James Proudman** and **Stephen Redding** evaluate the extent of persistence or mobility in trade in manufactured goods in Germany and the United Kingdom for the period 1970–93. A measure

of the extent of specialization is presented, and its evolution over time is modelled as a sequence of cross-section distributions. Evidence of considerable mobility is found, with the degree of mobility in the United Kingdom exceeding that in Germany.

Persistence and Mobility in International Trade
James Proudman and Stephen Redding

Discussion Paper No. 1802, March 1998 (IT)

Stages-of-growth Models

Endogenizing the 'Northern' Take-Off

In Discussion Paper No. 1803, **Richard Baldwin**, **Philippe Martin** and **Gianmarco Ottaviano** take a modest step towards formalizing the theoretical interconnections among four post-Industrial Revolution phenomena: the industrialization and growth take-off of rich 'northern' nations; massive global income divergence; and rapid trade expansion. Specifically, the paper presents a stages-of-growth model, in which the four phenomena are jointly endogenous and are all triggered by a gradual fall in the cost of doing business internationally. Beyond providing a simple framework for exploring the logical connections among these phenomena, the model itself may be of some interest because it is, to the authors' knowledge, the first endogenous growth model to display this Rostovian stages-of-growth feature.

Global Income Divergence, Trade and Industrialization: The Geography of Growth Take-Offs
Richard E Baldwin, Philippe Martin and Gianmarco P Ottaviano

Discussion Paper No. 1803, March 1998 (IM/IT)

EMU

ECB Challenges

In Discussion Paper No. 1804, **Francesco Giavazzi**, **Rudiger Dornbusch** and **Carlo Favero** discuss a number of issues that the newly constituted board of the European Central Bank (ECB) will face early on. The authors show that the conduct of a European monetary policy will be very different from living under the protective umbrella of the Bundesbank. They discuss voting on the ECB board, and argue that the ability to communicate information to the public will be a critical factor for the success of the new institution. They also ask how a single monetary policy – a common change in the interest rate controlled by the ECB – is transmitted to the economy of the member countries. They show that the monetary process differs significantly inside EMU: thus, at least initially, the cost of a disinflation

episode could fall unequally on a few member countries because they have a financial structure that spreads a monetary contraction widely, in combination with a wage-price structure that is relatively inflexible. Moreover, this process is sure to evolve, partly as a result of the financial-industry restructuring that is already under way, and that will be accentuated by the common money. And, as the 'Lucas principle' suggests, the wage-price process itself will adapt to the changing focus of European monetary policy.

A Red Letter Day?
Francesco Giavazzi, Rudiger Dornbusch and Carlo A Favero

Discussion Paper No. 1804, March 1998 (IM)

German Transition

Eastern Female Employment Trends

Since monetary union with West Germany on 1 July 1990, female monthly wages in eastern Germany have risen by 10 percentage points relative to male wages, but female employment has fallen 5 percentage points more than male employment. In Discussion Paper No. 1805, **Jennifer Hunt** uses the German Socio-Economic Panel to study the years 1990–4. She shows that, along with age, the wage of a worker in 1990 is the most important determinant of the hazard rate from employment. Differences in mean 1990 wages explain more than one-half of the gender gap in this hazard rate, since low earners were more likely to leave employment, and were disproportionately female. The withdrawal from employment of low earners can explain 80% of the rise in relative female wages. There is no evidence that reduction in child-care availability is a major factor in reducing female employment rates.

The Transition in East Germany: When is a Ten Point Fall in the Gender Wage Gap Bad News?
Jennifer Hunt

Discussion Paper No. 1805, March 1998 (TE)

Corporate Governance

Incomplete Contracts Approach

In Discussion Paper No. 1806, **Luigi Zingales** summarizes his own personal view of what corporate governance is about. He argues that it makes sense to discuss corporate governance only in an incomplete contract world. In this world, the notion of corporate governance is intrinsically related to the definition of the firm. In this respect, the shortcomings of the existing definitions of the firm are reviewed, and the possible applications of the idea – introduced by Rajan and Zingales (1997) – that the firm is a 'nexus of specific

investments' are explored. The paper concludes by discussing the limitations of the incomplete contracts approach to corporate governance.

Corporate Governance
Luigi Zingales

Discussion Paper No. 1806, March 1998 (FE)

Religion and Women's Labour Supply

Evidence from Israel

In Discussion Paper No. 1807, **Shoshana Grossbard-Shechtman** and **Shoshana Neuman** examine differences in the labour supply of women of different religions in Israel. The authors estimate religious differentials in the effect of husband's income, number of children, education and age on married women's labour supply. They suggest that labour-supply patterns of wives from different religious backgrounds may reveal differences in the institutions which different religious groups have established to regulate marriage and divorce. The results suggest that Christian marital institutions are closer to Jewish than they are to Moslem marital institutions. Moslem women appear to be less likely than either Christian or Jewish women to translate their resources into a higher value of time in marriage. Educated Moslem women seem to have fewer constraints on their marriages than their uneducated counterparts.

The Extra Burden of Moslem Wives: Clues from Israeli Women's Labour Supply
Shoshana Grossbard-Shechtman and Shoshana Neuman

Discussion Paper No. 1807, March 1998 (HR)

Financing Public Education

The Effects of Uncertainty

In Discussion Paper No. 1808, **Berthold Wigger** and **Robert von Weizsäcker** develop a public education scheme that takes uncertainty aspects of private educational investments explicitly into account. A case is made for tuition fees, which depend on expected return on investments in education. The consideration of uncertainty provides a neglected link between educational choice, resource endowment and productivity growth, which may serve to redefine the public role of education financing.

Risk, Resources and Education
Berthold U Wigger and Robert K von Weizsäcker

Discussion Paper No. 1808, March 1998 (HR)

Anglo-German Growth Comparison

Little Long-Term Difference?

In Discussion Paper No. 1809, **Barry Eichengreen** and **Albrecht Ritschl** seek to place Anglo-German growth after World War II in a long-term comparative perspective. Reviewing explanations of why post-war Germany is more dynamic than the United Kingdom, the authors evaluate arguments stressing institutional change, catching-up and country-specific long-term experience. Examining competition policy and macroeconomic demand management, they find only a limited role for institutional changes and an impressive degree of institutional continuity in each country. Likewise, in intertemporal perspective, the scope for catching up between Germany and the United Kingdom is unimpressive. Growth and productivity differences are found to be rooted in each country's starting position relative to its own steady state. During the 1950s, the UK economy grows along a steady state established between the wars, while the German economy experiences a pronounced rebound effect from the war shock. After its return to the steady state, German growth performance is very similar to that of the United Kingdom and by no means more impressive.

Winning the War, Losing the Peace? Britain's Post-War Recovery in a West German Mirror
Barry Eichengreen and Albrecht Ritschl

Discussion Paper No. 1809, March 1998 (HR)

Oligopolistic Economies

Analysing Profit Aspirations

An economy consists of many duopolistic markets. Firms must earn normal profits in the long run if they are to survive. Normal profits are interpreted as the long-run limit of average profits in the whole economy. In Discussion Paper No. 1810, **Huw Dixon** adopts the aspiration-based model of firm behaviour, and links it to the economy with the requirement that, in the long run, the profit aspiration must be at least as great as normal profits. Dixon assumes that the joint profits can be maximized with symmetric pay-offs, and with very few other assumptions is able to show that the (almost) global attractor is the cooperative outcome.

Keeping Up With the Joneses: Competition and the Evolution of Collusion in an Oligopolistic Economy
Huw David Dixon

Discussion Paper No. 1810, March 1998 (IO)

Herd Effects

In Discussion Paper No. 1811, **Gil Epstein** and **Arye Hillman** introduce the notion of herd effects, or information cascades, into models of migration-related phenomena. The authors consider individuals making sequential decisions regarding emigration. Each individual receives a signal which conveys private information regarding preferred locations abroad, and also observes the decisions made by previous emigrants. The herd behaviour which ensues gives rise to geographical concentration, in host countries, of immigrants from the one location. The authors show how herd effects can be expected to have both efficiency and political-economy consequences. They expect international factor allocation, predicated on herd effects, to be inefficient. Herd effects can also be the source of social tensions when the host country's resident population is xenophobic. In general, herd effects can lead to incorrect personal location decisions, since people are led to discount their private information. Herd effects are also compared with the network-externalities explanation of immigrant concentration.

Herd Effects and Migration
Gil S Epstein and Arye L Hillman

Discussion Paper No. 1811, March 1998 (HR)

Theories of Fairness

Competition, Cooperation and Punishment of Free Riders

There is strong evidence that people exploit their bargaining power in competitive markets, but not in bilateral bargaining situations. There is also strong evidence that people exploit free-riding opportunities in voluntary cooperation games. Yet when they are given the opportunity to punish free riders, stable cooperation is maintained, although punishment is costly for those who punish. In Discussion Paper No. 1812, **Ernst Fehr** and **Klaus Schmidt** ask whether there is a simple common principle that can explain this puzzling evidence. They show that if a fraction of the people exhibits inequality aversion, the puzzles can be resolved.

A Theory of Fairness, Competition and Cooperation
Ernst Fehr and Klaus M Schmidt

Discussion Paper No. 1812, March 1998 (IO)

A Canonical Geometry

Division-of-labour models have become a standard analytical tool, along with competitive general equilibrium models (Ricardian, HOS, Ricardo-Viner), in public finance, trade, growth, development and macroeconomics. Yet, unlike the earlier models, specialization models lack a canonical representation. This is because they are both new and complex, characterized by multiple equilibria, instability and emergent structural properties under parameter transformation. In Discussion Paper No. 1813, **Joseph Francois** and **Douglas Nelson** develop a general framework for such models, illustrating results from current research on specialization models, and explaining why one sub-class of these models is particularly difficult to illustrate easily.

A Geometry of Specialization
Joseph F Francois and Douglas Nelson

Discussion Paper No. 1813, March 1998 (IT)

UK Electricity Market

Will '1998' be Worth it?

Starting in 1998, the electricity market in England and Wales will be opened up to full competition, and all consumers will be allowed to choose their electricity supplier. This promises to result in lower prices, but there will be additional transactions costs exceeding £100 million a year for the first five years. In Discussion Paper No. 1814, **Tanga McDaniel** and **Richard Green** conclude that, relative to a counterfactual without competition, there are likely to be large transfers from electricity companies (and the coal industry) to consumers, but the companies lose more than consumers gain. This conclusion might be reversed, if competitive pressure leads to significant additional cost savings in the future.

Competition in Electricity Supply: Will '1998' be Worth it?
Tanga McDaniel and Richard Green

Discussion Paper No. 1814, March 1998 (IO)

Migration

Contests for Privilege

In Discussion Paper No. 1815, **Gil Epstein**, **Arye Hillman** and **Heinrich Ursprung** consider a country where a king assigns benefits in accordance with privilege determined by the population's proximity to the

throne. People have different relative advantages in seeking privilege and in productive activity. The nature of the contest for privilege determines whether, in equilibrium, the more productive or less productive in society are located closer to the king, and thus who has an incentive to emigrate. When contests for privilege are 'easy', the more productive are furthest from the king and emigrate first. When contests are 'difficult', the least productive emigrate first. In either case, the population unravels, although emigration is bounded.

The King Never Emigrates: Political Culture and the Reluctant International Movement of People
Gil S Epstein, Arye L Hillman and Heinrich W Ursprung

Discussion Paper No. 1815, March 1998 (HR)

Graduate Hiring Patterns

The Importance of Japanese Networks

In Discussion Paper No. 1816, **Marcus Rebick** examines the extent to which the transition from university education to work is characterized by persistent hiring flows between university faculties and firms, rather than being characterized by an open-market process. Using a specially devised metric, Rebick finds that more than one-half of all hires may be attributed to persistence in hiring by firms from specific faculties, with the remainder owing to random hiring. There does not seem to be a major difference in the importance of screening between science and engineering and non-science faculties. In general, the importance of persistence increases with increases in the differences in the quality of the faculties from which existing personnel in firms graduated, and with increases in the standard of faculties from which firms are hiring. This suggests that persistence exists to aid firms in screening students when they come from relatively low-standard faculties.

The Importance of Networks in the Market for University Graduates in Japan: A Longitudinal Analysis of Hiring Patterns
Marcus E Rebick

Discussion Paper No. 1816, May 1998 (HR)

Limit-Order Markets

Order-Flow Composition and Trading Costs

In Discussion Paper No. 1817, **Thierry Foucault** provides a game-theoretic model of price-formation and order-placement decisions in a dynamic limit-order market. Investors can choose to post limit orders or to submit market orders. Limit orders result in better execution prices, but face a risk of non-execution and a winner's curse problem. The execution probability of a limit-order trader is endogenous, and depends on the order-placement decisions of the other traders. Solving for the equilibrium of this dynamic game, closed-form solutions for the order-placement strategies are obtained. Thus testable implications for the cross-sectional behaviour of the mix between market and limit orders and trading costs in limit-order markets are derived. It is also shown that the winner's curse problem has a negative impact on the allocative efficiency of these markets.

