ABSTRACTS OF WORKING PAPERS IN ECONOMICS

This section contains abstracts and complete bibliographic information for current working papers, listed alphabetically by primary author. Brief entries appear for secondary authors, cross-referenced to the primary author. For more recent as well as historical information, consult the AWPE DATABASE, available on magnetic media from Cambridge University Press. (Call 212-924-3900)

Abell, Peter

PD July 1994. **TI** Mergers, Motivation and Directors' Remuneration. **AU** Abell, Peter; Samuels, John; Cranna, Michael. **AA** London School of Economics. **SR** London School of Economics Centre for Economic Performance Discussion Paper: 199; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 21. **PR** no charge. **JE** D23. **KW** Mergers. Managerial Remuneration. Corporate Performance.

AB Using small matched samples of companies which are, and are not, highly involved in acquisition in the period 1986-90, an investigation is mounted to ascertain whether "acquisitiveness" has any effect upon the remuneration of the top directors over and above what one would expect because of the growth in "size." The evidence suggests it does, if returns to share options are included in the measure of remuneration.

Ades, Alberto

PD April 1995. **TI** Competition and Corruption. **AU** Ades, Alberto; Di Tella, Rafael. **AA** Ades: Goldman, Sachs & Co. Di Tella: University of Oxford. **SR** Oxford Applied Economics Discussion Paper Series: 169; Institute of Economics and Statistics, St Cross Building, Manor Road, Oxford OX1 3UL. **PG** 18. **PR** not available. **JE** K42, L13, L51, D73. **KW** Market Structure. Regulations. Public Policy. Corruption.

AB This paper presents and tests a proposition regarding the effects of market structure on corruption. When market conditions enable firms to capture monopoly rents, bureaucrats can create mechanisms to extract some of those rents through bribes. Thus, other things equal, the less competitive a market environment, the higher will be the amount of corruption. Both our cross-section and time-series evidence supports this hypothesis. Using data on corruption from two different sources, we find that corruption is higher in countries with economies dominated by only a few firms, or where anti-trust regulations are not effective in preventing anticompetitive practices. We also find that economies in which domestic firms are sheltered from foreign competition because of political or natural barriers to trade have more corruption. Using a series of instruments, we are able to identify strong effects on corruption of exogenous changes in product market competition. These results suggest that policy measures aimed at making markets more competitive could be an important ingredient in controlling corruption.

Aizenman, Joshua

PD August 1994. **TI** Why is Inflation Skewed? A Debt and Volatility Story. **AU** Aizenman, Joshua; Hausmann, Ricardo. **AA** Aizenman: Dartmouth College and National Bureau of Economic Research. Hausmann: Inter-American Development Bank. **SR** National Bureau of Economic Research Working Paper: 4837; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 16. **PR** $5.00. **JE** E31, C21. **KW** Inflation Skewness. Public Finance. Volatility.

AB This paper studies the patterns of inflation skewness in 56 countries. Monthly data suggests that inflation is positively skewed. We investigate linkages between skewness and non-linearity, showing that concavity (convexity) will lead to negative (positive) skewness if the independent variable is symmetrically distributed. We construct a public finance model for a developing country that uses inflation tax and external borrowing as the residual means for fiscal financing. The model predicts a convex dependency of inflation on output, where inflation skewness depends positively on inflation volatility, and external debt difficulties magnify the skewness. We conclude the paper with an assessment of the patterns of inflation between 1979-1993 for the 56 countries. Overall, the patterns are consistent with the predictions of the model.

Aldrich, John

PD January 1995. **TI** Correlations Genuine and Spurious in Pearson and Yule. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9502; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 38. **PR** no charge. **JE** C13, C44. **KW** Correlation. Spurious Regression. Causation.

AB Karl Pearson and Udny Yule developed the main interpretations of correlation that have been followed by statisticians in the past century or so. They also considered a number of situations in which the correlation inference was unsatisfactory. This paper considers the development of their ideas on these cases and makes some reference to related modern work.

PD March 1995. **TI** R. A. Fisher and the Making of Maximum Likelihood 1912-22. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9504; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 51. **PR** no charge. **JE** C13, C51, C52, B19. **KW** Fisher. Inverse Probability. Maximum Likelihood. Sufficiency. Efficiency. Information.

AB In 1922 R. A. Fisher introduced the method of maximum likelihood. He first presented the numerical procedure in 1912. This paper considers Fisher's changing justifications for the method, the concepts he developed around it, including likelihood, sufficiency, efficiency, and information, and the approaches he discarded including inverse probability.

Alesina, Alberto

PD July 1994. **TI** The Welfare State and Competitiveness. **AU** Alesina, Alberto; Perotti, Roberto. **AA** Alesina: Harvard University and National Bureau of Economic Research. Perotti: Columbia University. **SR** National Bureau of Economic Research Working Paper: 4810; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 28. **PR** $5.00. **JE** D51, H23, J51. **KW** General Equilibrium. Labor Unions. Distortionary Taxation.

AB In all modern industrial countries, redistributive expenditures are a larger component of the government budget than consumption of goods and services. In this paper, we use a general equilibrium, two-country model with exportables, importables and nontradables to study redistribution across different types of agents in a world characterized by the presence of labor unions and distortionary taxation. We show that an increase in transfers to, say, retirees, financed by distortionary taxation, can generate a loss of competitiveness (defined as an increase in relative unit labor costs for tradable goods), an appreciation of the relative price of nontradables, and a decrease in employment in all sectors of the domestic economy. The same qualitative effects would also obtain in the case of an increase in transfers towards the unemployed even if financed by non-distortionary taxation. Moreover, all these effects of labor taxation depend in a nonlinear way on the degree of centralization of the wage setting process in the labor market. We then estimate the effects of labor taxation on unit labor costs and the relative price of nontradables in a sample of 14 OECD countries. We find considerable empirical support for the model.

Allen, Beth

PD December 1994. **TI** Equilibrium Selections. **AU** Allen, Beth; Dutta, Jayasri; Polemarchakis, Heracles M. **AA** Allen: University of Minnesota and Federal Reserve Bank of Minneapolis. Dutta: University of Cambridge. Polemarchakis: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9471; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 23. **PR** not available. **JE** D50, D60, D62. **KW** Multiple Equilibria. Random Selections. Asset Markets. Rational Expectations. Convergence.

AB This paper analyzes the impact of multiple competitive equilibria and complete markets in a simple general equilibrium model. A random selection from the equilibrium correspondence of a finite exchange economy defines probability distributions on equilibrium prices. Asset markets allow traders to insure against the resulting uncertainty. If asset markets are complete, equilibrium selections are necessarily degenerate. The selection cannot be non-trivially random, and must assign probability one to particular equilibrium price vectors. In this case, asset prices reveal the choice of equilibrium price vectors and achieve the coordination of traders' expectations. If the asset market is incomplete, equilibrium selections can be non-degenerate, so that price uncertainty is self-fulfilling. A fully insured random selection defines an iterative procedure of reallocations which is Pareto improving at each step. The process converges to a Pareto optimum in finitely many steps. The key requirement is that the random selection be continuous, which is a generic condition for smooth exchange economies with strictly concave utility functions.

Amir, Rabah

PD March 1994. **TI** Cournot Oligopoly and the Theory of Supermodular Games. **AA** Universitat Mannheim. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9413; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 20. **PR** not available. **JE** D43, L13, C71. **KW** Cournot Oligopoly. Supermodular.

AB We consider the Cournot oligopoly problem in light of the theory of supermodular games. Invoking the recent ordinal version of this theory proposed by Milgrom-Shannon (1991), we generalize Novshek's (1985) existence result, give an extension of a classical existence result under symmetry, and provide conditions making a Cournot oligopoly into a log-supermodular game (with the natural order on the action sets). We also provide extensive and precise insight as to why decreasing best- responses are widely regarded as being "typical", for the Cournot model with production costs. Several illustrative examples are provided.

PD May 1994. **TI** Stackelberg, vs. Cournot/Bertrand Equilibrium. **AU** Amir, Rabah; Grilo, Isabel. **AA** Amir: Universite of Dortmund. Grilo: University Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9424; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 14. **PR** not available. **JE** C73, D43, L13. **KW** Bertrand. Cournot. Endogenous Timing. Supermodular.

AB We consider the issue of endogenous timing, according to the extended game of Hamilton-Slutsky (1990), for the classical Cournot and Bertrand duopolies. We provide minimal sufficient conditions, directly on the primitives of each model (i.e. the demand and cost functions), yielding the simultaneous and two sequential modes of play. No superfluous assumptions of concavity, existence and uniqueness of equilibria are needed, and the analysis makes crucial use of the basic results from the theory of supermodular games.

PD May 1994. **TI** Strategic Intergenerational Bequests with Stochastic Convex Production. **AA** University of Dortmund and University Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9425; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 9. **PR** not available. **JE** O49. **KW** Altruism. Bequest. Growth.

AB This note reconsiders the well-known model of strategic bequest/altruistic growth, but with stochastic production satisfying a strong convexity condition. Existence of a Markov-stationary equilibrium consumption schedule, which is continuous as with all slopes in [0,1], is established. Under smooth data and interiority assumptions, this schedule is differentiable, and marginal consumption is in (0,1).

PD January 1995. **TI** Continuous Stochastic Games of Capital Accumulation with Convex Transitions. **AA** The Institute for Advanced Study, Vienna, Austria. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9509; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM.

PG 20. **PR** not available. **JE** C73, O41, Q21. **KW** Stochastic Games. Multisector Growth Models. Resource Management.

AB We consider a discounted stochastic game of common-property capital accumulation with asymmetric players, bounded one-period extraction capacities, and a transition law satisfying a general strong convexity condition. We show that the infinite-horizon problem had a Markov- stationary (subgame-perfect) equilibrium and that every finite-horizon transaction has a unique Markovian equilibrium, both in consumption functions which are continuous, nondecreasing and have all slopes bounded above by 1. Unlike previous results in strategic dynamic models, these properties are reminiscent of the corresponding optimal growth model.

Anderlini, Luca

PD May 1993. **TI** Path Dependence and Learning From Neighbors. **AU** Anderlini, Luca; Ianni, Antonella. **AA** Anderlini: University of Cambridge. Ianni: University College London. **SR** University of Cambridge Economic Theory Discussion Paper: 186; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 35. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C72, D83. **KW** Local Interaction. Learning. Noise at Margin. Strategic Complementarities. Majority Rules. Path Dependence.

AB We study the long-run properties of a class of locally interactive learning systems. In each time period, a finite set of players at fixed locations play a two-by-two normal form game displaying strategic complementarities, with one of their "neighbors" selected at random. We demonstrate convergence for a general class of spatial structures and "majority rules" when a change of action for one of the players triggers experimentation. Because of the endogenous nature of experimentation or "noise" the systems we study exhibit a high degree of path-dependence. We also characterize the steady states of the system in the special case of a toroidal spatial arrangement. We find that different actions of a pure coordination game may survive in the long-run at different locations on the torus. We conclude with an interpretation of our system in terms of a model of local price-search. Our results indicate that the local nature of search may be a robust reason for price dispersion in a search model.

PD July 1994. **TI** Endogenous Agency Problems. **AU** Anderlini, Luca; Felli, Leonardo. **AA** Anderlini: University of Cambridge. Felli: London School of Economics. **SR** University of Cambridge Economic Theory Discussion Paper: 200; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 31. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C63, L14, J41. **KW** Principal-Agent Problems. Written Contracts. Hard-to-Describe Actions and Outcomes.

AB This paper suggests a reason, other than asymmetric information, why agency contracts are not explicitly contingent on the contracting parties' performances or actions. Two ingredients are essential to this. The first is the written form that contracts are required to take to be enforceable. The second is a form of discontinuity in the parties' preferences and in the technology that transforms actions into a (probabilistic) outcome. The authors show that under these conditions the chosen contract may not be explicitly contingent on the parties' performance although, in principle, such performances are contractible and observable to all parties to the contract, court included. This approach allows us to interpret these contracts as incomplete in a well- defined sense.

Andersen, Lykke Eg

PD July 1994. **TI** Convergence or Not? New Answers to Old Questions. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-21; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 18. **PR** no charge. **JE** C13, C21, O11, O40. **KW** Convergence. Growth Theory. Neural Network Estimation.

AB Do poor countries catch up with the richer countries, or does the income gap between rich and poor countries get ever larger? The present paper attempts to answer this important question with the help of i) theory, ii) traditional methods of convergence measurement, and iii) a new method based on non-linear Neural Network estimation. Theory is shown to be ambiguous. We thus have to rely on data. The traditional econometric methods all indicate that the distribution of world incomes tend to diverge, but the non-linear estimation method offers further insight. This insight warrants more positive prospects for the development of the distribution of world incomes.

PD August 1994. **TI** Neural Networks as an Exploratory Statistical Technique. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-28; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 12. **PR** no charge. **JE** C13, C14, C21. **KW** Non-Linear Modeling. Exploratory Statistical Techniques. Neural Network Estimation. k-NN Smoothing. Polynomial Fits.

AB This paper investigates the usefulness of Artificial Neural Networks as an exploratory statistical technique to be used in early stages of a modeling process. We use a simple bivariate example of testing convergence of World incomes. We conclude that the Neural Network approach works, but is inefficient compared to other methods (polynomial fits). The main strength of the Neural Network method is its robustness against alternative parameterizations, and it seems worth trying the method on multivariate problems, where it may have a comparative advantage in the handling of cross-effects.

Andersen, Torben M.

PD February 1994. **TI** Price Adjustment in Open Economies. **AU** Andersen, Torben M.; Hansen, Niels Lynggard **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-15; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 12. **PR** no charge. **JE** F41, E32. **KW** Price Adjustment. Foreign Competition. Nominal Rigidities.

AB The adjustment of product prices in open economies is analyzed by use of a model encompassing different product market structures used in the open macroeconomics literature as special cases. Using quarterly data for Denmark, Germany, the Netherlands, Norway and Sweden, the short- and long- run adjustment paths are considered. In general, support is found in favor of a specialized production model implying that prices are affected by both internal and external factors. Price adjustment displays substantial inertia and is in the short run driven by real shocks to both supply and demand, as well as, being characterized by nominal rigidities whereas in the long run relative prices are driven solely by supply variables.

PD March 1994. **TI** Price and Quantity Adjustment in the Presence of Adjustment Costs. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-14; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 9. **PR** no charge. **JE** E32. **KW** Adjustment Costs. Rationing. Price and Quantity.

AB If both the adjustment of prices and quantities is costly, the adjustment process is qualitatively different than in the case where only adjustment of prices is costly (menu cost models). In particular i) the choice between prices and quantities in the adjustment process depends on relative adjustment costs, but also on properties of the structural relationships (here, the demand function), ii) "small" changes in the state variables always cause rationing of either a Keynesian or Classical type, and iii) the adjustment process is asymmetric in the upward and downward direction.

PD August 1994. **TI** Optimal Fiscal Policy in Open Economies with Labor Market Distortions. **AU** Andersen, Torben M.; Rasmussen, Bo Sandemann; Sorensen, Jan Rose. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-31; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 18. **PR** no charge. **JE** H21, H23, J30, J42. **KW** Optimal Fiscal Policy. Distortionary Taxation. Unemployment. Policy Coordination.

AB The optimal level of public consumption is considered in an open economy with unemployment caused distortions in the labor market. Increases in public demand financed by distortionary income taxes may be welfare improving, even if public consumption is pure waste. This is in part caused by such policies affecting activity and therefore mitigating the unemployment consequences of distortions in the labor market. A worsening of this distortion calls for a change in fiscal policy in the direction favorable to activity. Whether that entails an expansion or contraction of public activity depends on the sensitivity of demand to the terms of trade. Considering the interaction in fiscal policy between countries, it is found that non-cooperative decisions lead to an inefficiently high level of public activities.

PD January 1995. **TI** Demand Management and Structural Unemployment in an Open Economy. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1995-1; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 19. **PR** no charge. **JE** E62, F41, J41. **KW** Demand Management. Efficiency Wages. Terms of Trade.

AB The role of demand management policies is considered in an intertemporal model for a two-sector open economy with labor market imperfections causing persistent unemployment. Structural unemployment is shown to depend on demand management policies, although demand expansion need not in general lower unemployment. The implication of temporary and permanent changes in public demand for national wealth, unemployment and the trade balance are considered. Despite an inefficiently high level of unemployment and effectiveness of demand management policies, there is not in general a welfare case for pursuing such policies.

Anderson, Simon P.

PD August 1994. **TI** Oligopolistic Competition and the Optimal Provision of Products. **AU** Anderson, Simon P.; de Palma, Andre; Nesterov, Yurii E. **AA** Anderson: Charles University, Prague. de Palma: University of Geneva. Nesterov: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9434; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 15. **PR** not available. **JE** D23, L13. **KW** Oligopoly. Product Differentiation.

AB This paper considers the theory of market versus optimal product diversity in the light of two recent advances in oligopoly theory. The first is the development of discrete choice models to describe heterogeneous consumer tastes, and the application of such models to oligopolistic competition. The second advance is the proof that logconcavity of the consumer taste density guarantees the existence of a price equilibrium. Our main result is that logconcavity implies excessive product variety. This result extends to price-sensitive individual conditional demands, and call into question previous results in the literature which left open the possibility of insufficient variety.

PD August 1994. **TI** Price Discrimination with Costly Consumer Arbitrage. **AU** Anderson, Simon P.; Ginsburgh, Victor A. **AA** Anderson: University of Virginia. Ginsburgh: Universite Libre de Bruselles and Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9439; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 11. **PR** not available. **JE** D42, D45, L41, L43. **KW** Arbitrage. Monopoly. Price Discrimination.

AB Consumer arbitrage affects discriminatory pricing across markets in several ways. If all consumers face the same arbitrage costs, a monopolist's profit increases with arbitrage costs, and overall welfare declines with them (if output does not rise). If arbitrage costs differ across consumers, a monopolist may sell in a second market even if there is no local demand--it can use the second market to discriminate across consumers in the first market on the basis of their costs. When there is also local demand in the second market, welfare may be increasing in arbitrage costs, even if output falls.

Andrade, Isabel C.

PD August 1994. **TI** A Multivariate Study of the Fisher Hypothesis and the UK Stock Market. **AA** University of Southampton, University of Wales and ISEG. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9414; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 14. **PR** no charge. **JE** C32, E31, E44, G14. **KW** Fisher Hypothesis. Stock Market. Inflation. Econometric Modeling. Cointegration.

AB In this paper we investigate the Fisher Hypothesis, which states that common stock is a hedge against inflation. The positive relationship predicted by the Fisher Hypothesis between inflation and stock returns has been rejected by many researchers who typically find no statistically reliable relationship between the variables, or indeed a negative relationship between the two. We study the relationship between stock returns and inflation in a multivariate context, including other variables of interest into our analysis. The results here do not appear to support Fama's (1981) hypothesis that the negative relationship often documented has been found because inflation proxies for real activity growth. In addition we also reject Geske and Roll's (1983) conjecture that inflation is simply proxying for growth in the monetary base. Instead we find evidence to suggest that the relation between stock returns and inflation is a spurious one, which disappears once other relevant variables are introduced into the analysis.

Armstrong, Mark

PD February 1993. **TI** Multiproduct Nonlinear Pricing. **AA** University of Cambridge. **SR** University of Cambridge Economic Theory Discussion Paper: 185: Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 23. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C60, D42, D82. **KW** Adverse Selection. Nonlinear Pricing. Informational Asymmetries.

AB The past two decades have seen a rapid advance in the theory of adverse selection, for instance in the areas of optimal income taxation, monopoly regulation and nonlinear pricing. Typically this work has modeled the informational asymmetries in a very special way by assuming that all private information can adequately be captured in a single scalar variable. This paper explores one way in which this assumption can be relaxed in the context of the nonlinear pricing problem. The profit-maximizing nonlinear tariff for a multiproduct firm is analyzed, sufficient conditions for a tariff to be optimal are derived and a class of cases is solved explicitly. Within this class it is optimal for the firm make the charge for a bundle of goods depend only on its cost in producing the bundle. Results for the model include the facts that the firm will wish to (i) exclude some consumers from participating in the market, and (ii) ensure that once a given consumer decides to buy any of the firm's goods she will decide to buy each good.

