Abbink, Klaus (University of Nottingham), Bernd Irlenbusch, Elke Renner

**Group Size and Social Ties in Microfinance Institutions**

Microfinance programmes provide poor people with small loans given to jointly liable self-selected groups. Follow-up loans provide incentives to repay. In an experiment we investigate the influence of those features on strategic default. Each group member invests in an individual risky project, whose outcome is known only to the individual investor. Subjects decide, whether to contribute to group repayment or not. Only those with successful projects can contribute. The experiment ends if too few repay. We investigate group size and social ties effects. We observe high repayments rates, which are robust across treatment. Group lending outperforms individual lending. Self-selected groups show a high but less stable willingness to contribute.

**JEL:** C90, H41, I38, O16, Z13

**Keywords:** microcredits, group lending, public goods, laboratory experiments, development economics

Aikman, David Llewelyn (Bank of England)

**Money, Wealth and Overlapping Generations**

In this paper, we use Weil's (1989) overlapping dynasties framework to analyse a microfounded version of the real balance effect envisaged by Pigou (1944). The effect is absent from representative agent models as then net monetary wealth is always zero. With population growth, however, net monetary wealth is positive and a real balance effect emerges much as Pigou predicted. Our main conclusion, however, is a Keynesian one: rather than eliminating the possibility of a trap, the framework generating the real balance effect if anything makes a trap more likely due to the heightened constraints it imposes on the monetary authority.

**JEL:** E0, E3, E4, E5

**Keywords:** liquidity trap, real balance effect, Pigou effect, monetary policy, Japan

Alho, Kari E O (ETLA Finland)

**The Impact of Regionalism on Trade in Europe**

Using the classical gravity model we try to reach a more systematic view than previously in the literature of the impact of regionalism on the intensity of mutual integration through trade in Europe. We find that European trade is significantly influenced by various regional agreements and intensities of trade are strongly asymmetric between the regions. EMU has a positive impact on bilateral trade intensity, and its effect on total European trade of its member countries is also significantly positive. Both between the EU and CEE countries there are, respectively, significant differences with respect to the intensity in this trade.

**JEL:** F10, F15

**Keywords:** trade, EU, EMU, CEE, gravity model

Amegashie, J Atsu (University of Guelph), Joe Amoako-Tuffour

**Price bargaining and quantity bonus in developing economies**

Consider a seller and a buyer bargaining over the price of an agricultural product in a developing economy. Think of the following common bargaining deal: the seller tries to persuade the buyer to accept a higher price and, in return, give the buyer a deal (i.e., extra units of the product for free). Why doesn’t the seller just give the buyer a lower price instead of the deal? This paper provides an answer to this question. Although price can apparently replicate the use of quantity bonus (i.e., the free extra units), we argue that price bargaining per se limits the extent to which price can be used. Such bargaining deals are used because the seller can post them but cannot post prices. We explain why these sellers can post quantity bonuses. We give a condition under which the quantity bonus can replicate the equilibrium that would have obtained if the seller could directly post the price. We offer here a theory of bargaining deals.

**JEL:** D43, L13, O12

**Keywords:** price bargaining, non-price competition, posted prices, quantity bonus

Anderton, Robert (European Central Bank), Richard E Baldwin, Daria Taglioni

**The Impact of Monetary Union on Trade Prices**

Two seemingly unconnected empirical results suggest an intriguing mechanism. First, economic integration helps harmonize prices internationally, with trade being the primary channel (Rogoff 1996, Goldberg and Knetter 1997). Second, monetary union may greatly increase the amount of trade among members (Rose 2001). Putting these together, we see that formation of a monetary union may induce changes that help harmonise inflation rates. The effect might be large if the elimination of
exchange rate volatility simultaneously leads to a large increase in intra-union trade and a big increase in the speed at which price shocks are transmitted across members' goods markets. The problem is that standard estimates of price transmission speed suggest that trade's price-homogenising effect operates too slowly to matter much. Some new empirical evidence, however, suggests that a reduction in exchange rate variability reduces the variability of international price differences. Moreover, the effect seems to be highly nonlinear, and monetary union seems to have an effect even controlling for exchange rate volatility.

This paper is a first attempt to piece together part of this mechanism, namely the impact of monetary union (and exchange rate volatility more generally) on the international transmission of price shocks via the imported/exported inflation channel. In doing this we generate specific testable hypotheses and confront these with a number of data sets on European trade prices.

JEL: D40, F15, F31

Keywords: price arbitrage, exchange rate volatility, monetary union, market segmentation, non-linearities, no-arbitrage bands, harmonisation of price movements

Andrietti, Vincenzo (Universidad Carlos III de Madrid)

Pension Choices and Job Mobility in the UK

Using data from the British Household Panel Survey we analyze the impact of second tier pension scheme choices on job mobility within a discrete time hazard rate framework. We find that workers either offered and participating or offered and not participating to an occupational pension plan have significantly lower quit rates. However, once the endogeneity of pension scheme status is accounted for through an instrumental variable procedure, these coefficients are no more significant. Alternatively, the effect of pension portability losses on quits' hazards is never significant. The additional finding that workers participating to occupational pension plans are significantly less likely to quit for a non pension job can be interpreted as indirect evidence that they are in "good" jobs.

JEL: C41, J31, J32, J41, J63, J68

Keywords: labour mobility, occupational pension plans, duration analysis instrumental variables

Aoki, Kosuke (Universitat Pompeu Fabra), James Proudman, Gertjan Vlieghe

House prices, consumption, and monetary policy: a financial accelerator approach

We consider a general equilibrium model where asymmetric information problems create frictions in credit markets used by households. In our economy, houses serve as collateral to lower the agency costs related to borrowing. We show that this amplifies the effect of monetary policy shocks on housing investment, house prices and consumption. We consider the effect of a structural change in credit markets that lowers the transaction costs of additional borrowing against housing equity. We show that such a change would increase the effect of monetary policy shocks on consumption, but would decrease the effect on house prices and housing investment.

JEL: E32, E50, R21

Keywords: house prices, credit frictions, monetary policy, financial accelerator, consumption

Arghyrou, Michael G (Brunel University), Kul B Luintel

Government Solvency: Revisiting some EMU Countries

Corsetti and Roubini (1991) reported that the government finances of Greece, Ireland, Italy and the Netherlands (now all EMU countries) did not satisfy the intertemporal budget constraint (IBC). We re-examine this issue by utilizing a new empirical approach and extended data set. Structural shifts, an issue which Corsetti and Roubini were unable to address due to the lack of suitable econometric methods, are tackled. We find that: (i) multiple structural shifts, most of which correspond to important policy changes, did occur in the fiscal path of these countries; (ii) the effect of the majority of structural shifts has been to strengthen the evidence supporting IBC; and (iii) government finances of all four countries satisfy the IBC and this finding is robust to different time horizons. We also find a clear positive Maastricht effect on IBC for all countries.

JEL: E60, F41, N10

Keywords: intertemporal budget constraints, strong and weak form sustainability, structural breaks

Arulampalam, Wiji (University of Warwick), Alison L Booth, Mark L Bryan

Work-related Training and the New National Minimum Wage in Britain

In this paper we use important new training and wage data from the British Household Panel Survey to estimate the impact of the national minimum wage (introduced in April 1999) on the work-related training of low-wage workers. We use two ‘treatment groups’ for estimating the impact of the new minimum wage those workers who explicitly stated they were affected by the new minimum and
those workers whose derived 1998 wages were below the minimum. Using difference-in-differences techniques for the period 1998 to 2000, we find no evidence that the introduction of the minimum wage reduced the training of affected workers, and some evidence that it increased it. In particular we find a significant positive effect of about 8 to 11% for affected workers. Consequently our findings can be interpreted as providing no evidence in support of the orthodox human capital model as it applies to work-related training, and some evidence in support of the new theories based on imperfectly competitive labour markets. Our estimates also suggest that two of the goals of the UK government improving wages of the low paid and developing their skills have been compatible, at least for the introductory rates of the national minimum wage.

JEL: J24, J31, J41
Keywords: minimum wages, human capital, work-related training, difference-in-differences estimation

Arulampalam, Wiji (University of Warwick), Sonia Bhalotra
Infant Death Clustering in India: Genuine Scarring vs Unobserved Heterogeneity
Data from a range of different environments indicate that the incidence of death is not randomly distributed across children or households but, rather, that there is death clustering within households. A hypothesis of considerable interest for both theory and policy is that there is a causal process whereby the death of a child influences the risk of death of the succeeding child in the family. This causal effect which, drawing language from the literature on unemployment, we term scarring or genuine state dependence tends to be confounded with both observable and unobservable inter-family heterogeneity. In this paper, we investigate the extent of genuine scarring in three Indian states, controlling for these confounding factors. The paper offers a number of methodological innovations upon previous research in the area and, thereby, offers what we expect are more robust estimates of the scarring effect.

O12, I12, C25, J13
Keywords: death clustering, state dependence, unobserved heterogeneity, random effects probit, dynamic model

Avenel, Eric (GREMAQ)
Strategic vertical integration without foreclosure
We determine the endogenous degree of vertical integration in a model of successive oligopoly that captures both efficiency gains and strategic effects. We show that vertical merger waves can be expected to stop by themselves before integration is complete. Consequently, vertical foreclosure plays no significant role in this paper that claims for a soft approach of vertical integration by antitrust authorities.

JEL: L22, L40
Keywords: merger waves, vertical integration, vertical foreclosure

Bandyopadhyay, Taradas (University of California, Riverside), Kunal Sengupta
Rational Choice: The Case of Path Dependent Procedures
Describing a procedure in which choice proceeds in a sequence, we propose two alternatives ways of resolving the decision problem whenever the outcome is sequence-sensitive. One way yields a rationalizable choice set, and the other way produces a weakly rationalizable choice set that is equivalent to von Neumann-Morgenstern’s stable set. It is shown that for quasi-transitive rationalization, the maximal set must coincide with its stable set.

JEL: D11
Keywords: choice function, rational choice, stable set.

Banerjee, Priyodorshi (Ohio State University)
Information Acquisition and Market Power in Credit Markets
Investment in information acquisition can be used strategically by banks as a commitment device to augment market power. A static two-period economy with informationally heterogeneous banks is analyzed. Information acquisition limits asymmetries of information and competitors’ rents ex post. If projects yield insufficient returns in the first period, competitors’ ex ante break even constraints are tightened, and competition inhibited. Market power can thereby be substantially augmented, and monopoly rents obtained. Welfare is lower with information acquisition, while banks are better off. With more than two banks, information acquisition is characterized by strategic complementarities: hence, multiple equilibria may exist.

JEL: D82, G21, L13
Keywords: credit markets, information acquisition, market power
Banks, James (Institute for Fiscal Studies), Zoe Smith, Matt Wakefield
Financial wealth in later life: evidence from BHPS data
This paper examines evidence from the British Household Panel Survey on the distribution of financial wealth amongst benefit units in 1995 and 2000, and in particular focuses on older individuals as they approach and move through their retirement. We analyse the links between financial wealth, housing wealth and pension status and look at lessons and implications for the current policy debate on pensions, savings and the adequacy of financial provision for retirement.
JEL: D91, D31
Keywords: incomes, wealth, pensions, housing wealth, life-cycle model

Bardasi, Elena (ISER, University of Essex), Stephen P Jenkins
Gender differences in individual income in old age
This paper investigates the sources of the differences between men's and women's pension income among individuals aged 65+. We model the probability of receipt of private pension income and the level of individual pension income using regression models, and investigate gender differences using Blinder-Oaxaca-type decomposition techniques. Estimates are based on data from the British Household Panel Survey, combining panel data from waves 1-10 and the retrospective lifetime employment histories. We find that about three-quarters of the gender gap in the probability of pension receipt and in the amount received is accounted for by differences by sex in the returns to personal characteristics and the remaining 25 percent by differences by sex in the characteristics themselves. In particular, although there are marked differences between elderly men and elderly women in their employment histories (representing a large fraction of the sex-differential in average characteristics), these differences account for only a relatively small fraction of the overall pension income gap between the sexes.
JEL: J14, J16, I32
Keywords: pensions, income, gender income gap, old age

Barrell, Ray (NIESR), Ian Hurst, Tatiana Kirsanova
Choosing the Regime in an Uncertain World, the UK and Monetary Union
The UK has to take a decision on EMU membership at some point, and the costs and benefits have to be evaluated. Different policy frameworks result in differing outcomes for the means and variances of economic variables such as inflation, output, and nominal and real exchange rates and interest rates. Changing the level of uncertainty in the economy may change the equilibrium level of output and investment. Hence membership of EMU has to be evaluated in the light of its impact on the volatility of target variables and on the impact of volatility on the level of output and welfare. We discuss a theoretical framework within which we can discuss these issues, and we undertake stochastic simulation on a large, New Keynesian model including all the European economies in order to evaluate the effects of membership on the level and volatility of output. Our experiments suggest that membership of EMU would reduce volatility and as a result raise the sustainable level of output and employment in the UK.
JEL: F3, F4, E47
Keywords: EMU, exchange rate regimes, uncertainty and investment, UK membership

Battisti, Giuliana (Aston Business School), Paul Stoneman
The Prices of Material and Intermediate Inputs in UK Manufacturing
In this paper we explore the patterns and determinants of the prices of raw material and intermediate inputs in to UK manufacturing using the net (n) and gross (g) price indexes of materials and fuels (PIMF) as indicators. It is shown that (i) the PIMF series exhibit considerable fluctuations and nominal growth over time but real reductions (ii) PIMFn is stationary around a step mean, while PIMFg is stationary around a mean and an underlying step trend with both series showing similar structural breaks (iii) the PIMF series are independent of the demand for inputs and thus cost determined. A model of the cost of MII is developed that endogenises the prices of such inputs produced within the UK between 1979 and 2000. The main drivers of PIMFn and PIMFg are shown to be a stochastic trend, the prices of imported semi manufactured inputs, oil prices (including duties) and commodity prices, the latter three also reflecting exchange rate changes. In addition it is shown that the PIMFg is affected by lagged output prices.
JEL: E3
Keywords: price index of materials and fuels, manufacturing
Battistin, Erich (Institute for Fiscal Studies), Enrico Rettore
Another look at the Regression Discontinuity Design
The attractiveness of the Regression Discontinuity Design (RDD) rests on its similarity to an experimental design. On the other hand, it is of limited applicability since rarely assignment to the treatment is based on known pre-program measures. Besides, it only allows to identify the mean impact on a very specific sub-population. Here we show that the RDD generalizes to the instances in which eligibility is established on a pre-program measure and eligible individuals are allowed to self-select into the program. This set-up is also convenient to test the validity of conventional non-experimental estimators of the mean impact.
JEL: C4, C8
Keywords: program evaluation, second control group, specification tests

Beissinger, Thomas (University of Regensburg), Oliver Buesse
The Impact of the Benefit System on International Spillover Effects
Based on a two-country model it is scrutinized how the structure of the unemployment benefit system affects the consequences of idiosyncratic labor market shocks on real wages and unemployment in other countries. International spillover effects are caused by changes in world real income. The paper provides new insights on how changes in world real income affect labor demand and the wage bargaining process. The analysis of the interaction of shock spillovers and benefit system focuses on two-tier as well as pure earnings-related and flat-rate benefit systems.
JEL: E24, F41, J23, J51, J65
Keywords: benefit system, unemployment, real wages, open economy, wage bargaining

Bennett, John (Brunel University), Manfredi La Manna
State-Owned Enterprise, Mixed Oligopoly and Entry
We analyse state-owned enterprise (SOE) behaviour under pure and mixed oligopoly. An industry comprising at least two SOEs is shown not to have a symmetric stable equilibrium. This suggests the need for planning in such industries. For mixed oligopoly, we assume that an SOE has a cost disadvantage. When fixed costs must be sunk before entry, free entry implies that, if the SOE cost disadvantage is not too large, the presence of an SOE is immaterial for welfare (there is no welfare gain from privatisation). Similarly, a free-entry all-private oligopoly is welfare-superior to a public monopoly only if endowed with a significant cost advantage.
JEL: H32, L32, P23
Keywords: state-owned enterprise, mixed oligopoly, privatisation

Bernard, Andrew B, Stephen Redding, Peter K. Schott
Factor Price Equalization in the UK?
This paper develops a general test of factor price equalization that is robust to unobserved regional productivity differences, unobserved region-industry factor quality differences and variation in production technology across industries. We test relative factor price equalization across regions of the UK. Although the UK is small and densely-populated, we find evidence of statistically significant and economically important departures from relative factor price equalization. Our estimates suggest three distinct relative factor price areas with a clear spatial structure. We explore explanations for these findings, including multiple cones of diversification, region-industry technology differences, agglomeration and increasing returns to scale.
JEL: F11, F14, C14
Keywords: relative factor prices, diversification cones, technology, economic geography

Bertrand, Olivier (University of Paris 1), Nicole Madariaga
U.S. Greenfield Investments and M&A location: impact of American continental integration and Insider vs. Outsider position
This study examines the effects of economic integration on Greenfield Investments and cross-border Acquisitions locations. We use panel data on U.S. FDI in NAFTA and MERCOSUR members from 1989 to 1998. Economic integration is captured through tariff barriers and dummy variables. We pool data to distinguish between both agreements. We control for traditional macroeconomic determinants. It is found that economic integration certainly played a major role on U.S. firms’ location patterns. The U.S. position regarding the two agreements – insider vs. outsider- seemed to matter. Moreover, both our empirical study and our theoretical model underline the relevance of separating entry modes.
JEL: F15, F23, L10, L16, R12
Keywords: FDI, integration, location, mode of entry
Bingley, Paul (Aarhus University), Ian Walker, Yu Zhu

**Welfare and the Returns to Education: The Interaction between Welfare, Work and Wages in the UK**

This paper is concerned with the relationship between education, wages and working behaviour. The work is partly motivated by the sharp distinction in the literature between the returns to education and the effect of wages on labour supply. Education is the investment that cumulates in the form of human capital while labour supply is the utilization rate of that stock. Yet, variation in education is usually the basis for identifying labour supply models - education is assumed to determine wages but not affect labour supply. Moreover, it is commonly assumed that the private rate of return to education can be found from the schooling coefficient in a log-wage equation. Yet, the costs of education are largely independent of its subsequent utilisation but the benefits will be higher the greater the utilisation rate. Thus the returns will depend on how intensively that capital is utilised and we would expect that those who intend to work least to also invest least in human capital. Indeed, the net (of tax liabilities and welfare entitlements) return to education will be a complex function of labour supply and budget constraint considerations. Here we attempt to model the relationship between wages, work, education and the tax/welfare system allowing for the endogeneity of education as well for the correlations between the unobservable components of wages and working behaviour. We use the estimates to simulate the effect of a new UK policy designed to increase education for children from low-income households.

**JEL:** I38, J22, R31

**Keywords:** welfare programmes, labour supply, returns to education

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Blanden, Jo (London School of Economics), Stephen Machin

**Cross-Generation Correlations of Union Status for Young People in Britain**

In this paper we investigate whether young people whose fathers are union members are themselves more likely to join a union. We find that young people with unionized fathers are twice as likely to be unionized as those with non-union fathers. This association is stronger if the father reported himself as being active in the trade union. These links cannot be accounted for by the common individual or workplace characteristics of children and their parents and they have not decreased as union membership declined over the 1980s and 1990s.

**JEL:** J130, J510, C250, J620

**Keywords:** young people, union member, union at work, relative risk ratio, intergenerational links

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Bohn, Frank (University of Essex)

**Public Finance under Political Instability and Debt Conditionality**

This paper presents an intertemporal political economy model of sustainable public finance relevant for many developing or transition countries: instability is inherent to the political structure and foreign debt is a crucial source of government revenue. The main results are: First, political instability causes myopic government behaviour as it induces higher debt levels, but it does not lead to an increase in inflation taxation as in Cukierman, et al. (1992). Second, debt conditionality aiming at monetary stability is particularly effective in heterogeneous societies with unstable governments. Third, it is shown that IMF policies requiring debtor countries to achieve both monetary and fiscal stability are suboptimal.

**JEL:** E62, F34, F41, H61

**Keywords:** monetary and fiscal stability, political economy, IMF conditionality, government revenue, debt ceiling, public investment

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Bohringer, Christoph (ZEW, Mannheim), Thomas F Rutherford

**In Search of a Rationale for Differentiated Environmental Taxes**

Environmental tax schemes in OECD countries often involve tax rates differentiated across industrial, commercial and household sectors. In this paper, we investigate four potentially important arguments for these deviations from uniform taxation: pre-existing tax distortions, domestic equity concerns, global environmental effectiveness, and strategic trade policy. Our primary objective is to ascertain whether the degree of tax differentiation observed in many countries can be rationalized on economic grounds. In simulations with a computable general equilibrium model, we calculate optimal policies under various settings. Our simulation results lead us to conclude that there is little economic rationale for the common policy practice of discriminating strongly in favor of heavy industries, even when accounting for interacting taxes, distributional concerns, leakage, and international market power.