Order Flow Composition and Trading Costs in Dynamic Limit-Order Markets
Thierry Foucault

Discussion Paper No. 1817, March 1998 (FE)

Product-Market Integration

Wage and Employment Outcomes

Theory predicts that when economies become more integrated through the removal of tariff and other barriers to trade, resulting in an increase in competition in product markets, there should be effects on wage and employment outcomes in labour markets, particularly those in which unions are active. In Discussion Paper No. 1818, **John Driffill, Meloria Meschi** and **Alistair Ulph** investigate this idea empirically, using a cross-section of UK manufacturing establishments from the 1990 WIRS dataset. A reduction in non-tariff barriers from high to medium leads to lower wages, particularly for unskilled workers. Further reductions in non-tariff barriers produce a less well-determined effect. Intra-industry trade flows relative to sales, which are also used as a proxy for international integration, do not appear to affect wages so markedly.

Product-Market Integration and Wages: Evidence from a Cross-Section of Manufacturing Establishments in the United Kingdom
John Driffill, Meloria Meschi and Alistair Ulph

Discussion Paper No. 1818, March 1998 (IM)

Effects on Rational Behaviour and Market Equilibrium

In Discussion Paper No. 1819, **John Donaldson** and **Jean-Pierre Danthine** discuss the extent to which the expectation of a rare event, not present in the usual post-war sample data, but not rationally excludable from the set of possibilities – the 'peso problem' – can affect the behaviour of rational agents and the characteristics of market equilibrium. To that end, the authors describe quantitatively the macroeconomic and financial properties of a standard equilibrium business-cycle model, modified to allow for a very small probability of a depression state. They are careful to contrast what would be the stationary probability distribution descriptive of the dynamic rational expectations (RE) equilibrium, with the empirically observed behaviour of the economy under the same RE assumption when the depression does not appear in the sample. The effects of small probability events appear to be especially significant for financial-market characteristics. The paper produces a reasonable model specification, for which both business-cycle characteristics and mean financial returns are in accord with US observations. The 6.2% premium is obtained in an economy where agents are only moderately risk averse and where there are no frictions.

Non-Falsified Expectations and General Equilibrium Asset Pricing: The Power of the Peso
John B Donaldson and Jean-Pierre Danthine

Discussion Paper No. 1819, March 1998 (FE/IM)

Sovereign Liquidity Crises

The Case for a Payments Standstill

Is sovereign debt so different from corporate debt that there is no need for bankruptcy procedures to handle potential defaults? The basic tools of finance seem to confirm that, without water-tight sovereign immunity, creditors face a Prisoner's Dilemma: litigious creditors may be tempted to grab what sovereign assets they can in a 'race of the vultures'. Recent case history also suggests that there may be gains to 'learning-by-suing'. To check this by a standstill on payments would doubtless run some risk of debtor's moral hazard, as the Institute for International Finance has warned in its report on crisis resolution. But not to have an orderly procedure may mean that, *de facto*, the IMF is forced to bail out distressed members, leading to the risk of investors' moral hazard, i.e. where investors lend without monitoring, secure in the belief that the international agencies will have to intervene. In Discussion Paper No. 1820, **Lei Zhang** and **Marcus Miller** assert that the strategic case for making legal a

standstill on payments is to rescue the authorities from this 'time consistent' trap.

Sovereign Liquidity Crises: the Strategic Case for a Payments Standstill
Lei Zhang and Marcus H Miller

Discussion Paper No. 1820, March 1998 (IM)

Monetary Policy and Inflation

From Theory to Practice

In Discussion Paper No. 1821, **José Viñals** addresses a number of questions which are essential to a proper understanding of the causes and effects of the inflationary process, and to an assessment of the contribution of monetary policy to the achievement of long-term price stability. These questions are: (1) What are the economic costs of inflation? (2) What part does monetary policy play in the short- and medium-term evolution of inflation? (3) What are the most appropriate monetary policy strategies for fighting inflation?

Monetary Policy and Inflation: From Theory to Practice
José Viñals

Discussion Paper No. 1821, March 1998 (IM)

Economic Geography

Fiscal Effects of Regional Integration

In models of economic geography, plant-level scale economies and trade costs create incentives for spatial agglomeration of production into a manufacturing core and an agricultural periphery, creating regional income differentials. In Discussion Paper No. 1822, **Rodney Ludema** and **Ian Wooton** examine tax competition between national governments to influence the location of manufacturing activity. Labour is imperfectly mobile and governments impose redistributive taxes. Regional integration is modelled as either increased labour mobility or lower trade costs. The authors show that either type of integration may result in a decrease in the intensity of tax competition, and thus higher equilibrium taxes. Moreover, economic integration must increase taxes when the forces of agglomeration are the strongest.

Economic Geography and the Fiscal Effects of Regional Integration
Rodney D Ludema and Ian Wooton

Discussion Paper No. 1822, March 1998 (HR/IT)

The 1998 European Summer Symposium in Economic Theory

CEPR's 1998 European Summer Symposium in Economic Theory was held in Gerzensee, Switzerland, from 29 June to 10 July. The symposium was organized with financial support from the Review of Economic Studies and was hosted by the Studienzentrum Gerzensee. The organizers were **Mark Armstrong** (Nuffield College, Oxford, and CEPR), **Philippe Bacchetta** (Studienzentrum Gerzensee, Université de Lausanne and CEPR), **Patrick Bolton** (Princeton University and CEPR) and **Klaus Schmidt** (Universität München and CEPR).

The symposium brought together a diverse range of papers in economic theory. Many of the papers, however, were based on the themes of international trade, competition policy and regulation. The papers presented were as follows:

'Prices and the Winner's Curse', **Jeremy Bulow** (Stanford GSB) and **Paul Klemperer** (Nuffield College, Oxford)

'Does Symmetry Help Firms Collude?', **Massimo Motta** (Universität Pompeu Fabra and CEPR)

'Optimal Trade Policy in the Presence of DFI and Internal Tax Competition', **Laurel Adams** (Northwestern University) and **Pierre Regibeau** (Institut d'Anàlisi Econòmica, Barcelona, and CEPR)

'GATT-Think', **Kyle Bagwell** (Columbia University) and **Robert Staiger** (University of Wisconsin-Madison and NBER)

'International Competition for Multinational Investment', **Jan Haaland** (Norwegian School of Economics and Business Administration and CEPR) and **Ian Wooton** (Glasgow University and CEPR)

'Incomplete Social Contracts', **Philippe Aghion** (University College, London, EBRD and CEPR) and **Patrick Bolton** (Princeton University and CEPR)

'Information Aggregation, Strategic Behaviour and Efficiency', **Xavier Vives** (Institut d'Anàlisi Econòmica, Barcelona)

'The Search for Fit: Learning from Others and Organizational Design', **Kai-Uwe Kühn** (Institut d'Anàlisi Econòmica, Barcelona) and **Peter Zemsky** (INSEAD)

'Anti-Trust Issues in the Licensing of Intellectual Property', **Richard Gilbert** (University of California at Berkeley) and **Carl Shapiro** (University of California at Berkeley)

'Capacity Constraints, Mergers and Collusion', **Olivier Compte** (CERAS-ENPC, Paris), **Frederic Jenny** (ESSEC, Paris) and **Patrick Rey** (University of Toulouse, GREMAQ, IDEI and CEPR)

'Predatory Pricing: Strategic Theory and Legal Policy', **Patrick Bolton** (Princeton University and CEPR), **Joseph Bradley** (Boston University) and **Michael Riordan** (Boston University)

'The Effects of Anti-trust and Intellectual Property Law on Compatibility and Innovation', **Joseph Farrell** (University of California at Berkeley) and **Michael Katz** (University of California at Berkeley)

'Competition, Contracts and Entry in the Electricity Spot Market', **David Newbery** (University of Cambridge)

'Capacity Investment and Competition in Decentralised Electricity Markets', **Nils-Henrik von der Fehr** (University of Oslo) and **David Harbord** (David Harbord and Associates, Oxford)

'Team Play in the War of Attrition', **Jon Dworak** (MIT), **Justin Johnson** (MIT) and **David Myatt** (Nuffield College, Oxford)

'The Continuous-Time Principal-Agent Problem: Frequent-Monitoring Contracts', **Patrick Bolton** (Princeton University and CEPR) and **Christopher Harris** (University of Cambridge)

'On the Value of Competition in Procurement Auctions', **Olivier Compte** (CERAS-ENPC, Paris) and **Philippe Jehiel** (CERAS-ENPC, Paris)

'Allocation of Effort in Government Bureaucracies', **Maija Halonen** (University of Bristol) and **Carol Propper** (University of Bristol)

'Narrative Evidence on the Dynamics of Collusion: The Sugar Institute Case', **David Genesove** (MIT and NBER) and **Wallace Mullin** (Michigan State University and NBER)

'Estimating Demand for Local Telephone Service with Asymmetric Information and Optimal Calling Plans', **Eugenio Miravete** (INSEAD and Institut d'Anàlisi Econòmica, Barcelona)

'Horizontal Mergers: A Free-Entry Equilibrium Analysis', **Luís Cabral** (London Business School)

'Regulating Telecommunications: A Dynamic Perspective', **Michael Riordan** (Boston University) and **Gary Biglaiser** (University of North Carolina)

'The Transition to Competition in Telecommunications', **Gary Biglaiser** (University of North Carolina) and **Michael Riordan** (Boston University)

'The Life Cycle of Regulatory Agencies: Dynamic Capture and Transactions Costs', **David Martimort** (ESR-INRA and IDEI, Toulouse)

'The Design of Markets and the Solution to Hold-Up Problems', **Hans Gersbach** (Alfred-Weber-Institut, University of Heidelberg)

'The Sale of Intellectual Property: Strategic Disclosure, Property Rights and Incomplete Contracts', **James Anton** (Fuqua School, Duke University) and **Dennis Yao** (Wharton School, University of Pennsylvania)

'A Theory of Supervision with Endogenous Transaction Costs', **Antoine Faure-Grimaud** (London School of Economics and CEPR), **Jean-Jacques Laffont** (IDEI-GREMAQ Toulouse) and **David Martimort** (ESR-INRA and IDEI, Toulouse)

'Market Experimentation in a Dynamic Differentiated-Good Duopoly', **Godfrey Keller** (London School of Economics) and **Sven Rady** (Stanford Graduate School of Business)

'Sequential Investments and Options to Own', **Georg Nöldeke** (Universität Basel) and **Klaus Schmidt** (Universität München and CEPR)

The conference also incorporated an Anti-Trust Roundtable chaired by **Richard Gilbert** (University of California at Berkeley), with contributions from **David Newbery** (University of Cambridge), **Xavier Vives** (Institut d'Anàlisi Econòmica, Barcelona) and **Joseph Farrell** (University of California at Berkeley).

UK Monetary Policy

Post-ERM Option Prices and Expectations

The UK pound left the ERM on 16 September 1992 after a period of turbulence. UK monetary policy soon shifted to lower short interest rates and an inflation target was announced. In Discussion Paper No. 1823, **Paul Söderlind** uses daily option prices to estimate how the market's probability distribution of the future Deutsche mark/sterling exchange rate and of UK and German interest rates changed over the summer and autumn of 1992. The results show, among other things, how various policy decisions affected the market's assessment of the probabilities of realignments and lending rate cuts.

Extracting Expectations about 1992 UK Monetary Policy from Option Prices
Paul Söderlind

Discussion Paper No. 1823, March 1998 (IM)

Inter-War France

Expectations and Bond Prices

In Discussion Paper No. 1824, **Pierre-Cyrille Hautcoeur** and **Pierre Sicsic** set out to isolate and measure the respective importance of political and economic aspects in two critical episodes of the French inter-war period: the stabilization process of the mid-1920s and the reluctance to abandon the gold standard during the 1930s. To do this, the authors separate expectations of taxation and of devaluation that are

implicitly included in the prices of various categories of French bonds. On the 1924–6 crisis, they show first, that there was no expectation of government default; second, that a substantial part of the high level of interest rates in 1925 can be explained by expectations of a capital levy or other taxation devices; and third, that hyperinflation was not expected, even at the moment of maximum price rise, since implied five-year interest rates were lower than 20% and since the expected value of the franc was not as low as the spot value. For the 1930s, they show that expectations of a depreciation of the franc explain the rise in interest rates, so that no independent effect of fiscal policy was expected.