PD March 1993. **TI** Regulating a Multiproduct Firm With Unknown Costs. **AA** University of Cambridge. **SR** University of Cambridge Economic Theory Discussion Paper: 184; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 13. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C60, D42, D82, L51. **KW** Regulation. Information Asymmetries. Multiproduct Firm.

AB The past two decades have seen a rapid advance in the theory of adverse selection, for instance in the areas of optimal income taxation, nonlinear pricing and monopoly regulation. Typically this work has modeled the information asymmetries in a very special way by assuming that all private information can adequately be captured in a single scalar variable. This paper explores one way in which this assumption can be relaxed. The welfare-maximizing regulatory regime for a multiproduct firm with unknown unit costs is analyzed, sufficient conditions for a regime to be optimal are derived and class of cases is solved by making use of a change of variables. Within this class it is optimal for the regulator to ensure that the price/cost margin is the same for all goods. Results for this model include the facts that the regulator will wish to ensure that (i) certain high cost firms do not produce at all, and (ii) once a firm produces any goods it should produce all goods.

PD September 1994. **TI** Delegation and Discretion. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9421; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 24. **PR** no charge. **JE** D81, D82. **KW** Agency Theory. Delegation. Decision-Making.

AB There are many situations in which a principal delegates decisions over policy to a better-informed agent but does not choose to give full discretion. This paper discusses two reasons why this might be desirable: the agent may have tastes that diverge from those of the principal, or, alternatively, the agent may not be able to compute accurately the optimal policy. Limiting the agent's discretion has the advantage that an untrustworthy agent is constrained from following policies that are disliked by the principal, but the disadvantage that trustworthy agents are then not permitted to carry out some desirable policies. It is shown that a greater risk of the agent being untrustworthy will lead to her being offered less discretion over policy. Applications of the model involve judicial sentencing policy and regulatory authority over pricing and liberalization.

PD September 1994. **TI** Access Pricing, Entry and the Baumol-Willig Rule. **AU** Armstrong, Mark; Doyle, Chris. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9422; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 34. **PR** no charge. **JE** L51, L96, D42, L12. **KW** Access Pricing. Telecommunications. Vertical Integration. Essential Facilities.

AB This paper examines the regulation of an industry with a vertically integrated incumbent firm and a single potential entrant. In order to be able to offer a service the entrant requires access to an input that is monopolized by the incumbent. When the entrant offers a service identical to that of the incumbent, the optimal access charge is a form of what is known as the Baumol-Willig rule. If the entrant offers a differentiated service, this access charge formula should be reduced to take account of the entrant's market power. If entry is not profitable with the ex post efficient access charge, the conditions under which the charge should be reduced further in order to induce desirable entry are characterized.

PD March 1995. **TI** The Access Pricing Problem. **AU** Armstrong, Mark; Vickers, John. **AA** Armstrong: University of Southampton. Vickers: University of Oxford. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9506; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 16. **PR** no charge. **JE** D42, L51. **KW** Access Pricing. Regulation. Vertical Markets. Essential Facilities.

AB The Baumol-Willig efficient component pricing rule states that it is efficient for the price of access to an essential facility to be set equal to the direct cost of access plus the opportunity cost (lost profit) to the integrated access provider. We analyze the relevant notion of "opportunity cost" under various assumptions about supply conditions, including bypass and substitution possibilities, which are shown to reduce opportunity cost. We also consider uncertain endogenous entry (or exit), and discuss some implications for policy towards predatory access pricing.

Atkeson, Andrew

PD August 1994. **TI** Putty-Clay Capital and Energy. **AU** Atkeson, Andrew; Kehoe, Patrick J. **AA** Atkeson: University of Chicago and National Bureau of Economic Research. Kehoe: University of Minnesota. **SR** National Bureau of Economic Research Working Paper: 4833; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 28. **PR** $5.00. **JE** C61, D24. **KW** Dynamic Programming. Equilibrium. Putty-Clay Capital.

AB In this paper, we build a version of the putty-clay model in which there is a large variety of types of capital goods which are combined with energy in different fixed proportions. Our principal contribution is to establish easily checked conditions under which the problem of solving for the equilibrium of the model economy reduces to a dynamic programming problem with only two endogenous state variables, regardless of the number of different types of capital goods that are allowed. In appropriate applications, this result allows us to avoid the "curse of dimensionality" that typically plagues attempts to analyze the dynamics of economies with a wide variety of capital goods and binding non- negativity constraints on investment. We apply these results to study the equilibrium dynamics of value-added, investment, wages, and energy use in a simple model of energy use with putty-clay capital.

Attanasio, Orazio P.

PD July 1994. **TI** The Intertemporal Allocation of Consumption: Theory and Evidence. **AA** Stanford University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4811; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 34. **PR** $5.00. **JE** D91, E21, G21. **KW** Credit Markets. Consumption. Liquidity Constraints.

AB Liquidity constraints and, more generally, imperfections in credit markets, can be extremely important for the intertemporal allocation of consumption and have received a substantial amount of attention in the theoretical and empirical literature on consumption. In the first part of the paper I review the reasons why liquidity constraints are important. Unfortunately, for several reasons, it is not easy to test for the presence of liquidity constraints. Aggregation issues preclude the use of aggregate time series data for such a purpose. Tests based on micro data, however, are complicated by some serious identification problems. If a simple equilibrium model does not fit some data set, one can change the assumptions about the opportunity set available to the economic agents or the specifications of their preferences. For instance, empirical evidence that detects excess sensitivity of consumption to income could be explained by liquidity constraints or by non-separability between consumption and leisure. However, the available evidence shows that it is possible to find flexible specifications of preferences that fit consumption movements at business cycle frequencies. I also present some simulation evidence that shows that for many plausible parameter configurations, liquidity constraints are likely to be relevant only for a small proportion of economic agents. In the last part of the paper I present some new evidence on the relevance of liquidity constraints based on debt holding data. The data indicate that the demand for debt of individuals more likely to be liquidity constrained is less elastic to changes in the interest rate.

Attfield, Clifford L. F.

PD March 1994. **TI** Okun's Coefficient: A Comment. **AU** Attfield, Clifford L. F.; Silverstone, Brian. **AA** Attfield: University of Bristol. Silverstone: University of Waikato. **SR** University of Bristol Department of Economics Working Paper: 94/377; Department of Economics, University of Bristol, Alfred Marshall Building, 8 Woodland Road, Bristol BS8 1TN, ENGLAND. **PG** 8. **PR** no charge. **JE** C22, E24. **KW** Okun Coefficient. Time Series. Cointegration.

AB This paper reassesses a recent finding that the value of the Okun coefficient for the U.S. (linking unemployment changes to output changes) is only around -0.67 rather than around the more typical value of -2.25. Using a cointegration framework, and the same data sets as in that study, we find, for one of the data sets, that the Okun coefficient is virtually -2.0 with changes in capacity utilization having an independent influence on output changes together with changes in unemployment.

Bacharach, Michael

PD April 1995. **TI** An Experimental Study of the Variable Frame Theory of Focal Points. **AU** Bacharach, Michael; Bernasconi, Michele. **AA** Bacharach: University of Oxford. Bernasconi: University of Pavia, Italy. **SR** Oxford Applied Economics Discussion Paper Series: 166; Institute of Economics and Statistics, St Cross Building, Manor Road, Oxford OX1 3UL. **PG** 33. **PR** not available. **JE** C71. **KW** Availability. Coordination Game. Equilibrium Selection. Focal Point. Frame.

AB In the variable frame theory a game is played rationally, but which game gets played is determined by nonrational (e.g. perceptual) player characteristics. These determine their "frames"--the sets of phenomena they think about. The theory implies that it is rational to play focal points in coordination games with multiple equilibria. The reported experiment tests the theory for such games and confirms most of its claims, including the trade-off theorem: players who can hope to coordinate only by randomizing over a class of objects trade off the fewness of its members against the probability that it is in the partner's frame.

PD April 1995. **TI** An Experimental Study of the Variable Frame Theory of Focal Points: Appendix. **AU** Bacharach, Michael; Bernasconi, Michele. **AA** Bacharach: University of Oxford. Bernasconi: University of Pavia, Italy. **SR** Oxford Applied Economics Discussion Paper Series: 167; Institute of Economics and Statistics, St Cross Building, Manor Road, Oxford OX1 3UL. **PG** 38. **PR** not available. **JE** not available. **KW** not available.

AB This is the appendix to Discussion Paper No. 166.

Backhouse, Roger E.

PD April 1994. **TI** Why Should We Teach the History of Economic Thought? **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 94-14; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 10. **PR** 2 pounds. **JE** B00, B40. **KW** History of Economic Thought. Methodology.

AB Textbooks commonly present economics as an agreed body of doctrine which can be presented and understood without reference to the history of economic thought. This paper argues that such a perspective not only distorts the historical record, but creates barriers to students' understanding of the subject they are studying. The remedy is to introduce students to the idea that economics is a historical process -- that economic ideas evolve over time as problems and techniques change.

PD May 1994. **TI** Vision and Progress In Economic Thought: Schumpeter After Kuhn. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 94-17; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 15. **PR** 2 pounds. **JE** B00, B41. **KW** History of Economic Thought: Historiography. Scientific Revolution. Paradigm.

AB Schumpeter, in his History of Economic Analysis, analyzed the history of economic thought using concepts that had much in common with those found in Thomas Kuhn's The Structure of Scientific Revolutions. His "classical situations" resemble Kuhn's paradigms, and his account of the economics before the late 19th century echoes Kuhn's discussion of science before the emergence of paradigms. This paper considers Schumpeter's vision, comparing and contrasting it with Kuhn's. Its conclusion is that Schumpeter offered more than simply a vague anticipation of Kuhn. Rather, Schumpeter's emphasis on analytical progress leads to a perspective on the history of ideas that is, in significant respects, very different from Kuhn's.

PD May 1994. **TI** An Empirical Philosophy of Economic Theory. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 94-18; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 11. **PR** 2 pounds. **JE** B40. **KW** Economic Methodology. Hausman.

AB An essential theme running through all Dan Hausman's work, from Capital, Profits and Prices (1981) to The Inexact and Separate Science of Economics (1992) is that the philosophy of economics should be an empirical discipline. His conclusions are, therefore, based on observation of what goes on within economics. Hausman's view of economics, however, is a very narrow one, involving an excessive focus on microeconomic theory and general equilibrium analysis. The argument of this paper is that this leads to a distorted picture of economics and to his playing down the importance of theory appraisal. This paper questions Hausman's claim that the failings of contemporary economic theory are not linked to the adoption of an inappropriate methodology. Whilst supporting Hausman's claim that economic methodology should be empirically based, it is argued that it is equally important to avoid the danger of accepting the status quo.

Bailey, Ralph W.

PD January 1995. **TI** How Many Possibilities Does Arrow's Theorem Exclude? **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 95-03; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 6. **PR** 2 pounds. **JE** D71. **KW** Arrow's Impossibility Theorem. Weak Orders. Contour Integration.

AB Given that the number of ways of ranking p objects is A, and the number of agents is n, the number of excluded rankings is A**(A**n).

PD February 1995. **TI** Constructive Methods in Economic Theory. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 95-05; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 22. **PR** 2 pounds. **JE** C63. **KW** Convex Cones. Nonmonotone Preferences. Vector Maximization. Personal Probability.

AB Central results in economics, for instance those yielded by the Kuhn- Tucker Theorem, are most helpfully phrased in terms of convex cone terminology. Unfortunately they rarely receive this expression. To show the usefulness of cone imagery and methods we discuss two problems. The first is to test for Pareto efficiency in an economy where agents have amonotone preferences between unconstrained policy vectors. The second, a problem originally proposed by De Finetti, is to decide whether an agent's judgments of comparative probability are consistent and, if they are, to find all sets of relative probabilities consistent with those judgments.

Baliga, Sandeep

PD September 1993. **TI** Multilateral Bargaining With Imperfect Competition. **AU** Baliga, Sandeep; Serrano, Roberto. **AA** Baliga: University of Cambridge. Serrano: Brown University. **SR** University of Cambridge Economic Theory Discussion Paper: 193; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 16. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C72, C78. **KW** Non-Cooperative Bargaining. Imperfect Information. Optimistic Beliefs.

AB We study two versions of a multilateral bargaining procedure in which responders are told only their own shares. The proposal becomes common knowledge after the response stage and responders have optimistic beliefs after off-equilibrium offers. In the "unanimity" game, for a significant range of values of the discount factor, the set of equilibrium agreements is a singleton when discounting is high. When it is low, there is multiplicity of equilibria and a "folk" theorem is established. In the "exit" game, for every value of the discount factor there is a unique equilibrium agreement, which coincides with that found in the literature for the same model with either perfect or almost perfect information. Therefore, the results already known for multilateral sequential bargaining are extended without change to a context of imperfect information.

PD October 1993. **TI** Implementation in Incomplete Information Environments: The Use of Extensive Form Games. **AA** University of Cambridge. **SR** University of Cambridge Economic Theory Discussion Paper: 192; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 38. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C70. **KW** Implementations Incomplete Information. Extensive Form Games. Sequential Equilibrium. Perfect Sequential Equilibrium.

AB This paper considers the implementation of social choice functions in incomplete information environments. We show that a form of Incentive Compatibility and a sufficient condition for subgame perfect implementation are sufficient for implementation when sequential equilibrium is used to solve the extensive form game we construct. In economic environments, Incentive Compatibility alone is sufficient. We also argue that perfect sequential equilibrium is, for our game, the closest analogue to subgame perfect equilibrium as it brings our condition for implementation closer to the sufficient condition for subgame perfect implementation.

PD April 1994. **TI** The Not-So-Secret Agent: Professional Monitors, Hierarchies and Implementation. **AA** University of Cambridge. **SR** University of Cambridge Economic Theory Discussion Paper: 201; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 21. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C63. **KW** Private Information. Professional Monitors.
AB It is well known that when agents in an organization possess private information that is unverifiable by an outside party, games where agents simply announce their information can have multiple equilibria that may impede the successful implementation of the organization's objectives. The author shows that the introduction of a professional monitor can help to destroy the "bad" equilibria in three contexts: (1) (adverse selection) agents have private information but have incomplete information about others' information; (2) (moral hazard (a)) agents know their own effort level but not that of others; and (3) (moral hazard (b)) agents know everyone's effort but it is unverifiable by an outside party. We can interpret these results by saying that hierarchies in firms can arise to ensure that all equilibria meet the organization's objectives in all states of the world.

PD January 1995. **TI** Universal Collusion and Renegotiation, Dictators and Contracts. **AA** University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9511; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 25. **PR** $10.00 (5 pounds), checks payable to University of Cambridge. **JE** D78, L22. **KW** Collusion. Renegotiation. Incomplete Contracts.
AB This paper analyzes how renegotiation and collusion amongst agents affects the set of implementable social choice rules when there is complete information. Such rules have features (property rights, incentive compatibility, and impotence of third parties) suggested by the incomplete contracts literature. It is assumed that collusion and renegotiation from an inefficient outcome can lead to any efficient outcome that Pareto-dominates it (universal collusion and renegotiation). In exchange economies if the domain of preferences is sufficiently large, only dictatorial social choice rules can be implemented. Therefore, there is one agent who has the property right to all the surplus. In a principal-agent setting with private values, it is shown that the incentive compatibility condition that is necessary for implementation in incomplete information environments is also necessary in our setting. Finally, it is shown, in a model adapted from Tirole (1992), that contracts with third parties are useless when there is universal collusion and negotiation.

PD February 1995. **TI** Negotiations with Side-Deals. **AU** Baliga, Sandeep; Serrano, Roberto. **AA** Baliga: University of Cambridge. Serrano: Brown University. **SR** University of Cambridge Department of Applied Economics Working Paper: 9510; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 18. **PR** $10.00 (5 pounds), checks payable to University of Cambridge. **JE** C72, C78. **KW** Side-Deals. Imperfect Information. Partial Agreements. Independent Beliefs.
AB This paper studies multilateral negotiation procedures that allow for "partial agreements" in which responders are told only their own shares. The models here apply in the case of negotiations under "joint and several liability", as well as to certain disputes over a surplus. The authors find that there is a unique outcome that corresponds to that found in models without imperfect information.

PD February 1995. **TI** The Theory of Implementation when the Planner is a Player. **AU** Baliga, Sandeep; Corchon, Luis C.; Sjostrom, Tomas. **AA** Baliga: University of Cambridge. Corchon: Universidad de Alicante. Sjostrom: Harvard University. **SR** University of Cambridge Department of Applied Economics Working Paper: 9512; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 29. **PR** $10.00 (5 pounds), checks payable to University of Cambridge. **JE** C71, D72. **KW** Implementation. Signaling Game. Outcome Fraction.
AB This paper studies the situation where the planner cannot commit to a mechanism and the outcome function is substituted by the planner herself. It is assumed that (1) agents have complete information and play simultaneously, and (2) given the messages announced by the agents, the planner reacts in an optimal way given her beliefs. Necessary and sufficient conditions are derived for interactive implementation under different restrictions on the planner's out-of-equilibrium beliefs. These results are compared to standard results on Nash implementations.

Ball, Michael

PD 1994. **TI** How Many Jobs Does Construction Expenditure Generate? **AU** Ball, Michael; Wood, Andrew. **AA** Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 2/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 19. **PR** no charge. **JE** J21, L74. **KW** Construction. Employment.
AB Extra public expenditure on construction is frequently cited policy to alleviate demand deficient unemployment; yet the actual number of jobs created is uncertain. This paper surveys the job creation effect for the UK. It surveys previous estimates, then a construction employment model is estimated. The results do not conform to theoretical predictions, implying only a weak link between quarterly increases in total construction output and construction employment and no significant relationship between housebuilding and employment. It is suggested that these results arise from poor quality data, especially the estimates of changes in the number of self-employed workers. As an alternative, construction industry rules-of-thumb are used to derive more plausible employment effects. Employment estimates are also provided for sub- sectors of the industry. To improve on these calculations we conclude that there is a need for either more accurate construction data or, failing that, periodic site-survey based estimates of construction production functions.

PD 1994. **TI** Does Building Investment Affect Economic Growth? Some Long-Run Evidence From the UK. **AU** Ball, Michael; Wood, Andrew. **AA** Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 8/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 17. **PR** no

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charge. **JE** E22, O40, O11, N13, N14. **KW** Growth. Investment. Productivity Change. Building Cycles.
AB Building investment has been identified as both a major determinant of, and a brake on, economic growth, results which are based on conflicting evidence drawn from across-section of countries in the post- 1950 era. In contrast this paper looks at the very long-run, using annual UK data from the nineteenth century to the present day. Tests for cointegration and Granger Causality indicate a complex pattern of causality between equipment and structures investment and aggregate productivity. There seems to be a long-run steady state relationship and a series of error correcting mechanisms: results which do not support a policy of preferential treatment for equipment investment.

PD 1994. **TI** Housing Investment: Long-Run International Trends and Volatility. **AU** Ball, Michael; Wood, Andrew. **AA** South Bank University. **SR** Birkbeck College Discussion Papers in Economics: 11/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 20. **PR** no charge. **JE** E32, N60, L74, R31. **KW** Cycles. Housing Investment. International Comparisons.
AB Using long-run data for today's advanced economies, the pattern of housing investment is examined from the nineteenth century to the present day. The Kalman Filter is used to decompose the series into trends and cycles. Housing investment is shown to be subject to long cycles, the most pronounced of which were in the post-1945 era. Since 1970 the trend of housing investment has been flat for most countries considered, and falling as shares of national income. Fluctuations in housing investment demand helped to stabilize the world economy during the 1950's and 1960's but since then have switch to become a destabilizing factor.