**JEL:** C68, H21, Q4, R13
Boonprakaikawe, Juntip (University of Warwick), S. Ghosal

Moral Hazard in a model of Bank Run with Noisy Signals

We show that multiple equilibria exist in a model of bank run with moral hazard. Furthermore, this is true even with noisy signals on the economic fundamentals. We argue that the conditions under which this happens can arise naturally in models of banking with moral hazard problem.

JEL: D80, D82, G21

Keywords: banking, fundamentals, signals, equilibria

Booth, Alison (University of Essex & ANU), Jeff Frank, David Blackaby

Outside Offers and the Gender Pay Gap: Empirical Evidence from the UK Academic Labour Market

Using a unique data source on academic economists' labour market experiences, we explore gender, pay and promotions. In addition to earnings and productivity measures, we have information on outside offers and perceptions of discrimination. In contrast to the existing literature, we find both a gender promotions gap and a within-rank gender pay gap. A driving factor may be the role of outside offers: men receive more outside offers than women of comparable characteristics, and gain higher pay increases in response to outside offers. This may arise due to discrimination, and we find that perceptions of discrimination and also outside job applications correlate with an individual receiving earnings below that expected, given their characteristics.

JEL: J16, J33, J71

Keywords: gender, promotions, earnings, discrimination

Brekke, Kurt R (University of Bergen), Lars Sorgard

Private Versus Public Health Care in a National Health Service

This paper study the interplay between private and public health care in a National Health Service. We consider a two-stage game, where at stage one a Health Authority sets the public sector wage and a subsidy to (or tax on) private provision. At stage two physicians decide how much to work in the public and the private sector. We characterise different equilibria depending on the Health Authority's objectives, the physicians' job preferences, and the cost efficiency of private relative to public provision of health care. We find that the scope for a mixed health care system is limited when physicians are indifferent between working in the public and private sector. Competition between physicians triggers a shift from public provision towards private provision, and an increase in the total amount of health care provided. The endogenous nature of labour supply may have counter-intuitive effects. For example, a cost reduction in the private sector is followed by a higher wage in the public sector.

JEL: I11, I18, J42, L33

Keywords: health care, mixed oligopooly, physicians

Broadberry, Stephen (University of Warwick), Sayantan Ghosal


We document comparative productivity performance since 1870, showing the importance of services for US overtaking of Britain. The transition in market services from customised, low-volume, high-margin business organised on a network basis to standardised, high-volume, low-margin business with hierarchical management, is identified as a key factor. A model of the interaction between technology, organisation and economic performance is then provided, focusing on the transition from networks to hierarchies. We show that different technologies and organisational forms can co-exist efficiently and that technological change can cause difficulties of adjustment if it is not suited to the social capabilities of the society.

JEL: N10, O40, C79

Keywords: productivity, services, technology, organisation, hierarchies, netwworks

Brown, Sarah (University of Leicester), Lisa Farrell, Mark N Harris

Who are the Self-employed? A New Approach

Whilst the individual supply-side characteristics of the self-employed are well documented, the literature has largely neglected (or mis-specified) demand-side aspects. Our econometric framework, based on the parameterised DOGEV model, allows us to separately, and simultaneously, model supply and demand-side influences. We show that whilst individual characteristics are important
determinants of type of employment contract held, there are important contract-specific factors influencing the contract an individual is employed under. Our results suggest that workers may be "captive" to particular types of employment because of the sectors in which they work, the number of hours they prefer to work and their ethnicity.

**JEL:** J23, J33, C25, C10  
**Keywords:** self-employment, captivity

**Buddelmeyer, Hielke (IZA, Bonn), Emmanuel Skoufias**  
**Can Social Programs be Reliably Evaluated with NonExperimental Methods? Evidence on the Performance of Regression Discontinuity Design using PROGRESA data**

In 1997 a social program called PROGRESA was introduced in Mexico using a design for a randomized experiment. We exploit a build in, but neglected, discontinuity in the eligibility rule and use the quasi-experimental Regression-Discontinuity design in order to estimate marginal average treatment effects. Our findings show substantial regional variation. Moreover, given that the RDD approach allows us to use only data from the treated sample, we are able to investigate the extent to which the introduction of the program had an effect on ineligible children in the localities it was introduced and compare its performance to the experimental outcomes.

**JEL:** I21, I28, I32, J13  
**Keywords:** treatment effects, regression discontinuity design, PROGRESA

**Bühler, Stefan (University of Zurich), Zava Aydemir**  
**Estimating Vertical Foreclosure in U.S. Gasoline Supply**

We examine the competitive effects of the vertical integration of gasoline refineries and retailers in the U.S. Adapting the first-order condition approach of static oligopoly games to the analysis of vertically related oligopolies, we develop a novel framework for directly evaluating the strategic foreclosure effect and the efficiencies associated with vertical integration. We find significant evidence for both vertical foreclosure and efficiency benefits. The foreclosure effect dominates the efficiency benefits for more than half of the refining firms in the sample. Vertical foreclosure is found to increase the wholesale price of refined gasoline by 0.2 to 0.6 cents per gallon.

**JEL:** L13, L22, L49, L71  
**Keywords:** vertical integration, separation, foreclosure, market conduct, petroleum industry

**Byrne, Joseph B (NIESR), E. Philip Davis**  
**Panel Estimation of the Impact of Uncertainty on Investment in the Industrial Countries**

There is growing interest in economic uncertainty and its long run impact on investment. In previous work the authors established clear evidence of the negative impact of exchange rate uncertainty on investment in the G7, measured using a GARCH approach, and Pooled Mean Group Panel Estimation. In this paper we assess the impact on investment of temporary and permanent components of exchange rate uncertainty derived using a components GARCH model. For a poolable subsample of EU countries, results suggest that it is the transitory and not the permanent component which adversely affects investment.

**JEL:** E22, F31  
**Keywords:** investment, uncertainty, exchange rates, non stationary panel estimation

**Campos, Nauro F (University of Newcastle), Francesco Giovannoni**  
**Asset Strippers**

During the transition from plan to market, managers and politicians succeeded in maintaining de facto ownership of assets. This paper puts forward a theoretical model and econometric evidence on asset stripping in transition. We argue that it is driven by the value of the stripped assets, the probability of punishment and political power (the latter proxied by firm size). Using 1997 survey data for about 950 firms in five countries, we find that (1) firm size is a chief determinant of asset stripping and (2) there is strong support for the predicted non-linear relationship between potential profitability and the use of stripped assets.

**JEL:** H82, K42, O17, P26, P31  
**Keywords:** asset stripping, transition

**Canals-Cerda, Jose (University of Colorado at Boulder), Cristobal Ridao-Cano**  
**The Dynamics of School and Work in Rural Bangladesh**

This paper investigates the causes underlying the poor school performance of children in rural Bangladesh, while focusing on the effect of work on school progress. To this end, a dynamic
A switching model is presented for the sequence of school and work outcomes up to the end of secondary school, where the switching in each school level considered is determined by the endogenous work sequence up to that level. This approach allows us to characterize the full sequence of school and work choices of children, and to evaluate the dynamic effects of work on schooling. We find that work has a negative and sizable effect on school progress for the entire population, as well as for all the subpopulations considered, including the different groups of working children. We are also able to identify at each school level the observable and unobservable characteristics of working children relative to those of non-working children. This characterization and the magnitude of the estimated effects of work have important policy implications.

JEL: C35, D12, O15
Keywords: dynamics of school and work, dynamic evaluation, selection

**Capellari, Lorenzo** (Universita del Piemonte Orientale), **Alex Bryson, Claudio Lucifora**

**Why so Unhappy? The Effect of Union Membership on Job Satisfaction**

We investigate the effect of union membership on job satisfaction. We account for the endogenous selection induced by the sorting of workers into unionised jobs and use different methodologies to address the question of how the membership decision is related to overall job satisfaction and to satisfaction with pay. We analyse linked employer-employee data from the 1998 British Workplace Employee Relations Survey (WERS) using Propensity Score Matching and Instrumental Variables techniques. Both the linked structure of the data analysed and the estimation strategies employed allow us to deal with the limitations characterising the existing literature. We find that once the endogeneity of membership is accounted for, the unhappiness of union members disappears, suggesting that their reported dissatisfaction stems from individual unobservable attributes rather than from the union status, i.e. unionisation has no causal effect on satisfaction. When satisfaction with pay is considered, the union/non-union satisfaction differential drops considerably, consistently with the existence of wage premia in favour of members.

JEL: J28, J51
Keywords: job satisfaction, trade unions, linked employer-employee data

**Casarico, Alessandra** (University of Bocconi), **Carlo Devillanova**

**Capital-skill Complementarity and the Redistributive Effects of Social Security Reform**

This paper analyses the general equilibrium implications of reforming pay-as-you-go pension systems in an economy with heterogeneous agents, human capital investment and capital-skill complementarity. It shows that increasing funding delivers in the long run higher physical and human capital and therefore higher output, but also higher wage and income inequality. The latter affects preferences over the degree of redistribution of the remaining pay-as-you-go component: despite the greater role that redistribution could perform in the new steady state, we find a preference for lower redistribution for a larger group of the population.

JEL: H55, J31
Keywords: Capital-skill complementarity, inter and intragenerational redistribution

**Castelnuovo, Efrem** (Bocconi University & FEEM), **Paolo Surico**

**Why are Federal Funds Rates so Smooth?**

US monetary policy is characterized by a substantial degree of inertia. While in principle this may well be the outcome of an optimizing central bank behaviour, the ability of any derived policy rule to match the data relies on so large weights for interest rate smoothing into policy makers' preferences as to be theoretically flawed. In this paper we investigate whether such a puzzle can be interpreted as resulting from the concern of monetary authorities for potential misspecifications of the macroeconomic dynamics. Accordingly, we use a novel thick modeling approach to incorporate model uncertainty into the identification of central bank's preferences. The robust thick policy rule shows the kind of smoothness observed in the data without resorting to implausible values for the preference parameters.

JEL: C61, E52, E58
Keywords: Model uncertainty, interest rate smoothing, Fed policy preferences, robust optimal monetary policy

**Cerrato, Mario** (London Metropolitan University), **Nicholas Sarantis**

**Does the Purchasing Power Parity Hold in Emerging Markets? Evidence from Black Market Exchange Rates**
We examine the Purchasing Power Parity (PPP) hypothesis using a unique panel of monthly data on black market exchange rates for twenty emerging market economies over the period 1997M1-1993M12. We apply a large number of recent heterogeneous panel unit root and cointegration tests. Panel unit root tests do not favour mean reversion in the real black market exchange rate. The evidence for non-rejection of the unit root hypothesis remains robust even after allowing for structural breaks. Panel cointegration tests support evidence of cointegration between the nominal exchange rate and relative prices. These results contrast with those obtained from unit root tests. Since we believe that the former may be biased by the imposition of the joint symmetry and proportionality restriction, we test for such a restriction using likelihood ratio tests and find that it is strongly rejected.

JEL: F31, C23, C52

Keywords: black market exchange rates, purchasing power parity, panel unit root and cointegration tests

Chang, Yoonhee Tina (University of Warwick)

Dynamics of Banking Technology Adoption: An Application to Internet Banking

This paper is concerned with examining behaviour of firms (banks) and consumers (banks' customers) in the event of a new technology (internet banking) introduction. The determinants of consumer adoption of internet banking are characterised using survey data from Korea in both static and dynamic framework. I find evidence that adoption of internet banking is influenced by sex, age, marital status, degree of exposure to internet banking, and the characteristics of the banks. A duration analysis shows no evidence of first mover advantage (order effects) in internet banking whilst the largest bank (rank effects) in commercial banking remains dominant in internet banking. The results imply that the internet banking adoption is dominated by social norm effects.

JEL: D80, G21, G28, L00, O33

Keywords: internet banking, technology adoption, first-mover advantage, pre-emption, social norm

Chevalier, Arnaud (University College Dublin)

Motivation, expectations and the gender pay gap for UK graduates

Focussing on recent UK graduates, a gender wage gap of 12% is found as well as significant gender differences in the subject of graduation, sector of employment and feminisation of the job. Women also are more altruistic and less career oriented than men, character traits that are less rewarded by employers.

Two third of women agree that they expect to take career breaks for family reasons and more than 1/3rd of men expect their partner to sacrifice her career for childrearing responsibilities. These conservative attitudes affect women’s wages even at an early stage of their career and are the single most important determinants of the gender wage gap.

JEL: J16, J13, J29, J70

Keywords: gender wage gap, attitude

Clark, Ken (University of Manchester), Simon A Peters, Mark Tomlinson

The Determinants of Lateness: Evidence from British Workers

Using a sample of male and female workers from the 1992 Employment in Britain survey we estimate a generalised grouped zero-inflated Poisson regression model of employees' self-reported lateness. Reflecting theoretical predictions from both psychology and economics, lateness is modelled as a function of incentives, the monitoring of and sanctions for lateness within the workplace, job satisfaction and attitudes to work. Various aspects of workplace incentive and disciplinary policies turn out to affect lateness, however, once these are controlled for, an important role for job satisfaction remains.

JEL: C21, J22, J31, J33, J59

Keywords: lateness, tardiness, worker commitment, self-reported survey data, inflated and grouped count data

Clark, Andrew E (CNRS & DELTA France), Youenn Loheac

"It Wasn't Me, It Was Them!" Social Influence in Risky Behaviour by Adolescents

Institutional information does not seem to prevent drug experimentation. We use Add Health panel data (1994-1996) to examine risky behaviour by adolescents (the consumption of tobacco, alcohol and marijuana). We find that such behaviours are correlated with the (lagged) behaviour of three peer groups: others in the same school year; others one school year higher than the individual in the same school; and the individual's friends. Peer group effects are strongest within sexes. However girls do
also follow boys, while boys are only little affected by their female peers. We also find evidence of non-linearities in peer group effects.

JEL: C23, D12, Z13
Keywords: social interactions, smoking, drinking

Clemens, Christiane (University of Hannover), Thomas Reichmann
Discrete Public Goods: Contribution Levels and Learning as Outcomes of an Evolutionary Game
This paper examines the learning dynamics of boundedly rational agents, who are asked to contribute to a discrete public good. In an incomplete information setting, we discuss contribution games and subscription games. The theoretical results on myopic best response dynamics implying striking differences between strategies played in the two games are confirmed by simulations, where the learning process is modeled by an Evolutionary Algorithm. We show that the contribution game even aggravates the selective pressure leading towards the non-contributing equilibrium, thereby supporting results from laboratory experiments. In contrast to this, the subscription game removes the 'fear incentive', implying a higher percentage of successful provisions over time.

JEL: C6, C73, D83, H41
Keywords: bounded rationality, evolutionary games, evolutionary algorithms, learning, public goods

Climent, Amparo Castello (Universidad Jaume 1 & UCL), Rafael Domenech
Human Capital Inequality, Life Expectancy and Economic Growth
This paper provides a theoretical model in which inequality affects per capita income when individuals decide to accumulate human capital depending on their life expectancy. The model assumes that life expectancy depends to a large extent on the environment in which individuals grow up, in particular, on the human capital of their parents. After calibrating the life expectancy function according to the international evidence for cross-section data, our results show the existence of multiple steady states depending on the initial distribution of education. In particular, human capital may converge towards different stable steady states. In accordance with the evidence displayed by many developing countries, the low steady state is a poverty trap in which children are raised in poor families, have a low life expectancy and work as non-educated workers all their lives.

JEL: O11, O40
Keywords: life expectancy, inequality, human capital accumulation

Collie, David R (Cardiff Business School), Roger Clarke
Product Differentiation and the Gains from Trade under Bertrand Duopoly
In the literature on the welfare effects of free trade under imperfect competition, one important case seems to have been overlooked and that is the Bertrand duopoly model with differentiated products. Although many authors have analysed the welfare effects of free trade under Cournot duopoly, and demonstrated the possibility of losses from trade, there has been no thorough analysis of the welfare effects of free trade under Bertrand duopoly. This paper presents a thorough analysis of the welfare effects of free trade under Bertrand duopoly with differentiated products, and it is shown that there are always gains from trade.

JEL: F12
Keywords: gains from trade, Bertrand Oligopoly

Collier, William (University of Kent at Canterbury), Francis Green, John Peirson, David Wilkinson
Training and Establishment Survival
We investigate the relationship between training and the likelihood of commercial survival over a 7-year period, using a survey of British establishments. We find that in establishments of 200 or more employees, increased training of those in Professional, Sales, and Clerical and Secretarial occupations is associated with a greater chance of survival. In smaller establishments of less than 200 employees, increased training for Operatives and Assembly workers, Personal and Protective Service workers, and Craft and Technical workers is associated with better chances of survival. We interpret these findings as suggesting that training for these groups generated above-normal returns and indicates under-investment in training by such firms. There is no evidence to suggest under-investment in management training.

JEL: J24, J51, L21
Keywords: training, survival, economic performance

Cooke, Dudley (University of Warwick)
**Exchange Rate Volatility and Consumption Home-Bias**
This paper develops a stylised small open economy model with a closed form solution to study the behaviour of the exchange rate. Exchange rate volatility is a feature of the model when there is home-bias in consumption. In particular, when money demand is not responsive to changes in consumption the exchange rate overshoots in response to an increase in the money supply. Our results suggest that consumption home-bias is an important feature which should be incorporated into the modern approach to international finance.

**JEL:** E52, F41

**Keywords:** small open economy, consumption home-bias, exchange rate overshooting

**Cuaresma, Jesus Crespo** (University of Vienna)

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**Some million thresholds: Nonlinearity and cross-country growth regressions**
This paper examines the robustness of the determinants of economic growth in cross-country regressions allowing for nonlinearity in the specification of the data generating process. The nonlinearity is modelled as regime-dependent parameter heterogeneity, where the regime is determined by the level of the explanatory variable whose robustness we aim to measure. Using a generalization of the procedure in Sala-i-Martin (American Economic Review, 1997), strong evidence of nonlinearity is found for practically all of the variables that are robustly correlated to growth in the linear setting, including those variables which are usually included in most cross-county growth regressions.

**JEL:** C52, O50

**Keywords:** growth regressions, robustness, nonlinearity, threshold models

**d'Amico, Stefania** (Columbia University), **Mira Farka**

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**The Fed and Stock Market: A Proxy and Instrumental Variable Identification**
Stock market fluctuations are likely to be an important determinant of monetary policy decisions because of their potential impact on macroeconomy. At the same time, innovations in fed fund rates affect stock prices as they change the expected future real interest rates. In this paper we apply a new identification procedure, based on proxy and IV variables, to estimate the contemporaneous relations between stock market and monetary policy without imposing any exclusion restrictions on the parameters of interest. Our empirical results indicate: first, that monetary policy responds in a positive fashion to contemporaneous changes in the stock market, but this relationship is not significant; second, that stock returns respond negatively to a positive monetary policy shock and that this response is significant at 1% level. This estimation analysis, while indicating that stock market participants react strongly and significantly to monetary policy innovations, seems to confirm the fact that in the past the Fed has not directly targeted asset prices in the conduct of monetary policy.

**JEL:** E44, E47, E52

**Keywords:** monetary policy, financial markets, structural VAR, identification

**Damjanovic, Tatiana** (University of Essex)

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**The possibility of Pareto-Improving Pension Reform: More Arguments**
This article provides simulation results of Pareto-improving transitions from pay-as-you-go to fully funded pension systems in an economy where agents are heterogeneous within generations. The possibility of such transitions for a wide range of parameters states that intergenerational heterogeneity should no longer be considered an obstacle when implementing Pareto-improving pension reforms. To maintain redistributive or insurance mechanisms supported by pay-as-you-go systems, I propose to replace social system with redistributive tax and transfer payments inside one generation. This would save dynamically efficient economy from the inefficiency related to the implicit taxes on pension contributions imposed by pay-as-you-go systems.

**JEL:** H55

**Keywords:** pension reform, Pareto-improving transition, heterogeneous population, redistribution and insurance

**de Galdeano, Anna Sanz** (European University Institute)

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**Health Insurance and Job Mobility: Evidence from Clinton’s Second Mandate**
In this paper I analyse data from the 1996 panel of the Survey of Income and Program Participation to investigate the effect of employer-provided health insurance (EPHI) on job mobility from March 1996 to February 2000. First, I estimate the effect of EPHI on four month job turnover. I find that, after accounting for unobserved individual heterogeneity, holding EPHI induces substantial mobility reductions for all demographic groups, ranging from 31% to 58%. Second, I evaluate whether the
1996 Health Insurance Portability and Accountability Act succeeded in mitigating insurance induced mobility reductions and I find that it did not.

**JEL:** C23, I18, J60

**Keywords:** health insurance, job mobility

**de Meza, David** (University of Bristol)

**Do Unprejudiced Societies Need Equal Opportunity Legislation?**

To what extent should banks, insurance companies and employers be allowed to use personal information about the people whom they lend to, insure or employ in setting the terms of the contract? Even when different treatment is motivated by profit not prejudice, banning discrimination (when combined with mandatory protection against failure) may well be the best way of effecting redistribution of income. Unlike income taxation, this policy achieves its goals without much adverse effect on incentives. Public provision of low-powered incentive contracts issued on generous terms is also a potent instrument of efficient redistribution. This is true even if the government cannot observe type but the private sector can.