Threat of a Capital Levy, Expected Devaluation and Interest Rates in Inter-War France
Pierre-Cyrille Hautcoeur and Pierre Sicsic

Discussion Paper No. 1824, March 1998 (IM)

Work Organization in Firms

Towards Multi-Tasking

In Discussion Paper No. 1825, **Assar Lindbeck** and **Dennis Snower** examine the determinants of the division of labour within firms. The examination provides an explanation of the pervasive change in work organization, away from the traditional functional departments, and towards multi-tasking and job rotation. The existing literature on the division of labour within firms emphasizes the returns from specialization and the need for coordination of the work of different workers. The present analysis, by contrast, focuses on the returns from multi-tasking, which is itself shown to arise from informational and technological complementarities

among tasks, as well as from the exploitation of the versatility of human capital.

The Division of Labour Within Firms
Assar Lindbeck and Dennis J Snower

Discussion Paper No. 1825, March 1998 (HR)

Unemployment

The Natural-Rate vs Chain-Reaction Theories

In Discussion Paper No. 1826, **Marika Karanassou** and **Dennis Snower** evaluate two theories of unemployment: the natural-rate theory (whereby unemployment is depicted as fluctuating around a reasonably stable natural rate); and the chain-reaction theory (which views movements in unemployment as the outcome of the interplay between labour-market shocks and a network of lagged adjustment processes). The authors show that, for labour-market systems with two common characteristics – lagged endogenous variables and growing exogenous variables – lags affect unemployment not only in the short run, but also in the long run. The reason is that, in the presence of growing exogenous variables, the lagged responses are never able to work themselves out entirely. In this respect, the chain-reaction theory contrasts sharply with the natural-rate theory, which commonly views unemployment as approaching a natural rate determined solely by the values of the exogenous variables. The policy implications of the two theories are quite different as well. For an empirical model of the UK market, the authors show that unemployment does not converge to the natural rate, as conventionally defined. Furthermore, they show that lagged adjustment processes account for a substantial part of the long-run equilibrium unemployment rate and for the movement of UK unemployment over the past 15 years.

How Labour Market Flexibility Affects Unemployment: Long-Term Implications of the Chain-Reaction Theory
Marika Karanassou and Dennis J Snower

Discussion Paper No. 1826, February 1998 (HR)

Endogenous Growth

Links with IQ and Social Mobility

Intelligent agents may contribute to higher technological growth if assigned appropriate positions in the economy. These positive effects on growth are unlikely to be internalized in a competitive labour market. The allocation of talent depends on the relative award the market assigns to intelligence compared with

other individual merits, which will also influence intergenerational social mobility. In Discussion Paper No. 1827, **John Hassler** and **Jose Mora** seek to illustrate this by presenting an endogenous growth model, in which each agent can choose to be a worker or an entrepreneur. The reward to entrepreneurs is an endogenous function of the abilities with which they have been endowed by nature, as well as of the amount of knowledge and other social assets they inherit from their parents. When growth is low, the equilibrium in the labour market implies that the reward to entrepreneurs depends more on social assets than on intelligence. This gives children of entrepreneurs a large *ex ante* advantage over children of workers when working as entrepreneurs. In turn, this will cause low intergenerational social mobility and an inefficient allocation of human resources and, consequently, low growth. Conversely, there is also a stable equilibrium with high growth which mitigates the inefficiencies generated by the labour market and implies high intergenerational social mobility.

IQ, Social Mobility and Growth
John Hassler and Jose V Rodriguez Mora

Discussion Paper No. 1827, March 1998 (HR)

Emerging-Market Banking Crises

High 'Northern' Interest Rates to Blame?

In Discussion Paper No. 1828, **Barry Eichengreen** and **Andrew Rose** analyse banking crises using a panel of macroeconomic and financial data for more than 100 developing countries from 1975 through 1992. They find that banking crises in emerging markets are strongly associated with adverse external conditions. In particular, high Northern interest rates are strongly associated with the onset of banking crises in developing countries, even after taking into account a host of internal macroeconomic factors.

Staying Afloat When the Wind Shifts: External Factors and Emerging-Market Banking Crises
Barry Eichengreen and Andrew K Rose

Discussion Paper No. 1828, April 1998 (FE/IM)

Regional Redistribution and Stabilization

New Panel-Data Techniques

In Discussion Paper No. 1829, **Frederic Zumer** and **Jacques Mélitz** produce estimates of regional redistribution and stabilization through the central government budget in Canada, France, the United Kingdom and the United States. The estimates rest on

panel-data econometrics, and on an adherence to certain accounting principles that occasionally have been violated in the past. As a result of the statistical and accounting methods, the peak estimates for Canada and the United States in the earlier literature are never attained. In addition, panel-data econometrics yield estimates of stabilization which are entirely reasonable for France and the United Kingdom, whereas the estimates based on the previous literature are not so. Regional stabilization through the central government budget emerges as close to 20% in France, the United Kingdom and the United States, but only 10–14% in Canada.

Regional Redistribution and Stabilization by the Centre in Canada, France, the United Kingdom and the United States: New Estimates Based on Panel Data Econometrics

Frederic Zumer and Jacques Mélitz

Discussion Paper No. 1829, March 1998 (IM)

Earnings Inequalities

Modelling Households rather than Individuals

The rise in inequality and poverty has become one of the most important economic and social issues of recent times. In contrast to the literature on individual earnings inequality, however, there has been little work modelling (as opposed to documenting) household income dynamics. This is largely because of the difficulties created by the fact that, on top of the human-capital issues that arise in personal earnings, individuals are continually forming, dissolving and reforming household units. In Discussion Paper No. 1830, **Simon Burgess and Carol Propper** propose a framework for modelling household income dynamics. The framework emphasizes the roles of household formation and dissolution and labour-market participation. It allows standard economic theory to address the issues of household, as distinct from individual, income and poverty dynamics. The authors illustrate the framework with an application to poverty rates among young women in the United States, using the model to analyse differences in poverty experiences, particularly between black and white women.

An Economic Model of Household Income Dynamics, with an Application to Poverty Dynamics among American Women
Simon Burgess and Carol Propper

Discussion Paper No. 1830, March 1998 (HR)

Fiscal Policy Design

Thumbs Down for 'Golden Rule'

In Discussion Paper No. 1831, **Willem Buiter** comments on two central issues for fiscal policy design in the United Kingdom, highlighted in the recent 'Code for Fiscal Stability' proposed by the new Labour government. The first issue concerns the merits of the so-called 'golden rule of public-sector investment' – the proposition that, over the cycle, government borrowing should not exceed government capital formation. The second concerns the case for attempting to construct a more comprehensive balance sheet of public-sector assets and liabilities, including tangible public-sector assets and certain contingent claims. The two main conclusions are that the golden rule is without merit but that, subject to some important caveats, the construction of a more comprehensive government balance sheet is a worthwhile enterprise.

Notes on 'A Code for Fiscal Stability'
Willem H Buiter

Discussion Paper No. 1831, March 1998 (IM)

Swedish Demography

Fertility, Mortality and Real Wages

In Discussion Paper No. 1832, **Zvi Eckstein, Pedro Mira and Kenneth Wolpin** analyse the relationship between age-specific fertility, mortality and real wages in Sweden during the demographic transition. The authors take an overlapping-generations model of lifecycle fertility and fit it to actual Swedish time-series data over the past two-and-a-half centuries. The model fits the data well, accurately portraying the total fertility decline from more than four children per female before the mid-nineteenth century to about two children today. About 80% of this decline was in fertility that occurred at female ages over 30. The fitted model implies that the most important factor explaining the fertility decline is the reduction in child mortality over this period, whereas real-wage increases can explain less than one-third of the decline. Their combined effect, however, was considerably larger than a simple summing-up would predict. The fertility decline was also magnified by the combination of increasing real wages and rising adult survival rates. In addition, the paper finds that a model that is estimated using only pre-transition data would actually overstate the subsequent fertility decline.

A Quantitative Analysis of Swedish Fertility Dynamics: 1751–1990
Zvi Eckstein, Pedro Mira and Kenneth I Wolpin

Discussion Paper No. 1832, April 1998 (HR)

Labour-Market Frictions and Training

In the standard model of human capital with perfect labour markets, workers pay for general training. When labour-market frictions compress the structure of wages, firms may invest in the general skills of their employees. The reason is that the distortion in the wage structure turns 'technologically general' skills into 'specific' skills. Labour-market frictions and institutions, such as minimum wages and union wage setting, are crucial in shaping the wage structure, and thus have an important impact on training. In Discussion Paper No. 1833, **Daron Acemoglu** and **Jorn-Steffen Pischke** suggest that the more frictional and regulated labour markets in Europe and Japan may generate more firm-sponsored general training than those in the United States.

The Structure of Wages and Investment in General Training

Daron Acemoglu and Jorn-Steffen Pischke

Discussion Paper No. 1833, March 1998 (HR/IM)

EMU

Deflation Risk

In Discussion Paper No. 1834, **Paul De Grauwe** argues that the Maastricht-inspired policy mix of monetary and fiscal restriction applied during the first half of the 1990s is responsible, to a significant extent, for the build-up of both the unemployment rate and the government debt/GDP ratios on the European continent. De Grauwe contrasts this European policy mix with the one applied by the US authorities during the same period, and concludes that the US policy mix of fiscal restriction and monetary ease was more appropriate for reducing budget deficits and debt. The paper also evaluates the risk of the application of monetary and fiscal restriction in the future EMU, arguing that the Stability Pact has transformed the 60% Maastricht debt criterion into a 0% debt criterion.

The Risk of Deflation in the Future EMU: Lessons of the 1990s

Paul De Grauwe

Discussion Paper No. 1834, March 1998 (IM)

Evidence from Czech Panel Data

In Discussion Paper No. 1835, **Lubomir Lizal** and **Jan Svejnar** analyse the investment behaviour of medium and large industrial firms in the Czech Republic in 1992–5. The authors examine the relevance of alternative models of investment and test if behaviour varies across firms according to ownership and legal form. By using a large panel of quarterly observations, they eliminate the biases introduced by data aggregation and selectivity, reduce measurement error, take into account heterogeneity across firms and over time, and control for the significant seasonal variation in investment. The data indicate that foreign-owned companies invest the most, and cooperatives the least. Contrary to earlier survey findings, the large data set does not support the hypothesis that private firms invest more than state-owned ones. The authors' econometric tests suggest that, except for cooperatives and smaller private firms, the behaviour of firms is better approximated by the neoclassical/accelerator model than by cash-flow or financing-constraint theories. The data also fit quite precisely a dynamic structural model of investment for a profit-maximizing firm.

Enterprise Investment During the Transition: Evidence from Czech Panel Data

Lubomir Lizal and Jan Svejnar

Discussion Paper No. 1835, March 1998 (TE)

EMU

Fiscal Solvency and Forecasting Concerns

In Discussion Paper No. 1836, **Michael Artis** and **Massimiliano Marcellino** analyse two features of concern to policy-makers in the countries of the prospective European Monetary Union: the solvency of government finances, and the accuracy of fiscal forecasts. Extending the existing methodology of solvency tests, the paper finds that, with few exceptions, EU governments are insolvent, albeit that debt/GDP ratios show signs of stabilizing. The accuracy of official short-term fiscal forecasts (those of the OECD) is analysed, using conventional techniques, and found to be reassuring.

Fiscal Solvency and Fiscal Forecasting in Europe

Michael J Artis and Massimiliano Marcellino

Discussion Paper No. 1836, March 1998 (IM)

Implications of Asymmetric Information

Foreign direct investment (FDI) is observed to be the predominant form of capital flows to low- and middle-income countries with insufficiently developed capital markets. Discussion Paper No. 1837, by **Assaf Razin**, **Efraim Sadka** and **Chi-Wa Yuen** analyses the problem of channelling domestic savings into productive investment, in the presence of asymmetric information between the managing owners of firms and other portfolio stakeholders. The authors emphasize the crucial role played by FDI in sustaining equity-financed capital investment in economies plagued by such information problems. The paper identifies how, in the presence of information asymmetry, different capital-market structures may lead to foreign over- or underinvestment and to domestic under- or oversaving, and thus to inefficient equilibria. It shows how corrective tax-subsidy policies, consisting of taxes on corporate income and the capital incomes of both residents and non-residents, can restore efficiency.