Bandyopadhyay, Subhayu

PD January 1995. **TI** Customs Union of Free Trade Area? The Role of Political Asymmetries. **AU** Bandyopadhyay, Subhayu; Wall, Howard J. **AA** Bandyopadhyay: West Virginia University. Wall: Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 4/95; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 12. **PR** no charge. **JE** F15. **KW** International Integration. Trade. Welfare.
AB The literature on international integration had focused on whether or not integration is beneficial, but has largely ignored the question of the type of integration that would yield higher social welfare. When trade policy is endogenously-determined by lobbying, and not by a welfare-maximizing government, it matters whether the countries are arranged into a customs union or a free trade area. This paper compares the two regimes when the member governments are asymmetric in their susceptibilities to lobbying and in their bargaining power within a customs union. In our model, a customs union never Pareto-dominates a free trade area, but a free trade area may Pareto-dominate a customs union.

Banerjee, Anindya

PD November 1994. **TI** Dynamic Specification and Testing for Unit Roots and Co-integration. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 914; Department of Economics, Queen's University, Kingston, Ontario K7L 3N6, CANADA. **PG** 35. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** C10, C13, C51, C52. **KW** Dynamic Specification. Co-Integration. Unit Roots. Exogeneity.
AB This paper provides an interpretation of the vast literature on testing for unit roots and estimating co-integrating relations. Emphasis is placed on identifying the particular ways in which methods of dynamic specification need to be modified in order to take account of the possible presence of unit roots in the time series being modeled. The discussion is undertaken in the settings of both single-equation and systems methods and attention is paid to problems of estimation and inference. It is argued that the importance of issues such as exogeneity and rich dynamic specification, developed in the context of stationary time series, carry over to a very large extent when dealing with non- stationary series.

PD March 1995. **TI** On the Power of Co-Integration Test: Dimension Invariance vs Common Factors. **AU** Banerjee, Anindya; Dolado, Juan J.; Mestre, Ricardo. **AA** Banerjee: University of Oxford and Queen's University. Dolado and Mestre: Bank of Spain. **SR** Queen's Institute for Economic Research Discussion Paper: 922; Department of Economics, Queen's University, Kingston, Ontario K7L 3N6, CANADA. **PG** 25. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** C10, C13, C51, C52. **KW** Dimension Invariance. Common-Factor. Co-Integration. Tests.
AB This paper considers the trade-off, for co-integration tests, between dimension and power: i.e. we compare the power performance of test- statistics which are dimension-invariant but impose common factor restrictions with tests which are not dimension free but do not impose these restrictions. As a byproduct of the analysis, we consider cases where the t-ratio form of the tests has better power properties than the coefficient form, in spite of the latter diverging at rate O sub p(T) and the former at O sub p(T to the 1/2), under the alternative hypothesis of cointegration.

Banerjee, Anurag N.

PD January 1994. **TI** A Method of Estimating the Average Derivative. **AA** University Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9403; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 14. **PR** not available. **JE** C13. **KW** Average Derivative.
AB This work describes a method of estimating the Average Derivative delta = E(m') (where "m" is the regression function). The method, unlike the Hardle-Stoker (JASA, 1989) method, uses local linear regression, and is a "direct" estimate of delta. Some large sample properties have been obtained, and the two methods have been compared using simulation studies.

Banks, James

PD July 1994. **TI** Tax Reform and Welfare Measurement: Do We Need Demand System Estimation? **AU** Banks, James; Blundell, Richard; Lewbel, Arthur. **AA** Banks: Institute for Fiscal Studies. Blundell: Institute for Fiscal Studies and University College London. Lewbel: Brandeis University. **SR** Institute for Fiscal Studies Working Paper: W94/11; Institute for Fiscal Studies, 7 Ridgmount Street, London WC1E 7AE, ENGLAND. **PG** 14. **PR** 3 pounds. **JE** H21. **KW** Taxation. Welfare.
AB The exact measurement of the welfare costs of tax reform requires a detailed knowledge of individual preferences. However, using standard relations between the derivatives of

individual welfare functions and observable demands, first order approximations of welfare costs can be calculated without detailed knowledge of substitution effects. We derive second order approximations which, unlike first order approximations, require knowledge of the distribution of substitution elasticities. As tax reforms are often far from marginal, this paper asks to what extent simple approximations can be used to measure the welfare costs of tax reform and evaluates the magnitude of the biases for a plausible size tax reform. In our empirical examples some first order approximations perform well while others have systematic biases; second order approximations always worked well.

Barker, Terry

PD April 1994. **TI** Taxing Pollution Instead of Employment: Greenhouse Gas Abatement Through Fiscal Policy in the UK. **AA** University of Cambridge. **SR** University of Birmingham Department of Economics Discussion Paper: 94-10; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 36. **PR** 2 pounds. **JE** H24, Q28, Q48. **KW** Ecological Tax reform. Fiscal Reform. Carbon/Energy Tax. Greenhouse Gas Abatement. Double Dividend.

AB Fiscal changes designed to achieve the two objectives of reductions in greenhouse gas emissions and increases in employment are explored using a large-scale energy-environment-economy model of the UK, the Cambridge Multisectoral Dynamic Model (MDM). Two options are considered in detail: the road fuel duty escalator, introduced in the March 1993 Budget, and the CEC's proposed carbon/energy tax; revenues for each tax are recycled via reductions in employers' NIC calculated to keep the ratio of the PSBR to GDP at base scenario rates. The changes are introduced in 1996 and standardized so that each reduces carbon dioxide emission by some 21 mtC by 2005. The escalator is shown to raise far more revenue per mtC reduced and so NIC charges can be reduced much more than under the carbon/energy tax option. A detailed analysis is made of the effects on industrial costs of the carbon/energy tax option; the effects on competitiveness, measured as the effects on the balance of payments under a fixed exchange rate regime, are found to be negligible, even with a unilateral tax. Both options appear to provide substantial environmental net benefits as well as economic gains. However, each option has its strengths and weaknesses and a combination may allow the United Kingdom to reach the Toronto target of a 20% cut in carbon dioxide emissions below 1988 levels by 2005.

Basu, Susanto

PD August 1994. **TI** Intermediate Goods and Business Cycles: Implications for Productivity and Welfare. **AA** University of Michigan and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4817; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 27. **PR** $5.00. **JE** E23, E32, E41, L60. **KW** Business Cycle. Production. Money Neutrality. Manufacturing.

AB This paper presents an aggregate demand-driven model of business cycles that provides a new explanation for the procyclicality of productivity, and simultaneously predicts large welfare losses from monetary non-neutrality. The key features of the model are an input- output production structure, imperfect competition, countercyclical markups, and, for some results, state-dependent price rigidity. True technical efficiency is procyclical even though production takes place with constant returns, without technology shocks or technological externalities. The paper had observable implications that distinguish it empirically from related work. These implications are generally supported by data from U.S. manufacturing industries.

Baumol, William

PD November 1994. **TI** International Trade and Scale Economies--A New Analysis. **AU** Baumol, William; Gomory, Ralph. **AA** Baumol: New York University. Gomory: Alfred P. Sloan Foundation. **SR** London School of Economics Centre for Economic Performance Discussion Paper: 205; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 73. **PR** no charge. **JE** F01, F12. **KW** International Trade. Scale Economies. Trade Models.

AB The 1994 Lionel Robbins Memorial Lectures were presented at the London School of Economics on May 3,4 and 5, 1994 by William J. Baumol and Ralph E. Gomory on "International Trade and Scale Economies--A New Analysis." The two papers here reproduced contain the basis of analysis.

Bauwens, Luc

PD April 1994. **TI** Identification Restrictions and Posterior Densities in Cointegrated Gaussian VAR Systems. **AU** Bauwens, Luc; Lubrano, Michel. **AA** Gaussian: Universite Catholique de Louvain. Bauwens: GREQE. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9418; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 22. **PR** not available. **JE** C39. **KW** Cointegration. Vector Autoregression.

AB We derive the posterior density of the cointegrating coefficients in a Gaussian VAR system. The density does not belong in general to a family of densities with known properties. If there is one cointegrating vector, the density belongs to the class of poly-t densities. It is integrable if the coefficients are identified and it has finite moments to the order of overidentification. The identifying restrictions we consider are linear restrictions on the cointegrating vectors. The structure of the posterior density is exploited to implement Monte Carlo integration methods that are needed when there is more than one cointegrating vector. The paper contains two empirical illustrations.

PD August 1994. **TI** Do Art Experts Make Rational Estimates of Pre-Sale Prices? **AU** Bauwens, Luc; Ginsburgh, Victor A. **AA** Bauwens: University Catholique de Louvain. Ginsburgh: University Libre de Bruxelles and Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9438; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 9. **PR** not available. **JE** D84. **KW** Expectations. Rational Expectations.

AB Public sales art catalogues include low and high pre-sale price estimates made by experts. This makes it possible to analyze whether salerooms behave rationally or not, when setting their estimates. Rationality is tested using a sample of some 1,600 lots of English silver sold at auctions by Christie's and Sotheby's. Results show that estimates are significantly biased and that experts do not use all the information that is available to them when they make their estimates.

Beach, Charles M.

PD November 1994. **TI** Distribution-Free Statistical Inference for Inequality Dominance with Crossing Lorenz Curves. **AU** Beach, Charles M.; Davidson, Russell; Slotsve, George A. **AA** Beach and Davidson: Queen's University. Slotsve: Vanderbilt University. **SR** Queen's Institute for Economic Research Discussion Paper: 912; Department of Economics, Queen's University, Kingston, Ontario K71 3N6, CANADA. **PG** 10. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** C14, C40. **KW** Stochastic Dominance. Lorenz Curve. Income Inequality. Distribution- Free Statistical Inference.

AB Distribution-free techniques of statistical inference are developed for the cumulative coefficients of variation of an income distribution, thus allowing one to test for inequality dominance when Lorenz curves cross. The full covariance structure of the cumulative sample means and variances is worked out. As an illustration, the procedures are applied to the 1984 and 1990 earnings distributions of male paid workers in the United States, and it is found that the 1990 distribution was significantly less unequal than the 1984 distribution.

PD November 1994. **TI** Estimation and Inference for Normative Inequality Indices. **AU** Beach, Charles M.; Rongve, Ian. **AA** Beach: Queen's University. Rongve: University of Regina. **SR** Queen's Institute for Economic Research Discussion Paper: 913; Department of Economics, Queen's University, Kingston, Ontario K71 3N6, CANADA. **PG** 19. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** C12, C13, J31. **KW** Inequality. Inference. Inequality Indices.

AB This paper addresses the sampling distribution of two general classes of normative income inequality indices. Specifically, for approximations to the Atkinson-Kolm-Sen index of relative inequality, and the Kolm- Blackorby-Donaldson index of absolute inequality, the paper provides consistent estimators based on a random sample of income microdata and establishes their asymptotic normality. Asymptotic variance-covariance expressions are obtained that provide for distribution-free statistical inference on these measures in a straightforward fashion. The paper thus extends the principles of statistical inference to current classes of normative inequality measures and to Atkinson's equally distributed income measure, using a general approximation approach. An example using Canadian family income microdata illustrates the technique.

Beggs, Alan

PD September 1994. **TI** Learning and the Diffusion of New Products Under Monopoly. **AA** University of Oxford. **SR** Oxford Applied Economics Discussion Paper Series: 163; Institute of Economics and Statistics, St Cross Building, Manor Road, Oxford OX1 3UL. **PG** 24. **PR** not available. **JE** D11, D42, D62, L12. **KW** New Products. Pricing. Monopoly. Externalities.

AB This paper studies the diffusion of new products when consumers' can learn from one another about its quality. It shows that consumers purchase decisions exercise both positive and negative externalities upon one another. The paper examines the implications for optimal pricing by a monopolist. It also examines a series of simple models and shows that there may be multiple equilibria and examines the dynamics of prices over time.

Beitia, Arantza

PD February 1994. **TI** Quality Regulation in the Monopoly Case: The Impact of Information. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9412; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 17. **PR** not available. **JE** D41, L12, L43. **KW** Monopoly. Unknown Costs.

AB In this paper we study the problem of how to regulate a monopolist whose costs are unknown to the regulator. The total cost incurred by the firm depends on the quantity produced, on the level of quality, which is observable and verifiable, as well as on some privately known technological parameter. In the optimal regulatory policy, quantity, quality and transfers are designed as functions of the firm's report about his technological parameter so that the expected social welfare is maximized subject to the individual rationality and the incentive compatibility constraints. The analysis deals in detail with the factors that determine the direction of quantity-quality deviations relative to the complete information solution.

Bekaert, Geert

PD August 1994. **TI** The Time Variation of Risk And Return in Foreign Exchange Markets: A General Equilibrium Perspective. **AA** Stanford University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4818; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 28. **PR** $5.00. **JE** F31, D81, G12. **KW** Foreign Exchange. Risk Premiums. Uncertainty.

AB This paper investigates the statistical properties of high frequency nominal exchange rates and forward premiums in the context of a dynamic two-country general equilibrium model. Primary focus is on the persistence, variability, leptokurtosis, and conditional heteroskedasticity of exchange rates and on the behavior of foreign exchange risk premiums. The model combines temporal dependencies in preferences with a transaction cost technology that generates a role for money. Agents in the economy make decisions on a weekly frequency and face shocks which display time-varying uncertainty. Simulations reveal that the model accounts for the statistical properties of exchange rate data much more accurately than previous structural models.

PD August 1994. **TI** Time-Varying World Market Integration. **AU** Bekaert, Geert; Harvey, Campbell R. **AA** Bekaert: Stanford University and National Bureau of Economic Research. Harvey: Duke University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4843; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 31. **PR** $5.00. **JE** F15, F21. **KW** Integration. Capital Markets. Emerging Markets.

AB We propose a conditional measure of capital market integration that allows us to characterize both the cross-section and time-series of expected returns in developed and emerging markets. Our measure, which arises from a conditional regime-switching model, allows us to describe expected returns in countries that are segmented from world capital markets in one part of the sample and become integrated later in the sample. Our results suggest that a number of emerging markets exhibit time-varying integration. Interestingly, some markets appear to be more integrated than one might expect based on prior knowledge of investment restrictions. Other markets appear segmented even though foreigners have relatively free access to their capital markets.

Bell, Linda

PD July 1994. **TI** Why Do Americans and Germans Work Different Hours? **AU** Bell, Linda; Freeman, Richard. **AA** Bell: Haverford College. Freeman: Harvard University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4808; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 25. **PR** $5.00. **JE** J21, J22, J23, J31. **KW** Labor Hours. Employment. Earnings Inequality. Germany.

AB This paper documents the difference between the annual hours worked by employed Americans and Germans, decomposes the difference into differences due to vacation and holiday time and to hours worked while on the job, and examines alternative explanations for the difference. Employed Americans work roughly 10-15% more hours than Germans. Since the American employment-population rates exceed those of Germany, adult Americans average some 20% more work time than adult Germans. At the same time, Americans show greater preference for additional hours worked than do Germans. Both of these differences developed in the past 20 years. Two decades ago, Americans worked less than Germans, and it was the Germans who wanted to work more hours. Standard labor supply analyses do not appear able to explain this difference. We show that differences in hours worked are related to differences in earnings inequality across countries, and hypothesize that the high rewards to success in the U.S., lack of job security, and low social safety net compared to Germany or other European countries may explain the cross-country differences in an extended supply model.

Benabou, Roland

PD July 1994. **TI** Education, Income Distribution, and Growth: The Local Connection. **AA** Massachusetts Institute of Technology and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4798; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 29. **PR** $5.00. **JE** D63, J24, I21. **KW** Human Capital. Growth. Education. Stratification. Equalization.

AB This paper develops a simple model of human capital accumulation and community formation by heterogeneous families, which provides an integrated framework for analyzing the local determinants of inequality and growth. Five main conclusions emerge. First, minor differences in education technologies, preferences, or wealth can lead to a high degree of stratification. Imperfect capital markets are not necessary, but will compound these other sources. Second, stratification makes inequality in education and income more persistent across generations. Whether or not the same is true of inequality on total wealth depends on the ability of the rich to appropriate the rents created by their secession. Third, the polarization of urban areas resulting from individual residential decisions can be quite inefficient, both from the point of view of aggregate growth and in the Pareto sense, especially in the long run. Fourth, when state-wide equalization of school expenditures is insufficient to reduce stratification, it may improve educational achievement in poor communities much less than it lowers it in richer communities; thus average academic performance and income growth both fall. Yet it may still be possible for education policy to improve both equity and efficiency. Fifth, because of the cumulative nature of the stratification process, it is likely to be much harder to reverse once it has run its course than to arrest it at an early stage.

Berechman, Joseph

PD December 1994. **TI** Network Structure and Entry in the Deregulated Airline Industry. **AU** Berechman, Joseph; Poddar, Sougata; Shy, Oz. **AA** Berechman: Department of Public Policy and The Eitan Berglas School of Economics, Tel Aviv University. Poddar: Universite Catholique de Louvain. Sougata: The Eitan Berglas School of Economics, Tel Aviv University. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9464; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 20. **PR** not available. **JE** L93, L51. **KW** Airline Deregulation. Hub-and-Spoke. Networks. Entry.

AB In this paper, we explore how an incumbent airline firm structures its route network under the threat of entry caused by deregulation. We show that entry induces the incumbent firm to strategically later its flight operating network structure from a fully connected network (FC) to a hub-and -spoke network (HS). While the literature always assumed that the use of a HS can be used as an entry deterrence/accommodation mechanism even in cases where the HS is more costly to operate. We further analyze the effects of aircraft capacity on the strategic behavior of an airline firm.

Bergin, James

PD October 1994. **TI** Evolution with State-Dependent Mutations. **AU** Bergin, James; Lipman, Bart. **AA** Queen's University. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9455; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 18. **PR** not available. **JE** C78. **KW** Matching. Mutation.

AB Recent evolutionary models have introduced "small mutation rates" as a way of refining predictions of long-run behavior. We show that if mutation rates are allowed to vary across states, then mutations no longer narrow the set of possible predictions. In particular, given any model of the effect of mutations, any invariant distribution of the "mutationless" process is close to an invariant distribution of the process with appropriately chosen small mutation rates.

Berliant, Marcus. Zenou, Yves

PD January 1995. **TI** Labor Specialization and City Formation. **AA** Berliant: Washington University. Zenou: Universite Catholique de Louvain and Universite Pantheon-Assas. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9508; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 24. **PR** not available. **JE** R20, R31, R32, R41. **KW** Cities.

AB The aim of the paper is to explore the formation of cities through labor specialization, gains to trade, a fixed cost for the transportation network, imperfect competition between firms and the commuting costs of consumers. The model uses a very general setting, allowing a multidimensional location space and multiple firms using different types of labor to produce different outputs. Locations of all agents are endogenous as are prices and quantities. Firms play a Nash location game among themselves, anticipating the locations of consumers, but taking prices as given. Within this framework, we characterize the spatial configuration of firms in equilibrium. Whether or not equilibrium exists and whether or not it is locally unique depend crucially on the relative numbers of outputs, types of labor and firms. Finally, both welfare theorems fail in this model.

Bernanke, Ben S.

PD August 1994. **TI** The Macroeconomics of the Great Depressions: A Comparative Approach. **AA** Princeton University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4814; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 38. **PR** $5.00. **JE** N12, N22, E24, E41. **KW** Great Depression. Comparative Analysis. Monetary Collapse. Sticky Wages.

AB Recently, research on the causes of the Great Depression has shifted from a heavy emphasis on events in the United States to a broader, more comparative approach that examines the interwar experiences of many countries simultaneously. In this lecture I survey the current state of our knowledge about the Depression from a comparative perspective. On the aggregate demand side of the economy, comparative analysis has greatly strengthened the empirical case for monetary shocks as a major driving force of the Depression; an interesting possibility suggested by this analysis is that the worldwide monetary collapse that began in 1931 may be interpreted as a jump from one Nash equilibrium to another. On the aggregate supply side, comparative empirical studies provide support for both induced financial crisis and sticky nominal wages as mechanisms by which nominal shocks had real effects. Still unresolved is why nominal wages did not adjust more quickly in the face of mass unemployment.