**JEL:** D3, D8, H2, J7

**Keywords:** equal opportunities, incentive contracts, asymmetric information, distribution

**Demertzis, Maria** (De Nederlandsche Bank), **Andrew Hughes Hallett**

**Central Bank Transparency in Theory and Practice**

We study the effects of Central Bank transparency on inflation and the output gap. We thus first identify a small analytical model which concludes that transparency affects the variability of inflation and output and not their average levels. Then we examine whether this conjecture holds empirically, employing the recently derived index of transparency by Eijffinger and Geraats. The empirical findings confirm that the averages are not affected by transparency. It does seem to explain however, about 50% of the variability in inflation. The relation between transparency and output volatility is less clear but appears to be positive rather than negative.

**JEL:** E52, E58

**Keywords:** central bank, economic and political transparency, inflation and output gap performance

**Dewit, Gerda** (National University of Ireland Maynooth), **Dermot Leahy, Catia Montagna**

**Employment protection and globalisation in dynamic oligopoly**

We construct a model in which oligopolistic firms decide where to locate. Firms choose to locate either in a country where employment protection implies costly output adjustments or in one without adjustment costs. Using a two-period three-stage game with uncertainty it is demonstrated that location is influenced by both flexibility and strategic concerns. We show that the strategic effects under Cournot work towards domestic anchorage in the country with adjustment costs while those under Bertrand do not. Strategic agglomeration can occur in the inflexible country under Cournot and even under Bertrand provided uncertainty and foreign direct investment costs are low.

**JEL:** D80, F23, L13

**Keywords:** uncertainty, flexibility, oligopoly, employment protection, foreign direct investment

**di Mauro, Carmela** (University of Calabria), **Anna Maffioletti**

**Do individual violations of subjective expected utility persist in markets? Insight from an experiment**

Much of the evidence supporting the Ellsberg’s paradox comes from experiments on individual choice and judgement. In this study, we address the issue whether, in market experiments, there is a tendency for anomalous behaviour to disappear or to be reduced as a consequence of market experience and feedback. We empirically test the validity of this assumption by running an auction market for the sale of both risky and uncertain prospects. We conclude that, with the repetition of the market experience, individual bids converge towards behaviour consistent with subjective expected utility.

**JEL:** D81

**Keywords:** risk, uncertainty, market, auctions, violation

**Di Pietro, Giorgio** (University of Westminster), **Peter Urwin**

**Education and Skills Mismatch in the Italian Graduate Labour Market**

This paper focuses on education and skills mismatch amongst Italian graduates. Indicators for over and under-utilisation of education and under-utilisation of skills are included in a grouped data lognormal wage equation, allowing us to test a number of theories which could explain the effect of
over-schooling on wages. We find little evidence to support assignment theory and also identify a relatively weak wage effect arising from educational mismatch associated with the formal requirements of a job, when compared to that associated with an employee’s perception of the job requirements. Our interpretation is that employers may be mis-specifying jobs as ‘graduate’ jobs in order to take advantage of an excess supply of graduates.

JEL: I21, J31

Keywords: over-education, skill under-utilisation, wages, on-the-job search

Dickens, Richard (QMWP, University of London), Alan Manning
The Impact of the National Minimum Wage on the Wage Distribution in a Low-Wage Sector

The National Minimum Wage (NMW) that was introduced in April 1999 is sometimes paraded as evidence of the Blair government’s commitment to reversing the rise in inequality that was characteristic of the last 25 years. But, because the NMW has been set at a very modest level and because aggregate evidence suggests very small spill-over effects, it has had only a minimal impact on UK wage inequality. But, the small spill-over effects might be because of the small numbers of workers affected and it is possible that there was widespread anticipation of the introduction of the NMW making the impact effect appear very small. In this paper we have investigated these issues using data collected in a postal survey of care homes where the NMW affected 40% of workers. But, we still find no evidence of large spill-over effects and very small amounts of anticipation of the NMW.

Keywords: minimum wages

Dickerson, Andy (University of Warwick)
The Distribution and Determinants of Job Vacancies: Evidence From the 2001 Employers Skill Survey

Despite their obvious importance for employment determination and the operation of labour markets, little is known about the distribution, nature or determinants of job vacancies. This paper describes and analyses the results of a large-scale establishment-level survey for England conducted in Spring 2001. It documents the distribution of unfilled jobs and investigates the factors which influence firms’ recruitment practices and difficulties in a period of strong labour demand. While there is considerable heterogeneity in the stock of vacancies, it is possible to identify a downward sloping UV relationship between vacancies and the local unemployment rate.

JEL: J2, J6

Keywords: vacancies, skill-shortages, labour demand, local unemployment, UV curves

Dohmen, Thomas J (IZA)
A theory of Careers in Hierarchical Internal Labor Markets

The paper develops a model that explains a broad pattern of evidence on careers in multilevel organizations. It shows how job mobility inside firms depends on changes in the size of the organization. Promotion rates rise (fall) during a corporate expansion (contraction). Economic conditions therefore affect individual career mobility and earnings profiles. The model analyzes how the interaction between human capital accumulation and learning impacts on the assignment of workers to jobs at different levels of authority in the corporate hierarchy. The model makes predictions about the timing of the provision of formal training.

JEL: J00, M10

Keywords: career mobility, learning, sorting job assignment

Dolton, Peter (University of Newcastle)
Reducing Attrition Bias using Targeted Refreshment Sampling and Matching

This paper examines the possibility of reducing attrition bias in panel data using targeted refreshment sampling and matched imputation. The targeted refreshment sampling approach consists of collecting new data from the original sampling population from individuals who would never usually respond to surveys. Using propensity score matching and imputation in conjunction with refreshment sampling it is suggested that the dropouts from a panel can effectively be ‘replaced’. The procedure allows us to identify underlying joint distributions in the data. The method is illustrated using data from the Youth Cohort Surveys in the UK which suffer 45% attrition in the second wave. A comparison of the results of this method with other techniques for attrition modeling suggest that the technique could be an effective way to overcome a substantial part of the bias associated with attrition.

JEL: C1

Keywords: attrition, refreshment sampling
Domenech, Rafael (Universidad De Valencia), Javier Andres

**Automatic Stabilizers and Monetary Rules in a Ricardian Economy**

This paper analyses the effect of the fiscal structure upon the trade-off between inflation and output stabilization in presence of technological shocks in a DGE model with nominal inertia. The model is calibrated to reproduce the main features of European economies and it integrates a rich menu of fiscal variables as well as a target on the debt to output ratio. The main finding is that taxes linked to economic activity worsen the output-inflation variability trade-off as compared with an economy with lump-sum taxes, except when nominal and real rigidities are very large. Aside from the well known supply side channels that explain this result, we find that fiscal rules designed to ensure debt consolidation induce cyclical movements in aggregate demand that also contribute to increase the volatility of output in presence of distortionary taxes.

**JEL:** E32, E52, E63

**Keywords:** fiscal rules, macroeconomic stability, distortionary taxes

Driver, Ciaran (Imperial College), Paul Temple

**Governance, Strategy, and Investment: Evidence from Hurdle Rates**

This paper uses direct evidence from reported hurdle rates and discount rates to assess theories of corporate investment appraisal. We find first that hurdle rates are frequently below discount rates, suggesting strategic or managerial behaviour. To test this we use probit analysis to discriminate between this group and an alternative group, where hurdle rates are higher than discount rates. We find that variables representing the opportunity for managerial or strategic investment (e.g. free cash flow) or the motivation (e.g. low growth) increase the probability of firms having hurdle rates below discount rates.

In a second stage of the analysis we analyse the relationship between hurdle rates and discount rates for both sets of firms separately. For example, we find that for the strategists firms, product R&D tends to be associated with a lower hurdle rate relative to the discount rate, while for the profit maximising group of firms, the opposite is the case. For the second sample, we also find that risk variables raise the hurdle and that there is some evidence for an irreversibility effect. Responses of the hurdle rate to entry also differ between the two groups.

**JEL:** G3, L2, L6, E22

**Keywords:** hurdle rate, investment, corporate governance, irreversibility, PIMS database

Drost, Andre (University of Cologne)

**Herd Behaviour in Occupational Choice**

In this paper we examine why many professional labor markets are disturbed by cycles in the supply of new workers. We present a model where cycles in labor supply are the consequence of herd behavior in occupational choice. We also present evidence from nearly 150 West German labor markets which supports the herd behavior model of labor supply cycles.

**JEL:** I21, J24, J44

**Keywords:** analysis of education, occupational choice, professional labor markets

Duranton, Gilles (London School of Economics), Henry G Overman

**Testing for Localisation Using Micro-Geographic Data**

To study the detailed location patterns of industries, and particularly the tendency for industries to cluster relative to overall manufacturing, we develop distance-based tests of localisation. In contrast to previous studies, our approach allows us to assess the statistical significance of departures from randomness. In addition, we treat space as continuous instead of using an arbitrary collection of geographical units. This avoids problems relating to scale and borders. We apply these tests to an exhaustive UK data set. For four-digit industries, we find that (i) only 51% of them are localised at a 5% confidence level, (ii) localisation takes place mostly at small scales below 50 kilometres, (iii) the degree of localisation is very skewed, and (iv) industries follow broad sectoral patterns with respect to localisation. Depending on the industry, smaller establishments can be the main drivers of both localisation and dispersion. Three-digit sectors show similar patterns of localisation at small scales as well as a tendency to localise at medium scales.

**JEL:** C19, R12, L70

**Keywords:** localisation, clusters, K-density, spatial statistics

Dustmann, Christian (University College London), Francesca Fabbri, Ian Preston
The Local Labour Market Effects of Immigration in the UK

This paper provides an empirical analysis of the employment effects of immigration using UK data. We show that on a theoretical level, the effects of immigration on labour market outcomes depend on assumptions regarding the number of goods produced in the economy, and whether these goods are tradable or not. We then discuss the problems that may arise in empirical estimations, and suggests ways to address these problems. Our empirical analysis is based on data from the Labour Force Survey. There is some evidence that immigration affects employment prospects negatively; however, estimated effects are not significantly different from zero.

JEL: J61, J64
Keywords: immigration, labour market

Eberth, Barbara (University of Durham)
Cohort Wage Profiles in an Internal Labour Market
This paper investigates the movement of cohort wages in an internal labour market of a large British financial institution. The main objective of the analysis is to establish whether movements of cohort wages over time in this particular institution are consistent with the theoretical notion of an internal labour market as defined in the literature. The paper follows closely the analysis of aggregate mean cohort wages as outlined in Baker, Gibbs and Holmstrom (1994b). We find some evidence of the existence of an internal labour market in that employees are shielded from external market conditions.

JEL: J31, J41, M5
Keywords: internal labour markets, personnel economics, wage growth

Edwards, T Huw (University of Warwick), John Whalley
Short and Long Run Decomposition of OECD Wage Inequality Changes
This paper focuses on the decomposition of increased wage inequality in OECD countries into the component factors of trade surges in low wage products and technological change. It argues that if the observed wage inequality response to price and technology shocks represents a short run response in which factors and output have not adjusted fully across industries, then decomposition analysis is substantially altered relative to a long-run factors mobile world. This applies either when one type of labour has mobility costs or where there is an additional, sectorally immobile factor. Only small departures from the fully mobile model can greatly change decompositions. Previous general equilibrium based studies have assumed a long-run full mobility response, when this may not be the case, and may consequently have drawn incorrect conclusions.

JEL: F16, J31, C68
Keywords: Trade, wages, technology, inequality.

Ellis, Colin (Bank of England), Simon Price
UK Business Investment: Long-Run Elasticities and Short-Run Dynamics
From neoclassical theory output, capital stock and the user cost are cointegrated; capital and investment also (multi)cointegrate through the capital accumulation identity. An investment equation is estimated on UK data using a new capital stock series and a long series for the weighted cost of capital. Assuming CES technology, the elasticity of substitution is well-determined and below unity. Over-identifying restrictions are accepted. The long-run parameter is robust to alternative specifications, but single-equation investment relationships may obscure the dynamics. The Johansen method is over-sized, but outperforms a single equation test for excluding the capital accumulation identity from the investment equation.

JEL: C32, E22
Keywords: investment, capital stock, identification, multicointegration

Englmaier, Florian (University College London), Achim Wambach
Contracts and Inequity Aversion
Inequity aversion is a special form of other regarding preferences and captures many features of reciprocal behavior, an apparently robust pattern in human nature. Using this concept we analyze the Moral Hazard problem and derive several results which differ from conventional contract theory. Our three key insights are: First, inequity aversion plays a crucial role in the design of optimal contracts. Second, there is a strong tendency towards linear sharing rules, giving a simple and plausible rationale for the prevalence of these schemes in the real world. Third, the Sufficient Statistics result no longer holds as optimal contracts may be “too” complete. Along with these key insights we derive a couple of further results.

JEL: D63, J3, M12, Z13
Keywords: contract theory, linear contracts, incentives, sufficient statistics result, inequity aversion

Fahr, Rene (IZA, Bonn), Uwe Sunde

Spatial Aspects of Job Creation: Evidence from Western Germany

This paper provides detailed information about spatial interactions in the job creation process in West German regional labor markets. We investigate spatial (auto-) correlations in the matching process of vacancies and unemployed, examine regional hiring patterns, and identify clusters of regions with intense inter-regional matching. An extensive specification analysis illustrates the extent of regional dependencies. We investigate the impact of German re-unification on regional patterns of job creation, and compare regional matching efficiencies using a stochastic frontier approach.

JEL: J61, J64, J21, R12
Keywords: internal migration, regional unemployment, stochastic frontiers

Fertig, Michael (RWI Essen and IZA Bonn)

Educational Production, Endogenous Peer Group Formation and Class Composition - Evidence from the PISA 2000 Study

The majority of empirical papers in the literature on school quality finds no or only small effects of class size and other school quality measures on students' outcomes. This paper analyses the effect of achievement heterogeneity and therefore the effect of the composition rather than the pure size of the class on student achievement. In this endeavor, individual-level data from an internationally conducted standardized test, the PISA 2000 study is utilized. For the case of US schools the influence of a student's peer group is estimated in a pure endogenous effects model and a model also allowing for contextual effects. The potential endogeneity of peer group formation is addressed in an instrumental variable approach. It turns out that heterogeneous peer groups have a strong detrimental impact on individual achievement. Moreover, it becomes transparent that contextual variables are important for the extent of peer group effects and the endogeneity of peer group formation.

JEL: I21
Keywords: peer group effects, learning environment, school quality

Fidrmuc, Jarko (Osterreichische Nationalbank), Iikka Korhonen

Similarity of Supply and Demand Shocks Between the Euro Area and the CEECs

We assess the correlation of supply and demand shocks between the countries of the euro area and the accession countries in the 1990s. Shocks are recovered from estimated structural VAR models of output growth and inflation. We find that some accession countries have a quite high correlation of the underlying shocks with the euro area. However, even for many advanced accession countries, the shocks remain significantly more idiosyncratic. Continuing integration within the EU is likely to align the business cycles of these countries similarly to the sync

JEL: E32, F42
Keywords: optimum currency area, EU enlargement, structural VAR

Filippin, Antonio (European University Institute)

Discrimination and Workers' Expectations

The paper explores the role of workers' expectations as an original explanation for the puzzling long run persistence of discrimination against some minorities in the labor market. A game of incomplete information is presented, showing that ex ante identical groups of workers may be characterized by unequal outcomes in equilibrium due to their different beliefs, even though discriminatory tastes and statistical discrimination by employers have disappeared. Wrong beliefs of being discriminated against are self-confirming in this circumstance, being the ultimate cause of a lower percentage of promotions which supports these wrong beliefs.

JEL: J71, J15, J24, D84, C79
Keywords: discrimination, workers' expectations, self-confirming beliefs

Filmer, Deon (The World Bank), Elizabeth King, Dominique van de Walle

Testing for Pay and Promotion Bias in an International Organization

International organizations pursue multiple objectives in hiring policies including cultural diversity, reducing costs and avoiding discrimination among which there can be sharp trade-offs. The paper studies how these trade-offs are resolved in the World Bank's hiring processes. It estimates that half of salary and grade differentials between men and women and staff from high- and low-income countries are attributable to differences in productive characteristics. Alternative explanations for the remainder are explored, including omitted variable bias, quotas and discrimination. It is argued that
the first two are not compelling explanations. Discrimination probably exists, though less than would be implied by a cost minimizing hiring policy.

JEL: J16, J71
Keywords: male-female differentials, discrimination, internal labor markets

Fischer, Andreas (Swiss National Bank and CEPR), Michael J Dueker, Robert D Dittmar

Stochastic Capital Depreciation and the Comovement of Hours and Productivity

In this article, we demonstrate that a small degree of stochastic variation in the depreciation rate of capital can greatly reduce the comovement between hours worked and labor productivity in a neoclassical growth model. The depreciation rate is modeled as a Markov process, as opposed to a linear autoregressive process, to place a strict upper bound and to ensure that variation and not the level of the rate is driving the result. Markov switching implies nonlinear decision rules in the dynamic stochastic general equilibrium model (DSGE). Our contribution to solving DSGE models with Markov switching is to apply Judd's (1998) projection method to capture the nonlinearity in the decision rules. This approach allows for nonlinear decision rules in a richer set of models with many more state variables than can be solved with grid-based approximations. The results presented here suggest that Markov switching parameters offer a powerful extension to DSGE models.

JEL: C63, E22, E32
Keywords: Markov switching, nonlinear decision rules, hours-productivity corr.

Fratzscher, Marcel (European Central Bank), Matthieu Bussiere

Towards A New Early Warning System of Financial Crises

This paper develops a new Early Warning System (EWS) model for predicting financial crises, based on a multinomial logit model. It is shown that EWS approaches based on binomial discrete-dependent-variable models can be subject to what we call a post-crisis bias. This bias arises when no distinction is made between tranquil periods, when economic fundamentals are largely sound and sustainable, and crisis/post-crisis periods, when economic variables go through an adjustment process before reaching a more sustainable level or growth path. We show that applying a multinomial logit model, which allows distinguishing between more than two states, is a valid way of solving this problem and constitutes a substantial improvement in the ability to forecast financial crises. The empirical results reveal that, for a set of 32 open emerging markets from 1993 till the present, the model would have correctly predicted a large majority of crises in emerging markets. Moreover, we derive general results about the optimal design of EWS models, which allows policymakers to make an optimal choice based on their degree of risk-aversion against unanticipated financial crises.

JEL: F31, F47, F30
Keywords: currency crises, Early Warning System, crisis prediction

Galindo-Rueda, Fernando (London School of Economics),

Employer Learning and Schooling-Related Statistical Discrimination in Britain

This paper develops and tests a new model of asymmetric information in the labour market involving employer learning. In the model, I provide theoretical conditions for the identification -- based on the experience and tenure profiles of estimated returns to ability and education -- of employer learning about unobserved worker's productivity and statistical discrimination based on years of schooling. Using data from two British birth cohorts, estimates based on this model support the hypothesis that British employers have limited information about their workers, make inferences based on their education levels, and progressively learn about their true ability. Moreover, this learning process particularly among blue-collar workers favours incumbent employers relative to potential competitors (asymmetric learning). This informational advantage implies an additional distortion in the functioning of the labour market and policy evaluation rarely takes into account the informational impact of interventions and its implications for individual behaviour.

JEL: C51, C52, D82, J39, J79
Keywords: employer learning, statistical discrimination, asymmetric information, unobserved ability

Ganelli, Giovanni (Trinity College Dublin)

The New Open Economy Macroeconomics of Government Debt

In this paper we introduce an overlapping generations structure of the Blanchard (1985) type in a New Open Economy Macroeconomics model. This allows us to study a wider range of fiscal shocks compared to the traditional Mundell-Fleming and to the baseline Redux (Obstfeld and Rogoff 1995, 1996) models. One important policy implication of our model is that the tax cut implemented in the US
in 2001 might have contributed to the appreciation of the Dollar vis-a-vis the Euro. In contrast, the imposition of fiscal constraints such as the "Golden Rule" proposed by the UK government can have opposite exchange rate effects.

JEL: F41, F31, H63
Keywords: Overlapping generations, new open economy macroeconomics, debt, tax cut

Georgarakos, Dimitris (Queen Mary London)

Risky Asset Ownership Decisions by the Elderly in the UK: Evidence from the Retirement Survey

In this paper we shed more light on the portfolio behaviour of the older part of the UK population over the period 1988-94. We employ data from the Retirement Survey and different econometric specifications in order to model the risky asset ownership decisions over time. The unique nature of the dataset allows us to control for a variety of factors that may be important for the portfolio behaviour of people that are about to or they have recently retired. Our results are indicative for the role of the fixed participation costs and inertial behaviour in risky asset ownership decisions.