Channelling Domestic Savings into Productive Investment Under Asymmetric Information: The Essential Role of Foreign Direct Investment
Assaf Razin, Efraim Sadka and Chi-Wa Yuen

Discussion Paper No. 1837, March 1998 (IM)

SOE Reform

Federalism and Privatization, Chinese Style

In 1994, China began a profound reform of its state-owned enterprises (SOEs). In Discussion Paper No. 1838, **Yuanzheng Cao**, **Yingyi Qian** and **Barry Weingast** describe and characterize this progress in two areas: privatization of small SOEs at the county level; and mass lay-offs of excess state workers at the city level. Local governments have initiated these reforms, which are proceeding in economically and politically sensible ways. The authors go on to argue that privatization, Chinese style, rests on an adequate economic and political foundation – federalism, also Chinese style. They suggest a range of incentives that propel local governments towards SOE reform, including harder budget constraints and increased competition from the non-state sector. In this sense, Chinese-style federalism has induced Chinese-style privatization.

From Federalism, Chinese Style, to Privatization, Chinese Style
Yuanzheng Cao, Yingyi Qian and Barry R Weingast

Discussion Paper No. 1838, March 1998 (TE)

Big is Better?

In Discussion Paper No. 1839, **Jozef Konings** and **Alexander Repkin** estimate stochastic frontier production functions for Bulgarian (1993–5) and Romanian (1994–5) manufacturing industries, using firm-level panel data. The technical efficiency of firms is found to vary significantly both within and across industrial sectors in each country. The authors find strong evidence of a positive relationship between firms' technical efficiency levels and their profitability, which suggests the reforms have succeeded in creating hard budget constraints. The relationship between firm efficiency and size is also found to be positive, suggesting that big industrial firms in the former planned economies are not necessarily inefficient.

How Efficient are Firms in Transition Countries? Firm-Level Evidence from Bulgaria and Romania
Jozef Konings and Alexander Repkin

Discussion Paper No. 1839, March 1998 (TE)

Unemployment Benefits

Less Hazardous in Spain?

In Discussion Paper No. 1840, **Samuel Bentolila**, **Olympia Bover** and **Manuel Arellano** study the effects of unemployment-benefit duration and the business cycle on unemployment duration. From a longitudinal sample of Spanish men in 1987–94, they construct durations for individuals entering unemployment. Estimated discrete hazard models indicate that receipt of unemployment benefits significantly reduces the hazard of leaving unemployment. For instance, at durations of three months, the hazard for workers without benefits is twice as large as that for workers with benefits. Favourable business conditions increase the hazard of leaving unemployment. At sample-period magnitudes, this effect is significantly smaller than that of benefit receipt.

Unemployment Duration, Benefit Duration and the Business Cycle
Samuel Bentolila, Olympia Bover and Manuel Arellano

Discussion Paper No. 1840, March 1998 (HR)

Political Trade-Offs Between Growth and Spatial Distribution

In Discussion Paper No. 1841, **Philippe Martin** constructs a two-region endogenous growth model, in which economic geography and public infrastructures play a key role. The model permits analysis of the impacts of different types of redistributive public policies on growth, industrial geography and spatial income distribution. An improvement of infrastructures that helps decrease transaction costs inside the richest region also increases the spatial concentration of industries, increases the growth rate, and decreases the gap in income between the two regions. An improvement in infrastructure in the poor region has the exact reverse effect. In this sense, the paper highlights a non-trivial political trade-off between growth and spatial distribution of economic activities. Contrary to transfers and traditional regional policies, it is shown that a public policy that reduces the cost of innovation can attain the objectives of higher growth and more even spatial distribution of incomes and economic activities. From this point of view, these policies seem preferable to the regional policies that are now implemented in Europe.

Public Policies, Regional Inequalities and Growth
Philippe Martin

Discussion Paper No. 1841, March 1998 (IM/IT)

Central Bank Independence

The Fiscal Policy Threat

Most of the literature on the independence of the Central Bank assumes that only one policy instrument is available: monetary policy. If fiscal policy is introduced as well, when preferences may differ among policy-makers, the situation is radically different. In this case, fiscal policy will weaken substantially the impact of the Central Bank's actions, and may annihilate them altogether. The Stability Pact may then be a liability, instead of an asset, because it renders both policies impotent (even if credible). In Discussion Paper No. 1842, **Andrew Hughes Hallett**, **Nicola Viegi** and **Maria Demertzis** examine whether there is any incentive to retain monetary policy independence; and whether accountability can and should be used to ensure fiscal and monetary policies support, rather than destroy, each other.

Independently Blue? Accountability and Independence in the New European Central Bank
Andrew J Hughes Hallett, Nicola Viegi and Maria Demertzis

Discussion Paper No. 1842, March 1998 (IM)

Exploring Lower Deficit Targets

In Discussion Paper No. 1843, **Andrew Hughes Hallett** and **Peter McAdam** examine the potential consequences of imposing a 'stability pact' on the fiscal convergence criteria for monetary union. Various versions of the stability pact are possible. The authors examine the consequences of reducing the target deficit ratio to 1%, and of refundable fines for those who exceed the 3% limit specified in the Maastricht Treaty. They also consider the possibility of targeting structural, rather than actual, deficits. They find that tax increases are necessary, and would have to be permanent, if the proposed deficit reductions are to be sustained below the 3% limit. They also find that changes in the policy mix are necessary – a loosening in the real value of money relative to fiscal policy (but not necessarily in absolute terms) – to avoid liquidity shortages or a debt explosion. By far the most important result, however, is a sharp rise in real interest rates. In the longer term, this destroys investment, employment and output capacity. This is a more serious cost than short-term losses in output itself.

Large-Scale Fiscal Retrenchments: Long-Run Lessons from the Stability Pact
Andrew J Hughes Hallett and Peter McAdam

Discussion Paper No. 1843, March 1998 (IM)

Privatization

Enhancing Efficiency and Economic Growth

In Discussion Paper No. 1844, by **Thorvaldur Gylfason**, privatization is shown to increase national economic output in a two-sector, full-employment general-equilibrium model, by enhancing efficiency as if a relative-price distortion were being removed through price reform, trade liberalization, or stabilization. The static output gain from reallocation and reorganization through privatization is captured in a simple formula in which the gain is a quadratic function of the original distortion stemming from an excessively large public sector. Substitution of plausible parameter values into the formula indicates that, in practice, the static output gain from privatization may be large. The potential dynamic output gain from privatization also appears to be substantial.

Privatization, Efficiency and Economic Growth
Thorvaldur Gylfason

Discussion Paper No. 1844, March 1998 (IM)

The Benefits of a Simpler Model

The 'new' economic geography focuses on the footloose-labour and the vertically linked-industries models. Both are complex, since they feature demand-linked and cost-linked agglomeration forces. In Discussion Paper No. 1845, **Richard Baldwin** presents a simpler model, where agglomeration stems from demand-linked forces arising from endogenous capital with forward-looking agents. The model's simplicity permits many analytic results (rare in economic geography). Trade-cost levels that trigger catastrophic agglomeration are identified analytically; liberalization between almost equal-sized nations is shown to entail 'near-catastrophic' agglomeration; and Krugman's informal stability test is shown to be equivalent to formal tests in a fully specified dynamic model.

Agglomeration and Endogenous Capital
Richard E Baldwin

Discussion Paper No. 1845, March 1998 (IM/IT)

EMU

Bankers' vs Workers' Europe

The delegation of monetary policy to a supranational central bank creates a conflict of interest between residents of different countries. For example, the country in recession favours more inflation to boost output, whereas the country in boom prefers exactly the opposite. This conflict gives rise to an adverse-selection problem. Provided each government has private information about the current state of the economy, it may try to exploit the information in order to shift the common monetary policy to its own preferred way. In Discussion Paper No. 1846, **Laura Bottazzi** and **Paolo Manasse** show that problems of this kind can generate both an inflation and a primary-deficit bias (in line with the worries of Workers' Europe addressed by the 'stability pact'), and an excess monetary discipline and recession bias (in line with the worries addressed by the Bankers' Europe concern). When information problems are particularly severe, monetary policy becomes relatively insensitive to business-cycle conditions, and too little 'smoothing' is done by monetary (and fiscal) policy. Inflation oscillates between periods of severe contractions (stop) and periods of extreme expansions (go), thus amplifying the business cycle.

Bankers' Versus Workers' Europe (I): Adverse Selection in EMU
Laura Bottazzi and Paolo Manasse

Discussion Paper No. 1846, March 1998 (IM)

Interaction with Centralized Wage Bargaining

In Discussion Paper No. 1847, **Alex Cukierman** and **Francesco Lippi** propose a conceptual framework for investigating the effects of central bank independence, the degree of centralization of wage bargaining and the interaction between these institutional variables, on real wages, unemployment and inflation. The labour market is characterized by the degree of centralization of bargaining, and by the degree of trade union aversion to inflation. This aversion leads each union to moderate its wage demands in order to induce the central bank to inflate at a lower rate. An increase in the degree of centralization of wage bargaining (i.e. a decrease in the number of unions) triggers two opposite effects on real wages, unemployment and inflation. The reduction in the number of unions reduces the labour-market substitutability between the members of different unions and therefore the degree of effective inter-union competition. This 'reduced competition effect' raises real wages, unemployment and inflation. But the decrease in the number of unions also strengthens the moderating effect of inflationary fears on the real-wage demands of each union. This 'strategic effect' lowers real wages, unemployment and inflation.

The interaction between the two effects produces a Calmfors-Driffill-type relationship between real wages and centralization. The paper analyses the effects of centralization and of independence on the position and shape of this relationship, as well as on inflation and unemployment. Some of the resulting implications are tested empirically, using data from 19 developed economies. Implications for the optimal degree of conservativeness and for European Monetary Union are also discussed.

Central Bank Independence, Centralization of Wage Bargaining, Inflation and Unemployment – Theory and Evidence
Alex Cukierman and Francesco Lippi

Discussion Paper No. 1847, March 1998 (IM)

Endogenous Tariff Formation

The Case of Mercosur

In Discussion Paper No. 1848, **Marcelo Olarreaga** and **Isidro Soloaga** confront the results of the endogenous tariff literature with evidence from MERCOSUR (Mercado Comun del Sur, literally, 'the Common Market of the Southern Cone'). It is shown that MERCOSUR's common external tariff (CET), and member countries' deviations from the CET and from internal free trade, can be explained by sector/industry lobbying, as predicted by the endogenous tariff

literature. If political-economy viability is a key to success, then MERCOSUR is here to stay.

Endogenous Tariff Formation: The Case of Mercosur

Marcelo Olarreaga and Isidro Soloaga

Discussion Paper No. 1848, March 1998 (IT)

Output Volatility

Don't Blame Sticky Prices

In Discussion Paper No. 1849, **Martin Ellison** and **Andrew Scott** examine the effect of introducing price stickiness into a stochastic growth model, subject to a cash-in-advance constraint. As has been previously documented, the introduction of price rigidities has several consequences: it provides a substantial source of monetary non-neutrality; it leads to a strong positive correlation between inflation and output; and it contributes significantly to output volatility. Ellison and Scott find, however, that this increased volatility arises mostly at the higher-than-business-cycle frequencies; that it leads to lower persistence in output fluctuations; and that it causes a deterioration in the ability of the model to explain UK data at all frequencies, but especially over the business cycle. As noted by Chari, Kehoe and McGratten (1996), this failure of exogenous price stickiness to cause persistent output fluctuations is owing to strongly pro-cyclical marginal costs. The authors' results clearly show that, in the context of their model, adding price rigidities is not sufficient to account for business-cycle fluctuations.

Sticky Prices and Volatile Output: Or When is a Phillips Curve not a Phillips Curve?

Martin Ellison and Andrew Scott

Discussion Paper No. 1849, March 1998 (IM)

Employment Security Regulations

Explaining High Job-Turnover Rates

Contrary to the popular wisdom, 'sclerotic' European labour markets are characterized by relatively large job-turnover rates. In Discussion Paper No. 1850, **Tito Boeri** develops a model which – unlike standard theories of job matching with on-the-job search – can account for the coexistence of strict employment security regulations, significant job-to-job shifts and high long-term unemployment rates in these countries. This is because: (1) employment security regulations can only be enforced by increasing the number of workers on 'short-term jobs'; and (2) the latter compete for jobs with unemployed jobseekers. Evidence is presented, showing that job-finding probabilities of the

unemployed are decreasing in the incidence of temporary employment, in line with the predictions of the model.

Enforcement of Employment Security Regulations, On-the-Job Search and Unemployment Duration

Tito Boeri

Discussion Paper No. 1850, March 1998 (HR)

Trade and FDI

Why the Close Correlation?

The global pattern of foreign direct investment (FDI) is quite similar to the world trade pattern. In particular, intra-industry FDI between rich nations is almost as pervasive as intra-industry trade among rich nations. In the 'standard' multinational corporation (MNC) model (of Markusen, Venables, Brainard and others), FDI is driven by a trade-off between proximity and scale, so firms typically supply the foreign market via exports or via FDI. The close correlation of two-way trade and investment flows is therefore difficult to explain with the standard model. In Discussion Paper No. 1851, **Richard Baldwin** and **Gianmarco Ottaviano** propose a model of multiproduct MNCs where firms simultaneously engage in intra-industry FDI and intra-industry trade.