Bernasconi, Michele

TI An Experimental Study of the Variable Frame Theory of Focal Points. **AU** Bacharach, Michael; Bernasconi, Michele.

TI An Experimental Study of the Variable Frame Theory of Focal Points: Appendix. **AU** Bacharach, Michael; Bernasconi, Michele.

Berndt, Ernst R.

TI Costs, Institutional Mobility Barriers, and Market Structure: Advertising Agencies as Multiproduct Firms. **AU** Silk, Alvin J.; Berndt, Ernst R.

Bertoletti, Paolo

PD February 1995. **TI** Yardstick Contracts and Internal Firm Inefficiency. **AU** Bertoletti, Paolo; Poletti, Clara. **AA** Bertoletti: Universita di Pavia, Italy. Poletti: Birkbeck College and Universita Cattolica del Sacro Cuore, Italy. **SR** Birkbeck College Discussion Papers in Economics: 2/95; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 15. **PR** no charge. **JE** D82, L13, L22. **KW** X-Inefficiency. Market Competition. Managerial Contracts.

AB A recent stream of literature has addressed the assertion of whether market competition force firms toward more efficient behavior by studying the case of (imperfectly) competing agencies affected by adverse selection on costs. This literature abstracts from the direct informational role played by the market. Namely, the degree of competition does not change the cost of providing agency incentives. This paper stresses the relevance of a market as an informational resource. We formalize an example of how a yardstick contract can exploit correlation among managers private information. We show how in many cases the availability of additional information not controlled by the manager makes his private information irrelevant for firm behavior. This first best result casts doubts on the way this literature models X- inefficiency.

Beyer, Andreas

PD January 1995. **TI** The Causal Link Between Money and Prices in Germany. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9501; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 15. **PR** no charge. **JE** C22, C52, E41, E52. **KW** Money Demand. Exogeneity. Causality. Monetary Policy. Transmission.

AB In this paper an empirically stable money demand model for M3 in Germany is presented. Its data set includes German unification. Based on the results of econometric tests for the Lucas Critique and super exogeneity I found strong evidence that causality is running from prices to money but not vice versa. This contradicts with the central assumption of the so called "P-Star concept" and questions the role of M3 as intermediate target and indicator of German monetary policy.

Bianchi, Marco

PD 1994. **TI** Unemployment Persistence, Structural Factors and Hysteresis: Can Expansionary Policies Reduce the Level of Equilibrium Unemployment? **AU** Bianchi, Marco; Zoega, Gylfi. **AA** Bianchi: Universite Catholique de Louvain. Zoega: Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 7/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 19. **PR** no charge. **JE** C22, L24, L32. **KW** World Unemployment. Macroeconomic Policy. Equilibrium Unemployment. Hysteresis. Shifting Mean Value Model.

AB The paper is an empirical investigation of unemployment rate series in 17 countries. The timing and size of shifts in the mean rate of unemployment are estimated. The size of the shifts and the remaining persistence in the unemployment rate series are then related to institutional differences between the countries. The observed persistence in the unemployment rate series is found consistent with models of the equilibrium rate of unemployment and hysteresis models which explain why unemployment hysteresis arises following large shocks to unemployment but not following small changes in the actual unemployment rate.

Bilal, Sanoussi

PD November 1994. **TI** Administered and Political Protection: Impact on Protection-Seeking Behaviour of Institutional Reforms. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 94-20; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 46. **PR** 2 pounds. **JE** D72,

F13. **KW** Lobbying. Administered Protection. Political Protection. Political Economy. Institutions.
AB This paper discusses the effect of institutional reforms, which take the form of a tightening of administered rules, on the behavior of lobbyists seeking protection either at the political or the administrative level. In particular, the analysis shows that while a tightening of administered rules leads to a reduction in the lobbyists' expected gains from administered protection and the incentive to lobby for it in a single-stage process, this tightening can lead to the reverse in a multi-stage setting. This seemingly paradoxical result is due to the interaction between both the stages and the paths to protection.

Billot, Antoine

PD January 1994. **TI** A Nonadditive Probability Model of Individual Choice. **AU** Billot, Antoine; Thisse, Jacques-Francois. **AA** Billot: Universite de Bourgogne and CERA-ENPC. Thisse: Universite de Paris I and CERA-ENPC. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9401; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 21. **PR** not available. **JE** D10, D80. **KW** Choice. Nonadditive Probability.
AB This paper aims at contributing to the description of the choice behavior of an individual who is unable to deal with a large number of alternatives and is unsure about his most preferred alternative in any given choice subset. Hence, there is a conflict in that the individual wants to reduce the choice set (because of his limited ability in processing various objects) and to keep as many alternatives as possible (because he is unsure about his own tastes). A natural way to solve this conflict is to view the individual as choosing sequentially while giving a weight to each corresponding subset of alternatives. We assume that the weights are defined by nonadditive probabilities which are independent of the path followed in the choice process. These nonadditive choice probabilities are constructed from a utility defined on the power set of alternatives; this utility represents a preference for flexibility. However, the nonadditive choice probabilities are not observable. It is shown that they can be converted into probabilities which have intuitive and appealing properties. In particular, using these probabilities allows for a sensible solution to the blue bus--red bus paradox when the individual has a natural preference for flexibility.

Binder, Michael

PD May 1994. **TI** Multivariate Rational Expectations Models and Macroeconomic Modeling: A Review and Some New Results. **AU** Binder, Michael; Pesaran, M. Hashem. **AA** Binder: University of Pennsylvania. Pesaran: University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9415; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 88. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C13, C30, C50, E32. **KW** Rational Expectations. Multivariate Models. Cointegration. Real Business Cycles. Adjustment Cost.
AB This paper provides a review of solution and estimation methods for multivariate linear rational expectations models, and proposes a new method which is relatively straightforward to apply, provides a complete characterization of all the possible classes of solutions (namely the unique stable solution, multiple stable solutions, and the case where no stable solution exists), and allows the incorporation of many forms of non-stationarity and non-linearity of the models' forcing variables. This solution method also renders a convenient VAR-framework for purposes of full information estimation and the analysis of cointegration properties of multivariate linear rational expectations models. The proposed method is illustrated and contrasted with techniques available in the literature by applying it to a real business cycle model analyzed by Christiano and Eichenbaum (1992) and to a multivariate dynamic adjustment cost problem. The paper concludes with a brief overview of three other important recent developments in the rational expectations literature, namely learning, heterogeneous information and multivariate nonlinear rational expectations models.

Blake, David

PD January 1995. **TI** Pension Schemes As Option On Pension Fund Assets: Implications for Pension Fund Management. **AA** Birkbeck College. **SR** Birkbeck Discussion Paper in Financial Economics: 1/95; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 30. **PR** no charge. **JE** G11, G23. **KW** Pension Schemes. Pension Assets and Liabilities. Options. Duration. Fund Management. Asset Allocation. Immunization.
AB This paper investigates the relationship between the three most important types of funded pension scheme: the defined benefit, the defined contribution, and the targeted money purchase schemes. While, on the surface, there appear to be substantial differences amongst these schemes, we show that they are related in a very simple way that is equivalent to different combinations of options on the underlying assets in the pension fund. Once this is recognized, it is relatively straightforward for scheme members, sponsors and the financial markets to value the different pension schemes and to make choices between them. There are also important implications for pension fund management. We propose a dynamic asset allocation strategy over the lifetime of a pension scheme which involves switching, according to pre-set criteria, between equities, index bonds and conventional bonds. This contrast markedly with the prevailing theoretical framework for analyzing pension fund investment decision-making which emphasizes 100% bond dedication.

Bloch, F.

PD June 1994. **TI** Two-sided Search, Marriages and Matchmakers. **AU** Bloch, F.; Ryder, H. **AA** Bloch: Brown University and Universite Catholique de Louvain. Ryder: Brown University. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9428; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 23. **PR** not available. **JE** C78, J41. **KW** Two-Sided Search.
AB This paper analyzes the provision of matching services in a model of two-sided search. Agents belong to two populations and are uniformly distributed on [0,1]. Their utility is equal to the index of their mate. In a search equilibrium, as in Mac Namara and Collins (1990), agents form subintervals and are only matched to agents inside their class. Agents of higher quality form larger clusters. Marriage brokers offer to match agents according to a centralized matching procedure. If the matchmaker charges a uniform participation fee to all agents,

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then she selects to match a subset of agents of higher quality according to the stable identity matching rule. If, on the other hand, the matchmaker can charge different commissions to different agents, she will either choose to match all agents, if the matching cost is low enough, or not to operate.

Bloch, Francis

PD October 1994. **TI** Stable Trading Structures in Bilateral Oligopolies. **AU** Bloch, Francis; Ghosal, Sayantan. **AA** Bloch: Universite Catholique de Louvain and Groupe HEC. Ghosal: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9456; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 20. **PR** not available. **JE** D43, D51. **KW** Bilateral Oligopoly. Strategic Trade.

AB This paper analyzes the formation of trading groups in a bilateral market with strategic trades. A trading structure (a partition of the set of traders into trading groups) is strongly stable if no coalition of traders can deviate and increase the utility of some if its members while making no other member worse off. It is weakly stable if no coalition of traders can deviate and make all its members strictly better off. The only strongly stable trading structure is the grand coalition, where all agents trade on the same market. Other weakly stable trading structures exist and are characterized by a strong ordering property: trading groups can be ranked by size and cannot contain very different numbers of traders of the two types. In the particular example where traders have log-linear utility functions, the set of weakly stable trading structures is completely characterized.

Blundell, Richard

PD June 1994. **TI** Consumption and the Timing of Income Risk. **AU** Blundell, Richard; Stoker, Thomas M. **AA** Blundell: University College London and Institute for Fiscal Studies. Stocker: Massachusetts Institute of Technology. **SR** Institute for Fiscal Studies Working Paper: W94/9; Institute for Fiscal Studies, 7 Ridgmount Street, London WC1E 7AE, ENGLAND. **PG** 28. **PR** 3 pounds. **JE** D11, D84. **KW** Consumption. Income Uncertainty. Risk.

AB This article examines the impact of income uncertainty on optimal consumption expenditures, when the uncertainty in income is either near- term or in the more distant future. Using a three period framework, we provide solutions for optimal consumption choices for preferences that display Constant Relative Risk Aversion and derive the precise relationship between consumption and income innovations. These results are contrasted with those for quadratic preferences and preferences that display constant absolute risk aversion. The importance of near-term versus more distant risk in the analysis of consumption and savings is evaluated using a variety of scenarios of income risk over time.

PD July 1994. **TI** Dynamic Count Data Models of Technological Innovation. **AU** Blundell, Richard; Griffith, Rachel, Van Reenen, John. **AA** Blundell and Van Reenen: Institute for Fiscal Studies and University College London. Griffith: Institute for Fiscal Studies. **SR** Institute for Fiscal Studies Working Paper: W94/10; Institute for Fiscal Studies, 7 Ridgmount Street, London WC1E 7AE, ENGLAND. **PG** 12. **PR** 3 pounds. **JE** C51, C53, D24, O31, O33. **KW** Count Data. Innovation. Technology.

AB This paper examines the application of count data models to firm level panel data on technological innovations. The model we propose exhibits dynamic feedback and unobserved heterogeneity. We develop a fixed effects estimator that generalizes that standard Poisson and negative binomial models allowing for dynamic feedback through both the firms stock of knowledge and its product market position. This estimator exploits the long pre-sample history of innovation information in our sample to control for correlated fixed effects and is compared with alternative non-linear GMM estimators. We find some evidence of history dependence in innovation activity although variables reflecting the company's economic environment are also found to play a major role.

TI Tax Reform and Welfare Measurement: Do We Need Demand System Estimation? **AU** Banks, James; Blundell, Richard; Lewbel, Arthur.

PD September 1994. **TI** Income or Consumption in the Measurement of Inequality and Poverty? **AU** Blundell, Richard; Preston, Ian. **AA** Institute for Fiscal Studies and University College London. **SR** Institute for Fiscal Studies Working Paper: W94/12; Institute for Fiscal Studies, 7 Ridgmount Street, London WC1E 7AE, ENGLAND. **PG** 17. **PR** 3 pounds. **JE** D31, H53, I32. **KW** Consumption. Income. Inequality. Poverty. Welfare.

AB This paper places the debate over using consumption or income as a measure of household welfare in a formal intertemporal setting. It highlights the importance of assumptions concerning changing needs over the life-cycle and attitudes to risk. We show that the relative growth in the variance of consumption to income can be used to discriminate between growth in short term income uncertainty versus growth in persistent income inequality. Data from the 1970-1992 Family Expenditure Survey are used to investigate inequality and poverty in the UK. We find a striking difference in the patterns of consumption and income inequality between the employed, the unemployed and the retired. As regards change over time, a clear picture emerges of younger cohorts facing greater permanent inequality and grater short-term income variation.

Boadway, Robin W.

PD January 1994. **TI** Time-Consistent Criminal Sanctions. **AU** Boadway, Robin W.; Marceau, Nicolas; Marchand, Maurice. **AA** Boadway: Queen's University. Marceau: Universite Laval. Marchand: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9410; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 16. **PR** not available. **JE** H41. **KW** Crime. Punishment. Reputation.

AB A classic argument in the theory of crime is that optimal enforcement policy should involve maximal sanctions and no crime. Yet this is rarely observed in the real world. We argue that one reason for this has to do with the time inconsistency of such a policy. If sanctions are only applied after a crime has been committed, the enforcement authority may be reluctant to impose a high sanction since it will no longer have any deterrent effect. We show in a simple one period setting that if the enforcement authority can commit to its announced sanctions, the classic result is obtained. However, if the enforcement authority cannot commit, a minimal sanction with no deterrence is obtained. These extreme outcomes can be avoided in a setting in which crimes and enforcement occur repeatedly and the authority is able to built a reputation.

PD October 1994. **TI** The Role of Second-Best Theory in Public Economics. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 910; Department of Economics, Queen's University, Kingston, Ontario K7l 3N6, CANADA. **PG** 24. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** D60, H00. **KW** Second Best. Public Economics.

AB The paper surveys the evolution of the use of the theory of second best in public economics. It argues that much of modern normative public economics can be interpreted as simply applied second-best analysis. The original theory of second best as expounded by Lipsey and Lancaster involved analyzing policy in a single-consumer economy with a fixed distortion, and was especially interested in whether marginal cost pricing, or piecemeal prescriptions, could still be maintained. That analysis was subsequently extended to multi-household economies, to multi-distortion cases and to dynamic settings, and became the basis for the optimal tax analysis and duality theory, the second-best distortion has effectively been made endogenous; and the general government policy problem has been posed as a principal-agent one. The most common method is by assuming non-observability of some important household characteristic or behavioral outcome. As a consequence of these developments, most public policy problems can be viewed as special applications of second-best analysis. For example, the general problem of the efficiency-equity tradeoff (the "optimal income tax" problem) and the limit to redistribution can be viewed as second-best problems. A couple of the interesting features of viewing policy problems as second- best problems are as follows. For one, simple policy prescriptions no longer become possible. For another, seemingly odd types of policies, such as quantity restrictions, in-kind transfers and public provision of social insurance become "efficient" policy instruments in certain circumstances. The literature also stresses that second-best optima cannot be attained. Optimal time-consistent policies can also include unusual policy instruments that would otherwise be ruled out in a second-best setting.

PD November 1995. **TI** Efficiency and the Fiscal Gap in Federal Systems. **AU** Boadway, Robin W.; Keen, Michael. **AA** Boadway: Queen's University. Keen: University of Essex. **SR** Queen's Institute for Economic Research Discussion Paper: 915; Department of Economics, Queen's University, Kingston, Ontario K7l 3N6, CANADA. **PG** 24. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** H73, H77, H41. **KW** Fiscal Gap. Fiscal Federalism.

AB This paper investigates the efficiency argument for a vertical fiscal gap in a federation using a simple model of a central government and several identical states. Each level provides a public good to residents within its jurisdiction and finances it by taxing labor income and rents. If labor supply is fixed, there need not be a fiscal gap even if households are perfectly mobile. With variable labor supply, however, decentralized decision-making by the states will generally be inefficient because states' tax policies will affect not only their own revenues but also those of the federal government. If the federal government chooses its budgetary policy first and the states take this policy as given, federal policies can be chosen to replicate the second- best optimum. Moreover, with or without mobile households, second-best optimal federal policy involves negative federal labor tax rates and can plausibly also require a negative fiscal gap, with transfers going from the states to the federal government. Thus, on efficiency grounds, there can be no presumption that inter-governmental transfers should go from higher levels of government to lower.

Boero, Gianna

TI Controlling Greenhouse Gases: A Survey of Global Macroeconomic Studies--A Revision of Discussion Paper 91-25. **AU** Clarke, Rosemary; Boero, Gianna; Winters, L. Alan.

Bohm, Peter

PD January 1994. **TI** On the Feasibility of Joint Implementation of Carbon Emissions Reductions. **AA** University of Stockholm, Sweden. **SR** University of Birmingham Department of Economics Discussion Paper: 94-05; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 29. **PR** 2 pounds. **JE** Q20 Q23, Q28, Q30. **KW** Climate Change. Global Warming. Carbon Sequestration. Carbon Abatement Agreements. Tradable Emission Quotas.

AB The Framework Convention on Climate Change allows Parties, jointly with other Parties, to contribute to the objectives of the Convention. In this paper, at least some industrial (Annex-I) countries (ICs) are assumed to make binding commitments to limit their carbon emissions, whereas developing (non-Annex-I) countries (DCs) are not. An attempt is made to clarify the general implications of Joint Implementation (JI) between ICs, on the one hand, and between ICs and DCs, on the other. The first type of JI is found to contain all the preconditions for an internationally efficient tradable-emissions-quota system for IC signatories. The second type is altogether different and unlikely to play an important role for improving the efficiency of the actions taken by the ICs. The fundamental reason for this difference is that while monitoring of emissions reductions is achieved at essentially no extra cost at all in one case, it is complicated and costly in the other.

Boldrin, Michele

PD November 1994. **TI** Equilibria with Social Security. **AU** Boldrin, Michele; Rustichini, Aldo. **AA** Boldrin: Northwestern University and Universidad Carlos III, Madrid. Rustichini: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9460; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 27. **PR** not available. **JE** D71, H53, H55, I38. **KW** Pay-As-You-Go. Public Pension. Social Security.

AB We model pay-as-you-go (PAYG) social security systems as the outcome of majority voting within a standard OLG model with production and an exogenous population growth rate. At each point in time individuals work, save, consume and invest by taking the social security policy as given. The latter consists of a tax on current wages transferred to elderly people. When they vote, individuals have to make two choices: if they want to keep the commitment made by the previous generation by paying the elderly the promised amount of benefits, and which amount they want paid to themselves next period. We show that when the growth rate of population is high enough compared to the productivity of capital there exists an equilibrium where PAYG pensions are voted into existence and maintained. PAYG systems are kept even when everybody knows that they will surely be abandoned, and that some generation will pay and not be paid back. We characterize the steady state and dynamic properties of these equilibria and study their welfare properties. Equilibria achieved by voting are typically inefficient; however, they may be so due to over accumulation, as well as, in other cases, due to under accumulation. On the other hand, the efficient steady states turn out to be dynamically unstable: so we are presenting an unpleasant alternative for policy making.

Booth, Alison L.

PD January 1994. **TI** Seniority, Earnings and Unions. **AU** Booth, Alison L.; Frank, Jeff. **AA** Booth: Birkbeck College. Frank: Royal Holloway College and Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 1/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 12. **PR** no charge. **JE** J31, J33, J50, J51. **KW** Earnings. Unions.

AB This paper uses a new data source to investigate whether wages rise more with seniority in unionized or nonunionized workplaces. The data distinguish workers who are covered by incremental wage scales with automatic progression by seniority. For union workers with seniority scales, the union wage differential is increasing with seniority. This is not the case for union workers without seniority scales. Taking account of this heterogeneity, we are able to reconcile previous paradoxical empirical findings. The results provide support for discriminating monopoly models of the trade union and have important efficiency and distributional implications.