JEL: C23, C35, D12, G11
Keywords: household portfolios, risky asset ownership decisions, random effects probit, bivariate probit, transition rates

Gertler, Paul J (UC-Berkeley & NBER), Simone Boyce

An Experiment in Incentive-Based Welfare: The Impact of PROGRESA on Health in Mexico

We investigate the impact of a unique anti-poverty program in Mexico on health outcomes. The program, PROGRESA, combines a traditional cash transfer program with financial incentives for families to invest in human capital of children. Our analysis takes advantage of a controlled randomized study design with household panel data. We find that the program significantly increased utilization of public health clinics for preventive care. The program also lowered the number of inpatient hospitalizations and visits to private providers, which is consistent with the hypothesis that PROGESA lowered the incidence of severe illness. We found a significant improvement in the health of both children and adults.

JEL: I12, I38, O12
Keywords: anti-poverty program, child health, Mexico

Geuna, Aldo (University of Sussex), Anthony Arundel

Proximity and the Use of Public Science by Innovate European Firms

We use the results of a 1993 survey of Europe’s largest firms to explore the effect of proximity on knowledge flows from suppliers, customers, joint ventures, competitors and public research organisations to innovative firms. The focus is on the latter, since they are an essential component of National Innovation Systems. The importance of proximity for sourcing knowledge from public research increases with the quality and output of domestic public research organisations and declines with activity in the North American market, an increase in the firm’s R&D expenditures, and the importance of codified knowledge to the firm.

JEL: H4, L3, O3
Keywords: public research, knowledge flows, tacit knowledge, innovation

Girma, Sourafel (University of Leicester), Holger Gorg

Foreign Ownership, Returns to Scale and Productivity: Evidence from UK Manufacturing Establishments

This paper focuses on the pattern of returns to scale and productivity growth in UK manufacturing establishments in the electronics and food industries. Our results show that foreign establishments tend to have lower returns to scale than their domestic counterparts. Moreover, foreign acquisition is found to have a negative effect on RTS, especially in the food sector. Finally, establishments in the electronics sector experience a reduction in productivity post acquisition, while plants in the food sector increase productivity.

JEL: L11, F23
Keywords: returns to scale, foreign direct investment, acquisitions, productivity

Glewwe, Paul (University of Minnesota & The World Bank), Stefanie Koch), Bui Linh Nguyen

The Impact of Income Growth and Provision of Health-Care Services on Child Nutrition in Vietnam
Vietnam enjoyed rapid economic growth and a sharp reduction in child stunting in the 1990s. Economic growth can increase children's nutritional status in two ways. First, by raising household incomes, which can be used to purchase more food, medicine and medical services. Second, by raising government revenue, which can be used to improve publicly provided medical services. This paper estimates the impact of household per capita expenditures on children's nutritional status. All the estimation methods used indicate that household income growth explains at best only part of the decrease in child stunting. The paper also examines what aspects of public and private medical services improve child health.

JEL: O15, I12
Keywords: child nutrition and health, economic growth

Gorg, Holger (University of Nottingham), Eric Strobl
**Spillovers from foreign firms through worker mobility: An empirical investigation**
While there has been a large empirical literature on productivity spillovers from foreign to domestic firms this literature treats the channels through which these spillover effects work as a black box. This paper attempts to fill this gap in the literature. Our results suggest that firms which are run by owners that worked for multinationals in the same industry immediately prior to opening up their own firm have higher productivity growth than other domestic firms. This suggests that these entrepreneurs bring with them some of the knowledge accumulated in the multinational which can be usefully employed in the domestic firm. We do not find any positive effects on firm level productivity if the owner had experience in multinationals in other industries, or received training by multinationals.

JEL: F21, F23, J61
Keywords: foreign direct investment, spillovers, worker mobility, training

Gorzig, Bernd (DIW Berlin), Andreas Stephan
**Outsourcing and Firm-level Performance**
Using firm-level panel data from the German cost structure survey over the period 1992 to 2000, our empirical analysis shows that firms that increased material inputs relative to internal labor costs performed better in terms of gross operating surplus than other firms. However, firms that increased external services relative to internal labor costs, thus outsourcing service functions previously provided within the firm, performed worse. In sum, our findings support the view that firms tend to overestimate the benefits accruing from outsourcing of services previously provided internally.

JEL: L22, L23, C33
Keywords: outsourcing, firm performance, business service sector

Green, Francis (University of Kent at Canterbury), Andy Dickerson
**The Growth and Valuation of Generic Skills**
Using a method for measuring job skills derived from survey data on detailed work activities, we show that between 1997 and 2001 there was a growth in Britain in the utilisation of computing skills, literacy, numeracy, technical know-how, high-level communication skills, planning skills, client communication skills, horizontal communication skills, problem-solving and checking skills. Computer skills and high-level communication skills carry positive wage premia, as shown both in cross-section hedonic wage equations and through a within-cohorts change analysis. No part of the gender pay gap can be accounted for by differences in levels of generic skills between men and women.

JEL: J31
Keywords: skills, wages, computers

Green, Richard J (University of Hull), Joanne Evans
**Why did British electricity prices fall after 1998?**
In an attempt to reduce high electricity prices in England and Wales the government has reduced concentration among generators and introduced New Electricity Trading Arrangements (NETA). Econometric analysis on monthly data from April 1996 to September 2002 implies support for two conflicting hypotheses. On a static view, increases in competition and the capacity margin were chiefly responsible for the fall in prices. If generators had been tacitly colluding before NETA, however, the impending change in market rules might have changed their behaviour a few months before the abolition of the Pool. That view implies that NETA reduced prices.

JEL: L94
Keywords: electricity, market power, concentration, market rules

Guariglia, Alessandra (University of Kent at Canterbury), Robert E Carpenter
Cash flow, investment, and investment opportunities: New tests using UK panel data
The interpretation of the correlation between cash flow and investment is highly controversial. Some argue that it is caused by financial constraints, others by the correlation between cash flow and investment opportunities that are not properly measured by Tobin’s Q. This paper uses UK firms’ contracted capital expenditure to capture information about opportunities available only to insiders and thus not included in Q. When this variable is added in investment regressions, the explanatory power of cash flow falls for large firms, but remains unchanged for small firms. This suggests that the significance of cash flow stems from its role in alleviating credit frictions.

*JEL: D92, E22*
*Keywords: investment, Tobin’s Q, cash flow, financing constraints*

Guidolin, Massimo (University of Virginia), Allan Timmermann

**Economic Implications of Bull and Bear Regimes in UK Stock Returns**
This paper presents evidence of persistent ‘bull’ and ‘bear’ regimes in UK stock returns and considers their economic implications from the perspective of an investor's portfolio decisions. We find that the perceived state probability has a large effect on the optimal allocation to stocks, particularly at short investment horizons. If ignored, the presence of such regimes gives rise to welfare costs that are substantial, particularly in the bear state where stock holdings should be significantly reduced. When we extend the return forecasting model to allow for predictability from the lagged dividend yield, we find that both dividend yields and regime switching have strong effects on the optimal asset allocation.

*JEL: G11, C53*
*Keywords: optimal asset allocation, regime switching, Bull and Bear Markets, model specification*

Gutierrez-Domenech, Maria (CEP, London School of Economics)

**Employment Penalty after Motherhood: a European Comparison**
There is theoretical evidence that economic and family policies have an important impact on mother’s employment. The aim of this article is to study empirically the women's transitions from employment to non-employment after they have their first birth in Belgium, West-Germany, Italy, Spain and Sweden. The paper investigates the evolution of post-birth employment across time and how these shifts are related to cross-country different policies and society. We also test if the withdrawal from work is due to marriage or to motherhood. Results show that Spain and West-Germany are the countries with the lowest rates of staying-on in the labour market after childbearing. Higher education is a key explanatory factor of the probability of post-birth employment in all countries, except for Sweden. In the period 1973-93, Belgian and especially Spanish mothers increased their probability of post-birth employment, ceteris paribus. The opposite movement occurred in West-Germany. Italy and Sweden remained fairly constant. This trend is mainly explained by the taxation system (joint vs. separate), education and part-time employment

*JEL: I20, J13, J18, J20*
*Keywords: employment transitions, part-time work, motherhood, education*

Haag, Matthew (University of Warwick), Roger Lagunoff

**On the Size and Structure of Group Cooperation**
This paper examines characteristics of cooperative behavior in a repeated, n -person, continuous action generalization of a Prisoner’s Dilemma game. When time preferences are heterogeneous and bounded away from one, how “much” cooperation can be achieved by an ongoing group? How does group cooperation vary with the group’s size and structure? For an arbitrary distribution of discount factors, we characterize the maximal average co-operation (MAC) likelihood of this game. The MAC likelihood is the highest average level of cooperation, over all stationary subgame perfect equilibrium paths, that the group can achieve. The MAC likelihood is shown to be increasing in monotone shifts, and decreasing in mean preserving spreads, of the distribution of discount factors. The latter suggests that more heterogeneous groups are less cooperative on average. Finally, we establish weak conditions under which the MAC likelihood exhibits increasing returns to scale when discounting is heterogeneous. That is, larger groups are more cooperative, on average, than smaller ones. By contrast, when the group has a common discount factor, the MAC likelihood is invariant to group size.

*JEL: C7, D62, D7*
*Keywords: repeated games, maximal average cooperation likelihood, heterogeneous discount factors, returns to scale*

Hahn, Jong-Hee (Keele University)
**Damaged Durable Goods**
A durable-goods monopolist may use quality degradation as a commitment not to lower price in the future. The introduction of damaged goods expedites low-valuation consumers’ future demands, and helps the firm to mitigate the Coasian time-consistency problem. In such a case, damaged goods are more likely to be observed relative to the static setting where only the price-discrimination aspect of quality degradation is in effect. However, it is more likely to reduce welfare by inducing low-valuation buyers to buy the low-quality good early rather than to wait and buy the high-quality good later. So, quality degradation of durable goods is more likely to occur but less promising to the society, relative to the case of non-durable goods where damaged goods are rarely observed but more likely to be Pareto-improving.

*JEL: D42, L12, L15*
*Keywords: damaged goods, quality degradation, durable-good monopoly*

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**Joint Production Games with Mixed Sharing Rules**
We study joint production games under a mixed sharing rule in which part of the output (the mixing parameter) is shared in proportion to inputs and the rest according to exogenously determined shares. We show that this game has a unique Nash equilibrium and discuss comparative statics. When the game is large, we show that players unanimously prefer the same value of the mixing parameter: the equilibrium elasticity of production. At this value, the equilibrium allocation is fully efficient. Our approach heavily exploits the fact that payoffs depend only on a player's input and the aggregate input.

*JEL: C72, H42*
*Keywords: production externalities, non-cooperative games*

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**Immigration and Inter-Regional Mobility in the UK, 1982-2000**
The possible effects of higher immigration, raising unemployment and lowering earnings for locals, has been a contentious empirical issue and it has recently come to the fore in Britain. Most studies that look across local labour markets, chiefly for the US but recently for the UK, have found the effects of immigration to be benign. One possibility is that an influx of immigrants from abroad to a specific area simply pushes non-immigrants onwards to other localities and thereby spreads the labour market effects over the whole economy. We investigate this issue looking at net internal migration across 11 UK regions over two decades. While we find consistently negative crowding out effects, the results are not statistically very strong. Neither are they enhanced when embedded in a model that includes other variables that drive inter-regional migration or one that examines bilateral population flows between regions. We conclude that this particular channel of adjustment is fairly weak.

*JEL: J61*
*Keywords: UK immigration, inter-regional migration*

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**Unionisation Structures and Firms’ Incentives for Productivity Enhancing Investments**
This paper examines how unionisation structures that differ in the degree of wage centralisation affect firms' incentives to increase labour productivity. We distinguish three modes of unionisation with increasing degree of centralisation. (1) "Decentralisation" where wages are determined independently at the firm-level, (2) "coordination" where an industry union sets individual wages for all firms at the firm-level, and (3) "centralisation" where a uniform wage rate is set for the entire industry. We show that firms' investment incentives are largest under complete centralisation. However, investment incentives are non-monotone in the degree of centralisation so that "decentralization" carries higher investment incentives than "coordination." Depending on the innovation outcome, workers' wage bill is maximised under centralisation if firms' productivity differences remain small. Otherwise, workers prefer an intermediate degree of centralisation, which holds innovative activity down at its lowest level. Labour market policy can spur innovation by either decentralising unionisation structures or by imposing non-discrimination rules on monopoly unions.

*JEL: D43, J50, K31, L13*
*Keywords: unionised oligopoly, innovation, productivity, labour market institutions*

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**Monetary Policy in the Euro Area - Lessons from the First Years**
This paper investigates in a consistent semi-structural
empirical framework three current issues of monetary policy in the euro area. First, regarding policy transmission we offer a three-stage procedure to combine the efficient estimation of economic structure prior to EMU with current ECB monetary policy. Second, we test whether the regime change leads – before or after – EMU to structural instability. Third, we investigate the stance of monetary policy in Europe. We compare a “counterfactual” ECB reaction function based on average interest rates prior to EMU with actual ECB policy. Furthermore, we compare actual ECB policy with interest rate projections using Bundesbank reaction functions and euroland data.

**JEL:** E52, F41

**Keywords:** European Monetary Union, monetary policy, semi-structural modelling, reaction function, Taylor rule, transmission mechanism

**Heidhues, Paul** (University of Pittsburgh), **Nicolas Melissas**  
**Equilibria in a Dynamic Global Game: The role of cohort effects**  
We introduce strategic waiting in a global game setting. Players can wait in order to take a better informed decision. We allow for cohort effects, which naturally arise if the network externality in a given period depends on the mass of players who are actively using the technology at this point in time. Formally, cohort effects lead to intra-period network effects being greater than inter-period network effects. In the absence of cohort effects, our model has a unique rationalizable equilibrium. Cohort effects, however, can lead to multiple equilibria within the class of symmetric switching strategies.

**JEL:** C72, C73, D82, D83, ,

**Keywords:** global game, strategic waiting, coordination, strategic complementarities, period-specific network effects

**Hendry, David F** (University of Oxford), **Hans-Martin Krolzig**  
**The Properties of Automatic Gets Modelling**  
We describe some recent developments in PcGets, and consider their impact on its performance across different (unknown) states of nature. We discuss the consistency of its selection procedures, and examine the extent to which model selection is non-distortionary at relevant sample sizes. The problems posed in judging performance on collinear data are noted. We also describe how PcGets has been extended to assist non-experts in model formulation, handle more variables than observations, and tackle non-linear models.

**JEL:** C51, C22

**Keywords:** Model selection, econometric methodology, PcGets, selection consistency, Monte Carlo

**Henley, Andrew** (University of Wales Aberystwyth), **Rhian Eleri Jones**  
**Earnings and Linguistic Proficiency in a Bilingual Economy**  
Bilingualism is a widespread phenomenon, yet its economic effects are under researched. Typically studies find that bilingual workers are disadvantaged. Governments often protect minority languages through official promotion of bilingualism, with potential economic consequences. This paper addresses the impact of bilingualism on earnings, using the example of Wales. Results show a positive raw differential of 8 to 10 per cent depending on definition of linguistic proficiency. The use of Welsh in the workplace is not directly productive. Nevertheless language choice and earnings appear to be endogenous. The differential can be entirely explained by a selection effect. This is consistent with the effectiveness of legislation to promote the minority language.

**JEL:** J15, J24, J31

**Keywords:** earnings, language choice, human capital

**Higon, M Dolores Anon** (University of Warwick),  
**Total Factor Productivity and R&D Spillovers**  
The main purpose of this paper is to present new evidence on the long run relationship between R&D efforts and productivity performance of UK manufacturing industries in the presence of inter-industry and international spillovers of technology. The main dataset used to perform this analysis is a panel of eight UK manufacturing industries over the period 1970 to 1997. The empirical results indicate that there is a positive and significant link between industry's R&D activities and productivity in the long run. In addition, robust evidence was found of positive and significant domestic R&D externalities. Conversely, the finding that international spillovers do not contribute to TFP suggests that R&D spillovers are primarily an intra-national phenomenon, which may serve as a warning against under-estimating the importance of domestic technological efforts and over-estimating the potential contribution of international spillovers.

**JEL:** C23, D24, O30, O47
Hijzen, Alexander (University of Nottingham)
**Fragmentation, Productivity and Relative Wages in the UK: A General Equilibrium Approach**
Feenstra and Hanson (1999) propose a two-stop method to analyse the role of outsourcing and skill-biased technological change (SBTC) in the rise in wage inequality. This paper applies their methodology to UK manufacturing using data for the 1990s and extends it in order to obtain additional insight in the relative importance of the sector bias and the factor bias of outsourcing and SBTC. The results indicate that outsourcing has significantly contributed to the rise in the domestic wage inequality accounting for approximately 12% of the increase in the UK in the 1990s. Factor-biased outsourcing was about 2.5 times as important as sector-biased outsourcing in explaining the increase in wage inequality.
*JEL: F14, J31*

Keywords: fragmentation, outsourcing, productivity, mandated wage regressions

Hoffmann, Mathias (University of Cologne)
**Fixed versus Flexible Exchange Rates: A Panel-VAR Analysis**
This paper empirically investigates Mundell's (1961) formalisation that in a small open economy flexible exchange rates act as a 'shock absorber'. The role of a world real interest rate shock in driving output, trade imbalances and real exchange rate fluctuations under different exchange rate regimes is empirically investigated in a Panel VAR, which utilises economic theory for identification.
*JEL: C33, F31, F41*

Keywords: small open economies, exchange rate regimes, panel VAR

Huefner, Felix P (ZEW Mannheim), Friedrich Heinemann
**Is the View from the Eurotower Purely European? - National Divergence and ECB Interest Rate Policy**
The official view on ECB monetary policy claims that decisions are based on euro zone data and that diverging regional developments are disregarded. To test empirically whether regional developments have an impact on ECB decisions we develop a generalised monetary policy reaction function which allows for an influence of regional divergence. Reaction function estimations and a probit model of interest rate decisions for the first years of the euro area offer some first weak support for an impact of regional divergence. The results clarify that ignoring a potential national perspective may lead to biased estimates for the ECB reaction function.
*JEL: E58*

Keywords: ECB, monetary policy, Taylor rule

Imai, Katsushi (University of Oxford), Raghav Gaiha
**Vulnerability, Shocks and Persistence of Poverty - Estimates for Semi-Arid Rural South India**
This paper focuses on vulnerability of rural households to poverty when a negative crop shock occurs based on the ICRISAT panel data in India during 1975-84. Of particular concern is the possibility of some sections experiencing long spells of poverty as a consequence of such shocks. Using alternative specifications that take into account both direct and indirect effects of crop shocks, an assessment of vulnerability of different groups (e.g. caste affiliations) of households and policy simulations on land and non-land asset transfers are carried out. A reorientation of anti-poverty strategy is necessary to avoid welfare losses from the crop shocks.
*JEL: H53, I32, Q15*

Keywords: shocks, dynamics, vulnerability, transfers, poverty

Ireland, Norman J (University of Warwick)
**Rationing or Restrictions in an Equilibrium Model of Investment Loans**
Banks supply loans for firms to enter an industry. They choose between credit restrictions, where firms' decisions are limited by contract, and credit rationing. These are both ways to avoid firms' moral hazard. An equilibrium is described in both approaches. The two equilibria are compared and analysed, and either may occur depending on parameter values. Thus in some situations a credit rationing equilibrium may be observed while in others a credit restriction equilibrium may exist. Extensions include the derivation of incentives for banks to improve restrictions or controls and analysis of the case where temptations change endogenously.
*JEL: L0*

Keywords: credit rationing, control, moral hazard
Jahn, Elke J (Friedrich-Alexander-Universität Erlangen-Nuremberg), Thomas Wagner

**A Hiring Subsidy for Long-Term Unemployed in a Search Model with PES and Random Search**

Our search model combines two search methods, the public employment service (PES) and random search. The separation rate is endogenous, the job matching process consists of three stages. In the first and the second respectively the short-term (STU) and the long-term unemployed (LTU) randomly search for a vacancy. In the last stage the PES matches registered jobseekers with registered vacancies. The LTU cause training costs and, during the training period, have a lower marginal product than the STU. The effects of the hiring subsidy and of profiling techniques to increase the effectiveness of the PES depend on the target group. For target groups, who have relatively low private search costs in comparison with their productivity, not only the hiring subsidy but also the job placement activities of the PES are counterproductive and reduce overall employment.