Multiproduct Multinationals and Reciprocal FDI Dumping

Richard E Baldwin and Gianmarco I P Ottaviano

Discussion Paper No. 1851, March 1998 (IT)

Central Bank Goals

Monetary Policy, Transparency and Reputation

In Discussion Paper No. 1852, **Jon Faust** and **Lars Svensson** define and study transparency, credibility and reputation in a model where the central bank's characteristics are unobservable to the private sector, but are inferred from the policy outcome. A central bank with low credibility optimally conducts a more inflationary policy than one with high credibility, in the sense that it induces higher inflation, but a less expansionary policy, in the sense that it induces lower inflation and employment than expected. Increased transparency makes the bank's reputation and credibility more sensitive to its actions. This has a moderating influence on the bank's policy. Full transparency of the central bank's intentions is generally socially beneficial, but frequently not in the interest of the bank. Somewhat paradoxically, direct observability of idiosyncratic central

bank goals removes the moderating incentive on the bank and leads to the worst equilibrium.

Transparency and Credibility: Monetary Policy with Unobservable Goals

Jon Faust and Lars E O Svensson

Discussion Paper No. 1852, March 1998 (IM)

Immigrants' Wage Growth

Israeli Evidence

In Discussion Paper No. 1853, **Zvi Eckstein** and **Yoram Weiss** develop a descriptive methodology for the analysis of wage growth of immigrants, based on human capital theory. The sources of the wage growth are: (1) the rise of the return to imported human capital; (2) the impact of accumulated experience in the host country; and (3) the mobility up the occupational ladder in the host country. The authors formulate a non-linear model, and estimate it using repeated cross-section data on immigrants from the former Soviet Union to Israel. They find that, upon arrival, immigrants receive no return for imported skills. In the five years following arrival, wages of highly skilled immigrants grow at 8.13% a year. Rising prices of skills, occupational transitions, accumulated experience in Israel, economy-wide wage rises and repeated sampling account respectively for 4.3%, 3.1%, 1.6%, 1.2% and 2% each. There is convergence towards the natives in the occupational distribution, but not in wages. In the long run, the return to schooling converges to 0.044 and 0.027 for immigrants in high- and low-skill occupations respectively – substantially below the 0.073 for natives. The return to experience converges to that of Israelis, and immigrants receive a higher return for their unmeasured skills.

The Absorption of Highly-Skilled Immigrants: Israel, 1990–95

Zvi Eckstein and Yoram Weiss

Discussion Paper No. 1853, March 1998 (HR)

Matching Workers and Firms

Spatial Externalities

In Discussion Paper No. 1854, **Simon Burgess** and **Stefan Profit** provide empirical evidence on the nature of spatial externalities in a matching model for the United Kingdom. They use a monthly panel of outflows, unemployment and vacancy stocks data from the registers at Job Centres in the United Kingdom; these are mapped on to travel-to-work areas. They find evidence of significant spill-over effects that generally are in line with the predictions of theory. For example, conditional on local labour-market conditions, high

unemployment levels in neighbouring areas raise the number of local filled vacancies, but lower the local outflow from unemployment.

Externalities in the Matching of Workers and Firms in Britain

Simon Burgess and Stefan Profit

Discussion Paper No. 1854, April 1998 (HR)

Innovation and Growth

The Benefits of Income Equality

In Discussion Paper No. 1855, **Josef Zweimuller** and **Johann Brunner** examine the impact of income inequality on the level of innovative activity in a model in which innovations result in quality improvements. The market for quality goods is characterized by a natural oligopoly with two types of consumers – rich and poor. In general, the authors find that, for reasons of strategic price setting, a more equal distribution is favourable for innovation incentives. This is consistent with empirical evidence, suggesting that countries with a more equal distribution have grown faster.

Innovation and Growth with Rich and Poor Consumers

Josef Zweimuller and Johann K Brunner

Discussion Paper No. 1855, April 1998 (HR)

Employment and Growth

Workers Must Learn and Firms Must Innovate

In Discussion Paper No. 1856, **Josef Falkinger** and **Josef Zweimuller** present a model in which workers have to be educated to become employed, and firms have to innovate in order to increase productivity. Education, innovation and production all require skilled labour as inputs. This, and the fact that learning opportunities differ among workers, determines simultaneously the long-run level of employment and the long-run rate of growth. The authors investigate the impact of changes in the education of workers and the incentives to innovate. Lower profits imply lower growth rates, but not necessarily less employment. The effects of redistributive policy measures among workers depend on the form of redistribution. Subsidization of education increases employment and growth. Redistribution through the tax and benefit system, or the social net, has the opposite effect.

Learning for Employment, Innovating for Growth
Josef Falkinger and Josef Zweimuller

Discussion Paper No. 1856, April 1998 (HR)

The Determinants of Exports and Imports

A large share of world trade, especially among the OECD countries, is two-way trade within industries, so-called intra-industry trade (IIT). Despite this, few attempts have been made to examine why countries export some products within industries, whereas they import others. In Discussion Paper No. 1857, **Johan Torstensson** and **David Greenaway** examine this issue in three ways: by means of regression analysis; by examining the shares of IIT that are vertical and horizontal; and by examining price dispersion. The regression results suggest that an abundant human-capital endowment and a large domestic market increase the quality of OECD countries' manufacturing exports, thus offering support for comparative advantage models and newer geography models. The authors do not find support for increased concentration of production within industries, but do find that human capital becomes an increasingly important determinant of quality over time.

Economic Geography, Comparative Advantage and Trade Within Industries: Evidence from the OECD
Johan Torstensson and David Greenaway

Discussion Paper No. 1857, April 1998 (IT)

Growth Models with Externalities

Is the Importance of Indeterminacy Overstated?

Models with externalities have become increasingly popular for studying both long-term growth and business-cycle fluctuations. Externalities can lead to indeterminacy, allowing self-fulfilling expectations to determine the equilibrium. In Discussion Paper No. 1858, **Berthold Herrendorf**, **Akos Valentinyi** and **Robert Waldmann** argue that the importance of indeterminacy might be overstated by the literature, as it does not recognize that heterogeneity across individuals can have a strong stabilizing effect. The authors illustrate this in a stylized two-sector economy with an externality, by considering changes in the distribution of the individual entry costs into the two sectors. First, they find that the equilibrium is indeterminate (determinate) when the entry costs are relatively homogeneous (heterogeneous) across individuals. Their second result is that, for any neighbourhood of any possible long-run outcome of the economy, there is a mean-preserving spread of the entry-cost distribution, such that the unique steady state lies in that neighbourhood and is saddle-path stable. This implies that the aggregate characteristics may not be informative even when there is determinacy. Thus indeterminacy is not necessary to explain the empirical

fact that countries with very similar fundamentals can end up in rather different steady states.

Ruling out Indeterminacy: the Role of Heterogeneity
Berthold Herrendorf, Akos Valentinyi and Robert Waldmann

Discussion Paper No. 1858, April 1998 (IM)

Labour Markets

Racial Discrimination and Wage and Employment Differentials

In Discussion Paper No. 1859, **Audra Bowlus** and **Zvi Eckstein** analyse an equilibrium search model with three sources for wage and unemployment differentials among workers with the same (observed) human capital, but with different appearance (race). The three sources are unobserved productivity (skill), search intensities, and discrimination owing to an appearance-based employer-disutility factor (Becker 1957). Because these sources affect the earnings distributions differently, empirical identification of their potential role in the explanation of wage and unemployment differentials is possible. The authors show that the structural parameters of the model, including the firm's disutility from certain workers, are identifiable using standard labour-market survey data. They demonstrate identification using data from the National Longitudinal Survey of Youth. Estimation of these parameters by matching moments from a sample of black and white high-school graduates implies: (1) that blacks have a 9% lower productivity level than whites; (2) that the disutility factor in employers' preferences is 28% of the white workers' productivity level; and (3) that 53% of firms have a disutility factor in their utility toward blacks.

Discrimination and Skill Differences in an Equilibrium Search Model
Audra J Bowlus and Zvi Eckstein

Discussion Paper No. 1859, April 1998 (HR)

European Antidumping Policy

Interaction with Union Bargaining Power

The purpose of Discussion Paper No. 1860, by **Jozef Konings**, **Hylke Vandenbussche** and **Reinhilde Veugelers**, is to analyse the interaction between union bargaining power and the likelihood and type of European anti-dumping measures (duties and undertakings) in imperfectly competitive product markets. The authors present a simple theoretical model, which is well embedded in EU legal practice, to

show that cost asymmetries, induced by union wage bargaining in a European firm, lead to an increase in both the likelihood and the level of anti-dumping protection against foreign imports of a similar product. In addition, their results indicate that a cost asymmetry, in the form of a unionized wage differential, alters the relative probability of a duty versus an undertaking. They show that the size of these effects depends on the intensity of product-market competition. Belgian firm-level micro-data are used to provide some evidence for these predictions.

Union Wage Bargaining and European Anti-dumping Policy in Imperfectly Competitive Markets
Jozef Konings, Hylke Vandenbussche and Reinhilde Veugelers

Discussion Paper No. 1860, April 1998 (IT)

Youth Employment

Adverse Effects on School Performance?

The Fair Labour Standards Act (FLSA) imposes restrictions on working hours and the types of jobs held by minors at ages below 18. In the National Longitudinal Survey of Youth sample, average hours worked increased monotonically from 2.5 for 14-year-olds to 16.2 for 18-year-olds. Among all those who worked positive hours, the mean increased from 8.9 to 24.5. *De facto*, this evidence is in compliance with the FLSA regulations on weekly hours. In Discussion Paper No. 1861, **Kenneth Wolpin** and **Zvi Eckstein** set out to assess one of the underlying premises for the legislation, namely that working while attending high school could adversely affect school performance.

Wolpin and Eckstein formulate and estimate an explicit sequential decision model of high-school attendance and work that captures, in a stylized fashion, the important institutional features of high-school grade progression. Individuals accumulate credits towards graduation depending on their history of performance (knowledge acquisition), their level of participation in the labour market (hours worked) and their known (to them) ability and motivation. The labour market (randomly) offers wages for part-time and full-time employment that depend also on some inherent skill 'endowment' and labour-market experience. The value of attending high school consists of both the perceived investment pay-off to graduation and a current consumption value, which is random. The authors simplify the model by assuming that a terminal condition for decisions during the high-school period, and its value, can be estimated as an additional parameter. Their results indicate that a policy that forced youths to remain in high school without working for five years or until they graduate, whichever comes first, would increase the number of high-school graduates slightly from 82% to 84.1%.

Youth Employment and Academic Performance in High School

Kenneth I Wolpin and Zvi Eckstein

Discussion Paper No. 1861, April 1998 (HR)

Large-Company Performance

Empirical Survey

In Discussion Paper No. 1862, **Paul Geroski** undertakes a brief survey of recent empirical work on the performance of large companies. He tries to pull together the literature in the form of six stylized facts, illustrating these with data drawn from a single sample. The paper concludes by highlighting the issues thrown up for future work. These are: accounting for persistent heterogeneities between firms; accounting for the apparently erratic performance of many firms; and moving away from empirical agendas driven by hypothesis testing.

An Applied Econometrician's View of Large-Company Performance
Paul A Geroski

Discussion Paper No. 1862, April 1998 (IO)

Cross-Border Relocation Decisions in Duopoly

The Role of Wage Differentials

In Discussion Paper No. 1863, **Tito Cordella** and **Isabel Grilo** adopt the vertical differentiation duopoly framework to give a full description of firms' relocation decisions, when the removal either of trade barriers or of restrictions on capital outflows/inflows ('globalization') allows them to serve the domestic market through foreign plants. The authors identify the advantages associated with production abroad with the possibility of exploiting a given wage differential. They show that, in welfare terms, when the liberalization of trade or investment flows yields the relocation of the whole industry, autarchy is strictly better than 'globalization'. It is only when relocation is a dominant strategy for one (and only one) of the firms, that 'globalization' may be unambiguously welfare-improving. Furthermore, they show that the effects of the relocation of high- and of low-quality firms are different. In particular, if the economy is 'high-quality biased' ('low-quality biased') relocation of the firm producing the high-quality variant (the low-quality variant) is preferred to relocation of the other firm, if the wage differential is high enough.