PD November 1994. **TI** Quitting Externalities, Employment Cyclicality and Firing Costs. **AU** Booth, Alison L.; Zoega, Gylfi. **AA** Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 19/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 26. **PR** no charge. **JE** E32, K23, K24, K41. **KW** Quitting Externalities. Human Capital. Employment Cyclicality. Redundancy Payments.

AB This paper derives a model in which workers have firm-specific and industry-specific skills, and in each period there is a non-zero probability that a worker quits. This makes the private discount factor, used by firms in making decisions about hiring and training new workers and firing existing ones, higher than the social one. As a consequence, not only do firms underinvest in training but employment becomes too cyclical. Firms are too quick to dispose of their human capital in a cyclical downturn because it is of less value to them than it is to society. This provides a rationale for state-mandated redundancy payments as a second-best remedy to overcome the market failure.

Brenton, Paul

PD April 1994. **TI** Estimation of Cross-Country Consumption Patterns: Implications for Carbon Abatement Policies. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 94-12; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 19. **PR** 2 pounds. **JE** D12, H31, Q41. **KW** Consumption Patterns. Demand Estimation. Carbon Taxes. Greenhouse Gas Abatement.

AB Global carbon taxes have been advocated by economists as an appropriate response to the warming of the planet caused by the emission of greenhouse gases. This paper highlights the ramifications of differences between countries in demand behavior for the effects of global Carbon taxes. Using data on international consumption of 40 commodities we estimate a simple price and expenditure elasticities to vary by country. We then use the estimated parameters together with data on the carbon dioxide intensities of the different products to investigate the effects of a global carbon tax. The results highlight the importance of international distributional effects when considering global environmental policy.

Brewer, Anthony

PD January 1994. **TI** An Eighteenth Century View of Economic Development: Hume and Steuart. **AA** University of Bristol. **SR** University of Bristol Department of Economics Working Paper: 94/372; Department of Economics, University of Bristol, Alfred Marshall Building, 8 Woodland Road, Bristol BS8 1TN, ENGLAND. **PG** 17. **PR** no charge. **JE** B11. **KW** Hume. Steuart. Development. Growth.

AB The differences between David Hume (1711-1776) and James Steuart (1712-1780) are more often stressed than the similarities. Hume is treated as a precursor of Adam Smith while Steuart is seen as Smith's defeated opponent. The differences are real enough, but they conceal an almost identical theory of the causes of development and underdevelopment (as they would now be called), which focuses on the incentive effects of changes in the range of available products and changes in tastes. Hume set the theory out first, and Steuart followed in his footsteps.

Broome, John

PD February 1994. **TI** The Value of a Person. **AA** University of Bristol, University of British Columbia and Australian National University. **SR** University of Bristol Department of Economics Working Paper: 94/373; Department of Economics, University of Bristol, Alfred Marshall Building, 8 Woodland Road, Bristol BS8 1TN, ENGLAND. **PG** 10. **PR** no charge. **JE** D63. **KW** Population. Value of Life. Agent Relativity.

AB Many people have the intuition that adding a person to the world is not valuable in itself, even if the person would have a good life. But this intuition turns out to lead to paradoxes. This paper examines a number of attempts to overcome the paradoxes whilst retaining some part of the intuition. It concludes that the attempts are unsuccessful.

PD February 1994. **TI** The Two-Envelope Paradox. **AA** University of Bristol. **SR** University of Bristol Department of Economics Working Paper: 94/374; Department of Economics, University of Bristol, Alfred Marshall Building, 8 Woodland Road, Bristol BS8 1TN, ENGLAND. **PG** 3. **PR** no charge. **JE** C70. **KW** St. Petersburg Paradox. Infinite Mean.

AB The best solution available for the two-envelope paradox depends on risk aversion. But this solution seems unsatisfactory.

Broze, Laurence

PD December 1994. **TI** Forecast Intervals in ARCH Exponential Smoothing. **AU** Broze, Laurence; Melard, Guy; Scaillet, Olivier. **AA** Broze: Universite Catholique de Louvain and Universite de Lille III. Melard: Universite de Bruxelles. Scaillet: CREST. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9481; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-

Neuve, BELGIUM. **PG** 16. **PR** not available. **JE** C22. **KW** Exponential Smoothing. Forecast Interval. Times Series. Financial Data. Marketing Data. ARCH.

AB Exponential smoothing (ES) with ARCH (autoregressive conditionally heteroskedastic) and GARCH (generalized ARCH) errors are introduced. This is done for a large class of ES methods, those for which the forecasts are obtained using a set of additive updating formulas, and also those for which an ARIMA form had been previously established. The class includes HOLT and WINTERS methods but also methods involving a damped trend. The transition from homoskedastic ES to ES-GARCH representation of the ES-GARCH methods. The problems which are discussed are the following: (a) the estimation of the smoothing constants; (b) the computation of the forecast intervals. Examples demonstrating the new approach are given. They are related to finance and marketing.

PD January 1995. **TI** Quasi Indirect Inference for Diffusion Processes. **AU** Broze, Laurence; Scaillet, Olivier; Zakoian, Jean-Michel. **AA** Broze: Universite Catholique de Louvain and Universite de Lille 3. Scaillet: CREST. Zakoin: CREST and Universite de Lille 1. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9505; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 23. **PR** not available. **JE** C22, C24. **KW** Simulation Based Inference. Indirect Inference. Diffusion Process. Discretization Bias. Stochastic Volatility.

AB We present an estimation procedure for continuous time models based on discrete sampled data with a fixed unit of time between two observations. Since in general the conditional likelihood of the model cannot be derived an indirect inference procedure based on simulations of a discretized model is proposed. Asymptotic properties of this quasi indirect estimator are given and some particular cases are examined. Finite sample properties are also considered through Monte Carlo experiments. We also examine the problem of the choice of an appropriate simulation step.

Buiter, Willem H.

PD January 1995. **TI** Budgetary Aspects of Stabilisation and Structural Adjustment in India. **AU** Buiter, Willem H.; Patel, Urjit R. **AA** Buiter: University of Cambridge. Patel: International Monetary Fund. **SR** University of Cambridge Department of Applied Economics Working Paper: 9506; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 34. **PR** $10.00 (5 pounds), checks payable to University of Cambridge. **JE** H60, E62, O23. **KW** India. Sustainability. Structural Fiscal Reforms.

AB With the collapse of the communist regimes in the former Soviet Union and Eastern Europe, India became, by early 1991, one of the most over- regulated economic systems in the world. In addition, during the 1980's there had been a break with a long tradition of fiscal prudence. This paper evaluates the success of the stabilization effort and of the structural budgetary reforms. While some progress has been made on both fronts, much remains to be done before a sustainable budgetary program and an efficient system of public spending and revenues can be said to have been established.

PD January 1995. **TI** Capital Mobility, Fiscal Policy and Growth Under Self-Financing of Human Capital Formation. **AU** Buiter, Willem H.; Kletzer, Kenneth M. **AA** Buiter: University of Cambridge, Centre for Economic Policy Research and National Bureau of Economic Research. Kletzer: University of California, Santa Cruz. **SR** University of Cambridge Department of Applied Economics Working Paper: 9507; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 31. **PR** $10.00 (5 pounds), checks payable to University of Cambridge. **JE** E62, F43, O42. **KW** Endogenous Growth. Capital Mobility. Convergence. Borrowing Constraints.

AB This paper considers the effects of fiscal and financial policy on economic growth in open and closed economies, when human capital formation by young households is constrained by the illiquidity of human wealth. Both endogenous and exogenous growth versions of the basic OLG model are analyzed. The authors find that intergenerational redistribution policies that discourage physical capital formation may encourage human capital formation. Despite common technologies and perfect international mobility of financial capital, the non-tradedness of human capital and the illiquidity of human wealth make for persistent differences in productivity growth rates (in the endogenous growth version of the model) or in their levels (in the exogenous growth version.) We also consider the productivity growth (or level) effects of public spending on education and the distortionary taxation of financial asset income.

Caballero-Sanz, Francisco

PD July 1994. **TI** Optimal Licensing in a Spatial Model. **AU** Caballero-Sanz, Francisco; Moner-Colonques, Rafael; Sempere-Monerris, Jose. **AA** Caballero-Sanz: University of Valencia and Commission of the European Communities. Moner-Colonques and Sempere-Monerris: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9431; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 19. **PR** not available. **JE** D23, L22. **KW** Licensing. Royalties. Fees. Exclusive Territories.

AB This paper studies, in a spatial model, optimal licensing policies by first, comparing our results with the standard (non-spatial) licensing literature, and second, how results are affected if the patent holder can introduce a vertical restraint (exclusive territories). Contrary to standard results we find that royalties are superior to fees. Once the licensor introduces an ET clause, his profits are higher than when he uses either fees or royalties only. A conflict between private and social interests arises since consumers are better off when the technology is licensed via fees.

Calomiris, Charles W.

PD July 1994. **TI** Leverage as a State Variable for Employment, Inventory Accumulation, and Fixed Investment. **AU** Calomiris, Charles W.; Orphanides, Athanasios; Sharpe, Steven A. **AA** Calomiris: University of Illinois and National Bureau of Economic Research. Orphnides and Sharpe: Federal Reserve Board. **SR** National Bureau of Economic Research Working Paper: 4800; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 15. **PR** $5.00. **JE** E22, E32, G31, M11. **KW** Business Cycles. Investment Decisions. Leverage.

AB The importance of a firm's balance sheet for determining its investment and employment decisions is the central assumption of macroeconomic models of "debt deflation" or "debt overhang." According to these models, firm investment decisions are influenced not only by the fundamental opportunity set of the firm, but also by the firm's existing financial condition, especially its leverage. This paper tests that assumption by examining whether the responsiveness of employment, investment, and inventory accumulation to exogenous changes in sales depend on the leverage of the firm. We find that leverage acts as an important state variable for conditioning the response of all three variables to changes in sales. We also find that this effect varies depending on the state of the economy. During recessions, higher leverage magnifies the contractionary effect of declines in sales on investment; during times of positive sales growth, higher leverage tends to dampen the expansionary effect of growth in demand. The size and significance of leverage conditioning effects are larger during recessions. These results support theoretical models of the potential importance of "debt overhang" effects. Firms that use debt to finance expansion during times of increasing demand suffer reduced ability to maintain growth during recessions as a consequence of their higher leverage.

Card, David

PD August 1994. **TI** Earnings, Schooling, and Ability Revisited. **AA** Princeton University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4832; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 33. **PR** $5.00. **JE** I21, J24, J31. **KW** Education. Earnings. Return to Schooling.

AB This paper presents a survey and interpretation of recent research on the return to education. The empirical findings in a series of current papers suggest that the causal effect of education on earnings is understated by standard estimation methods. Using a simple model of optimal schooling developed by Gary Becker (1967), I derive an explicit formula for the conventional estimate of the return to schooling and for alternative instrumental variables and fixed-effects estimators. The analysis suggests that instrumental variables estimates based on "interventions" that affect the schooling choices of children from relatively disadvantaged family backgrounds will tend to exceed the corresponding OLS estimates.

Catao, Luis

TI Real Effective Exchange Rates 1870-1913: The Core Industrial Countries. **AU** Solomou, Solomos; Catao, Luis.

Chalkley, Martin

TI Asymmetric Business Cycles. **AU** Lee, In Ho.; Chalkley, Martin.

Chander, Pakash

PD October 1994. **TI** A Core-Theoretic Solution for the Design of Cooperative Agreements on Transfrontier Pollution. **AU** Chander, Pakash; Tulkens, Henry. **AA** Chander: California Institute of Technology and India Statistical Institute, New Delhi. Tulkens: Universite Catholique de Louvain and Facultes Universitaires Saint-Louis. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9448; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 18. **PR** not available. **JE** C78. **KW** Transfrontier Pollution.

AB For a simple economic model of transfrontier pollution, widely used in theoretical studies of international treaties bearing on joint abatement, we exhibit in this paper a scheme for sharing national abatement costs, through international financial transfers, which is inspired by a very classical solution concept offered in the theory of cooperative games, namely the "core" of a game. The scheme has the following properties: (i) total damage and abatement costs in all countries are minimized (optimality property), and (ii) no "coalition", i.e. subset, of countries can achieve lower such total costs for its members by taking another course of action in terms of emissions and/or transfers, under some reasonable assumption as to the reactions of those not in the coalition (core property).

Chang, Pamela

TI Technical Progress, Environmental Improvement and Economic Growth: How Does the Choice of Instruments Matter? **AU** Hung, Victor T. Y.; Chang, Pamela.

Chesher, Andrew

PD December 1993. **TI** Likelihood Ratio Specification Tests. **AU** Chesher, Andrew; Smith, Richard. **AA** Chesher: Bristol University. Smith: University of Cambridge. **SR** University of Bristol Department of Economics Working Paper: 94/370; Department of Economics, University of Bristol, Alfred Marshall Building, 8 Woodland Road, Bristol BS8 1TN, ENGLAND. **PG** 56. **PR** no charge. **JE** C12, C52. **KW** Specification Tests. Edgeworth Expansions. Bartlett Corrections. Conditional Moment Tests.

AB This paper is concerned with the quality of inferences made when moment conditions that hold for a maintained density are used as the basis for determining whether that density is an appropriate model for a set of data. A parametric family of distributions is defined which contains the maintained distribution as a special case that occurs if and only if a vector of parameters, lambda equals zero. In this context a likelihood ratio test of H not: lambda equals zero constitutes a test of the validity of the moment conditions and is an alternative to conventional tests which examine the sample analogues of the proposed moment conditions. The resulting likelihood ratio specification (LRS) test admits a Bartlett correction, which depends on the way in which the new family of distributions is defined. The power of the new test is examined and approximations to order O(n to the -1/2) are obtained. Monte Carlo evidence suggests that, in contrast to the conventional moment test, the null distribution of the LRS test is indeed well approximated by a scaled chi-squared distribution in small samples with a scale factor largely eliminated by the Bartlett correction.

Chin, Anthony

PD March 1995. **TI** Car Ownership and Government Policy: Analysis and Evaluation of Singapore's Vehicle Quota Scheme. **AU** Chin, Anthony; Smith, Peter. **AA** Chin: National University of Singapore. Smith: University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9505; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 22. **PR** no charge. **JE** R41, R48. **KW** Congestion. Car Ownership. Quota-Rationing Policy. Singapore.

AB Rapid growth in real income in many countries of South-East Asia has led to large increases in the ownership and usage of cars. In many major cities this has resulted in chronic traffic congestion. Singapore has so far avoided the worst excesses of this problem by a series of policy measures aimed at controlling car ownership as well as usage. In the latest moves (from 1990), a quantity rationing system has been introduced to impose close control on the number of additional cars allowed in Singapore, augmenting a battery of price-based policies introduced over the previous fifteen years. This paper examines the theoretical basis for this switch in the focus of policy, and presents an econometric investigation intended to evaluate the overall success of the program in controlling the car population.

Christensen, Morten Stampe

PD August 1994. **TI** The Absolute and Relative Profitability of Irreversible Investment. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-24; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 15. **PR** no charge. **JE** D81, D92, E22. **KW** Mutual Exclusion. Relative Profitability. Idiosyncratic vs. Common Risk.

AB The investment plan for irreversible investment under uncertainty is studied when a firm has to choose between mutually exclusive investment projects. A "value of waiting to invest" arises due to two distinct considerations: Deferment of an investment provides the ability to capture gains and avoid losses of the investment (absolute profitability) but also provides the ability to capture gains of other investment projects (relative profitability). Numerical analysis show that the no investment area for NPV implied by absolute profitability considerations increases tremendously taking relative profitability into account. It is furthermore, shown that although common uncertainty ("business cycle" uncertainty) per se may have a saying in deterring investment, idiosyncratic project uncertainty ("policy" uncertainty) influencing projects' relative profitability may be more important when explaining investment and a negative investment-uncertainty relationship.

PD August 1994. **TI** The Folk Theorem of Irreversible Investment. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-25; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 14. **PR** no charge. **JE** D81, D92, E22. **KW** Uncertainty. Irreversible Investment.

AB This paper considers the general claim of uncertainty depressing investment which emerged from the recent literature on irreversible investment. Using the simplest possible framework of -- a sunk cost and a stochastic revenue -- it is shown that although higher uncertainty implies a higher threshold for the revenue process at which the investment will be undertaken, higher uncertainty may in fact also either decrease the expected time until the threshold is reached or increase the probability that the threshold is ever reached. Uncertainty does therefore not as generally perceived necessarily depress investment.

PD August 1994. **TI** Contract Renewals Under Uncertainty. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-26; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 17. **PR** no charge. **JE** C72, D81, E31. **KW** Contract Renewal. Uncertainty. Inflation Effects.

AB The optimal timing of contract renewals under uncertainty and contract renewal cost is derived as the equilibrium of a two agent non symmetric stopping game. At the contract level higher uncertainty yields larger and more frequent adjustments of the terms of the contract. A higher inflation rate implies more frequent contract adjustments while the size of the adjustment is ambiguous. At the aggregate level-- assuming the contract payment to be in nominal terms-- inflation will have real effects not only by affecting real price variability but more importantly by affecting average real contract payment thereby suggesting that money may matter in a contract economy.

PD August 1994. **TI** Price Setting Under Cost Uncertainty and Menu costs-The Case of the Danish Petrol Market. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-27; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 21. **PR** no charge. **JE** C14, D40, L71. **KW** Menu Costs. Nonparametric Estimation. Empirical Petrol Pricing Policy.

AB This paper derives the optimal pricing policy for a firm facing menu costs and stochastic production cost. The pricing policy is a boundary pricing policy and numerical comparative static analysis shows how exogenous parameters -- the drift and variance of the production cost, the discount factor and the menu costs -- affect the boundaries. Analyzing daily data for the Danish petrol price illustrates that a boundary pricing policy indeed has been followed for the period 1988- 1992, with occasionally shifts in both the desired mark-up and more importantly in the width of the bounds. While the theoretical model can say nothing of the shifts in desired mark-up, changes in the width of the bounds are found to be consistent with the implications of the model.

Clarke, Rosemary

PD December 1993. **TI** Controlling Greenhouse Gases: A Survey of Global Macroeconomic Studies--A Revision of Discussion Paper 91-25. **AU** Clarke, Rosemary; Boero, Gianna; Winters, L. Alan. **AA** Clarke and Winters: University of Birmingham; Boero: University of Nottingham. **SR** University of Birmingham Department of Economics Discussion Paper: 93-18; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 32. **PR** 2 pounds. **JE** Q20, Q25, Q30, Q38, Q42, Q43, Q48. **KW** Global Warming. Greenhouse Gases. Abatement. Damage Costs.

AB A conceptual framework which identifies the main determinants of the macroeconomic costs of abating greenhouse gases is developed. This is used to survey long-term quantitative studies of abatement, especially their modeling approaches and choices of key parameters. These studies suggest that 20 percent abatement below business-as-usual emissions is likely to cost approximately 1% percent of gross world product. Recent research, estimating both abatement and damage costs of global warming, suggests that an abatement target of less than 20% percent may be optimal.

PD December 1993. **TI** Energy Pricing For Sustainable Development In China. **AU** Clarke, Rosemary; Winters, L. Alan. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 93-19; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM.

PG 22. PR 2 pounds. JE P22, P23, Q25, Q28, Q40, Q48. KW China. Global Warming. Market Imperfections. Energy Pricing.

AB China is currently the fourth largest consumer of commercial energy and the third largest emitter of carbon dioxide. Energy prices in China have been heavily distorted for many years and, in this paper, we explore the effects of raising energy prices-through a carbon tax and by rectifying price distortions-on sulfur dioxide, nitrogen oxides and particulates.