**JEL:** J41, J63, J64, J68

**Keywords:** matching model, hiring subsidy, endogenous separation rate, active labour market policy, PES and search market

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Jain, Sanjay (University of Virginia), Sharun Mukand

**Public Opinion and the Dynamics of Reform**

Why do economic reforms that are proceeding successfully often run aground? A number of observers have expressed surprise that public opinion regarding the continuation of a reform process often runs directly counter to the performance of the reform itself. This is especially surprising if one thinks of voters as forward-looking. If anything, a reform that is proceeding successfully might be expected to see burgeoning political support, as voters learn something about the underlying reform, or about the incumbent government’s ability to implement it smoothly. In this paper we show that there might arise circumstances where the initial success of reform might result in it running into a political impasse. We suggest that the key might lie in the effect that the reform process has on the balance of political power. In particular, if initially successful reforms change the balance of political power in such a way as to make future redistribution less likely, then public opinion may turn against reform. Thus, in some sense, an initially successful reform may well end up sowing the seeds of its own destruction.

**JEL:** D72, O20, P16

**Keywords:** political economy, economic reform, public opinion, redistribution, compensation

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Kamps, Christophe (Kiel Institute for World Economics)

**New Estimates of Government Net Capital Stocks for 22 OECD Countries 1960-2001**

The issue of whether government capital is productive has received a lot of attention in the recent past. Yet, empirical analyses of public capital productivity have in general been limited to a small sample of countries for which official capital stock estimates are available. Alternatively, many researchers have investigated the output effects of public investment – recognizing that investment may be a poor proxy for the corresponding capital stock. This paper tries to overcome this data shortage by providing internationally comparable capital stock estimates for a large panel of OECD countries.

**JEL:** E22, H540

**Keywords:** capital stock, perpetual inventory method, OECD countries

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Kattuman, Paul (University of Cambridge), Michael R Baye, Rupert Gatti, John Morgan

**Outline Pricing and the Euro Changeover: Cross-Country Comparisons**

We study the impact of the Euro on prices charged by online retailers within the EU. Our data spans the period before and after the Euro was introduced, covers a variety of products, and includes countries inside and outside of the Eurozone. Our main finding is that the Euro changeover in 2002 neither mitigated price differences nor resulted in purchasing power parity for products sold online. In fact, evidence suggests that online prices in the Eurozone actually increased compared to prices of EU countries outside the Eurozone. Further, contrary to the predictions of purchasing-power-parity, we find significant differences in the prices charged by firms both within and across seven countries in the European Union. We also find significant differences in both the average price charged and the best price available in these countries. These conclusions are robust to a variety of controls.

**JEL:** D400, D830, F150, L130, M370

**Keywords:** price competition, Euro, internet

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Kellard, Neil (University of Essex), Mark E Wohar
Trends and Persistence in Primary Commodity Prices
This paper applies new time-series procedures to examine the Prebisch-Singer hypothesis of a secular deterioration in relative primary commodity prices and the nature of their persistence. Employing a dataset of 24 relative commodity prices for the 1900-98 period, the pervasiveness of the Prebisch-Singer hypothesis is shown to be a function of a priori selected decision criteria, providing an explanation of conflicting findings in the recent literature. Moreover, much less persistence is found in the relative commodity prices than previously reported, since 23 out of the 24 commodities can be classified as trend-stationary. This implies there may well be more room for stabilization and price support mechanisms than previously advocated.

JEL: O13, C22
Keywords: primary commodities, unit root tests, structural breaks

Kenc, Turalay (Imperial College), John Driffill, Martin Sola
An Empirical Examination of Term Structure Models with Regime Shifts
We examine several continuous-time term structure models in which the short rate is subject both to continuous changes and to discrete shifts. Several regime-switching term structure models are developed, with regime-dependence in various combinations of their drift and diffusion parameters. We examine their predictive power. Our empirical analysis suggests that it is important to attempt to specify the switching model correctly: badly parameterized switching models may not be an improvement (in terms of pricing) over models which do not allow for regime switching, even when there are clear breaks in the data.

JEL: E43, G12
Keywords: term structure of interest rates, bond yields, stochastic discount factor/pricing kernel, regime switching

Kim, Byung-Yeon (University of Essex), Jukka Pirttila
The Political Economy of Reforms: Empirical Evidence from Post-Communist Transition in the 1990s
Using a novel data set from post-communist countries in the 1990s, this paper examines the linkages between political constraints, economic reforms and growth. Results from a dynamic panel analysis suggest that public support for reform is negatively associated with increases in income inequality and unemployment. In addition, both ex post and ex ante political constraints referring to the extent of public support affect progress in economic reforms, which in turn determines economic growth. These findings highlight that while economic reforms are needed to foster growth, they must be designed in such a way that they do not undermine political support for reform.

JEL: P26, O11, C33
Keywords: political constraints, economic reform, transition, growth, dynamic panel models

Kim, Dong Heon (University of Manchester), Denise R Osborn, Marianne Sensier
Nonlinearity in the Fed’s Monetary Policy Rule
This paper investigates the nature of nonlinearities in the monetary policy rule of the US Fed using the flexible approach of Hamilton (2001a). We find that while there is significant evidence of nonlinearity for the period to 1979, there is little such evidence for the subsequent period. Possible asymmetries in the Fed’s reactions to inflation deviations from target and the output gap in the 1960s and 70s may tell part of the story, but do not capture the entire nature of the nonlinearity. The inclusion of the interaction between inflation deviations and the output gap, as recently proposed, appears to characterize the nonlinear policy rule more adequately.

JEL: E52, E58, C13
Keywords: nonlinearities, monetary policy rule, Phillips curve, interaction

Kim, Tae-Hwan (University of Nottingham), Thanaset Chevapatrakul, Paul Mizen
Predicting Changes in the Interest Rate: The Performance of Taylor Rules Versus Alternatives for the United Kingdom
We consider an experiment where we use the Taylor rule information set, inflation and the output gap, to predict the next change in monetary policy for the United Kingdom 1992 - 2000. To do this we use a limited dependent variable approach, where the next rate change could be `upwards', `downwards' or `no change'. A Multinomial Logit model is used to predict the next most likely change using monthly data, and these predictions are compared to the actual outturn. Against this hypothesis we compare a wider information set including more than just inflation and output gap variables. The in-sample and out-of-sample prediction tests are evaluated using forecast performance tests.
Transactions That Did Not Happen and Their Influence on Prices
This paper studies data from the wholesale fruit and vegetables market in Marseille. We have details of counteroffers to the prices that were proposed by the seller even when no transaction took place. With a simple theoretical model we analyse the evolution of prices during the day and in particular the relation between the final price struck and the proposals of the two parties. Periods with no buyer refusals, of offers or bargaining with no transaction will lead to a revision of the seller’s first price. More importantly the sharing of the surplus moves in the buyer’s favour during the day. These presumptions are then shown to be confirmed by our data set.

Wage Formation in Open Economies and the Role of Monetary and Wage-Setting Institutions
The paper studies the determinants of unemployment in a two-country model, where real wages are the outcome of the strategic interaction between various institutional players (firms, unions, central banks). We show that: (i) the results derived in the recent literature on this topic are not generally robust against the introduction of openness; (ii) the shape of the Calmfors-Driffill curve not only depends on a country’s own centralization of wage bargaining (CWB) but rather on home and foreign characteristics; (iii) the model challenges the established belief that a shift to a monetary union (MU) will (negatively) affect unemployment in all member countries by fundamentally changing the nature of strategic interactions. Under certain assumptions our open-economy model suggests that the formation of a MU has no effect whatsoever on structural unemployment.

Individual versus group behavior and the role of the decision making procedure in gift-exchange experiments
We test for behavioral differences between groups and individuals in gift-exchange experiments. Related studies establish group behavior as typically closer to the game-theoretic equilibrium. We show that this result may depend crucially on the decision making procedure within groups. A novel decision making protocol opens up the black box of group decision making and allows to track important features of the group interaction process. We are able to show that the mere fact of being a group member shifts initial individual choices towards the game-theoretic equilibrium.

Factor price frontiers with international fragmentation of multistage production
This paper investigates international fragmentation in a modeling framework where the multi-stage nature of industrial production is made explicit, and where the engineering sequence of stages is juxtaposed with a sequence of increasing economic incentive for international fragmentation. Assuming that there are two tradable goods sectors, a multi-stage sector amenable to international fragmentation and a standard sector where production is always fully integrated in the domestic economy, I first explore the nature and shape of the domestic factor price frontier, endogenously determining the margin of international fragmentation under given world prices for the two goods. I then explore the consequences of an exogenous change in the terms of trade on the margin of international fragmentation, and the implications of a fall in the cost of transport and communication that facilitates an increasing degree of international fragmentation.

Firm Performance and Selection in an emerging Economy: Micro Evidence from Slovenia
We investigate the determinants of firm survival and growth (employment and sales), in the context of transition from plan to market, using firm data from Slovenia spanning from 1994 to 1998 and OLS
and Heckman selection models. Firm and industry pre-transition conditions including size, ownership, financial constraints, trade and market structure are used to understand what firms best performed in the Slovenian transition. Small, private, exporting and capital intensive firms grew the fastest. Large firms with positive profits and higher sunk costs were more likely to survive compare to firms with higher financial constraints, high costs or trading abroad.

*JEL:* P2, P3, L6
*Keywords:* firm growth and survival, ownership, competition, financial constraints

**Krolzig, Hans-Martin** (University of Oxford), **Peter Flaschel**

**Wage and Price Phillips Curves**

In this paper we introduce a small Keynesian model of economic growth which is centered around two advanced types of Phillips curves, one for money wages and one for prices, both being augmented by perfect myopic foresight and supplemented by a measure of the medium-term inflationary climate updated in an adaptive fashion. The model contains two potentially destabilizing feedback chains, the so-called Mundell and Rose-effects. We estimate parsimonious and congruent Phillips curves for money wages and prices in the US over the past five decades. Using the parameters of the empirical Phillips curves, we show that the growth path of the private sector of the model economy is likely to be surrounded by centrifugal forces. Convergence to this growth path can be generated in two ways: a Blanchard-Katz-type error-correction mechanism in the money-wage Phillips curve or a modified Taylor rule that is augmented by a term, which transmits increases in the wage share (real unit labor costs) to increases in the nominal rate of interest. Thus the model is characterized by local instability of the wage-price spiral, which however can be tamed by appropriate wage or monetary policies. Our empirical analysis finds the error-correction mechanism being ineffective in both Phillips curves suggesting that the stability of the post-war US macroeconomy originates from the stabilizing role of monetary policy.

*JEL:* E24, E31, E32, J30
*Keywords:* Phillips curves, Mundell effect, Rose effect, monetary policy, Taylor rule, inflation, unemployment, instability

**Landon-Lane, John S** (Rutgers University), **Peter E. Robertston**

**Structural Change, Accumulation and Growth in Developing Economies**

Historically, episodes of rapid growth are accompanied by significant structural change. In this paper we therefore aim to quantify the extent to which factor accumulation induces structural change and productivity growth in industrializing economies. We present an extension of a standard growth model that incorporates two sectors, traditional and modern, and an endogenous wage gap, due to efficiency wages. We quantify the model using a panel of 78 countries over the post war era. The results show that these labour reallocation effects are significant and can increase the effective return to physical capital by around 30% in many countries.

*JEL:* O0, O1, O3
*Keywords:* growth, development, endogenous growth, dual economy, convergence

**Lasselle, Laurence** (University of St Andrews), **Serge Svizzero, Clem Tisdell**

**Heterogeneous Expectations, Dynamics, and Stability of Markets**

This paper examines the role of heterogeneous beliefs in a cobweb model. We proceed in two stages. First, two groups of agents are distinguished. They are either fundamentalists, or chartists. The latter specify the expected price from an adaptive process, the former have a “rational behaviour”. Second, agents may choose between rational expectations and an adaptive process. We demonstrate twofold. The market behaviour of fundamentalists compared to chartists promotes market stability. Market stability may emerge depending on the specification of the expectations and the intensity of switching between the two behaviours.

*JEL:* C62, D84, E30
*Keywords:* cobweb model, switching behaviour, Flip bifurcation, Neimark-Sacker bifurcation, resonance

**Lau, Sau-Him Paul** (University of Hong Kong),

**Using an error-correction model to test whether endogenous long-run growth exists**

A major empirical interest in growth studies is whether permanent changes in economic fundamentals affect the long-run growth rate. However, a direct time series analysis of this hypothesis may not always be feasible because the permanence of many such changes is rather questionable. This paper explains why examining the long-run effects of temporary changes in investment share on per
capita output provides indirectly the answer regarding the effects of (possibly hypothetical) permanent changes in investment share, when per capita output and per capita investment are cointegrated. Applying the proposed method to the post-war data of major industrial countries, it is found that a disturbance to investment share does not produce a positive long-run effect in France, Japan and the UK. The evidence is unfavorable to the class of endogenous growth models.

**JEL:** O40, E22  
**Keywords:** error-correction model, presence or absence of endogenous growth

**Lawrence, Peter (Keele University), Arijit Mukherjee**  
**Price-Capping regulation as a protectionist strategy in developing countries**  
In developing countries undergoing liberalising reforms, there are typically local incumbents facing the loss of protection. Strategic lobbying by such firms for a price-capping regulatory regime can deter entry. We show that a regulatory price can be set such that the net profit of the entrant is lower than the entry cost thus deterring entry and that it is possible for the profit of the incumbent to be greater under regulation than under unregulated duopoly. We consider the case of multiple incumbents threatened by entry and also extend our analysis to incorporate lobbying by the entrant.  
**JEL:** L11, L41, L51  
**Keywords:** entrant, incumbent, lobbying, price-capping regulation

**Leech, Dennis (University of Warwick)**  
**Incentives to Corporate Governance Activism**  
This paper considers incentives faced by investors (financial institutions) to become actively involved in the governance of under-performing companies in their portfolio as recently proposed. By considering the private benefits and the costs of investor activism separately, it questions the conventional wisdom -based on simplistic agency theory - that share ownership is so widely held in the UK that such incentives are too weak for shareholder activism to be a rational basis of a system of corporate governance. It finds that in many cases, by contrast, these incentives would be very strong indeed if conflicts of interest could be avoided.  
**JEL:** G34, G20, L21  
**Keywords:** Corporate governance, shareholder activism, incentives, free-rider problem, agency

**Leith, Campbell (University of Glasgow), Simon Wren-Lewis**  
**Interactions Between Monetary and Fiscal Policy Under Flexible Exchange Rates**  
We extend the fiscal theory of the price level (FTPL) by developing a two-country open-economy model under flexible exchange rates, where overlapping generations of consumers supply labour to imperfectly competitive firms which change their prices infrequently. We show that the fiscal response required to support an active inflation-targeting monetary policy is greater when consumers have finite lives. Additionally, one monetary authority can abandon its active targeting of inflation to stabilise the debt of a fiscal authority, even if the policy makers operate in different countries. Finally, through simulations, we consider the impact of fiscal shocks on key macroeconomic variables.  
**JEL:** E10, E63  
**Keywords:** monetary policy, fiscal policy, new open economy macroeconomics, fiscal theory of the price level

**Lemos, Sara (University College London)**  
**Political Variables as Instruments: Are They Good Candidates?**  
The international literature on minimum wage greatly lacks empirical evidence from developing countries. In Brazil, not only are increases in the minimum wage large and frequent but also the minimum wage has been used as anti-inflation policy in addition to its social role. This paper estimates the effects of the minimum wage on employment using Brazilian data. A number of conceptual and identification questions are discussed as tentative explanation of the non-negative estimates found in the literature, for example:  
1. The superiority of "spike" over "fraction affected" and "Kaitz index" as a minimum wage variable;  
2. Political variables as excluded exogenous instruments;  
3. Decomposition of the minimum wage employment effect into hours worked and number of jobs effects.  
4. Informal and public sectors sorting robustness checks. Robust results to various alternative specifications and instrumental variables indicate that an increase in the minimum wage has moderately small adverse effects on employment.  
**JEL:** J38  
**Keywords:** minimum wage, wage effect, employment effect, informal sector
Leonardi, Marco (London School of Economics and IZA)  
**Firms’ Heterogeneity in Capital/Labor Ratios and Wage Inequality**  
This paper provides some empirical evidence and a theory of the relationship between residual wage inequality and the increasing dispersion of capital/labor ratios across firms. I document the increasing variance of capital/labor ratios across firms in the US labor market using Compustat data. I also show that the increase in the variance of capital/labor ratios across firms is related to the increasing variance of wages. To explain these empirical regularities I adopt a search model where firms differ in their optimal composition of capital between equipment and structure. As the relative price of equipment falls over time the distribution of capital/labor ratios becomes more dispersed across firms. In a frictional labor market this force generates wage dispersion among identical workers. In the model the increase in wage inequality is due only to job changers as they are randomly matched to an increasingly wide variety of jobs (capital/labor ratio). This feature of the model is consistent with recent evidence that indicates that the bulk of the increase in wage inequality took place between plants rather than within plants. Simple estimation of the model indicates that the dispersion of capital/labor ratios can explain up to one half of the total increase in residual wage inequality.  
**JEL:** J21, J31  
**Keywords:** wage inequality, capital intensity, search models

Leon-Ledesma, Miguel (University of Kent), Peter McAdam  
**Unemployment, Hysteresis and Transition**  
We quantify the degree of persistence in the unemployment rates of transition countries using a variety of methods benchmarked against the EU. In doing so, we will also characterize the dynamic behavior of unemployment in the CEECs during the past decade. In part of the paper, we will work with the concept of linear “Hysteresis” as described by the presence of unit roots in unemployment as in most empirical research on this area. Given that this is potentially a rather narrow definition, we will also take into account the existence of structural breaks and non-linear dynamics in unemployment in order to allow for a richer set of dynamics. Finally, we examine whether CEECs’ unemployment presents features of multiple equilibria, that is, if it remains locked into a new level whenever a structural change occurs. Our findings show that, in general, we can reject the unit root hypothesis after controlling for structural changes and business cycle effects, but we can observe the presence of a high and low unemployment equilibria. The speed of adjustment is faster for CEECs than the EU, although CEECs tend to move more frequently between equilibria.  
**JEL:** E24, C22, C23  
**Keywords:** unemployment, hysteresis, unit root, transition

Leslie, Derek (Manchester Metropolitan University)  
**Better qualified but a lower acceptance rate: does Higher Education discriminate against women?**  
Using a sample of around 2.3 million observations on applications to UK Higher Education institutions from 1996-2001, the paper explores whether the selection process into Higher Education is discriminatory. The answer is no discrimination, even though women are better qualified and less likely to be offered an HE place. The lower tier Higher National Diploma sector is a key issue because women are less likely to undertake these courses, which are ‘male orientated’. The policy conclusion is that to encourage less well-qualified females to undertake Higher Education, more appropriate provision is necessary that recognizes the reality of subject gender segregation.  
**JEL:** J16, J33, J71  
**Keywords:** gender, discrimination, Higher Education

Li, Chol-Won (University of Glasgow)  
**Cycles + Semi-endogenous Growth = Endogenous Growth**  
One-sector R&D-based models predict scale effects, which is empirically inconsistent. This is due to the “knife-edge” assumption that new ideas created are linear in the stock of knowledge. If this assumption is dropped to make a one-sector R&D-based model consistent with data, growth becomes semi-endogenous in the sense that public policy and consumer preferences do not affect growth in the long run, though technical progress is endogenous. This paper challenges this Consensus View. Using an otherwise very standard one-sector R&D-based model, we emonstrate the possibility of endogenous cycles where public policy and consumer preferences affect productivity growth. This result is obtained when the knife-edge assumption is violated.  
**JEL:** O30  
**Keywords:** Endogenous growth, semi-endogenous growth, R&D, technical progress
Liao, Hailin (Loughborough University), Mark Holmes, Thomas Weyman-Jones, David Llewellyn

**Productivity Growth of East Asia Economies’ Manufacturing: A Decomposition Analysis**

Applying a stochastic production frontier to sector-level data within manufacturing, this paper examines total factor productivity (TFP) growth for eight East Asian economies during 1963-1998, using both single country and cross-country regression. The analysis focuses on the trend of technological progress (TP) and technical efficiency change (TEC), and the role of productivity change in economic growth. The empirical results reveal that although input factor accumulation is still the main source for East Asian economies’ growth, TFP growth is accounting for an increasing and important proportion of output growth, among which the improved TEC plays a crucial role in productivity growth.

**JEL:** D24, L60, O30, 053, O47,

**Keywords:** total factor productivity, technical efficiency change, technological progress, stochastic production frontier, East Asian economy

Linne, Thomas (Institute for Economic Research Halle), Axel Bruggermann

**Are the Central and Eastern European Transition Countries still vulnerable to a Financial Crisis? Results from a Multivariate Logit Analysis**

The aim of the paper is to analyse the determinants of financial crises in a sample of nine transition countries in Central and Eastern Europe with a modified logit model. The modification takes explicitly into account the rare event characteristic of a currency crisis. Our results suggest that it is possible to explain the occurrence of crises with only a small number of macroeconomic variables. The variables which contribute positively to the probability of a crisis are: i) the ratio of the current account deficit to GDP; ii) the ratio of the budget deficit to GDP; iii) the change in currency reserves; iv) the amount of real appreciation of the currency relative to a trend, and v) the change in exports. Short-term debt by banks, which played a key role in the history of the Asian crises, was not an important factor in the build up of the crisis potential in Central and Eastern Europe.