'Globalization' and Relocation in a Vertically Differentiated Industry
Tito Cordella and Isabel Grilo

Discussion Paper No. 1863, April 1998 (IT)

Distinguishing Interventions from Customer Transactions

In Discussion Paper No. 1864, **Andreas Fischer** and **Mathias Zurlinden** examine the intra-daily efficacy of interventions by the Swiss National Bank (SNB) for the period 1986–94. The paper extends results from earlier studies by using the actual intervention exchange rates – all SNB interventions being known to the market. The authors' test of the signalling hypothesis, which distinguishes between interventions and customer transactions, is similar in spirit to US studies that exploit the informational differences between reported and unreported interventions. A key finding is that only initial interventions matter: customer transactions and subsequent interventions have no influence.

Interventions Versus Customer Transactions: An Alternative Test of the Signalling Hypothesis
Andreas M Fischer and Mathias Zurlinden

Discussion Paper No. 1864, April 1998 (IM)

Edison, Pongsak Luangaram and **Marcus Miller** use Kiyotaki and Moore's (1997) model of highly leveraged credit-constrained firms to explore this question. As applied to land-holding property companies, the model predicts greatly amplified responses to financial shocks, such as the ending of the land-price bubble or the fall of the exchange rate. The initial fall in asset values is followed by the 'knock-on' effects of the scramble for liquidity, as companies sell land to satisfy their collateral requirements, thus causing land prices to fall further. This could lead to financial collapse, where – like falling dominoes – prudent firms are brought down by imprudent firms. Key to avoiding collapse is the nature of financial stabilization policy: in a crisis, temporary financing can prevent illiquidity becoming insolvency, and launching 'lifeboats' can do the same. But the vulnerability of financial systems, like those in East Asia, to short-term foreign currency exposure suggests that preventive measures are also required.

Asset Bubbles, Domino Effects and 'Lifeboats': Elements of the East Asian Crisis
Hali J Edison, Pongsak Luangaram and Marcus H Miller

Discussion Paper No. 1866, April 1998 (IM)

Exaggerating Poor-country Capacity?

Conventional PPP-adjusted real output measures, invaluable for making international comparisons of living standards, may greatly exaggerate the productive capacity of poor countries. In Discussion Paper No. 1865, **Patrick Honohan** suggests that the equilibrium prices of a hypothetical world of full economic integration provide an instructive basis for evaluating the potential share of different countries in world output.

Does PPP-Adjusted Data Exaggerate the Relative Size of Poor Economies?
Patrick Honohan

Discussion Paper No. 1865, April 1998 (IM)

Blaming Credit-Market Imperfections

Credit-market imperfections have been blamed for the depth and persistence of the Great Depression in the United States. Could similar mechanisms have played a role in ending the East Asian miracle? In Discussion Paper No. 1866, following a brief account of the nature of the recent crises, **Hali**

Idiosyncratic Firm-Level Sources

In Discussion Paper No. 1867, **Paul Geroski, Ian Small** and **Chris Walters** examine some of the determinants of total factor productivity growth, using a sample of 216 large UK firms, observed over the period 1974–90, and then using three further samples to check the robustness of the results. The main focus of the paper is on identifying the size of agglomeration economies and technology spillovers between firms. Both types of externality should drive the productivity growth rates of individual firms together (and, in the second case, link them to the incidence of innovation). The overwhelming feature of the data, however, is that productivity growth rates, at the level of the firm, are very idiosyncratic. Not only are they extremely hard to predict using their own history, but they are also very difficult to predict using information on the productivity growth or innovative activity of their rivals. The authors conclude that agglomeration economies and technological spillovers are, at best, of very modest size.

Agglomeration Economies, Technology Spillovers and Company Productivity Growth
Paul A Geroski, Ian Small and Chris F Walters

Discussion Paper No. 1867, April 1998 (IO)

Block Trades vs Tender Offers

In Discussion Paper No. 1868, **Denis Gromb**, **Fausto Panunzi** and **Mike Burkart** evaluate block trades and tender offers as alternative means for transferring corporate control in firms with a dominant minority blockholder and an otherwise dispersed ownership structure. Incumbent and new controlling parties strictly prefer to trade the controlling block. From a social point of view, however, this method is inferior to tender offers, because it preserves a low level of ownership concentration, which induces more inefficient extraction of private control benefits. This discrepancy is caused by the free-riding behaviour of small shareholders. Moreover, the controlling block trades at a premium which reflects, in part, the surplus that the incumbent and the acquirer realize by avoiding a tender offer and the consequent transfer to small shareholders. Therefore, factors that alter the pay-offs of small shareholders in a tender offer (e.g. supermajority rules, disclosure rules and non-voting shares) also alter the block premium. Finally, the paper argues that greenmail, like block trading, enables the controlling parties to preserve low levels of ownership concentration and large private control benefits.

Block Premia in Transfers of Corporate Control
Denis Gromb, Fausto Panunzi and Mike Burkart

Discussion Paper No. 1868, June 1998 (FE)

German Labour Market

Wages and Worker Displacement

In Discussion Paper No. 1869, **Antje Mertens** and **Michael Burda** investigate the effect of displacement on the wages of socially insured German workers, who became unemployed in 1986. Because detailed information on job loss is unavailable, displacement status is predicted using a probit, estimated on the German Socioeconomic Panel. In contrast to US findings, post-displacement wages decline only slightly upon re-employment. The lowest earnings quartile, in which displacement is concentrated, even gains slightly (2%), whereas wage-growth losses for the upper three quartiles are higher (17%). Limited wage adjustment of displaced workers is likely to play an important role in explaining aggregate wage rigidity in Germany.

Wages and Worker Displacement in Germany
Antje Mertens and Michael C Burda

Discussion Paper No. 1869, April 1998 (HR)

Local Unemployment and Specialization

Recent empirical work has shown that there exists a negative relation between wages and unemployment estimated across regions. In Discussion Paper No. 1870, **Peer Ritter** and **Uwe Walz** employ a model that recognizes the spatial dimension of the so-called wage-curve by using a Hotelling/Salop framework in which a finite number of firms compete for heterogeneous workers. Ritter and Walz incorporate this set-up into an efficiency-wage framework. In setting wages, firms perceive their influence on the wage-unemployment trade-off, thus taking the employment decisions of their competitors as an externality. The model predicts that in larger regions, with firms demanding more specialized labour, workers receive higher wages and face lower unemployment.

Local Unemployment and Specialization
Peer Ritter and Uwe Walz

Discussion Paper No. 1870, April 1998 (HR)

The Welfare State

Threat from European Integration

In Discussion Paper No. 1871, **Hans-Werner Sinn** argues that increased factor mobility incurs the risk of dismantling the welfare state, even though this state may have useful allocative functions. It will be difficult to finance the welfare state with taxes on capital, and it may be necessary to subsidize this factor in the sense that some of the infrastructure it uses will have to be covered by taxes on other factors. In general, redistribution activities are underprovided, since they provide other countries with positive policy externalities. To overcome these difficulties and to make competition among welfare states workable, the paper suggests taxing capital income on a cash flow basis, and other incomes on the basis of a nationality principle.

European Integration and the Future of the Welfare State
Hans-Werner Sinn

Discussion Paper No. 1871, April 1998 (HR)

Lessons from the Gold Standard

The high level of trade and financial integration reached by Europe, both today and under the late-nineteenth century gold standard, suggests that important lessons can be learned by looking at the past record to inform current issues. In Discussion Paper No. 1872, **Marc Flandreau, Jacques le Cacheux and Frederic Zumer**, draw a fresh picture of the European gold standard, and use it to derive a number of useful implications. The paper's basic finding is that the stability of the European gold standard depended on the stance of the common monetary policy. Under the gold standard, this stance was disturbingly deflationary prior to 1895. As a result, debts became exceedingly heavy, and monetary standards crumbled under their weight, not so much because fiscal policies became looser, but rather because debt burdens became unsustainable in the wake of continued deflation. Once gold was discovered and deflation gave way to inflation, real interest rates fell and debt grew more slowly. The clear implication for the EMU zone is that stability will hinge on the European Central Bank's policy not being too restrictive.

Stability Without a Pact? Lessons from the European Gold Standard 1880–1914
Marc Flandreau, Jacques le Cacheux and Frederic Zumer

Discussion Paper No. 1872, April 1998 (IM)

Underpriced IPOs

Minimizing Entrepreneurs' Wealth Losses

In Discussion Paper No. 1873, **Michel Habib and Alexander Ljungqvist** develop the implications of the observation that entrepreneurs can affect, to some extent at least, the level of underpricing in their firms' Initial Public Offerings (IPOs), for example, by choosing highly reputable investment bankers as underwriters. The authors argue that entrepreneurs can, and will, minimize underpricing, but that they will do so only to an extent that is commensurate with the minimization of their wealth losses. Their empirical results suggest this is indeed the case in the United States: entrepreneurs will minimize underpricing until their marginal wealth losses equal the marginal cost of reducing headline underpricing. This suggests that private benefits may not be of primary importance when going public.

Headline Underpricing and Entrepreneurial Wealth Losses in IPOs: Theory and Evidence
Michel A Habib and Alexander Ljungqvist

Discussion Paper No. 1873, April 1998 (FE)

Spectacular Fiscal Adjustment

In Discussion Paper No. 1874, **Fiorella Padoa Schioppa Kostoris** analyses the spectacular fiscal adjustment currently occurring in Italy. In 1990, the Italian government had the second largest primary deficit-to-GDP ratio in Europe; in 1997 it was expected to have the largest primary surplus-to-GDP ratio, with a 3% overall deficit-to-GDP ratio. Inflation and inflationary expectations had thus been beaten; the lira was firmly reintroduced in the EMS exchange-rate mechanism, and the interest-rate differential on Treasury bonds with the rest of Europe was almost non-existent; in the budget process, most of the traditional divergences between the appropriations approved by Parliament and the final cash expenditures had been eliminated. Some qualitative shortcomings, however, appeared in the Italian fiscal adjustment. They concerned the excessive use of taxation, the reduction in public investment, the insufficiency of structural reforms of the welfare state, and the slowness of concrete steps in overall administrative reform and in the rethinking of the public sector's role in a modern society (liberalizations, rentability of public properties, privatizations).

Economic Policy and Reforms in Contemporary Italy
Fiorella Padoa Schioppa Kostoris

Discussion Paper No. 1874, June 1998 (IM)

Recurrent Hyperinflations

Learning Models

In Discussion Paper No. 1875, **Albert Marcet and Juan Nicolini** use a model of boundedly rational learning to account for the observations of recurrent hyperinflations in the last decade. The authors consider a standard monetary model, in which the full rational-expectations assumption is replaced by a formal definition of quasi-rational learning. Under learning, the model is able to match remarkably well some of the crucial stylized facts observed during the recurrent hyperinflations experienced by several countries in the 1980s. The authors argue that, despite involving a small departure from rational expectations, quasi-rational learning does not preclude falsifiability of the model, and it does not violate reasonable rationality requirements.

Recurrent Hyperinflations and Learning
Albert Marcet and Juan Pablo Nicolini

Discussion Paper No. 1875, May 1998 (IM)

Guest Workers Reduce Accident Incidence

In Discussion Paper No. 1876, **Thomas Bauer, Andreas Million, Ralph Rotte** and **Klaus Zimmermann** use standard as well as recently developed univariate and bivariate, count data models to analyse the determinants of workplace accidents using a dataset for German firms. Given the tight system of public workplace safety regulation, introduced in part as early as 1869, and the important role of foreign labour in manufacturing, the focus is on the impact of work organization and the interdependence between native and foreign workers. The empirical results indicate that there are no significant differences between natives and foreign workers regarding technological determinants of workplace accidents. The employment of guest workers has a strong positive effect on the job safety of natives, however. The estimates imply that a 1% increase in the employment of guest workers is associated with a 1.7% decrease of less severe accidents and a 1.3% decrease of severe accidents of natives. The empirical results also indicate that foreigners' representation in the work council is an important factor for increasing workplace safety for guest workers.

Immigrant Labour and Workplace Safety
Thomas Bauer, Andreas Million, Ralph Rotte and Klaus F Zimmermann

Discussion Paper No. 1876, November 1998 (HR)

Immigration

Determinants of Voter Attitudes

In Discussion Paper No. 1877, **Sanoussi Bilal, Jean-Marie Grether** and **Jaime de Melo** consider a three-factor (capital, low- and high-skill labour), two-household (low- and high-skill individuals), two-sector trade model. They use the model to analyse the determinants of voter attitudes towards immigration under direct democracy, and to identify factors that would be consistent with both the observed increase in the skilled-unskilled wage differential and the stiffening attitudes towards low-skill, capital-poor immigration. If the import-competing sector is intensive in the use of low-skill labour, and capital is the middle factor, either an improvement in the terms of trade, or neutral technical progress in the exporting sector, will lead nationals to oppose immigration of capital-poor, low-skill households. An increase in income inequality is also likely to stiffen resistance towards this type of immigration, prevalent in Europe until recently.