Coakley, Jerry

PD August 1994. TI The Savings-Investment Association. AU Coakley, Jerry; Kulasi, Farida; Smith, Ron. AA Coakley and Kulasi: London Guidhall University. Smith: Birkbeck College. SR Birkbeck College Discussion Papers in Economics: 10/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. PG 18. PR no charge. JE C50, E20, F20. KW Savings-Investment Association. Feldstein-Horioka Result. Capital Mobility. Swamy Random Coefficient Model. Cointegration.

AB In this paper we question both the Feldstein-Horioka (1980) result and the subsequent acceptance of a robustly high association between national savings and investment. First, we show that simply updating the FH regression equation produces estimates of the savings retention ratio which are both significantly different from one and which display a tendency to decline over time. Second, Swamy random coefficient model estimation of our common factor model, which includes growth and inflation as regressors, produces substantially smaller short and long savings retention ratios than the simple Feldstein-Horioka regression. Lastly we find that savings and investment are not cointegrated in most OECD countries. This casts doubt on Tesar's (1991) assertion of a long run relationship between savings and investment. To sum up, both the theoretical arguments and the empirical results reported in this paper strongly qualify the Feldstein-Horioka result of a high savings-investment association and point to a preliminary conclusion in favor of partial rather than zero capital mobility.

PD May 1995. TI The Feldstein-Horioka Puzzle and Capital Mobility. AU Coakley, Jerry; Kulasi, Farida; Smith, Ron. AA Coakley and Kulasi: London Guildhall University. Smith: Birkbeck College. SR Birkbeck College Discussion Papers in Economics: 6/95; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. PG 42. PR no charge. JE C50, E20, F20. KW Saving-Investment Association. Feldstein-Horioka Puzzle. Capital Mobility. Current Account.

AB This paper reviews how economists responded to the Feldstein-Horioka (FH) result that regressions of investment on savings across OECD countries could not reject the null of zero capital mobility. This result posed an uncomfortable puzzle since the conventional wisdom, embodied in most open-economy macro models, was that capital mobility was high. We use the set of generic responses suggested by Stigler to organize the survey. At an empirical level, econometric studies have suggested only a modification and not an outright rejection of the FH result. At a theoretical level, the puzzle has deepened. While most of the alternative resolutions of the puzzle in a large and continuing literature have rejected the FJ interpretation of zero capital mobility, a number of studies has supported a modified FH view of partial capital mobility.

Codognato, Giulio

PD November 1994. TI Cournot Equilibria in Markets with a Continuum of Traders. AU Codognato, Giulio; Ghosal, Sayantan. AA Codognato: Universita degli Studi di Udine. Ghosal: Universite Catholique de Louvain. SR Universite Catholique de Louvain CORE Discussion Paper: 9459; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. PG 8. PR not available. JE C72, D43, D51, L13. KW Cournot. Duopoly. Equilibrium. Shapley. Walras.

AB We consider the model of exchange "a la Cournot", originally proposed by Lloyd S. Shapley and analyzed by S. Sahi and S. Yao (1989), in markets with a continuum of traders. We show that each active Cournot equilibrium is a Walras equilibrium and each Walras equilibrium is a Cournot equilibrium.

Cooper, Russell

PD August 1994. TI Financial Intermediation and Aggregate Fluctuations: A Quantitative Analysis. AU Cooper, Russell; Ejarque, Joao. AA Cooper: Boston University and National Bureau of Economic Research. Ejarque: Boston University. SR National Bureau of Economic Research Working Paper: 4819; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 30. PR $5.00. JE E22, E23, E32, E44. KW Business Cycle. Aggregate Fluctuations. Financial Intermediation. Capital Accumulation. Total Factor Productivity.

AB This paper investigates the quantitative implications of two business cycle models in which aggregate fluctuations arise in response to variations in the process of financial intermediation. In the first, fundamental shocks in the capital accumulation process lead to fluctuations in the real returns from intermediated investment. For this economy, we find that the correlations produced are not consistent with observations of the U.S. economy. In particular, consumption is not smoother than output, investment is negatively correlated with output, variations in the capital stock are quite large and interest rates are procyclical. In an economy with both intermediation and total factor productivity shocks, the correlations we produce are closer to those observed in the U.S. economy only when the intermediation shock is relatively unimportant. In the second economy, variations in the returns to intermediation are part of a sunspot equilibrium. Fluctuations here are driven by self-fulfilling beliefs by private agents regarding the returns to intermediation as in an economy beset by banking crises. For this non-linear economy, we find that the correlations are closer to those observed but the variability of capital relative to output is still too large.

Corchon, Luis C.

TI The Theory of Implementation when the Planner is a Player. AU Baliga, Sandeep; Corchon, Luis C.; Sjostrom, Tomas.

Cordella, Tito

PD September 1994. TI "Nice" Trivial Equilibria in Strategic Market Games: A Comment on Dubey-Shubik (1978). AU Cordella, Tito; Ganszewicz, Jean J. AA Cordella: Universite Catholique de Louvain and Universitat Pompeu Fabra, Barcelona. Ganszewicz: Universite Catholique de Louvain. SR Universite Catholique de Louvain CORE

Discussion Paper: 9442; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 4. **PR** not available. **JE** C78. **KW** Strategic Market Games.
AB An example of an exchange economy is provided, satisfying all the assumption as in Dubey-Shubik (1988), for which the trivial Nash Equilibrium is the unique equilibrium point of the associated market game. From this example, we are led to propose an argument, related to the intensity of competition, explaining why there could be no trade at an equilibrium point.

PD January 1995. **TI** "Social Dumping" and Delocalization: Is There a Case for Imposing a Social Clause? **AU** Cordella, Tito; Grilo, Isabel. **AA** Cordella: Universitat Pompeu Fabra, Barcelona. Grilo: Universite Catholique de Louvain and CERAS, Ecole Nationale des Ponts et Chaussees, France. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9504; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 21. **PR** not available. **JE** F13. **KW** International Trade. Social Dumping. Social Protection.
AB In many European countries, public opinion seems to be worried about the effect of lower-wage country competition. In newspapers' articles, as well as in policy debates, the term "social dumping' becomes more and more popular. Trade unions, worried by the effect of what they call "unfair competition", propose, in many countries, the adoption of a "social clause" protecting domestic markets from commodities produced in countries were minimal labor condition are not met. To the effects of such a policy is devoted our analysis.

Cranna, Michael

TI Mergers, Motivation and Directors' Remuneration. **AU** Abell, Peter; Samuels, John; Cranna, Michael.

Cremer, Helmuth

PD December 1994. **TI** Interregional Redistribution Through Tax Surcharge. **AU** Cremer, Helmuth; Marchand, Maurice; Pestieau, Pierre. **AA** Cremer: Universite de Toulouse. Marchand: Universite Catholique de Louvain. Pestieau: Universite de Liege and Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9469; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 14. **PR** not available. **JE** D82, H11, H21, H41, H50, R50. **KW** National Public Goods. Optimal Taxation. Revenue Sharing.
AB This paper considers a utilitarian federal government that attempts to effect some revenue sharing or to finance through taxation some national public good. For reason of asymmetric information, this financing cannot be based on actual regional income nor on regional preferences, as it should be in a first-best setting. The only information available at no cost to federal authorities is the amount of regional public spending. In this setting with two imperfectly observable characteristics, regional income and regional preferences, we derive an optimal tax surcharge that can be viewed as a non linear matching grant scheme. This is done first without and second with the possibility of using costly auditors to acquire more information on regional income.

d'Aspremont, Claude

PD March 1994. **TI** Tougher Price-Competition or Lower Concentration: A Trade-Off for Antitrust Authorities? **AU** d'Aspremont, Claude; Motta, Massimo. **AA** d'Aspremont: Universite Catholique de Louvain. Motta: Universitat Pompeu Fabra, Barcelona. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9415; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 17. **PR** not available. **JE** D43, L13. **KW** Bertrand. Cournot. Oligopoly.
AB In a horizontal product differentiation model, we show conditions under which Cournot competition (which implies some form of price coordination) allows a large number of firms to operate in the industry than Bertrand competition. In turn, total welfare is higher under Cournot than under Bertrand. This suggests that if antitrust authorities try to impose "too much" price competition in an industry, an increase in concentration may follow which is not necessarily beneficial to the collectivity.

PD December 1994. **TI** On the Dixit-Stiglitz Model of Monopolistic Competition as Enforcement Mechanisms. **AU** d'Aspremont, Claude; Dos Santos Ferreira, Rodolphe; Gerard-Varet, L. **AA** d'Aspremont: Unversite Catholique de Louvain. Dos Santos Ferreira: Universite Louis Pasteur, Strasbourg. Gerad-Varet: Ecole des Hautes Etudes en Sciences Sociales, Marseille. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9467; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 10. **PR** not available. **JE** D43, L13. **KW** Monopolistic Competition.
AB We examine two variants of the monopolistic competition model of Dixit and Stiglitz (1993). One is a simple general equilibrium model with n produced monopolistic goods and a numeraire good, the other in an "enlarged model", that includes labor time and an additional good. In the case of a large n, it is reasonable to consider in both variants only the direct effects of individual pricing decisions on demand, neglecting all indirect effects, either through the price index or through income. However, for other cases, we show that all these indirect effects can be taken into account and explicit solutions obtained. The derivations are even simpler for the enlarged model.

PD December 1994. **TI** Market Power, Coordination Failures and Endogenous Fluctuations. **AU** d'Aspremont, Claude; Dos Santos Ferreira, Rodolphe; Gerard-Varet, L. **AA** d'Aspremont: Universite Catholique de Louvain. Dos Santos Ferreira: Universite Louis Pasteur, Strasbourg. Gerard-Varet: Ecole des Hautes Etudes en Sciences Sociales, Marseille. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9468; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 38. **PR** not available. **JE** C72, D43, D91, L13. **KW** Cournot Duopoly. Imperfect Competition. Monopolistic Competition. Overlapping Generations.
AB We analyze an overlapping generations economy with Cournot monopolistic competition in the produced goods markets and perfect competition in the labor market. All prices are perfectly flexible and no adjustments costs are introduced. We show that these features lead to properties qualitatively different from those obtained when all markets are perfectly competitive. First there is a possibility of multiple Pareto-ranked temporary or stationary equilibria. Second, a preliminary analysis of the intertemporal equilibria shows that imperfect competition opens up new possibilities of

endogenous fluctuations, and may lead to non-monotonicity of all equilibria in prices and output. These results are essentially based on two features, naturally associated with imperfect competition, increasing returns to scale and the variability of oligopolistic market power as a consequence of the variability of demand elasticity.

PD December 1994. **TI** Moral Hazard in Teams with Uncertainty, and Transfers of Repetition as Enforcement Mechanisms. **AU** d'Aspremont, Claude; Gerard-Varet, L. **AA** d'Aspremont: Universite Catholique de Louvain. Gerard-Varet: Ecole des Haustes Etudes en Sciences Sociales, Marseille. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9473; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 24. **PR** not available. **JE** D20, D70. **KW** Mechanism Design. Team Moral Hazard. Folk Theorem.

AB Properties of stochastic outcome functions are exploited to solve the moral hazard problem in teams under unobservable individual actions and different individual objectives. Two kinds of enforcement mechanisms are considered: Enforcement through utility transfers and enforcement through repetition. For both more general results are obtained by adapting conditions previously derived to ensure truthful revelation of private information for collective decision-making. These conditions are shown to be used by Fudenberg, Levine and Maskin, a new Folk theorem is obtained.

PD December 1994. **TI** Imperfect Competition in an Overlapping Generations Model: A Case for Fiscal Policy. **AU** d'Aspremont, Claude; Dos Santos Ferreira, Rodolphe; Gerard-Varet, L. **AA** d'Aspremont: University Catholique de Louvain. Dos Santos Ferreira: Universite Louis Pasteur, Strasbourg. Gerard-Varet: Universites Aix- Marseille 2 et 3, Marseille. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9477; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 24. **PR** not available. **JE** C72, D43, E13, E62, L13. **KW** Cournot Oligopoly. Fiscal Policy.

AB Imperfect competition is a meaningful feature for macroeconomic analysis only to the extent that it leads to properties qualitatively different from those obtained under perfect competition. In particular, we have to wonder how imperfect competition per se may find an alternative fiscal policy. For that matter we consider a simple overlapping generations model with firms acting as Cournot oligopolists in the good market. Through fiscal policy, a government, keeping the stock of money constant, redistributes wealth among generations and absorb some of the output to provide public services. We show in this model that fiscal policy, by affecting firms' market power, can move the economy across perfect foresight stationary equilibria along a Pareto improving path, or that it can implement a full employment stationary equilibrium which Pareto-dominates underemployment equilibria.

Dacco, Roberto

PD June 1994. **TI** A Bivariate Threshold Autoregressive Model For the Italian Stock Market. **AA** Birkbeck College. **SR** Birkbeck Discussion Paper in Financial Economics: 4/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 24. **PR** no charge. **JE** C14, G12. **KW** Non-Linear Dynamics. Threshold Autoregressive Model. Italian Stock Market.

AB This paper analyzes the conditional mean and conditional variance of the Italian stock market with the threshold autoregressive model of Tong. A bivariate threshold autoregressive model is considered for the return and volatility series. It provides support for a risk premium rising as the anticipated level of risk rises and the past return decreases. It can also accommodate the asymmetric relation between stock returns and volatility changes found by Nelson (1991). An extension of Tsay's F statistic for "our" bivariate series is presented.

Darby, Michael R.

PD July 1994. **TI** Over-The-Counter Derivatives and Systemic Risk to the Global Financial System. **AA** University of California, Los Angeles and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4801; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 22. **PR** \$5.00. **JE** G13, G15, G18. **KW** Derivative Securities. Financial Instruments. Systemic Risk.

AB Over the last decade dealing in derivative financial instruments (basically forwards, futures, options and combinations of these), particularly in the over-the-counter (OTC) derivatives market, has become a central activity for major wholesale banks and financial institutions. Measured in terms of notional principal amount, OTC derivatives outstanding are near, if not greater than, U.S. \$10 trillion, even after deduction of double-counting for intra-dealer transactions. Major new regulatory initiatives, including proposed new capital requirements, are under consideration as a means of reducing systemic risk. This paper examines the concept of systemic risk--that failure of one firm will lead to the failure of a large number of other firms or indeed the collapse of the international financial system. Alternative proposed definitions are considered and integrated and the effects of OTC derivatives on these risks discussed. The key conclusion is that systemic risk has been reduced by the development of the OTC derivatives market due to shifting economic risks to those better able either to bear the risk or, in many cases, cancel it against offsetting risks. The implications of the Basle II capital proposals for systemic risk are analyzed and shown to increase this risk due to encouraging transactions which increase portfolio risks of the dealers and discouraging transactions which decrease their portfolio risk.

Datta, Manjira

PD January 1994. **TI** Externalities and Price Dynamics. **AA** University of Saskatchewan. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9406; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 24. **PR** not available. **JE** C73, D51, D90, Q22. **KW** Duopoly. Externality. General Equilibrium.

AB We consider a dynamic two-country, two-commodity model in which each country specializes in the production of one commodity and trades with the other to consume both goods. The amount of capital used for production in one country generates externalities in the production of the other. This is one element of interdependence between the nations. Another source of interdependence comes from the market clearing prices, since the equilibrium price depends on their supply and consumption decisions are a function of the prices. We have a differential duopoly model to capture the strategic dynamic interaction between the countries. We work with a linear-logarithmic economy and find a closed loop Cournot-Nash equilibrium in linear stationary strategies. Higher consumption per unit of stock is associated with lower productivity or with negative externalities. The equilibrium evolution of stocks admits the possibility of monotonic or cyclical behavior, even in the long-run. The prices eventually reach a steady-state but may exhibit non-monotonic behavior, in the short-run.

PD January 1994. **TI** Dynamic Capital Interactions, Externalities and Trade. **AU** Datta, Manjira; Mirman, Leonard J. **AA** Datta: University of Saskatchewan, Saskatoon, Canada. Mirman: University of Virginia. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9409; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 33. **PR** not available. **JE** C73, D90, F12, O41, Q22. **KW** Duopoly. Externality. General Equilibrium.

AB The motivation for this paper is to introduce trade in a dynamic model with capital interactions and to evaluate the consequences of trading on capital accumulation and market clearing prices. We consider a dynamic two-country, two-commodity model in which each country specializes in the production of one commodity and trades with the other country to consume both. The amount of capital used for production in one country generates externalities in the production of the good in the other country. This is one element of interdependence between nations. Another source of interdependence comes from the market clearing prices, since the equilibrium price depends upon supply decisions while consumption decisions are affected by these prices. We have a dynamic duopoly model to capture the strategic dynamic interaction between the countries. We work with a linear-logarithmic example and find a closed loop Cournot-Nash equilibrium. We derive the equilibrium evolution of stocks and prices over time and show that the noncooperative equilibrium is efficient either when there is no production externality or when the marginal rate of substitution between the commodities is same within the country and for the world economy. We also compare our result to the equilibrium that occurs each country, in autarky, produces both goods for its own consumption. We show that both countries are strictly worse off in the latter case.

Davidson, Russell

TI Distribution-Free Statistical Inference for Inequality Dominance with Crossing Lorenz Curves. **AU** Beach, Charles M.; Davidson, Russell; Slotsve, George A.

De Gregorio, Jose

PD July 1994. **TI** Terms of Trade, Productivity, and the Real Exchange Rate. **AU** De Gregorio, Jose; Wolf, Holger C. **AA** De Gregorio: Ministry of Finance, Chile. Wolf: New York University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4807; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 10. **PR** $5.00. **JE** E23, F14, F31, F41. **KW** Productivity Differentials. Open Economy. Terms of Trade. Foreign Exchange.

AB The paper examines the effects of terms of trade movements and productivity differentials across sectors on the behavior of the real exchange rate. We develop a simple model of a small open economy producing exportable and nontradable goods and consuming importable and nontradable goods and present empirical evidence for a sample of fourteen OECD countries. The evidence broadly supports the predictions of the model, namely that faster productivity growth in the tradable relative to the nontradable sector and an improvement in the terms of trade induce a real appreciation.

De Meyer, Bernard

PD March 1994. **TI** A Note on Affine Aggregation. **AU** De Meyer, Bernard; Mongin, Philippe. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9414; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 7. **PR** not available. **JE** D71. **KW** Affine Aggregation. Social Welfare Function.

AB If a vector-valued function has convex range and one of its components is related to the others by a Pareto-like condition, that component must be affine with respect to the others; sign restrictions on the coefficients follow from suitably strengthening the unanimity condition. The theorem is applied to social choice and decision theories.

PD February 1995. **TI** A Bound for Continuous Martingales in a Come. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9515; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 18. **PR** not available. **JE** C19. **KW** Brownian Motion. Martingales.

AB Not available.

de Palma, Andre

TI Oligopolistic Competition and the Optimal Provision of Products. **AU** Anderson, Simon P.; de Palma, Andre; Nesterov, Yurii E.

de Sousa Ramos, Francisco

PD August 1994. **TI** Pigovian Taxes, Tradables Permits and a Dynamic Process for an Economy with Pollutions. **AA** University Catholique de Louvain and Federal University of Pernambuco, Brazil. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9435; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 13. **PR** not available. **JE** D62, Q25. **KW** Water Pollution.

AB This paper's purpose is to discuss the problems posed by water pollution, as well as its resolution in a static and dynamic context. We consider an economy with a public "bad": pollution. The overproduction of this good is corrected in a static context by using incentive instruments: Pigovian taxes and tradable permits. In a dynamic context, we use effluent standards to bring this economy from a laissez-faire equilibrium (where firms are free to pollute) to an efficient state in the sense of Pareto. To achieve this (i) we characterize an efficient state; (ii) we use stability analysis to simulate the evolution of this economy to the optimum; (iii) finally, we establish the main properties of the dynamic process (feasibility, individual rationality, convergence, stability).

de Souza, Cid C.

TI Formulations and Valid Inequalities for the Node Capacitated Graph Partitioning Problem. **AU** Ferreira, Carlos

E.; Martin, Alexander; de Souza, Cid C.; Weismantel, Robert; Wolsey, Laurence A.