**JEL:** F31, F47

**Keywords:** currency crisis, logit-analysis, Central and Eastern Europe

Lombardelli, Clare (Bank of England), James Proudman, James Talbot

**Committees versus individuals: an experimental analysis of monetary policy decision-making**

We report the results of an experimental analysis of monetary policy decision-making under uncertainty. A large sample of economically literate students from the London School of Economics played a simple monetary policy game, as both individuals and committees of five players. Our findings - that groups make better decisions than individuals - accord with previous work by Blinder and Morgan. The experiment also attempted to establish why group decision-making is superior: although some improvement was related to committees taking decisions by majority voting, a significant additional committee benefit was associated with members being able to share information and observe each other's voting behaviour.

**JEL:** C91, C92, E5

**Keywords:** monetary policy, experimental economics, central banking, uncertainty

Lutz, Matthias (University of St Gallen)

**Price Convergence under EMU? First Estimates**

This paper examines whether European monetary union has lowered the degree of price dispersion among member countries. A number of different estimation methods are applied to four independent datasets containing prices of identical goods. While the results reported in the paper vary somewhat across goods, they provide little overall support of the European Commission's claim that the single currency would significantly deepen market integration among the euro-zone countries. Even though this should be viewed as preliminary evidence, it does suggest that there are other, more important impediments to market integration in the EU.

**JEL:** JEL: F15, F33, F36

**Keywords:** price convergence, EMU, treatment effect

Ma, Ada (University of Aberdeen), Peter Dolton

**Executive Pay in the Public Sector: The Case of CEOs in UK Universities**

We analyse top management public sector pay using a panel data of university Vice Chancellors (VC) in UK. We assess how institutional performance, hierarchical effects, and personal characteristics determine VC pay. VC personal data covers personal details, qualifications and career history, which
let us distinguish between internal promotions and hires from outside academia. We use the results of three Research Assessment Exercises as academic performance indicators, and university financial positions as measures of sound executive management. We analysed the importance of university salary structure and how they affect VC pay. Fixed and random institutional effects are also identified and analysed.

**JEL:** M5, J3, J45

**Keywords:** pay, public sector, CEO, universities

**Machin, Stephen** (UCL & CEP London School of Economics), **Alan Manning, Lupin Rahman** (STICERD London School of Economics)

**Where Minimum Wage Bites Hard: The Introduction of the UK National Minimum Wage to a Low Wage Sector**

Between 1993 and April 1999 there was no minimum wage in the UK (except in agriculture). In this paper we study the effects of the introduction of a National Minimum Wage (NMW) in April 1999 on one heavily affected sector, the residential care homes industry. This sector contains a large number of low paid workers and as such can be viewed as being very vulnerable to minimum wage legislation. We look at the impact on both wages and employment. Our results suggest that the minimum wage raised the wages of a large number of care homes workers, causing a very big wage compression of the lower end of the wage distribution, thereby strongly reducing wage inequality. There is some evidence of employment and hours reductions after the minimum wage introduction, though the estimated effects are not that sizable given how heavily the wage structure was affected.

**Keywords:**

**Makepeace, Gerry** (Cardiff University), **Peter Dolton**

**Computer use and earnings in Britain**

This paper estimates various models of the effect of computer use on earnings using recent NCDS data. The cross-section estimates are large and significant while the standard fixed effects estimates are small or insignificant. The panel estimates change considerably once we allow the coefficients to differ across individuals. Indeed, conditional on assumptions about when individuals use computers, conventional panel estimates may not identify the crucial parameters and cross-sectional methods may be needed. We conclude that there was a premium associated with computer use for some individuals in the UK which we attribute to better capital equipment.

**JEL:** J00, J30, J31

**Keywords:** earnings, ICT, computers

**Marrocu, Emanuela** (University of Cagliari), **Gianna Boero**

**The Performance of SETAR models by Regime: A Conditional Evaluation of Interval and Density Forecasts**

The aim of this paper is to analyse the out-of-sample performance of SETAR models using daily data for the Euro effective exchange rate. The evaluation is conducted on point, interval and density forecasts. The benchmark used for the comparison is a linear AR model for point forecast evaluation and a GARCH model for interval and density forecasts. In each case the models are evaluated unconditionally, over the whole forecast period, and conditionally, on the regimes of the SETAR models. The results show that, in general, the performance of the SETAR models improves significantly for the forecasts governed by the regime(s) with fewer observations. However, overall the GARCH model is better able to capture the distributional features of the series and to predict higher ordered moments.

**JEL:** C22, C51, C53, E17

**Keywords:** SETAR models, point forecasts, interval forecasts, density forecasts, Euro effective exchange rate

**Mason, Robin** (University of Southampton), **Helen Weeds**

**The Failing Firm Defence: Merger Policy and Entry**

This paper considers the ‘failing firm defence’. Under this principle, found in most antitrust jurisdictions, a merger that would otherwise be blocked due to its adverse effect on competition is permitted when the firm to be acquired is a failing firm, and an alternative, less detrimental merger is unavailable. Competition authorities have shown considerable reluctance to accept the failing firm defence, and it has been successfully used in just a handful of cases. The paper considers the defence in a dynamic setting with uncertainty. A firm entering a market also considers its ease of exit, foreseeing that it may later wish to leave should market conditions deteriorate. By facilitating exit in
times of financial distress, the failing firm defence may encourage entry sufficiently that welfare is increased overall. This view of the defence has several implications relevant to a number of merger cases. The conditions under which greater leniency is welfare-improving are examined.

**JEL:** L41, K21, D81

**Keywords:** merger policy, failing firm defence, entry, exit

**Mateut, Simona** (University of Nottingham), **Spiros Bougheas, Paul Mizen**

**Trade Credit, Bank Lending and Monetary Policy Transmission** This paper investigates the role of trade credit in the transmission of monetary policy. Most models of the transmission mechanism allow the firm to access only financial markets or bank lending according to some net worth criterion. In our model we introduce trade credit as an additional source of funding. We predict that when monetary policy tightens there will be a reduction in market and bank lending, and an increase in trade credit. This is confirmed with an empirical investigation of 16,000 manufacturing firms.

**JEL:** E44, E52

**Keywords:** trade credit, bank lending, monetary policy transmission, credit channel

**Mayer, Thierry** (CERAS, France), **Pierre-Phillippe Combes, Miren Lafourcade**

**Can Business and Social Networks Explain the Border Effect Puzzle?** McCallum (1995) shows in an influential contribution that, even when controlling for the impact of bilateral distance and region size, borders sharply reduce trade volumes between countries. We use in this paper data on bilateral trade flows between 94 French regions, for 10 industries and 2 years (1978 and 1993) to study the magnitude and variations over time of trade impediments, both distance-related and (administrative) border-related. We focus on assessing the role that business and social networks can play in shaping trade patterns and explaining the border effect puzzle. Using a structural econometric approach, we show that intra-national administrative borders significantly affect trade patterns inside France. The impact is of the same order of magnitude as in Wolf (2000) for trade inside the United States. We show that more than 60% of these (puzzling) intra-national border effects can be explained by the composition of local labour force in terms of birth place (social networks) and by inter-plants connections (business networks). In addition, controlling for these network effects reduces the impact of transport cost on trade flows by a comparable factor. Thus, business and social networks that help to reduce informational trade barriers are shown to be strong determinants of trade patterns and to explain a large part of the border puzzle.

**JEL:** F12, F15

**Keywords:** gravity, border effects, networks

**McIntosh, Steven** (CEP, London School of Economics), **Arnaud Chevalier, Peter Dolton**

**Recruiting and Retaining Teachers in the UK: An Analysis of Graduate Occupation Choice from the 1960s to the 1990s**

This paper examines the market for teachers in the UK from 1960 to 1996 using graduate cohort data from 5 separate cohorts. We find that relative wages in teaching compared to alternative professions have a significant impact on the likelihood of graduates choosing to teach, although the impact depends upon the market situation at the time. The wage effect on the supply of teachers is strongest at times of low relative teachers’ wages, or following a period of decline in those wages. It is also strongest for those individuals who have more recently graduated.

**JEL:** J2, J4

**Keywords:** labour supply, teachers, relative wages

**McKillop, Donal** (Queen’s University Belfast), **Pat McGregor**

**Credit Unions and the Supply of Insurance to Low Income Households**

The low-income credit union modelled in this paper is an institution with a particular form of contract designed to allow it to operate among agents that are excluded from using banks. Specifically credit unions deal with those potentially on the minimum income guarantee. The challenge facing them is to distinguish between those whose motivation is consumption smoothing and those who seek the largest credible loan with the intention of defaulting. This is achieved by setting the level of the minimum deposit and the loan and deposit rates such that an intentional defaulter has no incentive to join the credit union.

**JEL:** G21, D82

**Keywords:** credit unions, intentional defaulter, financial contract

**McVicar, Duncan** (Northern Ireland Economic Research Centre), **Jan M Podivinsky**
**Unemployment Duration Before and After New Deal**

A major active labour market policy - the New Deal for Young People (NDYP) - was introduced throughout the UK in 1998. We examine its effects on unemployment duration by estimating hazard functions for unemployment outflows before and after its introduction. We add value to existing evaluations in the following ways. First, we examine previously unused administrative data for Northern Ireland. Second, we examine NDYP effects at all unemployment durations. Third, we estimate separately by gender. Fourth, exits to employment, education and training and other benefits are identified separately. Since NDYP's introduction, young people are 25-50% less likely to experience year-long unemployment spells, with increased probabilities for all types of exit. NDYP is intended, however, to largely eradicate long term youth unemployment. We ask why this has not been the case in Northern Ireland.

**JEL:** J64, J68  
**Keywords:** unemployment duration, new deal, hazard functions, young people

**Messina, Julian** (European Central Bank)  
**Sectoral Structure and Entry Regulations**

The sectoral allocation of labor differs considerably across developed economies, even in the presence of similar patterns of structural change. A general equilibrium model that captures the stylized facts of structural change is presented. In this framework, economy-wide barriers to entry hinder the development of dynamic sectors such as service industries. Moreover, higher service prices and rents in regulated economies reduce labor supply, providing a rationale for the negative association between product market regulations and the employment rate previously found in the literature. Empirical evidence presented shows that regulatory entry barriers help explaining differences in the sectoral allocation of labor across OECD countries.

**JEL:** O11, O41, L5  
**Keywords:** unbalanced growth, entry regulations

**Mitraille, Sebastien** (University of Bristol), **Eric Avenel**

**Strategic delays of delivery, market separation and demand discrimination**

We show that an adequate choice of delays to deliver a durable good allows a monopoly to reduce competition between his two retailers on two different markets. Instead of preventing each retailer from selling on both markets, the producer separates the markets by directing the choices of consumers between the retailers. The consumer whose willingness to pay is the lowest obtains the good later than the other, and both pay their highest valuations for the good: the producer perfectly discriminates the demand. The European car market where producers try to restrict competition between retailers is an application of our findings.

**JEL:** L22, L12, L40  
**Keywords:** delivery delays, discrimination, market separation, vertical restraints, European car market

**Monteiro, Natalia Pimenta** (University of Warwick)

**The Impact of Privatisation on Wages: Evidence from the Portuguese Banking Industry**

This paper adopts a difference-in-differences estimator to examine the impact of privatisation on wages in the Portuguese banking industry for the period 1989-97. The design of the reform and the nature of dataset employed (matched employer-employee) provided a particularly important opportunity to analyse the effects of privatisation on different demographic groups, using multiple control groups, and considering the timing of the effects. The empirical evidence suggests a U-shaped relationship between wage variation and time period of restructuring, regardless of the choice of the comparison group, for those employees, either men or women, retained by privatised firms.

**JEL:** J31, J45, L33  
**Keywords:** privatisation, wages, Portuguese banking industry, difference-in-difference

**Montero, Maria** (University of Nottingham)

**Two-Stage Bargaining with Reversible Coalitions: the Case of Apex Games**

This paper studies coalition formation and payoff division in a class of majority games (apex games) assuming that payoff division can only be agreed upon after forming the coalition (two-stage bargaining) and that negotiations in the coalition can break down and a new coalition be formed (reversible coalitions). In contrast with the results of other two-stage models, all minimal winning coalitions may form and expected payoffs coincide with the per capita nucleolus. These results are robust to small changes in the bargaining procedure. Surprisingly, having a two-stage process (rather
than a one-stage process with simultaneous coalition formation and payoff division) benefits the apex player.

**JEL:** C71, C72, C78

**Keywords:** coalition formation, two-stage bargaining, reversible coalitions, apex games, per capita nucleolus

**Neyer, Ulrike** (Martin-Luther-University Halle-Wittenberg)

**Banks' Behaviour in the European Money Market and the Operational Framework of the Eurosystem**

The Eurosystem has stated its intention to reformulate important aspects of its operational framework. This paper presents a model to analyze banks' behaviour in the European money market. Its main result is that the suggested alterations are sensible, but that further improvements should be undertaken. Under the current framework under- and overbidding behaviour in the main refinancing operations and wildly differing provisions of required reserves can occur. This can be avoided if first, the maturities of the main refinancing operations do not overlap, and second, if the required reserves are not remunerated at an average rate.

**JEL:** E52, E58, G21

**Keywords:** bank behaviour, European Central Bank, monetary policy instruments, market for reserves

**Oechslin, Manuel** (University of Zurich), **Reto Foellmi**

**Who Gains from Non-Collusive Corruption?**

We explore the impact of non-collusive corruption on the wealth distribution. We show that the distributional consequences depend crucially on the degree of capital market imperfections. With perfect capital markets, corruption does not redistribute wealth within the private sector. However, if borrowing is limited, members of the “middle class” suffer most since bribery drives them out of the capital market. This makes access to credit easier for wealthy individuals such that a group of them even wins. Finally, we provide cross-country evidence showing that a high level of corruption and a polarization of the distribution go indeed hand in hand.

**JEL:** O11, D31, D73

**Keywords:** corruption, income inequality, development

**Oliveira, Alessandro** (University of Warwick)

**A Competition Model for A Brazilian Air Shuttle Market**

This paper aims at developing a competition model for a relevant subset of the Brazilian airline industry: the air shuttle market on the route Rio de Janeiro – São Paulo, a pioneer service created in 1959. The competition model presented here contains elements of both vertical product differentiation and representative consumer. I also use the conduct parameter approach to infer about the behaviour of airlines in the market under three situations: a quasideregulation rocess (from 1998 on), two price war events (1998 and 2001), and a shock in costs due to currency devaluation (1999). Results permitted making inference on the impacts of liberalisation on competition and investigating an alleged collusive behaviour of 1999.

**JEL:** L93

**Keywords:** air shuttle, competition, deregulation, product differentiation

**Oswald, Andrew** (University of Warwick), **Jonathan Gardner**

**Is it Money or Marriage that Keeps People Alive?**

It is believed that the length of a person's life depends on a mixture of economic and social factors. Yet the relative importance of these is still debated. We provide evidence in this paper that marriage has a much more important (positive) effect on longevity than high income does. For men, it almost exactly offsets the large negative effect of smoking. Economics, however, plays little or no role. After controlling for health at the start of the 1990s, we find no reliable evidence that income affects the probability of death over the subsequent decade.

**JEL:** I12, J12

**Keywords:** mortality, health, income, marriage

**Paul, Maureen** (University of Warwick)

**A Cross-section Analysis of the Fairness-of-pay Perception of UK Employers**

This paper aims to contribute to the understanding of individuals' fairness perceptions by using cross-section data from the British Social Attitudes Survey to estimate what seem to be the first fairness perceptions-of-pay equations in the literature. The results suggest that, consistent with the existence
of discrimination in the labour market, non-white workers perceive their pay as disadvantageously unfair. In contrast, a rather interesting finding is that women's fairness-of-pay perceptions are higher than that of men. The findings suggest that tackling pay alone will not eliminate feelings of underpayment. There is also evidence that with age, workers feel less fairly paid.

JEL: C21, C23, C25, J28, J71, Z13
Keywords: fairness perception, pay

Pezzini, Silvia (London School of Economics), Robert MacCulloch
The Role of Freedom, Growth and Religion in the Taste for Revolution
A fundamental question about the determinants of civil conflict is the relative importance of political freedoms versus economic development. This paper takes a new approach to provide an answer by using micro-data based on surveys of revolutionary tastes of 130,000 people living in 61 nations between 1981 and 1997. Controlling for personal characteristics, country and year fixed effects, more freedom and economic growth both reduce revolutionary support. Losing one level of freedom, equivalent to a shift from the US to Turkey, increases support for revolt by 4 percentage points. To reduce support by the same amount requires adding 14 percentage points onto the GDP growth rate. Being Muslim in a free country has no effect on the probability of supporting revolt compared to a non-religious person. However being Muslim in a country that is not free increases it by 13 percentage points. Being Christian in a free country decreases the chance of supporting revolt by 4 percentage points, compared to a non-religious person, and in a not-free country by 1 percentage point.
JEL: D74, H11, O1, O4, Z12
Keywords: revolution, freedom, development, growth, religion

Pfann, Gerard A (I.Z.A. Bonn), Ben Kriechel
Heterogeneity among Displaced Workers
We combine post-displacement survey data with information from a displacing firm's personnel files in order to reveal sources of worker heterogeneity in search time and wage losses. First, we detail how experience-related characteristics affect workers' labour market careers during a period of three years after the bankruptcy of the firm. We find that wage losses are large. Interestingly, firm, rank, or job tenure do not explain observed wage differences. Idiosyncratic ability, job rotations prior to displacement, and differences in pre- and post-displacement job characteristics contribute most to observed variations in wages. The individual post-displacement labor market histories allow for testing the Blanchard-Diamond (1994) ranking model for which we find no support. We then develop a dynamic reservation wage updating model. The method of updating is based on the simple idea that job seekers are informed about successful matches of their former colleagues (Rees, 1966; Granovetter, 1974). The model fits the data well.
JEL: J33, J63, J65, C42
Keywords: idiosyncratic ability, mass lay-off, social networks, unemployment

Pfluger, Michael (DIW Berlin), Andreas Haufler
International Commodity Taxation under Monopolistic Competition
We analyze non-cooperative commodity taxation in a two-country trade model characterized by monopolistic competition and international firm and capital mobility. In this setting, taxes in one country affect foreign welfare through the relocation of mobile firms and through changes in the rents accruing to capital owners. With consumption-based taxation, these fiscal externalities exactly offset each other and the non-cooperative tax equilibrium is Pareto efficient. With production-based taxation, however, there are additional externalities on the foreign tax base and the foreign price level which lead non-cooperative tax rates to exceed their Pareto efficient levels.
JEL: F12, H21, H87
Keywords: tax competition, market imperfections, international trade

Pickering, Andrew (University of Bristol)
The oil extraction puzzle: theory and evidence
This paper considers the relationship between the extraction rates and remaining reserves of a non-renewable resource. Under general conditions the derived extraction rule is firstly linear, and secondly exhibits a slope term common to all extractors regardless of pricing behaviour and costs whilst differences are captured by the intercept. Data from the world oil industry supports the hypothesis of linearity but the implied test was rejected in some cases. Latterly, it appears that either OPEC members are discounting at a higher rate than the competitive fringe or they are overstating their reserve levels.
Posada, Pedro (University of Warwick), Odd Rune Straume

**Merger, partial collusion and relocation**

We set up a three-firm model of spatial competition to analyse how a merger affects the incentives for relocation, and conversely, how the possibility of relocation affects the profitability of the merger, particularly for the non-participating firm. The analysis is carried out for the assumptions of both mill pricing and price discrimination, and we also consider the case of partial collusion. For the case of mill pricing, a merger will generally induce the merger participants to relocate, but the direction of relocation is ambiguous, and dependent on the degree of convexity in the consumers' transportation cost function. We also identify a set of parameter values for which the free-rider effect of a merger vanishes, implying that the possibility of relocation could solve the 'merger paradox', even in the absence of price discrimination.

**JEL:** L13, L41, R30

**Keywords:** spatial competition, merger, relocation, partial collusion

Price, Simon (Bank of England), Dimitrios Asteriou, Peter Lukacs, Nigel Pain

**Manufacturing price determination in OECD countries; markups, demand and uncertainty in a dynamic heterogeneous panel**

Manufacturing price markup equations are estimated for 15 OECD countries using annual data. Firms have CES production technology. The markup depends on demand, competitors' prices and uncertainty. Cointegration is tested with the Pedroni tests and a panel version of the Johansen test, and evidence found for unique cointegrating vectors. Estimation of the long-run parameters is performed with a pooled mean group method, with short run heterogeneous dynamics. Tests for homogeneity of the long-run parameters do not reject the hypothesis. Markups are pro-cyclical and rise with both competitors' prices and uncertainty.