Determinants of Attitudes Towards Immigration: A Trade-Theoretic Approach

Sanoussi Bilal, Jean-Marie Grether and Jaime de Melo

Discussion Paper No. 1877, May 1998 (HR/IT)

Multilateral Trade Liberalization

Using an FTA to Ease the Pain

In Discussion Paper No. 1878, **Olivier Cadot, Jaime de Melo** and **Marcelo Olarreaga** use the influence-driven approach to endogenous trade-policy determination to show how a free-trade agreement (FTA) with rules of origin can work as a device to compensate losers from trade liberalization. The FTA constructed in the paper is characterized by external tariff structures that are negatively correlated across member countries, ensuring efficiency gains and, through reduced average protection, compatibility with the requirements of the multilateral trading system. The FTA is also politically viable, and the authors demonstrate that, in the countries concerned, governments are willing to include its formation in the political agenda even though, in equilibrium, political contributions from producer lobbies decline after the agreement.

Can Bilateralism Ease the Pains of Multilateral Trade Liberalization?
Olivier Cadot, Jaime de Melo and Marcelo Olarreaga

Discussion Paper No. 1878, May 1998 (IT)

In-Company Training

What Returns?

In Discussion Paper No. 1879, **Alan Barrett** and **Philip O'Connell** apply the familiar theoretical distinction between general and specific training to the empirical task of estimating the returns to in-company training. Given the theoretical prediction that employees who receive general training are more likely to quit, the productivity effects of general training should be lower than those of specific training. Using a firm-level dataset which distinguishes between general and specific training, the authors test for the relative effects of the two types of training on productivity growth. Contrary to expectations, they find that, although general training has a statistically positive effect on productivity growth, no such effect is observable for specific training. This positive effect of general training remains when they control for changes in work organization and corporate restructuring. Moreover, the impact of general training varies positively with the level of capital investment.

Does Training Generally Work? The Returns to In-Company Training

Alan Barrett and Philip J O'Connell

Discussion Paper No. 1879, June 1998 (HR)

Inequality and Growth

Innovation-Driven Technical Progress

In Discussion Paper No. 1880, **Josef Zweimuller** analyses the impact of inequality on growth when technical progress is driven by innovations. It is assumed that consumers have hierarchic preferences. As a result, inequality affects demand and therefore the incentive to innovate. Whether more inequality is harmful or beneficial for growth depends on the initial distribution. Complementarities between a technical and a pecuniary externality resulting from the innovation process may generate multiple equilibria. Redistribution may push an economy trapped in underdevelopment to a high-growth regime.

Schumpeterian Entrepreneurs Meet Engel's Law: The Impact of Inequality on Innovation-Driven Growth
Josef Zweimuller

Discussion Paper No. 1880, May 1998 (HR/IM)

Transition Labour Markets

Consequences of EU Enlargement

In Discussion Paper No. 1881, **Michael Burda** summarizes some of the findings of Boeri, Burda and Kollo (1998), which provide an overview of the state of labour markets in the transition economies of Central and Eastern Europe. The paper argues that a hasty 'return to Europe' with respect to labour-market policies may not be in the best interests of these economies, and may actually impede an efficient transition.

The Consequences of EU Enlargement for Central and Eastern European Labour Markets
Michael C Burda

Discussion Paper No. 1881, May 1998 (TE)

US-Egyptian FTA

Economic Incentives and Effects

In Discussion Paper No. 1882, **Keith Maskus**, **Bernard Hoekman** and **Denise Konan** explore the economic impact of a putative free trade agreement

(FTA) between Egypt and the United States, assuming that Egypt implements both the recently agreed Arab League FTA and a Partnership Agreement with the EU. An Egypt-United States agreement would improve Egypt's economic welfare. Gains would be maximized if the agreement were to reduce greatly the prevalence of non-tariff barriers and 'red tape' costs – something that does not appear to be likely under the Arab and EU FTAs. If so, the modelling exercise suggests that both welfare and US exports to Egypt would rise significantly. Arab countries should not be concerned with an Egypt-United States agreement, as there are no major implications for exports to Egypt. The share of Egypt's imports originating in the rest of the world declines significantly under the FTA scenarios, however. This is costly to both Egypt and to these trading partners. Such costs can be avoided if external trade barriers are lowered in conjunction with the implementation of the various FTAs.

An Egypt-United States Free Trade Agreement: Economic Incentives and Effects
Keith Maskus, Bernard Hoekman and Denise Konan

Discussion Paper No. 1882, May 1998 (IT)

FDI in the Czech Republic

Technology Transfers and Productivity Change

Firm-level data for the Czech Republic during 1992–96 suggest that foreign investment has tended to flow to firms of above-average size, initial profitability and initial labour productivity. In Discussion Paper No. 1883, after controlling for this selection bias, **Simeon Djankov** and **Bernard Hoekman** find that foreign investment has a positive, but statistically insignificant, impact on TFP growth. This is surprising, given that there is a presumption that foreign investors should be transferring new technologies and knowledge to partner firms. Spillovers associated with a foreign-investment presence in an industry are found to be negatively correlated with domestic-firm performance, whereas imports are found to have a significant positive effect on TFP growth of such firms. Djankov and Hoekman conclude that trade (imports) appears to have played an important role as a channel for improved performance of Czech enterprises.

Avenues of Technology Transfer: Foreign Investment and Productivity Change in the Czech Republic
Simeon Djankov and Bernard Hoekman

Discussion Paper No. 1883, May 1998 (TE)

RBC Models

Determining Asset Prices

In Discussion Paper No. 1884, **Martin Lettau** derives closed-form solutions for a variety of prices for financial assets in a real business cycle (RBC) economy. The equations are based on a loglinear solution of the RBC model and allow a clearer understanding of the determination of risk premia in models with production. For example, Lettau shows that risk premia of long bonds and equity are negative when technology shocks are permanent. Moreover, the wedge between the equity premium and the long bond premium is small and often negative. The closed-form solutions presented are applicable to any RBC model that can be approximated in loglinear form.

Inspecting the Mechanism: The Determination of Asset Prices in the Real Business Cycle Model
Martin Lettau

Discussion Paper No. 1884, May 1998 (FE/IM)

Dynamic Portfolio Management

Instantaneous Performance Measures

In Discussion Paper No. 1885, **Lars Nielson** and **Maria Vassalou** propose instantaneous versions of the Sharpe ratio and Jensen's alpha as performance measures for managed portfolios. Both measures are derived from optimal portfolio selection theory in a dynamic model. The instantaneous Sharpe ratio equals the discrete Sharpe ratio plus half of the volatility of the fund. Hence it does not penalize fund managers for taking risks as much as the discrete ratio does. This is justified by dynamic portfolio theory. Unlike their discrete versions, the instantaneous performance measures correctly take leverage into account in a dynamic setting, and they also take into account investor rebalancings of portfolios over time.

Performance Measures for Dynamic Portfolio Management
Lars Tyge Nielson and Maria Vassalou

Discussion Paper No. 1885, May 1998 (FE)

Bank Failures

Public Disclosure of Bank Risk

In Discussion Paper No. 1886, **Tito Cordella** and **Eduardo Yeyati** analyse the impact of public disclosure of banks' risk exposure on the banks' risk-

taking incentives, and its implications for the soundness of the banking system. The authors find that, when banks have complete control over the volatility of their loan portfolio, public disclosure reduces the probability of banking crises. When asset risk is driven largely by exogenous factors beyond the control of bank managers, however, information disclosure may increase banking-sector fragility. The reason is that the potential gains from a safer choice of assets are offset by the negative feedback arising from a positive correlation between asset risk and the deposit rate demanded by informed depositors.

Public Disclosure and Bank Failures
Tito Cordella and Eduardo Levy Yeyati

Discussion Paper No. 1886, May 1998 (FE)

Venture Capital

Exploiting Learning Externalities

Venture capitalists provide risk capital and valuable monitoring services that are essential for the success of start-up companies. The financial sector's expertise in monitoring investment proposals may increase with the accumulated experience in funding such projects. In the other direction, the productivity gains from learning reduce the cost of venture-capital finance and reinforce start-up investment. Since learning depends on aggregate investment, the effect is external to individual agents. In Discussion Paper No. 1887, **Christian Keuschnigg** demonstrates how the nature of the externality depends on the state of financial-sector development, and how the appropriate tax/subsidy policy should be tailored to it.

Venture Capital: A Case for Investment Promotion
Christian Keuschnigg

Discussion Paper No. 1887, July 1998 (FE)

R&D Projects

Project Evaluation and Organizational Form

In situations of imperfect testing and communication, it has been suggested by Sah and Stiglitz (1986) that organizational forms can be identified with different rules for aggregating evaluations of individual screening units. In Discussion paper No. 1888, **Pierre Regibeau**, **Kate Rockett** and **Thomas Gehrigh** discuss the relative merits of polyarchical and hierarchical organizations in evaluating cost-reducing R&D projects when the decision thresholds of individual units are fully

endogenous. Contrary to the results obtained by Sah and Stiglitz, the authors find that the relative merit of an organizational form depends on the curvature of the screening functions of the individual evaluation units, rather than on the pool of potential projects. They find that, for certain parameters, organizations would want to implement asymmetric decision rules across screening units. This allows them to derive sufficient conditions for a polyarchy to dominate a hierarchy. They also find conditions for which the cost curves associated with the two organizational forms cross each other. In this case, the optimal organizational form will depend on product market conditions and on the 'lumpiness' of cost-reducing R&D.

Project Evaluation and Organizational Form
Pierre Regibeau, Kate Rockett and Thomas Gehrig

Discussion Paper No. 1888, May 1998 (IO)

Emerging Markets

Financial Liberalization and Capital Flows

In Discussion Paper No. 1889, **Philippe Bacchetta** and **Eric van Wincoop** analyse the impact of financial liberalization and reform in emerging markets on the dynamics of capital flows to these markets. Using a model of international investors' behaviour the authors show that the gradual nature of liberalization, combined with the cost of absorbing large inflows in emerging economies, leads to rich dynamics of capital flows and often implies an initial period of overshooting as portfolios adjust. Asset prices will also overshoot. They also show that, if investors have incomplete information about new emerging markets, and learn over time, there can be high volatility of capital flows and contagion. Finally, they provide numerical estimates of long-run capital inflows to emerging-market economies and compare them to actual inflows. This gives a good indicator of upcoming crisis situations.

Capital Flows to Emerging Markets: Liberalization, Overshooting and Volatility
Philippe Bacchetta and Eric van Wincoop

Discussion Paper No. 1889, May 1998 (IM)

Exchange-Rate Target Zones

Applying the Drift-adjustment Method

The drift-adjustment method uses simple equations to estimate the expected rate of depreciation within an exchange-rate band. Papers applying this method claim that, although forecasting a freely floating

currency is hopeless, predicting an exchange rate within the future band is successful. In Discussion Paper No. 1890, **Zsolt Darvas** shows that the results achieved by applications to EMS and Nordic currencies are not specific to data of target-zone currencies. For example, application to the US dollar leads qualitatively to the same result as application to EMS currencies. Simulation evidence suggests that the closer the dominant inverted autoregressive root is to unity, the higher the chance of reproducing the empirical target-zone results, since the finite sample biases of the parameters of interest in the unit-root case are such that the random walk seemingly significantly fits the model in the vast majority of experiments. HAC standard errors do not help much in hypothesis-testing either. The paper develops a model, coinciding with the stylized facts of target zones, which demonstrates the unpredictability of the expected rate of depreciation within the band. Surprisingly, application of the drift-adjustment method to a process switching between stationary periods and chaotic periods generates a fit similar to that for reported target-zone results.

Spurious Correlation in Exchange-Rate Target Zone Modelling: Testing the Drift-Adjustment Method on the US Dollar, Random Walk and Chaos
Zsolt Darvas

Discussion Paper No. 1890, May 1998 (IM)

FDI

Expropriation and Control Rights

In Discussion Paper No. 1891, **Monika Schnitzer** examines the strategic interaction between a foreign direct investor and a host country. Schnitzer analyses how investors can use their control rights to protect their investment, if they face the risk of 'creeping expropriation' once their investment is sunk. It is shown that this hold-up problem may cause underinvestment, if the outside option of the investor is too weak, and overinvestment if it is too strong. The paper also analyses the impact of spillover effects, gives a rationale for 'tax holidays', and examines how stochastic returns affect the strategic interaction between an investor and the host country.