TI The Node Capacitated Graph Partitioning Problem: A Computational Study. **AU** Ferreira, Carlos E.; Martin, Alexander; de Souza, Cid C.; Weismantel, Robert; Wolsey, Laurence A.

Di Tella, Rafael

TI Competition and Corruption. **AU** Ades, Alberto; Di Tella, Rafael.

Dickens, Richard

PD August 1994. **TI** Estimating the Effect of Minimum Wages on Employment From the Distribution of Wages: A Critical View. **AU** Dickens, Richard; Machin, Stephen; Manning, Alan. **AA** Dickens and Manning: London School of Economics. Machin: University College London and London School of Economics. **SR** London School of Economics Centre for Economic Performance Discussion Paper: 203; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 11. **PR** no charge. **JE** J42. **KW** Minimum Wages. Employment.

AB In two papers, Meyer and Wise (1983a, b) present an ingenious method for estimating the effect of minimum wage rates on wages and employment using data based only on the observed cross-sectional distribution of wages. They, and others who have used this method, have generally found that the minimum wage causes substantial losses in employment. In this paper we evaluate the robustness of this technique. We argue that the estimates, at least for the United Kingdom, are very sensitive to the functional form assumed for the distribution of wages and to the assumption made about how far up the wage distribution the minimum wage has spillover effects.

PD August 1994. **TI** The Effect of Minimum Wages on UK Agriculture. **AU** Dickens, Richard; Machin, Stephen; Manning, Alan; Metcalf, David; Wadsworth, Jonathan; Woodland, Stephen. **AA** London School of Economics. **SR** London School of Economics Centre for Economic Performance Discussion Paper: 204; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 20. **PR** no charge. **JE** J35, J38. **KW** Minimum Wage. Employment.

AB Since the abolition of the Wages Councils in September 1993, agriculture is the only sector in the United Kingdom economy covered by any form of minimum wage legislation. This paper investigates the effect of the system of minimum wages on the level and structure of earnings and employment in agriculture. On wages, our main conclusion is that the minimum wages set by the Agricultural Wages Boards are important determinants of the average level and distribution of earnings in United Kingdom agriculture. On employment, our main conclusion is that there is no evidence that minimum wages have reduced the level of employment in agriculture. If anything, our estimates imply a weak positive effect of minimum wages on employment. There are no significant differences between men and women.

Diewert, W. Erwin

PD July 1994. **TI** Productivity Measurement for a Distribution Firm. **AU** Diewert, W. Erwin; Smith, Ann Marie. **AA** Diewert: University of British Columbia and National Bureau of Economic Research. Smith: Columbia Distributors, Ltd, Vancouver. **SR** National Bureau of Economic Research Working Paper: 4812; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 14. **PR** $5.00. **JE** D24, E22, E23, L23. **KW** Productivity. Inventories. Distribution Firm. Total Factor Productivity.

AB The paper derives a consistent accounting framework for the treatment of inventories when measuring the productivity of a distribution firm. The average purchase price of an inventory item during an accounting period must be distinguished from its average selling price and these two average prices should be distinguished from the corresponding balance sheet prices. The accounting framework is implemented for a distribution form which sold 76,000 separate items. The firm achieved a 9.6 percent per quarter total factor productivity growth rate over 6 quarters.

Docquier, Frederic

PD October 1994. **TI** Education Subsidies and Endogenous Growth: Implications of Demographic Shocks. **AU** Docquier, Frederic; Michel, Philippe. **AA** Docquier: Service des Etudes et de la Statistique, Ministere de la Region Wallonne, Namur and Universite Catholique de Louvain. Michel: Universite d'Aix-Marseille II, France. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9452; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 19. **PR** not available. **JE** O41, J24, E62. **KW** Education. Growth. Human Capital.

AB In this paper we develop a three-period overlapping generations model in which individual decisions about education are the engine of growth. In this setting, it is first shown that an education subsidy combined with a lump-sum redistribution from adults to retirees makes it possible to reach the optimum in a market context. Then we examine how these transfers should be adjusted in the presence of unexpected fatality shocks. Especially, in the case of a "baby boom-baby bust" shock, the sharing of the shock burden requires increased transfers to retirees when the share of elderlies peaks.

Dolado, Juan J.

TI On the Power of Co-Integration Test: Dimension Invariance vs Common Factors. **AU** Banerjee, Anindya; Dolado, Juan J.; Mestre, Ricardo.

Dore, Ronald

PD August 1994. **TI** Incurable Unemployment: A Progressive Disease of Modern Societies? **AA** London School of Economics. **SR** London School of Economics Centre for Economic Performance Occasional Paper: 6; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, ENGLAND. **PG** 27. **PR** no charge. **JE** I38, J21, J24, J64, J68. **KW** Employment Policy. Transfer Payments. Unemployment.

AB It is widely acknowledged that the contemporary unemployment problem is very largely a problem of unemployed unskilled workers. This paper argues (a) that high levels of unemployment and increasing dispersion in the primary labor income distribution are intimately related; (b) that both reflect the effect of the accumulation of technology on the job structure; (c) skill shortages are to be explained in increasing part by limits to the available stock of learning ability as well as to inefficiencies in training institutions; (d) a sizable quantum of existing unemployment arises because the market clearing wage for people of low learning ability falls below either a statutory minimum wage or the reservation wage as set by the social security minimum; (e) adequate discussion of these hypotheses is inhibited by a variety of taboos. Going from analysis to prescription, the paper argues that the more serious social problem is not unemployment per se, but the increasing inequality of condition of which it is a symptom. It seems particularly important to stress this, given that about the only cure for unemployment on offer seems to be greater "flexibility"--reduction of worker-protection "rigidities"--which would increase inequality; making the cure worse than the disease. Seemingly utopian long-run cures are considered, primarily moving towards a reasonably adequate universal citizen's income. This so redefines the rights and duties of citizenship that the necessary redistribution is seen not as taking from the able and industrious to give to the feckless, but as taking from the gifted lucky ones who can get satisfying work, in order to give both to the unlucky ones who cannot work and to those who could work--but who choose to do other things.

Dos Santos Ferreira, Rodolphe

TI On the Dixit-Stiglitz Model of Monopolistic Competition as Enforcement Mechanisms. **AU** d'Aspremont, Claude; Dos Santos Ferreira, Rodolphe; Gerard-Varet, L.

TI Market Power, Coordination Failures and Endogenous Fluctuations. **AU** d'Aspremont, Claude; Dos Santos Ferreira, Rodolphe; Gerard-Varet, L.

TI Imperfect Competition in an Overlapping Generations Model: A Case for Fiscal Policy. **AU** d'Aspremont, Claude; Dos Santos Ferreira, Rodolphe; Gerard-Varet, L.

Douglas, Stratford

PD December 1993. **TI** Estimating the Value of Amenities With Migration Data. **AU** Douglas, Stratford; Wall, Howard J. **AA** Douglas: West Virginia University. Wall: Birkbeck College and West Virginia University. **SR** Birkbeck College Discussion Papers in Economics: 5/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 12. **PR** no charge. **JE** I31. **KW** Amenities. Migration. Standard of Living.

AB This paper uses migration data to calculate differences in amenities across region. When there are moving costs, amenity differentials may not be completely compensated for by differences in market-generated variables at each point in time, meaning that the standard of living may not be uniform across regions. Thus, marker-generated variables, such as of living may not be uniform across regions. Thus, market-generated variables, such as income and rent, may not accurately reflect compensating differentials. Because of this, we use cross-migration rates to estimate the relationship between migration and income, and to calculate the income for which standard-of-living equivalence would occur. Applying our model to Canadian interprovincial migration, our results indicate that the use of actual income tends to overestimate (underestimate) the amenities of income poor (income rich) provinces.

PD January 1995. **TI** The Revealed Costs of Unemployment. **AU** Douglas, Stratford; Wall, Howard J. **AA** Douglas: West Virginia University. Wall: Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 3/95; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 12. **PR** no charge. **JE** E24, I31. **KW** Cyclical Unemployment.

AB We propose estimating the cost of cyclical unemployment by the amount that people would be willing to pay to avoid it. Because unemployment rates are a measure of labor market risk, regional income differentials should tend to compensate for regional differences in unemployment. Because this compensation is not complete in the short run, we use cross-migration rates to reveal people's preferences towards the income- unemployment tradeoff. We estimate that the total cost of cyclical unemployment in Canada from 1971-1986 was between 3.3% and 7.4% of national income. This amount of additional income is comparable to additional growth of 0.4% to 0.8% every year.

Dow, James

PD November 1994. **TI** Noise Trading, Delegated Portfolio Management, and Economic Welfare. **AU** Dow, James; Gorton, Gary. **AA** Dow: London Business School. Gorton: University of Pennsylvania. **SR** Centre for Economic Policy Research European Science Foundation Working Paper: 54; Centre for Economic Policy Research, 25-28 Old Burlington Street, London W1X 1LB, ENGLAND. **PG** 33. **PR** not available. **JE** G14. **KW** Noise Trade. Portfolio Management.

AB We consider a model of the stock market with delegated portfolio management. All agents are rational: some trade for hedging reasons, some investors optimally contract with portfolio managers who may have stock-picking abilities, and portfolio managers trade optimally given the incentives provided by this contract. Managers try, but sometimes fail, to discover profitable trading opportunities. Although it is best not to trade in this case, their clients cannot distinguish "actively doing nothing", in this sense, from "simply doing nothing." Because of this problem: (i) some portfolio managers trade even though they have no reason to prefer one asset to another (noise trade); (ii) the amount of such noise trade can be large compared with the amount of hedging volume; and (iii) perhaps surprisingly, noise trade may be Pareto- improving. Noise trade may be viewed as a public good. Results (i) and (ii) are compatible with observed high levels of turnover in securities markets. Result (iii) illustrates some of the possible subtleties of the welfare economics of financial markets.

Doyle, Chris

PD November 1993. **TI** Investment Decisions: The Role of Market Structure in Vertically Separated Network Industries. **AU** Doyle, Chris; Maher, Maria. **AA** University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9403; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 14. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** D40, L10, L43, L90. **KW** Market Structure. Regulation. Vertically Separated Network Industries.

AB We consider the effect different market structures have on investment incentives in vertically separated network industries. A two stage oligopolistic framework embodying capacity constraints is applied. Two types of investment can occur: high and low cost. The following outcomes are shown to be equilibria: (i) a low cost, low price competitive outcome, (ii) a monopoly with a competitive fringe and some high cost investment, and (iii) an asymmetric Cournot duopoly solution. We also examine the scope for using market structure as a surrogate or second best regulatory device aimed at limiting upstream distortions and market power on the part of the network.

PD February 1994. **TI** Specific Investment, Hold-Up, and Commitment Through Dual-Class Common Stock. **AU** Doyle, Chris; Maher, Maria. **AA** University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9405; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 14. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** D23, G34. **KW** Investment. Dual-Class Common Stock. Opportunism. Bargaining. Commitment. Joint-Ventures.

AB This paper considers the hold-up problem arising from relationship- specific investment. A two-stage model embodying a joint venture is used to show how the emergence of differential voting stock can be used to provide commitment over investment strategies. The use of dual-class common stock by firms can overcome the problem of ex post opportunism and leads to Pareto-improving outcomes in some circumstances. Superior voting stock held by insiders commands a premium. However, the interpretation here contrasts with the received opinion on dual-class stock as anti-competitive devices and provides a positive raison d'etre.

TI Access Pricing, Entry and the Baumol-Willig Rule. **AU** Armstrong, Mark; Doyle, Chris.

Drake, Leigh

PD January 1995. **TI** One Divisia Money for Europe? **AU** Drake, Leigh; Mullineux, Andy W. **AA** Drake: Loughborough University. Mullineux: University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 95-04; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 19. **PR** 2 pounds. **JE** E40, E50. **KW** Monetary Aggregation. Monetary Policy. European Monetary Integration.

AB In 1992 the EU monetary authorities adopted a "harmonized" broad money aggregate. The EMI was subsequently established to promote monetary policy coordination. This paper considers how broad money aggregates might be used to guide EU monetary policy and whether a "Euro-Divisia" monetary index might provide a better guide than a "Euro- simple-sum" aggregate. Our findings are based on data from the United Kingdom, France and Germany. They indicate that "Euro-money" Granger- causes "Euro-prices" and that the Euro-Divisia monetary index is a better leading indicator of "Euro-inflation" than the Euro-simple-sum monetary aggregate.

Dreze, Jacques H.

PD August 1994. **TI** Technical Development, Competition from Low-Wage Economies and Low- Skilled Unemployment. **AU** Dreze, Jacques H.; Sneessens, Henri R. **AA** Dreze: Universite Catholique de Louvain. Sneessens: Universite Catholique de Louvain and Universite Catholique de Lille. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9436; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 20. **PR** not available. **JE** J21, J23, J31, J38, J68. **KW** Minimum Wage. Unemployment. Unskilled Labor.

AB The market position of less educated workers is weak and deteriorating, both in the U.S. and in Europe, due in particular to technological development and growing competition from low-wage economies. In continental Europe, the resistance of relative wages of less-skilled workers has been an aggravating factor. Is it possible to reconcile labor costs low enough to promote full employment with reasonable incomes for low-skilled workers and proper incentives for economic efficiency? Constructive measures start with practical education and training, then go on to promote the demand and institutionalized supply of proximity services. Reliance on the price mechanism points towards measures reducing or eliminating the wedge between labor costs to employers and net marginal earnings of employees. A basic policy choice must be made between two avenues: minimum wages, unemployment benefits and employment subsidies concentrated on the low end of the wage scale; or flexible wages, no durable unemployment benefits, but a "participation income" issued on an individual basis to all adult members of the labor force. The merits of the second avenue hinge crucially on the prospects for implementing flexible wages. Union- wage and insider-outsider theories of wage determination cast doubts -- but would need to be verified specially for low skill levels. Short of making that choice, reductions or exemptions of employers' contributions to social security constitute a natural, urgently needed, first step. Such measures appear indispensable to the sustainability of free trade between countries with highly dissimilar levels of social protection.

TI State Dependent Utility. **AU** Rustichini, Aldo; Dreze, Jacques H.

PD November 1994. **TI** Money and Monetary Policy in General Equilibrium. **AU** Dreze, Jacques H.; Polemarchakis, Heracles M. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9480; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 27. **PR** not available. **JE** D50, E40, E50. **KW** Money. Banks. Equilibrium.

AB The introduction of banks which issue and supply balances and pay out their profits as dividends is the natural modification of the competitive equilibrium model developed by Arrow and Debreu which encompasses monetary economies. Equilibria in which money serves as a medium of exchange, and possibly only as such, exists. But they are, typically, suboptimal and indeterminate. There is an optimal monetary policy.

PD December 1994. **TI** Forty Years of Public Economics: A Personal Perspective. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9475; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 17. **PR** not available. **JE** B21, B22, D70, H00. **KW** History of Thought. Public Finance. Public Economics.

AB This paper presents a personal perspective on the field of public economics, as I have seen it evolve over the past forty years. Starting in the early fifties, microeconomic theory invaded the age-old field of public finance. A central core of this work consists in deriving general qualitative formula, within the general equilibrium model extended to encompass a public sector, pubic goods and taxation. That central development is flanked on one side by implementable solutions to practical problems (I refer in particular to public utility pricing, road pricing and auction design), on the other side by the development of a rich abstract framework (I refer to equilibrium with increasing returns, state-contingent contracts, priority service contracts,...). The two flanks should come together, as they did in the early fifties when the theoretical developments grew out of practical applications. Yet, few economists succeed in creatively linking theory to real problems, and our professional organization fails to promote adequately such contributions and their authors. Next to this emphasis on the interplay of theory and applications, I discuss briefly the success of public economics, its fragmentation into subfields and its relation to macroeconomics.

PD January 1995. **TI** Moral Hazard and Conditional Preferences. **AU** Dreze, Jacques H.; Rustichini, Aldo. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9510; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 30. **PR** not available. **JE** D81, D82. **KW** Conditional Expected Utility Theory. Moral Hazard.

AB Conditional Expected Utility Theory (CEUT) provides an axiomatic foundation for a theory of decision under uncertainty which allows agents to choose which event in the state space will occur. Here we provide an alternative axiomatization of this situation. In this framework CEUT may be seen a special case of Decision Theory with Moral Hazard; at the same time it is possible to describe the conditions in which this theory is free from possible difficulties.

Duncan, Alan

PD December 1994. **TI** A Comparison of the Properties of Nonparametric Estimates of the Generalized Entropy Class of Inequality Indices. **AU** Duncan, Alan; Preston, Ian. **AA** Duncan: University of York and Institute for Fiscal Studies. Preston: University College London and Institute for Fiscal Studies. **SR** Institute for Fiscal Studies Working Paper: W94/14; Institute for Fiscal Studies, 7 Ridgmount Street, London WC1E 7AE, ENGLAND. **PG** 12. **PR** 3 pounds. **JE** C14, C15, D31. **KW** Inequality Indices. Kernel Smoothing. Large Sample Distribution. Rates of Convergence. Small Sample Bias.

AB We compare the small and large sample properties of kernel-based nonparametric estimates of Generalized Entropy inequality statistics to those of the more conventional estimates. We establish results confirming that kernel smoothing widens estimated distribution. Kernel- based estimates are shown to converge more slowly, with more persistent bias. Smoothing appears advantageous in only one case, Pareto distribution.

Dutta, Jayasri

PD March 1993. **TI** Learning by Observation Within the Firm. **AU** Dutta, Jayasri; Prasad, Kislaya. **AA** Dutta: University of Cambridge. Prasad: Florida State University. **SR** University of Cambridge Economic Theory Discussion Paper: 187; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 33. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** D20, L20. **KW** Learning. Research. Firm. Organization.

AB This paper studies the effects of learning by observation on the production and wage decisions of a firm. Workers can improve their productivity by observing others within the firm. The firm chooses a wage profile, which determines the amount of research done within the firm. Some workers may chose to free ride on the research of others. We examine whether the firm will have increasing returns to scale in production. It turns out that the production function either satisfies the efficiency wage hypothesis, or has increasing returns to scale. The objectives of the firm determine in which of the two regions its production schedule lies.

PD August 1993. **TI** Liquidity and Financial Intermediation. **AU** Dutta, Jayasri; Kapur, Sandeep. **AA** Dutta: University of Cambridge. Kapur: Birkbeck College. **SR** University of Cambridge Economic Theory Discussion Paper: 188; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 39. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** E43, E44. **KW** Liquidity. Liquidity Premium. Term Premium. Money. Banking.

AB This paper examines the effect of liquidity preference on investment, output, and prices in competitive markets, with alternative structures of financial intermediation. The need for liquidity is due to uncertainty in the preferences of individuals. Investment in physical capital is unobservable, and so illiquid. Individuals are willing to carry liquid assets which are dominated in their rate of return. Three types of economy are examined: one with money, the second with bonds, and the third with investment banking. Monetary and interest rate policies can have expansionary effects; the qualitative impacts of policy interventions differ across asset structures. The aggregate provision for liquidity, as well as liquidity and term premia at equilibrium, is also examined.

PD November 1994. **TI** Liquidity Preference and Financial Intermediation. **AU** Dutta, Jayasri; Kapur, Sandeep. **AA** Dutta: University of Cambridge. Kapur: Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 17/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 23. **PR** no charge. **JE** E43, E44. **KW** Liquidity. Liquidity Premium. Money. Intermediation. Tobin Effect. Optimal Inflation. Optimal Quality of Money.

AB This paper examines the effect of liquidity preference on investment, output, and prices in competitive markets, with alternative structures of financial intermediation. The need for liquidity is due to uncertainty in the preferences of individuals. Investment in physical capital is unobservable, which makes this asset illiquid. Individuals are willing to carry liquid assets which are dominated in their rate of return. We examine the welfare effects of expansionary policies in economies where money is the only liquid asset. We also derive the aggregate output, investment, consumption and welfare levels which can be achieved by efficient intermediation.