**JEL:** C23, E30

**Keywords:** pricing behaviour, markups, panel test for order of integration, panel cointegration, dynamic heterogeneous panels, pooled mean group estimation

Propper, Carol (University of Bristol), Simon Burgess, Denise Abraham

**Competition and Quality: Evidence from the NHS Internal Market 1991-1999**

Payer-driven competition has been widely advocated as a means of increasing efficiency in health care markets. The 1990s reforms to the UK health service followed this path. We examine whether competition led to better outcomes for patients, as measured by death rates after treatment following heart attacks. Using data on mortality as a measure of hospital quality and exploiting the policy change during the 1990s, we find that the relationship between competition and quality of care appears to be negative.

**JEL:** I1, L8, H4

**Keywords:** competition, health care, mortality, quality of care

Proto, Eugene (University of Bristol)

**International Risk Sharing and Bank Runs**

Banks act as maturity transformers, who take liquid deposit and invest in illiquid assets. In this classical framework, we introduce uncertainty in the asset returns. We show that banks can insure individuals against the risk of illiquidity at the cost of increasing the riskiness of their portfolios. In an open financial market, they can better diversify their portfolio and decrease its risk. In that way, they can also increase the level of insurance against the risk of illiquidity. This improves individual welfare, but the banks' short-term deposit-reserve ratio and the fragility of the financial system result higher in an open economy than in an autarchic regime. For this reason, the mechanism of deposit insurance against bank runs becomes more difficult to implement by each country's central bank.

**JEL:** F36, G11, G15, G21

**Keywords:** bank run, international risk sharing, fragility of financial markets, deposit insurance

Pudney, Stephen (University of Leicester), Monica Hernandez, Ruth Hancock


We estimate parametric and semi-parametric binary choice models of benefit take-up by British pensioners and use a revealed preference argument to infer the cash-equivalent value of disutility arising from stigma or complexity of the claims process. These implicit costs turn out to be relatively...
small, averaging about £2-4 per week across Income Support recipients. Using the Foster-Greer-Thorbecke measure of poverty among pensioners, we find that allowing for implicit claim costs incurred by benefit recipients raises the measured degree of poverty by not more than 16%

JEL: C25, D63, H55, I32, I38
Keywords: benefit take-up, program participation, pensions, welfare, poverty

Renou, Ludovic (European University Institute), Guillaume Carlier

Optimal debt contracts and diversity of opinions: an extreme case of bunching

This paper studies optimal menus of debt contracts such as secured debentures or bonds, in the presence of diversity of opinions between borrowers and lenders. We first characterize incentive compatible contracts, then prove the existence of optimal debt contracts. Finally, we are able to explicitly characterize such optimal menus within a specific case: we notably show that borrowers optimally offer at most two contracts, which is an extreme case of bunching.

JEL: C7, D8, G3
Keywords: debt contracts, heterogeneity of beliefs, multidimensional screening, bunching

Rigon, Massimiliano (University of Glasgow)

Monetary Policy in Open Economies: Price Inertia and Inflation Targeting

In this paper we consider a two-country model. Each country is characterised by several different sources of nominal inertia. This distinguishes our model from others in the so called New Open Economy Macroeconomics and makes it a suitable framework within which analyse the stabilising properties of monetary policies. We show that the variance of inflation induced by domestic inflationary shocks is lower under CPI targeting than when we target a measure of output price inflation. In fact, market segmentation and staggered wage and price setting result in lower and more persistent foreign inflation responses to a domestic inflationary shocks. This inertia in foreign price adjustments is completely passed through into CPI inflation but not into output price inflation. These differences cannot be detected in traditional models that usually introduce sluggish adjustments of domestic output prices as the only source of inertia. Furthermore, we find a limited role for the exchange rate in affecting the stabilising properties of the rules.

JEL: E52, E58, F41
Keywords: monetary policy, inflation targeting, open economy, exchange rate, staggered price

Roberts, Mark (University of Nottingham), Michael Bleaney

International labour mobility and unemployment

We develop a two-country labour-market model characterised by union wage-bargaining, in which the unemployed incur individual-specific costs of seeking work abroad. We explore the effects on equilibrium unemployment in each country of changes in union bargaining strength, the ratio of unemployment benefits to wages, and employers’ willingness to hire foreign workers. Unfavourable labour-market institutions increase unemployment abroad as well as at home. We find that no country has an incentive to internationalise its own labour market unilaterally, because all the employment gains spill over abroad, which gives countries a strong incentive to co-ordinate on internationalisation.

JEL: F22, F42, J51, J61
Keywords: international labour mobility, unions, wage bargaining, globalization, unemployment

Robertson, Peter (University of New South Wales), John S Landon-Lane

Can government policies increase national long-run growth rates?

We obtain time series estimates of the long run growth rates of 17 OECD countries, and test the hypothesis that these are the same across countries. We find that we cannot reject this hypothesis for the first and last three decades of the 20th century. We conclude that: (i) there are few, if any, feasible policies available that have a significant effect on long run growth rates, and; (ii) any policies that can raise national growth rates must be international in scope. The results therefore have bleak implications for the ability of countries to affect their long run growth rates.

JEL: F0, O0, O4
Keywords: economic policy, technological change, convergence, economic growth

Robinson, Helen (Cardiff University)

Regional evidence on the effect of the National Minimum Wage on the gender pay gap

We study the evidence of change in the gender wage gap across regions around the introduction of the National Minimum Wage (NMW) in Britain. As the proportion of low paid workers continued to vary across British regions, so did the relative share of men and women paid below the NMW before
its introduction. This variation provides a "quasi" natural experiment with which to try and measure the effect of the introduction of the NMW. Using difference-in-differences type estimation, we conclude that there is variation in the narrowing of the overall gender pay gap across regions, consistent with regional differences in the incidence and magnitude of low pay.

**JEL: J38**

**Keywords:** gender wage gap, difference-in-differences

Roider, Andreas (University of Bonn), Mathias Drehnmann, Jorg Oechssler  
**Herding and Contrarian Behavior in Financial Markets - An Internet Experiment**

We report results of an internet experiment designed to test the theory of informational cascades in financial markets. More than 6000 subjects, including a subsample of 267 consultants from an international consulting firm, participated in the experiment. As predicted by theory, we find that the presence of a flexible market price prevents herding. However, the presence of contrarian behavior, which can (partly) be rationalized via error models, distorts prices, and even after 20 decisions convergence to the fundamental value is rare. We also study the effects of transaction costs and the expectations of subjects with respect to future prices. Finally, we look at the behavior of various subsamples of our heterogeneous subject pool.

**JEL: C99, D8, G12, G14**

**Keywords:** herd behavior, informational cascades, contrarian investors, market efficiency, internet experiment

Ruffin, Roy J (University of Houston), Ronald W Jones  
**Trade and Wages: A Deeper Investigation**

A new presentation of the specific factors model shows how labor fares under international trade by considering how the price elasticity of the nominal wage rate responds to the terms of trade as well as factor endowments. Gains to labor are decomposed into measurable terms of trade effects and production bias effects. If trade is caused by differences in technology, trade can harm the interests of labor when the elasticities of substitution are sufficiently small. If trade is caused by differences in labor endowments, trade raises real wages in the labor abundant country, even if exports are capital intensive.

**JEL: F1**

**Keywords:** trade, real wages, beta function, specific factors

Sanchez-Fung, Jose R (Kingston University),  
**Inflation targeting and monetary analysis in Chile and Mexico**

This paper studies the role of monetary and open economy indicators in inflation targeting (IT) economies through the analysis of a nested Phillips curve/ P-star model for Chile and Mexico. For Chile a real money gap and a money growth indicator are found to be relevant in predicting deviations of observed from target inflation. In contrast, for Mexico real exchange rate measures are robust predictors of deviations of actual from (i) expected inflation during the pre-IT (1999) period, and (ii) target inflation in the post-IT span.

**JEL: E30, E40, E50, F41**

**Keywords:** inflation targeting, monetary policy, money demand, PPP, P-star, Phillips curve, cointegration, Kalman filter, block Granger non-causality, VARs

Santoni, Michele (University degli Studi di Milano)  
**Product market integration and endogenous bargaining structure**

This paper focuses on the effects of product market integration on wage-bargaining institutions in a one-way trade model of an international Cournot oligopoly. It shows that product market integration (i.e. a reduction in trade costs either from an arbitrary or from its optimal level) lowers the incentives to centralisation for home unions, given that firms always prefer decentralisation, making it more likely that a decentralised wage bargaining structure occurs in equilibrium.

**JEL: F1, J51, L13.**

**Keywords:** Bargaining institutions, unionised oligopolies, trade integration

Saporta, Victoria (Bank of England), Andrew G Haldane, Gregor Irwin  
**Bail-Out or Work-Out? Theoretical Considerations**

In recent years, we appear to have entered an era of capital account crises. In response, a number of new crisis resolution ideas have been put forward, including the establishment of supranational institutions such as an international lender of last resort or an international bankruptcy court,
temporary payments standstills and the inclusion of collective action clauses in debt contracts. This paper assesses these proposals using a theoretical model of crisis. The model underscores the importance of adapting policy interventions to the nature of the crisis at hand. For example, it finds that payments standstills and last-resort lending are an equally efficient means of dealing with liquidity crises, both ex-ante and ex-post, while creditor committees are second-best. It finds that debt-write-downs are a preferred means of dealing with solvency crises than subsidized IMF financing because of the negative moral hazard implications of the latter tool. And it finds that international bankruptcy court proposals may be superior to contractual approaches in securing such write-downs.

JEL: F33, F34
Keywords: crisis resolution, international lender of last resort, standstills, IMF

Sarangi, Sudipta (Louisiana State University), Raj Kannan, Lydia Ray
The Structure of Information Networks
We develop a model of information acquisition in a network where agents pay for all the information they acquire including those through indirect links. The cost of information depends on the value of information itself and the distance it traverses in the network. We find that when the costs of information increase with distance, the complete network is the only Nash network. When costs of information decrease with distance capturing delay, all equilibrium information networks are minimally connected, though not all trees are Nash. We analyze the popular star and chain networks and identify strict Nash networks. We show that there is almost no divergence between efficient and equilibrium information networks. We explore the implications of a spatial model and information decay and discuss the relationship with experimental evidence.

JEL: D82, D83
Keywords: Nash networks, information networks, efficient networks

Sarno, Lucio (University of Warwick), Daniel I Thornton, Giorgio Valente
Federal Funds Rate Prediction
Recent research has reported that both the federal funds rate futures market and the federal funds target contain valuable information for explaining the behavior of the US effective federal funds rate. A parallel literature on interest rate modelling has recorded evidence that the dynamics of interest rates displays significant regime-switching behavior. In this paper we produce out of sample forecasts of the federal funds rate at horizons up to 8 weeks ahead using linear and nonlinear, regime-switching equilibrium correction models of the funds rate and employing both point and density measures of forecast accuracy. We cannot discriminate among the models considered in terms of point forecast accuracy. However, in terms of density forecast accuracy, we find that the term structure model of the federal funds futures rate is significantly better than the other models considered, and that regime-switching models provide a substantial forecasting improvement relative to their linear counterparts and relative to individual series of the futures rate.

JEL: E43, E47
Keywords: federal funds rate, term structure of interest rates, forecasting, nonlinearity

Schabert, Andreas (University of Cologne)
Interactions of monetary and fiscal policy in a business cycle model with open market operations
Consensus monetary business cycle theory is hardly able to rationalize why fiscal policy is repeatedly found to stimulate private consumption and why monetary policy should care about Ricardian fiscal policy. In this paper we demonstrate that this changes when government bonds provide liquidity services. We develop a simple business cycle, which can be solved analytically, where money is supplied via open market operations. When only government bonds are accepted as a collateral for money and private debt earns a higher interest, real public debt eases households' access to money and Ricardian equivalence does not hold. Interest rate policy is not restricted by requirements for equilibrium determinacy and its effects are consistent with common priors. Shocks are propagated via changes in financial wealth and persistence is altered by the stance of fiscal and monetary policy. Government expenditures, which are not completely tax financed, can raise private consumption when monetary policy is not too reactive. Similarly, a moderate interest rate policy allows a deficit financed tax cut to stimulate real activity.

JEL: E63, E52, E32
Keywords: interaction of monetary and fiscal policy, open market operations, cash-in-advance, interest rate rules, fiscal policy shocks
Schmalenbach, Anke (University of Bonn), Manisha Chakrabarty
The Representative Agent Hypothesis: An Empirical Test
This paper empirically tests the validity of using only mean income as a representative variable in the aggregate consumption relation and of assuming time-invariance of the coefficients in this relation, as done in macromodels. We use a statistical distributional approach of aggregation to test these properties on the UK-Family Expenditure Survey [1974-1993]. The time-invariance assumption is rejected in most cases. A bootstrap test also suggests that in addition to mean income, the dispersion of income matters significantly for the commodity group/services in several years and for total/nondurable in some years, thus invalidating the representative agent hypothesis.
JEL: C12, C14, D12, E21
Keywords: representative agent hypothesis, time invariance, heterogeneity

Shields, Michael (University of Melbourne), Paul Frijters, John P Haisken-DeNew
The Value of Reunification in Germany: An Analysis of Changes in Life Satisfaction
Recent years have seen a considerable increase in the number of economists researching the role of income, employment status and other demographic characteristics in determining individual life satisfaction or happiness. In this paper we investigate how life satisfaction is affected by a large exogenous shock, namely, reunification for East Germans. In particular, we identify the effects of the substantial increase in real household income and increased unemployment. We implement a new fixed-effect estimator for ordinal life satisfaction in the German Socio-Economic Panel and develop a decomposition approach that accounts for new entrants and panel attrition. We find that average life satisfaction in East Germany increased by around 20% in the years following reunification, leading to a clear convergence with West Germany. Importantly, increased real household incomes in East Germany accounted for around 35-40% of this increase.
JEL: Z1, C23, C25, I31
Keywords: life satisfaction, German reunification, random and fixed-effects panel models, causal decomposition

Shields, Kalvinder (University of Melbourne), Kevin B Grier, Olan T Henry, Nilss Olekalns
The Asymmetric Effects of Uncertainty on Inflation and Output Growth
We study the effects of growth volatility and inflation volatility on average rates of output growth and inflation for post-war U.S. data. Our results suggest that growth uncertainty is associated with higher average growth and lower average inflation. Inflation uncertainty is significantly negatively correlated with both output growth and average inflation. Both inflation and growth display evidence of significant asymmetric response to positive and negative shocks of equal magnitude.
JEL: E390
Keywords: growth, inflation, uncertainty, asymmetry, generalised impulse response functions

Simmons, Peter (University of York), G Garino
Truth-telling and the Role of Limited Liability in Costly State Verification Loan Contracts
Recent literature has considered the form of loan contract between two or more risk neutral parties where the revelation principle is inappropriate due to the lack of commitment to an auditing policy by the lender. The privately informed debtor has a stochastic return; once he knows the state realisation, auditing and cheating are determined as Nash equilibria. The literature assumes that this leads to randomised cheating and auditing. In this paper we verify that the contract may involve this randomisation; but that it may also involve truth-telling with random auditing and one or more investors in line with Persons (1996); or a single state independent repayment with no auditing. We define conditions on the state observation cost and the distribution of returns which determine which of these three forms of contract is optimal. We find that under unlimited liability when the loan size is fixed the two investor truth-telling contract dominates all the other forms; and that this is also true when the loan size is optimally chosen. On the other hand under limited liability if the cost of observation is large relative to the lowest state revenue, the random auditing contract or a constrained two investor truth-telling contract may be optimal. The limited liability condition in the constrained truth-telling contracts forces the level of finance to be higher than under unlimited liability.
JEL: C7, G0
Keywords: loan contracts, costly state verification, commitment, limited liability

Smith, Jennifer (University of Warwick)
Pay Cuts
This paper tests the ‘morale’ theory of downward nominal wage rigidity. This theory relies on workers disliking nominal pay cuts: cuts should make workers less happy. We investigate this using panel data on individual employees’ pay and satisfaction. We confirm that nominal cuts do make workers less happy than if their pay had not fallen. But we find no difference in the effect on happiness of cuts and pay freezes. This represents important information about the nature of wage rigidity in practice and the applicability of the morale theory. The morale theory may be able to explain generalised downward wage rigidity, but apparently fails to explain downward nominal rigidity.

JEL: J30, E24

Keywords: wage rigidity, satisfaction

Sonedda, Daniela (University of Piemonte Orientale)

Wealth Inequality, Income Redistribution and Growth in 15 OECD countries

We model the individuals’ investment in physical capital and education decisions in presence of borrowing constraints and a progressive taxation system. Our empirical evidence for 15 OECD countries supports the theoretical model predictions according to which the effects on growth of higher redistribution are ambiguous. We find that in those countries characterized by a high (low) taxation level and a high (low) degree of tax progressivity, further redistribution has a negative (positive) impact on growth since the disincentive effects on individuals' effort prevail (is dominated by) the positive effect of allowing more people to have access to the capital market.

JEL: O5, E25, H24

Keywords: growth, income distribution, progressive taxation

Stahler, Frank (University of Kiel)

Market Entry and Foreign Direct Investment

This paper discusses the impact of foreign direct investment (FDI) on market entry and welfare. It assumes that firms may enter markets in the first period as national firms only. In the second period, however, FDI is possible. The paper demonstrates that FDI reduces market entry because equilibrium profits in the second period decline with a decrease in the fixed cost of FDI. Therefore, compared to a trade regime without any FDI, prices rise in the first period but decline in the second period. The paper shows, however, that FDI will unambiguously improve the discounted sum of consumer surplus.

JEL: F12, F15

Keywords: foreign direct investment, multinational enterprises, imperfect competition, free entry

Stark, Oded (University of Bonn), C Simon Fan

Addition through Depletion: The Brain Drain as a Catalyst of Human Capital Formation and Economic Betterment

Enabling educated individuals to work abroad entails a brain drain and results in educated unemployment at home. Because the prospect of migration raises the expected returns to higher education it also facilitates a "brain gain": a developing economy ends up with a higher fraction of educated individuals. Due to the positive externality effect of the prevailing, economy-wide endowment of human capital on the formation of human capital, a relaxation of migration policy pursued in both the current period and the preceding period can greatly facilitate the "take-off" of a developing economy in the current period. Thus we identify a new policy tool that could yield an improvement in the well-being of the population of a developing economy: a controlled migration of educated workers.

JEL: F22, H23, I30, J61, O40,

Keywords: Brain drain, human capital formation, externalities, economic growth, social welfare

Stevens, Phillip Andrew (NIESR), Richard Kneller

Absorptive Capacity and Frontier Technology: Evidence from OECD Manufacturing Industries

This paper investigates whether differences in absorptive capacity help to explain cross-country differences in the level of productivity. We utilise stochastic frontier analysis to investigate two potential sources of this inefficiency: differences in human capital and R&D for nine industries in twelve OECD countries over the period 1973-92. We find that inefficiency in production does indeed exist and it depends upon the level of human capital of the country’s workforce. Evidence that the amount of R&D an industry undertakes is also important is less robust.

JEL: O3, O4

Keywords: absorptive capacity, human capital, R&D, SFA

Stewart, Mark B (University of Warwick)
The relationship between the financial position of pensioners and their working-life earnings levels
This paper investigates the link between the incomes and wealth of pensioners and their working-life earnings levels. It uses the combination of detailed income and asset information and working-life history information available in the British Household Panel Survey. The proportionality predicted by a simple "stripped down" form of the life-cycle model is supported for pensioner couples and male single pensioners, but not for female single pensioners.

JEL: D91, D31
Keywords: incomes, wealth, pensions, housing wealth, life-cycle model

Stewart, Mark B (University of Warwick)
Estimating the employment effects of minimum wage increases in the presence of cyclical differences between comparison groups

Keywords: minimum wage, employment determination, labour demand, difference-in-differences estimator

Strachan, Rodney (University of Liverpool), Brett Inder
Bayesian Analysis of Stochastic and Deterministic Processes in The Error Correction Model
In this article a method for joint estimation of the number of stochastic trends and the deterministic processes in a multivariate error correction model is presented. This approach takes advantage of the Laplace method of approximating integrals and, the second important contribution of the paper, careful elicitation of the prior for the cointegrating vectors from a prior on the cointegrating space. The approach follows the classical approaches of James (1969), Anderson (1951) and Johansen (1988 and 1991) and performs well when used to estimate the number of stochastic trends compared with information criteria in finite samples in Monte Carlo experiments.

JEL: C11, C32
Keywords: stochastic trend, deterministic trend, posterior probability, Grassman manifold, Stiefel manifold

Sunde, Uwe (IZA Bonn, University of Bonn), Matteo Cervellati
Human Capital Accumulation, Lifetime Duration and the Process of Economic Development
This paper presents a microfounded theory of long-term development. We model the interplay between economic variables, namely the process of human capital formation and technological progress, and the biological constraint of finite lifetime expectancy. All these processes affect each other and are endogenously determined. The model is analytically solved and simulated for illustrative purposes. The resulting dynamics reproduce a long period of stagnant growth as well as an endogenous and rapid transition to a situation characterized by permanent growth. This transition can be interpreted as industrial revolution. Historical and empirical evidence is discussed and shown to be in line with the predictions of the model.