Expropriation and Control Rights: A Dynamic Model of Foreign Direct Investment
Monika Schnitzer

Discussion Paper No. 1891, May 1998 (IO/IT)

Predicting Recessions

In Discussion Paper No. 1892, **Henri Bernard** and **Stefan Gerlach** follow Estrella and Hardouvelis (1991) and Estrella and Mishkin (1995) in studying the ability of the term structure to predict recessions in eight countries. They obtain four results. First, the yield curve predicts future recessions in all countries. Second, term spreads forecast recessions as much as two years ahead. Third, although German and US spreads are frequently significant in the regressions for the other countries, the added information is limited, except in Japan and the United Kingdom. Fourth, although leading indicators contain information beyond that in term spreads, this information is useful only for forecasting recessions in the immediate future. These findings provide further evidence of the potential usefulness of term spreads as indicators for monetary-policy purposes.

Does the Term Structure Predict Recessions? The International Evidence

Henri Bernard and Stefan Gerlach

Discussion Paper No. 1892, May 1998 (IM)

Measuring Risk Attitudes

Data from a TV Game Show

In Discussion Paper No. 1893, **Roel Beetsma** and **Peter Schotman** use data from a television game show, involving elementary lotteries and substantial prize money, as a natural experiment in measuring risk attitudes. The authors find robust evidence of substantial risk aversion. As an extension, they estimate the various models using transformations of the 'true' probabilities to decision weights. The estimated degree of risk aversion increases further, and players tend to overestimate substantially their chances of winning. Constant relative risk aversion (CRRA) and constant absolute risk aversion (CARA) utility specifications perform approximately equally well, with CARA having an advantage in that the players' decisions do not depend on their initial wealth.

Measuring Risk Attitudes in a Natural Experiment: Data from the Television Game Show LINGO **Roel M W J Beetsma and Peter C Schotman**

Discussion Paper No. 1893, June 1998 (FE)

Assessing their Future Role

In Discussion Paper No. 1894, **Thomas Gehrig** surveys the literature on the geography of financial activity in order to assess the role of financial centres. Although there is widespread concern that rapid technological progress, especially in communication and information technologies, ultimately will lead to a delocalization of financial activity, the role of financial centres depends delicately on their success in generating local externalities. On the basis of empirical evidence from recent developments in world financial markets, it is argued that the ability of financial centres to attract financial activity in information-sensitive securities will be crucial for their future role. To the extent that information is localized and market access is costly, financial centres perform an important role in aggregating local information. Therefore a reduction of global market access and information costs may increase global demand for local securities, and even strengthen the role of certain financial centres. Furthermore, complementarities between informationally sensitive and less sensitive financial activities may also attract footloose activities to financial centres.

Cities and the Geography of Financial Centres **Thomas Gehrig**

Discussion Paper No. 1894, June 1998 (FE/IO)

War Costs

Long-Run Educational Effects

An important component of the long-run cost of a war is the loss of human capital suffered by children of schooling age, who receive less education because of the war. In Discussion Paper No. 1895, **Andrea Ichino** and **Rudolf Winter-Ebmer** show that, in the European countries involved in World War II, children who were ten years old during the conflict were significantly less likely to proceed into higher education. By contrast, no effect is found for individuals in the same cohorts living in countries not involved in the war. Using data for Austria, Germany, Sweden and Switzerland, the authors estimate the cost of the war in terms of earning losses suffered by those individuals who did not reach higher education on account of the conflict, and calculate the implied loss of GDP for their countries. In order to identify this cost, the authors interpret their instrumental variable (IV) estimates as measures of the 'local average treatment effects' (Angrist and Imbens, 1994) of education connected to their war instruments. In as much as World War II caused a tightening of liquidity constraints for families with children of schooling age (e.g. through the death of the father), the estimates may be considered as measures of the long-lasting income losses that could be avoided in peacetime by exogenously increasing the educational attainment of children in families that are

subject to constraints similar to those caused by the war (e.g. families with single mothers).

The Long-Run Educational Cost of World War II: An Example of Local Average Treatment Effect Estimation

Andrea Ichino and Rudolf Winter-Ebmer

Discussion Paper No. 1895, June 1998 (HR)

Exchange-Rate Uncertainty

Impact on Investment Levels

Conventional wisdom suggests that increasing price or exchange-rate uncertainty reduces the level of investment. In Discussion Paper No. 1896, **Andrew Hughes Hallett, Jonathon Ireland, Julia Darby and Laura Piscitelli** investigate this question using the Dixit-Pindyck model. The authors find that there are some situations in which uncertainty does depress investment, and others in which increasing uncertainty actually leads to more investment. The outcome depends first on the risk of being stuck with (*ex post*) unwanted investments, then on the ratio of that risk to the opportunity cost of waiting, and finally on the initial level of uncertainty. There are important threshold effects in switching from one determinant to another. That fact permits identification of the circumstances in which rising exchange-rate volatility would increase or decrease investment; it also permits identification of the types of industries that would gain, and the types that would suffer, from a move to fixed exchange rates. This is important for monetary union in Europe since it is likely that, even if trade is insensitive to exchange-rate volatility, investment with its longer horizon (beyond insurance on the futures markets) is sensitive to such volatility. The paper's empirical results confirm the observation.

The Impact of Exchange-Rate Uncertainty on the Level of Investment

Andrew J Hughes Hallett, Jonathon Ireland, Julia Darby and Laura Piscitelli

Discussion Paper No. 1896, May 1998 (IM)

Income Inequality and Transition

Comparative Trends in the Czech and Slovak Republics

Disposable income inequality, as measured by the Gini coefficient and using Family Budget Survey data, increased very little, and by similar amounts, in both the Czech Republic and Slovakia in the period 1989–93. This surprising result is examined by **Thesia Garner and Katherine Terrell** in Discussion Paper No.

1897, via an analysis of changes in the channels of redistribution and a Gini decomposition. The authors find that the sizeable increases in overall inequality owing to changes in the wage-earnings component are mitigated by changes in the tax and transfer components in both republics. As for the relative effects of government policies, changes in the transfer component contributed more than changes in the tax component to lowering the growth of inequality in the Czech Republic, whereas the reverse was true for Slovakia.

A Gini Decomposition Analysis of Inequality in the Czech and Slovak Republics during the Transition **Thesia I Garner and Katherine Terrell**

Discussion Paper No. 1897, June 1998 (TE)

Inter-War UK Unemployment

Defence of Sterling was to Blame

In Discussion Paper No. 1898, **Barry Eichengreen and Olivier Jeanne** examine the role of unemployment in sterling's inter-war experience. According to most narrative accounts, the proximate cause of the 1931 sterling crisis was a high and rising unemployment rate that placed pressure on UK governments to pursue reflationary policies. The authors present a model which, in the spirit of the 'second generation' approach to currency crises, highlights the conflict between the objective of low unemployment and defence of the currency. They show that the model can reproduce the main features of sterling's inter-war experience. Econometric evidence lends further support to the view that the proximate cause of the sterling crisis was the dramatic rise in unemployment caused by external deflationary forces.

Currency Crisis and Unemployment: Sterling in 1931 **Barry Eichengreen and Olivier Jeanne**

Discussion Paper No. 1898, June 1998 (IM)

Exchange-Rate Regimes

Implications of New Price Theory

In Discussion Paper No. 1899, **Matthew Canzoneri, Robert Cumby and Behzad Diba** explore the implications of the new Leeper-Woodford-Sims theory of price determination for the maintenance of various exchange-rate systems: crawling pegs, fixed pegs and common currency areas. The authors show that deeper monetary integration requires more fiscal discipline, especially if price stability is an objective – these monetary arrangements cannot be achieved by monetary policy alone, as conventional wisdom would seem to suggest. A particularly striking result is that a

currency peg is simply not sustainable if fiscal surpluses are determined by an exogenous political process. Maintenance of a fixed currency peg requires the government to guarantee fiscal solvency for any equilibrium sequence of prices (which Woodford calls a Ricardian Regime). Interestingly, the debt and deficit constraints that were written into the Maastricht Treaty, and will continue in the Stability Pact after EMU, are examples of the fiscal discipline that is required.

Fiscal Discipline and Exchange-Rate Regimes
Matthew B Canzoneri, Robert E Cumby and Behzad Diba

Discussion Paper No. 1899, May 1998 (IM)

Endogenous Growth

Introducing State-Owned Enterprises

In Discussion Paper No. 1900, **Gylfi Zoega, Thorvaldur Gylfason** and **Tryggvi Thor Herbertsson** introduce state-owned enterprises into an endogenous-growth model with an expanding variety of inputs. The authors show that, if state firms are less efficient than private firms in organizing labour and also in adopting new technology, the rate of innovation and, hence, also the rate of growth of output, will be lower in the long run, *ceteris paribus*, because the rate of innovation is adversely affected. The model is tested on cross-section data for about 75 industrial and developing countries over the period 1978–92. The results indicate that the size of the state-owned sector is inversely related to total factor productivity and economic growth.

Ownership and Growth
Gylfi Zoega, Thorvaldur Gylfason and Tryggvi Thor Herbertsson

Discussion Paper No. 1900, June 1998 (IM)

Unemployment Dynamics

A CEPR/ESRC Workshop on unemployment dynamics was held in London on 25 February 1998. The workshop was organized under the auspices of the ESRC Resource Centre, established at CEPR in 1993 to provide networking, dissemination, support and training services to the UK economics community. The organizers were **Jennifer Greenslade** (London Business School), **Brian Henry** (London Business School) and **Dennis Snower** (Birkbeck College, London, and CEPR).

Five papers were presented:

'Technology and Changes in Skill Structure: Evidence from Seven OECD Countries', **Stephen Machin** (University College London, London School of Economics and CEPR) and **John van Reenen** (University College London, London School of Economics and CEPR)

'Does the Sector Bias of Skilled-Biased Technological Change Explain Changing Wage Inequality?', **Jonathan Haskel** (Queen Mary and Westfield College, London, and CEPR) and **J Slaughter** (Dartmouth College, Hanover, and NBER)

'A Dynamic Wage-Price Model for the UK', **Jennifer Greenslade** (London Business School), **Brian Henry** (London Business School) and **Richard Jackman** (London School of Economics)

'Hysteresis and Unemployment: Some Preliminary Investigations', **Rod Cross** (University of Strathclyde), **Julia Darby** (University of Glasgow), **Jonathan Ireland** (University of Strathclyde) and **Laura Piscitelli** (University of Strathclyde)

'Staggered Wages and Disinflation Dynamics: What Can More Microfoundations Tell Us?', **Guido Ascari** (University of Warwick) and **Neil Rankin** (University of Warwick and CEPR)

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Conferences and workshops are indicated in grey and attendance is *by invitation only*.

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1999 ▼

8
APRIL

ESRC Workshop: Finance Network (with the Economic and Social Research Council (ESRC)).

9/10
APRIL

Twenty-Ninth Economic Policy Panel Meeting (Conference), Frankfurt.

10
APRIL

EPI Forum 6 (Conference, EPI with the East West Institute), Prague.

22/23
APRIL

The Future of the Financial Services Sector (Workshop hosted by the Bank of Finland), Helsinki.

23
APRIL

MED II Reference Group Meeting (Workshop, MED with SNS, Stockholm), London.

14/16
MAY

Recent Developments in Business Cycle Theory and Economic Policy (Workshop hosted by IMOP), Hydra.

17/26
MAY

Annual Transition Economics Workshop for Young Academics (hosted by the Central European University), Budapest.

25
MAY

The Economic Analysis of Political Institutions (Mid-Term Review Meeting), Sintra, Portugal.

26/30
MAY

European Summer Symposium in Macroeconomics (hosted by the Banco de Portugal), Evora, Portugal.

27/29
MAY

CEPR/JFI Symposium on Competition, Regulation and Financial Integration (hosted by INSEAD), Fontainebleau.

4/5
JUN

International Seminar on International Trade (ISIT) – New Issues in the World Trading System (Conference, ISIT with the National Bureau of Economic Research (NBER)), Cambridge, MA.

11 JUN

Economic Policy Roundtable (Conference), Frankfurt.

18/19
JUN

Economics and Psychology (Conference with GREMAQ), Toulouse.

20/21
JUN

Security Prices in Secondary Markets: The Impact of Incentives, Regulation and Market Structure (Conference with IRES, Université Catholique de Louvain), Louvain-la-Neuve, Belgium.

24/27
JUN

European Research Workshop in International Trade (ERWIT) (hosted by the Norwegian School of Economics and Business Administration), Bergen.

25/26
JUN

Information Processing Organizations (Conference), Brussels.

25 JUN

Unemployment Dynamics (Workshop with the Economic and Social Research Council (ESRC)), London.

28
JUN/
9 JUL

European Summer Symposium in Economic Theory (hosted by the Studienzentrums Gerzensee), Studienzentrums Gerzensee.

2 JUL

MEI Steering Committee Meeting, Geneva

12/23
JUL

European Summer Symposium in Financial Markets (hosted by the Studienzentrums Gerzensee), Studienzentrums Gerzensee.