JEL: E19, J10, O10, O40, O41
Keywords: long-term development, endogenous lifetime duration, endogenous life expectancy, human capital, technological progress, growth externalities

Surico, Paolo (Universita Bocconi)
US Monetary Policy Rules: the Case for Asymmetric Preferences
This paper investigates the empirical relevance of a new framework for monetary policy analysis in which decision makers are allowed to weight differently positive and negative deviations of inflation and output from the target values. The specification of the central bank objective is general enough to nest the symmetric quadratic form as a special case, thereby making the derived policy rule potentially nonlinear. This forms the basis of our identification strategy which is used to develop a formal hypothesis testing for the presence of asymmetric preferences. Reduced-form estimates of postwar US policy rules indicate that the preferences of the Fed have been highly asymmetric with respect to both inflation and output gaps, with the latter being the dominant source of nonlinearity after 1983.

JEL: C52, E52
Keywords: nonlinear optimal monetary policy rules, asymmetric loss function, linearized central bank Euler equation

Tekin, Erdal (Georgia State University)
Child Care Subsidies, Wages, And Employment of Single Mothers

This paper provides a comprehensive analysis of employment and child care payment decisions of single mothers in the early post-welfare reform environment, using data from the National Survey of America's Families (NSAF). I develop and estimate a model that examines the effects of the price of child care and the wage rate on employment decision as well as the decision to use paid child care among single mothers. The model distinguishes between the full-time and part-time employment decisions as well as the prevailing wages in these two employment markets. A semi-parametric random effects estimator and the Gaussian Quadrature are used together to estimate the system of equations for the discrete outcomes of full-time and part-time employment, and child care payment, and the linear equations of the price of child care, and part-time and full-time wages in a unified framework. The econometric model also controls for the endogeneity of child care subsidy receipt and adjusts the hourly price of child care for the amount of subsidy for mothers who receive one. The results show that full-time working mothers are more sensitive to the price of child care than part-time working mothers. A lower price of child care leads to increases in overall employment and the use of paid child care. However, much of the increase in employment is in the form of full-time employment. An increase in the full-time wage rate leads to increases in overall employment and the use of paid child care. The effects of full-time wage rate are estimated to be much larger than those of the price of child care. Part-time wage effects are found to be so small to have significant implications.

JEL: J13, C14, J23
Keywords: child care, employment, wage rate, child care subsidies

Temple, Jonathan (University of Bristol)
The costs of dualism
This paper shows how to calibrate a two-sector general equilibrium model of production using a small number of parameter assumptions and readily available data. The framework is then used to analyze the costs of labor market dualism. The paper quantifies the effects of rural-urban wage differentials and urban unemployment on total output, wages and returns to capital, factor shares, and sectoral structure. One of the main findings is that labor market rigidities can have a major impact on the extent of industrialization.

JEL: D61, O40
Keywords: dualism, productivity, wage differentials, minimum wages

Thompson, Steve (University of Leicester), Sourafel Girma, Peter W Wright
Corporate Governance Reforms and Executive Compensation Determination: Evidence from the UK
This paper examines the effect that the ‘Cadbury reforms’ have had on the pay determination process of executives in the UK. Our results suggest that, on average, the impact has been disappointing. The relationship between pay and performance remains weak and the link to firm size has, if anything, been strengthened. However, our results suggest considerable heterogeneity in the impact of the reforms, and for those firms above median employment the link between pay and profits appears to have strengthened.

Keywords: executive, compensation, governance, Cadbury

Thompson, Jamie (Bank of England), Hasan Bakhshi, Nick Oulton
Modelling Investment When Relative Prices Are Trending: Theory and Evidence for the UK
This paper investigates the ability of aggregate and disaggregate equations to account for the boom in UK plant and machinery investment in the second half of the 1990s. We extend previous US research by Tevlin and Whelan (2002) by explaining the failure of the aggregate equations more formally in terms of misspecification when relative prices are trending; and by conducting the econometric analysis in a formal cointegration framework. In line with the US research, we find asset-level equations can explain the UK investment boom over this period, whereas the aggregate equation completely fails.

JEL: C51, E22
Keywords: investment, computers, relative prices

Thoron, Sylvie (GREQAM)
Which Acceptable Agreements are Equilibria?
I propose a normal form game of agreement formation in which each player's strategy is to say for each size of agreement whether it is acceptable or not. I propose a refinement, which guarantees that each one of these choices is self-enforcing. For general payoff functions, which exhibit positive
externalities, I analyse situations in which symmetric players have the possibility to reach a unique agreement. I prove the uniqueness of this equilibrium. I give two specific examples: a cartel and an agreement to contribute to a public good.

**JEL:** C70, C72  
**Keywords:** coalition formation, normal form games, agreement, cartel, environmental agreement, public good

**To, Thuy Duong** (University of Technology, Sydney), **Carl Chiarella**  
*The Jump Component of the Volatility Structure of Interest Rate Futures Markets: An International Comparison*

We propose a generalization of the Shirakawa (1991) model to capture the jump component in fixed income markets. The model is formulated under the Heath, Jarrow and Morton (1992) framework, and allows the presence of a Wiener noise and a finite number of Poisson noises, each associated with a time deterministic volatility function. We derive the evolution of the futures price and use this evolution to estimate the model parameters via the likelihood transformation technique of Duan (1994). We apply the method to the short term futures contracts traded on CME, SFE, LIFFE and TIFFE, and find that each market is characterized by very different behaviour.

**JEL:** C51, E43, G12, G13  
**Keywords:** term structure, Heath-Jarrow-Morton, Jump-diffusion, FIML, likelihood transformation, interest rate futures

**Trabold, Harald** (DIW Berlin), **Parvati Trubswetter, Philipp J H Schroder**  
*Intermediation in Foreign Trade: When do Exporters Rely on Intermediaries?*

The paper explores theoretically and empirically why trade intermediaries (TIs) are frequently used as agents for exports to some countries but not to others. We adapt a standard intra-industry trade model with variable export costs (e.g. transport) and fixed export costs (e.g. market access) to include a TI that is able to pool market access cost. From this framework explanatory factors for the TI share in a country’s exports are derived and subsequently tested with a new data set based on French customs information. The paper finds that: (i) higher market access costs increase the TI share, (ii) smaller export markets feature a larger TI share, (iii) the TI share is independent from variable (distance-dependent) export costs.

**JEL:** D23, F10, F12, F15, F23  
**Keywords:** trade intermediation, indirect exports, monopolistic competition

**Tudela, Merxe** (Bank of England), **Garry Young**  
*A Merton Model Approach to Assessing the Default Risk of UK Public Companies*

This paper shows how a Merton-model approach can be used to develop measures of the probability of failure of quoted UK companies. Probability estimates are constructed for a group of failed companies and their properties as leading indicators of failure assessed. Probability estimates of failure for a control group of surviving companies are also constructed. These are used in Probit-regressions to evaluate the information content of the Merton-based estimates relative to information available in company accounts. The paper shows that there is much useful information in the Merton-style estimates.

**JEL:** G12, G13  
**Keywords:** Merton models, corporate failure, implied default probabilities

**Turon, Helene** (University of Bristol), **Simon Burgess**  
*Unemployment equilibrium and on-the-job search*

This paper uses the search and matching framework to explore the impact of employed job search on the labour market. We allow for endogenous employed job search, endogenous job destruction and heterogenous job creation. Job flows and workers flows do not coincide as we allow for job-to-job flows, firms’ churning of workers and labour force entries and exits. Employed job search is shown to have a substantial impact on unemployment dynamics but a negligible one on the level of unemployment. It also plays a key role in propagating a shock to institutions or to the economy to the labour market.

**JEL:** J64  
**Keywords:** unemployment, on-the-job search, job destruction, business cycles, matching

**Upward, Richard** (University of Nottingham), **Martyn Andrews, Steve Bradley, Dave Stott**  
*Testing theories of labour market matching*
This paper estimates a model of two-sided search using micro-level data for a well-defined labour market. It examines the assumption of random matching and contrasts it with the stock-flow (or non-random) matching model of Coles and collaborators. Given a dataset of contacts, matches, and complete labour-market histories for both sides of the market, we estimate hazard functions for both (unemployed) job-seekers and vacancies. For job-seekers, the tests adds the stock of new vacancies to a standard job-seeker hazard which itself depends on the stocks of vacancies and unemployed. Our tentative results find very weak evidence of stock-flow matching.

**JEL:** C41, E24, J41, J63, J64  
**Keywords:** two-sided search, random matching, hazards

**Vecchi, Michela (NIESR), Mary O'Mahony**  
*In Search of An ICT Impact on TFP: Evidence from Industry Panel Data*

This paper uses a new set of industry data for the US and the UK non-agricultural market economy, to provide new evidence on the impact of ICT on TFP. We compare the results from standard panel data techniques with newly developed dynamic panel data estimation methods. The traditional industry panel data analysis fails to find a significant impact of ICT on output/TFP growth. This paper argues that this is due to heterogeneity across industries, particularly in the time dimension. An alternative technique which allows the dynamic specification to vary across industries yields a positive and significant long-run impact of ICT on TFP.

**JEL:** C33, C44, D24, O3  
**Keywords:** productivity, ICT capital, heterogeneous dynamic panels

**Viitanen, Tarja K (University College Dublin), Arnaud Chevalier**  
*The Supply of Childcare in Britain: Do Mothers Queue for Childcare?*

This paper presents a model of partial observability applied to the childcare market in Britain. We simultaneously estimate the demand and use and calculate the excess demand for childcare. We find a large queue with nearly half of the mothers demanding childcare queuing for it. We also find that formal and informal care are not substitute, implying that policies increasing the supply of formal care lead to an increase in the use of care rather than solely a shift from informal to formal care. This has implication on the efficiency of policies aiming at increasing the labour supply of mothers.

**JEL:** J130, J220  
**Keywords:** supply of childcare

**Vlieghe, Gertjan (Bank of England), Stephen Bond, Alexander Klemm, Rain Newton-Smith, Murtaza Syed**  
*A Vectorautoregressive Investment Model (VIM) and Monetary Policy Transmission: Panel Evidence from German Firms*

This paper proposes a new framework for studying the effects of monetary policy on business investment, modeling investment spending as a VAR. Based on a panel of financial statement data for 6,408 German firms (44,345 datapoints) supplemented with user costs of capital and confidential measures of creditworthiness, we generate GMM estimates of a Vectorautoregressive Investment Model (VIM) containing investment, cash flow, sales, and the user cost of capital. Apart from reporting several substantive findings, this paper demonstrates that the panel VAR approach is useful for modeling firm dynamics and real/financial interactions and for assessing monetary policy transmission.

**JEL:** E5, C33, E22
Waisman, Gisela (Stockholm University)
**Decision making in the ECB's Governing Council - Should minutes and forecasts be published?**
Governments seem to influence the decisions taken by the Governing Council of the ECB. It's been argued that the publication of forecasts and minutes of the Governing Council's meetings would have a negative effect due to the influence of governments on their representatives' votes. In my model, such information reduces their influence and benefits the Executive Board. Governments benefit from the publication of minutes, while they sometimes disagree with respect to the forecasts. The model suggests that the EMU members may want to withhold the publication of forecasts when taking enlargement with a more heterogeneous group of countries into account.

**JEL:** E42, E58, F33

**Keywords:** European central bank, EMU, monetary union, voting, transparency

Wakerly, Elizabeth C (University of East Anglia), Elena Loukoianova, Shaun P. Vahey
**A Real Time Tax Smoothing Based Fiscal Policy Rule**
We consider the real-time implementation of a fiscal policy rule based on tax smoothing (Barro (1979), Bohn (1998)). We show that the tax smoothing approach, augmented by fiscal habit considerations, provides a surprisingly accurate description of US budget surplus movements. In order to investigate the robustness of the policy implications of the rule, we construct a real-time US fiscal data set, complementing the data documented by Croushore and Stark (2001). For each variable, we record the different vintages, reflecting the remeasurements that occur over time. We demonstrate that the rule provides a useful benchmark for policy analysis that is robust to real-time remeasurements.

**JEL:** C82, E62, E66

**Keywords:** fiscal rules, tax smoothing, fiscal habits, real-time data

Walde, Klaus (University of Dresden)
**Capital accumulation in a model of growth and creative destruction**
Capital accumulation and creative destruction is modeled together with risk-averse households. The novel aspect - risk-averse households - allows to use well-known models not only for analyzing long-run growth as in the literature but also short-run fluctuations. The model remains analytically tractable due to a very convenient property of the household's investment decision in this stochastic continuous-time setup.

**JEL:** E32, O41, O31

**Keywords:** creative destruction, risk averse households, capital accumulation, endogenous fluctuations and growth

Wallis, Gavin (Office for National Statistics/University of Warwick)
**The Effect of Skill shortages on Unemployment and Real Wage Growth: A Simultaneous Equation Approach**
This paper attempts to quantify the effect of skill shortages on the UK labour market by developing a simultaneous equation model of unemployment and real wage growth. The model is developed following a structural approach based on a priori economic information and is initially estimated using a two-stage least squares procedure. The model is also estimated using Zellner's seemingly unrelated regressions estimation technique, with similar results. It is shown that skill shortages have a positive effect on real-wage growth and a negative effect on unemployment, with both these effects economically and statistically significant.

**JEL:** C32, C51, C52, E24

**Keywords:** skill shortages, unemployment, wages, 2SLS

Wang, Yong (City University of Hong Kong), Michael C M Leung
**Endogenous Health Care, Life Expectancy, and Economic Development**
We study the endogenous relationship between health care, life expectancy and output in a modified neoclassical growth model. While health care competes resources away from goods production, it prolongs life expectancy which in turn leads to higher capital accumulation. We show that savings and health care are complements in equilibrium, with both rising with economic development. Our model is therefore consistent with several stylized facts, namely, (i) countries spend more on health care as they prosper, (ii) individuals in rich countries tend to live longer, and (iii) population aging is more
pronounced in rich countries. Moreover, through simulation, health care and health production technology are found to be growth and welfare enhancing.

**JEL:** E13, E21, I12, J10, O11
**Keywords:** life expectancy, health care, economic growth, population aging

**Waterson, Michael** (University of Warwick), Joanne Sault, Otto Toivanen

**Fast Food - the early years: Geography and the growth of a chain-store in the UK**

We examine the development of UK outlets of a major fast food chain, from inauguration in 1974 until 1990, after which industry structure changed somewhat. The chain effectively introduced the counter-service burger concept. Locational spread across local authority district markets is explained by the characteristics of the areas where the outlets are sited. Of special interest is the effect of scale economies, measured by outlet numbers in neighboring districts. Both first and second entry are examined. We find that the hazard of first entry is positively influenced by market size and population density and negatively by distance from company headquarters.

**JEL:** L21, L81, R11, R12
**Keywords:** fast food, diffusion, regional economic activity, entry

**Wheatley Price, Stephen** (University of Leicester), Michael A Shields

**Immigrant Job Search in the UK**

Most immigrant groups in the UK experience higher unemployment rates than otherwise similar UK born whites. Empirical research to date has attributed this finding to discrimination, lack of English Language fluency and the (non-) transferability of skills acquired before immigration. In this paper, we investigate how the job search methods of unemployed white and ethnic minority immigrants, and their success in exiting unemployment, compare with the UK born, using the panel element of the Quarterly Labour Force Survey, pooled over 1997-2001. We condition, amongst other things, on some observable immigrant characteristics and discuss the policy implications of our findings.

**JEL:** J61, J64
**Keywords:** unemployment, job search, immigrants

**Woessmann, Ludger** (Kiel Institute for World Economics)

**How Does East Asia Achieve Its High Educational Performance?**

East Asian students regularly take top positions in international league tables of educational performance. Using internationally comparable student-level data, I estimate how family background and schooling policies affect student performance in five high-performing East Asian economies. Family background is a strong predictor of student performance in South Korea and Singapore, while Hong Kong and Thailand achieve more equalized outcomes. There is no evidence that smaller classes improve student performance in East Asia. By contrast, school autonomy over salaries and regular homework assignments are related to higher student performance in several of the considered countries.

**JEL:** O15, I20, H52
**Keywords:** education production function, East Asia, family background, class size, school autonomy

**Wren, Colin** (University of Newcastle upon Tyne)

**Informational Rents and Discretionary Industrial Assistance**

The paper analyses the existence and efficiency of discretionary industrial assistance schemes under asymmetric information between an uninformed government and a uniform distribution of firms with differing productivities. Discretionary assistance allows the government to scrutinise projects in an effort to learn the type to reduce the 'informational rents' of automatic assistance, where firms take up any contract on offer. Two discretionary grant schemes are analysed, which either exclude 'non-additional' projects or reduce the assistance to the minimum necessary for a project to proceed. The paper finds the conditions under which discretionary assistance exists and is more efficient than automatic assistance.

**JEL:** H2, D8
**Keywords:** subsidies, asymmetric information, discretionary assistance, investment grants

**Wright, Peter** (University of Nottingham), Joanne Lindley, Richard Upward

**Regional mobility and unemployment transitions in the UK and Spain**

If the distribution of industrial employment is uneven across regions, changes in patterns of production will require the reallocation of labour across regions as well as industries. In this paper we consider this aspect of the adjustment process. Specifically, we compare the geographical mobility of
the workforce in the UK and Spain, and examine the extent to which differences in mobility explain differences in the probability of exiting unemployment between the two countries.

**JEL:** J61, J64  
**Keywords:** unemployment, mobility, regional migration

**Xavier, Ana** (Catholic University of Leuven, Belgium), **Robin Thompson**  
**Unofficial payments for acute state hospital care in Kazakhstan. A model of physician behaviour with price discrimination and vertical service differentiation**  
We consider a discriminatory pricing and service differentiation model where: a) state physicians exploit their monopoly position and adjust quality to the unofficial payment made, and b) patients, perceiving state provision as poor, pay unofficially to improve it. Applying OLS and probit analysis to survey data on patients discharged from Almaty City hospitals, and using admission wait, length of stay (LOS) and a subjective categorical variable as quality measures. Unofficial payments are positively associated with surgical admission wait and the subjective quality of care while negatively associated with hospital LOS. Evidence suggests that price discrimination and service differentiation takes place in Kazakhstan.  
**JEL:** I1, P3  
**Keywords:** transition economies, unofficial or informal payments for health care, length of stay, ordered probit and marginal effects

**Yates, Tony** (Bank of England), **Richard Harrison, George Kapetanios**  
**Forecasting with measurement errors in dynamic models**  
This paper explores the effects of measurement error on dynamic forecasting models. The paper sets out to illustrate a trade off that confronts forecasters and policymakers when they use data that are measured with error. On the one hand, observations on recent data give valuable clues as to the shocks that are hitting the system and will be propagated into the variables to be forecast (and which ultimately will inform monetary policy). But on the other, those recent observations are likely to be those least well measured. Two broad classes of results are illustrated. The first relates to cases where it is imagined that the forecaster takes the coefficients in the data generating process as a given, and has to choose how much of the historical time series of data to use to form a forecast. It is shown that if recent data is sufficiently badly measured, relative to older data, that it can be optimal in this case not to use old data at all. The second class of results is more general. Here, it is shown that for a general class of linear autoregressive forecasting models, the optimal weight to place on a data observation of some age, relative to the weight in the true data generating process, will depend on the measurement error in that data. The gains to be had in forecasting are illustrated using a model of UK business investment growth.  
**JEL:** C53  
**Keywords:** measurement error, forecasting, signal-extraction

**Zangelidis, Alexandros N** (University of Warwick)  
**Profitable Career Paths: Accumulated Skills in Work, Their Degree of Transferability and Wage Premia**  
In this paper we challenge the conventional assumption that accumulated human capital can be divided into employer-specific and general labour market skills and explore the possibility of industry and occupational specificity. The estimates of a Mincer wage equation, on a BHPS sample, suggest some interesting patterns. Occupational expertise, so far overlooked in the literature, appears to play a major role on workers’ earnings profiles. Antithetically, the evidence on industry experience is limited and in some cases mixed. Furthermore, the estimated occupational effect is actually driven by some particular occupations, implying that expertise is important only in these specific career paths.  
**JEL:** J24, J31  
**Keywords:** human capital, occupational expertise, industry experience, wages

**Zhang, Lei** (University of Warwick), **Marcus Miller, Kannika Thampanishvong**  
**Learning to Forget? Contagion and Political Risk in Brazil**  
We examine whether Brazilian sovereign spreads of over 20 percent in 2002 could be due to contagion from Argentina or to domestic politics, or both. Treating unilateral debt restructuring as a policy variable gives rise to the possibility of self-fulfilling crisis, which can be triggered by contagion. We explore an alternative political-economy explanation of panic in financial markets inspired by Alesina (1987), which stresses exaggerated market fears of an untried Left-wing candidate. To
account for the fall of sovereign spreads since the election, we employ a model of Bayesian learning and analyse the effects of contagion and IMF commitments.

JEL: E61, E62, F34

Keywords: sovereign spreads, political risk, Bayesian learning, time-consistency