TI Equilibrium Selections. **AU** Allen, Beth; Dutta, Jayasri; Polemarchakis, Heracles M.

Easley, David

PD April 1995. TI Liquidity, Information, and Infrequently Traded Stocks. AU Easley, David; Kiefer, Nicholas M.; O'Hara, Maureen; Paperman, Joseph B. AA Easley, O'Hara and Paperman: Cornell University. Kiefer: Cornell University and Aarhus University. SR Aarhus Department of Economics Memo: 1995-6; Department of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. PG 32. PR no charge. JE G10, C50. KW Information. Finance. Likelihood. Trading.

AB Infrequently traded stocks tend to have higher bid-ask spreads than frequently traded stocks. We use a new empirical technique to investigate the risk of information-based trading in active versus inactive stocks. We estimate the stochastic process of trades by maximum likelihood. Using a sample of NYSE stocks, we find that actively traded stocks have a much greater rate of uniformed trade. This suggests that the larger spreads are due at least in part to the higher risks associated with making a market in infrequently traded stocks.

PD May 1995. TI Cream-Skimming or Profit-Sharing? The Curious Role of Purchased Order Flow. AU Easley, David; Kiefer, Nicholas M.; O'Hara, Maureen. AA Easley and O'Hara: Cornell University. Kiefer: Aarhus University and Cornell University. SR Aarhus Department of Economics Memo: 1995-5; Department of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. PG 25. PR no charge. JE G10, C50. KW Information. Finance. Likelihood. Market Separation.

AB Emergence of new financial markets has led to fragmentation of order flows, leading to reduced liquidity in any particular market. Some markets are alleged to compete by focusing on "cream-skimming" of uninformed trades, leaving informed trades to established markets. We develop a test of this hypothesis, using a model of the stochastic process of trades. We use trade flow data for a sample of stocks on NYSE and an alternative site to estimate the information content of trades by trade site. The model is fit by maximum likelihood. We find differences in the information content of trades across sites. The difference is consistent with cream-skimming.

Eeckault, Philippe Vanden

TI Radial and Nonradial Technical Efficiency Measures on a DEA Reference Technology: A Comparison Using U.S. Banking Data. AU Ferrier, Gary D.; Kerstens, Kris; Eeckault, Philippe Vanden.

Egginton, Don

PD December 1993. TI Directors' Perceptions of the Effects and Values of Share Option Rewards. AU Egginton, Don; Elliott, Geoffrey; Forker, John; Grout, Paul. AA Egginton, Elliott and Forker: Bristol University. Grout: South Bank University. SR University of Bristol Department of Economics Working Paper: 94/369; Department of Economics, University of Bristol, Alfred Marshall Building, 8 Woodland Road, Bristol BS8 1TN, ENGLAND. PG 42. PR no charge. JE M21, J33. KW Executive Share Options. Perceived Values. Motivation.

AB This paper addresses the effectiveness of share option rewards for directors. It analyzes the main advantages and problems of option rewards from the shareholder viewpoint and reports on a survey of the perceptions of U.K. directors relating to the incentive effects and valuation of share options. Among the findings are support for the view that options rewards can counter the "short-termism" of conventional rewards, although options appear to have negligible effects on the performance and tenure of a quarter of executive directors. When directors assigned values to options, the results suggested that non-executives were rather more sophisticated valuers than executives. However, there was an overall tendency to undervalue by 27% relative to option-pricing-model values, which is likely to arise partly from the illiquidity of executive share options. There was also a significant upper tail in the distribution of values which directors assigned to options, so that some directors valued options very highly relative to option-pricing-model values. Thus, the results suggest the need for option rewards to be correctly focused in terms of both motivation and recipient valuation if they are to be cost effective.

Eichberger, Jurgen

PD December 1993. TI Non-Additive Beliefs and Game Theory. AU Eichberger, Jurgen; Kelsey, David. AA Eichberger: University of Melbourne. Kelsey: University of Birmingham. SR University of Birmingham Department of Economics Discussion Paper: 94-01; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. PG 21. PR 2 pounds. JE C72, D81. KW Uncertainty Aversion. Choquet Integral. Non-Additive Probability. Equilibrium Concepts.

AB This paper studies games where players' beliefs about their opponents behavior are modeled as non-additive probabilities. The concept of an equilibrium under uncertainty is introduced and discussed in the context of two-player games. Existence of such an equilibrium is demonstrated under usual conditions. For simple capacities equilibria under uncertainty approximate Nash equilibria as the degree of uncertainty vanishes. At the other extreme, as the degree of uncertainty goes to one, maximin equilibria appear. Finally, it can be shown that the use of nonadditive probabilities can eliminate some implausible Nash equilibria.

PD February 1995. TI Signaling Games With Uncertainty. AU Eichberger, Jurgen; Kelsey, David. AA Eichberger: University of Saarbrucken and University of Melbourne. Kelsey: University of Birmingham. SR University of Birmingham Department of Economics Discussion Paper: 95-13; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. PG 27. PR 2 pounds. JE C72, D81. KW Uncertainty Aversion. Non-Additive Probability. Dempster-Schafer Rule. Signaling Game.

AB If players' beliefs are strictly non-additive, the Dempster-Shafer updating rule can be used to definite beliefs off the equilibrium path. We use this to define equilibrium in two person signaling games. We show that in the limit as uncertainty tends to zero, our equilibrium approximates standard solution concepts for signaling games. We argue that our equilibrium can be used to define a refinement of Bayesian equilibrium which is similar to but does not exactly coincide with perfect Bayesian equilibrium. Our solution concept coincides with the Pareto dominant pooling equilibrium in the Spence job market signaling game.

PD April 1995. TI Uncertainty Aversion and Preference for Randomization. AU Eichberger, Jurgen; Kelsey, David.

AA Eichberger: University of Saarbrucken and University of Melbourne. Kelsey: University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 95-14; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 13. **PR** 2 pounds. **JE** D81. **KW** Uncertainty-Aversion. Non-Additive Probability. Preference for Randomization. Choquet Integral.

AB In this paper we show that while uncertainty-averse individuals display a strict preference for randomization in an Anscombe-Aumann framework they are unlikely to do so in a Savage-style decision theory. We argue that this is related to the distinction between one and two- stage Choquet integrals. We believe our result will have implications for determining an appropriate solution concept for games with uncertainty-averse players.

Ejarque, Joao

TI Financial Intermediation and Aggregate Fluctuations: A Quantitative Analysis. **AU** Cooper, Russell; Ejarque, Joao.

Ekins, Paul W.

PD March 1994. **TI** Rethinking the Costs Related to Global Warming. **AA** Birkbeck College and University of London. **SR** University of Birmingham Department of Economics Discussion Paper: 94-07; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 42. **PR** 2 pounds. **JE** Q25, Q28. **KW** Global Warming. Carbon Tax. Carbon Dioxide. Abatement Cost.

AB The economic analysis of global warming seeks to balance the costs of damage from or adaptation to it with the costs of mitigating it. The costs of adaptation and damage have been estimated using techniques of environmental evaluation, but are subject to a wide margin of uncertainty. The costs of mitigation, principally by reducing the emissions of carbon dioxide, have been estimated using different kinds of economic models, some of the results of which have suggested that very little abatement is justified before the costs of abatement exceed the benefits of it in terms of foregone damage and adaptation costs. The paper analyzes the extent to which this conclusion is a function of the modeling assumptions and techniques used, rather than likely practical outcomes, with regard to the models' treatment of unemployed resources, revenue recycling, prior distortions in the economy due to the tax system and possible dynamic effects from the introduction of a carbon- energy tax. It concludes that, with different and arguably more appropriate treatment of the above issues, especially when the secondary benefits of reducing carbon dioxide emissions are also taken into account, it is not clear that even substantial reductions in the use of fossil fuels will incur net costs, especially if there is the prospect of even moderate costs from global warming.

Elgar, Jane

PD June 1994. **TI** The Impact of the Law on Industrial Disputes in the 1980's: Report of a Survey of Printing Employers. **AU** Elgar, Jane; Simpson, Robert. **AA** London School of Economics. **SR** London School of Economics Centre for Economic Performance Discussion Paper: 194; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 13. **PR** no charge. **JE** J52, K31. **KW** Employment Law. Strikes. Industrial Action. Trade Unions. Arbitration. Labor-Management Relations.

AB This paper reports the results of one part of a research project designed to investigate the nature and extent of the effect of the labor legislation enacted between 1980 and 1990 on the conduct of industrial relations and the processes by which this has come about. Interviews were carried out with managers in a number of printing companies affiliated to the British Printing Industries Federation (BPIF). In general, these managers did not see the law to be particularly relevant to their own experience. The law had not disrupted established industrial relations practices but considerable change had been achieved without major confrontation with the unions. While the law was not a prominent feature of the management of the process of change, it was seen to be a background factor of real, if limited, significance.

PD June 1994. **TI** The Impact of the Law on Industrial Disputes in the 1980's: Report of a Survey of Construction Employers. **AU** Elgar, Jane; Simpson, Robert. **AA** London School of Economics. **SR** London School of Economics Centre for Economic Performance Discussion Paper: 196; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 18. **PR** no charge. **JE** J52, K31. **KW** Employment Law. Strikes. Trade Unions. Arbitration. Labor-Management Relations.

AB This paper reports the results of one part of a research project designed to investigate the nature and extent of the effect of the labor legislation enacted between 1980 and 1990 on the conduct of industrial relations and the processes by which this has come about. Interviews were carried out with managers in a number of companies affiliated to both the Building Employers' Confederation and the Federation of Civil Engineering Contractors. There was a broad similarity in the experience of all our respondents. An accelerated trend away from direct employment was generally seen to be the main factor explaining the low incidence of industrial action over the period under review. The law had been of limited relevance to their industrial relations activities but it was seen as having made some contribution to creating an environment in which management could feel more confident in pursuing its goals.

PD June 1994. **TI** The Impact of the Law on Industrial Disputes in the 1980's: Report of a Survey of Education Authorities. **AU** Elgar, Jane; Simpson, Robert. **AA** London School of Economics. **SR** London School of Economics Centre for Economic Performance Discussion Paper: 197; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 15. **PR** no charge. **JE** J52, K31. **KW** Employment Law. Authorities. Industrial Disputes. Trade Unions. Education Reform Acts.

AB This paper reports the results of one part of a research project designed to investigate the nature and extent of the labor legislation enacted between 1980 and 1990 on the conduct of industrial relations and the processes by which this has come about. Interviews were carried out with officers in the education departments of ten Local Education Authorities. All had felt the effect of major national disputes from the mid-1980s to early 1990s. So far as the law was concerned, the most important legacy of this experience was that it had now become generally the case that any significant industrial action would lead to Authorities considering whether to make deductions from the pay of workers concerned. Modification to the structure for the provision of public sector education under the Education Acts of the late 1980s and early 1990s was a far more important legal influence. This required significant change in established industrial relations and employment practices and could be a cause of disputes to which the labor legislation of the 1980s was of limited relevance.

Elliott, Geoffrey

TI Directors' Perceptions of the Effects and Values of Share Option Rewards. **AU** Egginton, Don; Elliott, Geoffrey; Forker, John; Grout, Paul.

Ellison, Glenn

PD August 1994. **TI** Geographic Concentration in U.S. Manufacturing Industries: A Dartboard Approach. **AU** Ellison, Glenn; Glaeser, Edward L. **AA** Ellison: Massachusetts, Institute of Technology. Glaeser: Harvard University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4840; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 27. **PR** $5.00. **JE** L23, L60, D21. **KW** Firm Location. Manufacturing. Geographic Concentration. Agglomerations.

AB This paper discusses the prevalence of Silicon Valley-style localizations of individual manufacturing industries in the United States. Several models in which firms choose locations by throwing darts at a map are used to test whether the degree of localization is greater than would be expected to arise randomly and to motivate a new index of geographic concentration. The proposed index controls for differences in the size distribution of plants and for differences in the size of the geographic areas for which data is available. As a consequence, comparisons of the degree of geographic concentration across industries can be made with more confidence. We reaffirm previous observations in finding that almost all industries are localized, although the degree of localization appears to be slight in about half of the industries in our sample. We explore the nature of agglomerative forces in describing patterns of concentrations, the geographic scope of localization, and the extent to which agglomerations involve plants in similar, as opposed to identical, industries.

Engel, Charles

PD August 1994. **TI** How Wide Is the Border? **AU** Engel, Charles; Rogers, John H. **AA** Engel: University of Washington and National Bureau of Economic Research. Rogers: Board of Governors of the Federal Reserve System. **SR** National Bureau of Economic Research Working Paper: 4829; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 26. **PR** $5.00. **JE** E31, F31. **KW** Foreign Exchange. Law of One Price. Canada.

AB Failures of the law of one price explain much of the variation in real C.P.I. exchange rates. We use C.P.I. data for U.S. cities and Canadian cities for 14 categories of consumer prices to examine the nature of the deviations from the law of one price. The distance between cities explains a significant amount of the variation in the prices of similar goods in different cities. But, the variation of the price is much higher for two cities located in different countries than for two equidistant cities in the same country. By our most conservative measure, crossing the border adds as much to the volatility of prices as adding 2500 miles between cities.

PD August 1994. **TI** The Distribution of Exchange Rates in the EMS. **AU** Engel, Charles; Hakkio, Craig S. **AA** Engel: University of Washington and National Bureau of Economic Research. Hakkio: Federal Reserve Bank of Kansas City. **SR** National Bureau of Economic Research Working Paper: 4834; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 25. **PR** $5.00. **JE** F31, F32. **KW** Foreign Exchange. Currency. Exchange Rate Mechanism. Volatility.

AB Exchange rates of currencies in the Exchange Rate Mechanism of the EMS are characterized by long periods of stability interrupted by periods of extreme volatility. The periods of volatility appear at times of realignments of the central parities and at times when the exchange rate is within the ERM bands. We begin by considering a procedure for finding outliers based on measuring distance as a quadratic form. The evidence suggests that the exchange rates of the EMS can be described by a mixture of two distributions. We therefore model the exchange rate as switching between two distributions--one that holds in stable times and the other that holds in volatile times. In particular, we use Hamilton's Markov-switching model. In addition, we extend Hamilton's model by allowing the probability of switching from one state to another to depend on the position of the exchange rate within its EMS band. This model has the interesting implication that near the edge of the band, large movements--either realignments or large jumps to the center of the band--are more likely if the move to the edge of the band has been precipitous.

Fankhauser, Samuel

PD March 1994. **TI** The Economic Costs of Global Warming Damage: A Survey. **AA** University College London and University of East Anglia. **SR** University of Birmingham Department of Economics Discussion Paper: 94-04; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 17. **PR** 2 pounds. **JE** Q20, Q28, Q29, Q30, Q39, Q40. **KW** Climate Change. Global Warming Impacts. Valuation.

AB This paper provides an overview on literature dealing with an economic assessment of expected global warming damage. While a relatively large body of literature exists on other economic aspects of global warming, in particular the costs of carbon abatement, the question of greenhouse damage valuation has gained little attention so far. The first part of the paper surveys the results of existing analyses on the costs of global warming. The second part discusses the main shortcomings of these studies and the main problems faced by researchers in this area.

Feenstra, Robert C.

PD August 1994. **TI** Bias in U.S. Import Prices and Demand. **AU** Feenstra, Robert C.; Shiells, Clinton R. **AA** Feenstra: University of California, Davis and National Bureau of Economic Research. Shiells: International Monetary Fund. **SR** National Bureau of Economic Research Working Paper: 4841; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 26. **PR** $5.00. **JE** E31, F17, F41. **KW** Income Elasticity. Import Demand. Price Index.

AB The purpose of the paper is to measure the potential bias in the U.S. import price index due to the appearance of new product varieties, or new foreign suppliers, and determine the effect of this bias on the estimated income elasticity of import demand. Existing import price indexes are based on a sample of products from importing firms. We argue that if the share of import expenditure in the sampled products is falling over time this will lead to an upward bias in the measured index. Using a correction based on the falling expenditure share on sampled countries, we find that the income elasticity of aggregate U.S. import demand is reduced from 2.5 to 1.7, or about halfway to unity. Our estimates suggest that the aggregate import price index is upward biased by about one and one-half percentage points annually.

PD August 1994. **TI** Pass-Through of Exchange Rates and Purchasing Power Parity. **AU** Feenstra, Robert C.; Kendall, Jon D. **AA** Feenstra: University of California, Davis and National Bureau of Economic Research. Kendall: University of Tasmania. **SR** National Bureau of Economic Research Working Paper: 4842; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 26. **PR** $5.00. **JE** F14, F31, E31. **KW** Foreign Exchange. Export Goods. Purchasing Power Parity.

AB In this paper we develop and test two hypotheses about purchasing power parity (PPP) derived from the pricing behavior of profit- maximizing, exporting firms. The first is that changes in the price of traded goods relative to domestic substitutes, due to partial pass- through of exchange rates, will affect the PPP relation. The second is that PPP should hold on forward rather than spot exchange rates, due to hedging by firms. Using quarterly data for the United States, Canada, France, Germany, Japan, and the United Kingdom, we find considerable support for the first but not the second hypothesis.

Felli, Leonardo

TI Endogenous Agency Problems. **AU** Anderlini, Luca; Felli, Leonardo.

Fender, John

PD March 1994. **TI** Multiple Equilibria in a Macroeconomic Model with Endogenous Credit Rationing. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 94-13; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 20. **PR** 2 pounds. **JE** E10. **KW** Credit Rationing. Coordination Failure. Multiple Equilibria.

AB In this paper, a two-period macroeconomic model is constructed. Firms may borrow to finance investment in the first period; however, there is an Incentive Compatibility Condition which may or may not bind. If it binds, there is endogenous credit rationing. The properties of the macroeconomic model are explored; it turns out that these properties depend very much on whether credit rationing happens to obtain. Credit rationing is argued to be crucial in generating the possibility of multiple equilibria. It is also argued that the paper provides theoretical confirmation of the notion that changes in credit conditions may sometimes be associated with significant changes in economic activity.

PD January 1995. **TI** On the Disincentive and Risk-Sharing Properties of Debt: A Model With Debt, Equity and Endogenous Default. **AU** Fender, John; Sinclair, Peter J. N. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 95-02; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 31. **PR** 2 pounds. **JE** G32. **KW** Debt. Equity. Renegotiation.

AB We consider a model where an entrepreneur can finance an investment project with a mixture of debt and equity. The entrepreneur may in certain circumstances threaten default on the loan and this leads to renegotiation. The choices of the optimal debt-equity ratio and of the optimal investment level are considered. A number of conclusions are derived: the true cost of capital is the risk free interest rate even though borrowers borrow at a risk-inclusive rate, debt may have superior risk-reduction properties to equity, risk-aversion on the part of borrowers does not lead to under-investment and credit rationing may also occur.

Ferrall, Christopher

PD July 1994. **TI** Unemployment Insurance and Youth Labor Market Behavior in Canada and the United States. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 904; Department of Economics, Queen's University, Kingston, Ontario K7l 3N6, CANADA. **PG** 22. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** J60, C30. **KW** Unemployment Insurance. Job Search. Maximum Likelihood Estimation.

AB To study how the design of unemployment insurance affects people leaving school to find jobs, a model of job search in the presence of UI is developed and estimated for the U.S. and Canada. The level of UI benefits depends upon previous earnings, a fact which creates opposing incentives for unemployed people not receiving benefits. Reservation wages of uninsured youth are found to be more sensitive to UI eligibility rules than to the length of the benefit period. The estimates are also used to analyze differences in preferences and labor market opportunities within the two countries.

PD August 1994. **TI** Incentives, Team Production, Transactions Costs, and the Optimal Contract: Estimates of an Agency Model Using Payroll Records. **AU** Ferrall, Christopher; Shearer, Bruce. **AA** Ferrall: Queen's University. Shearer: Laval University. **SR** Queen's Institute for Economic Research Discussion Paper: 908; Department of Economics, Queen's University, Kingston, Ontario K7l 3N6, CANADA. **PG** 34. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** L20, D20, J30, C40. **KW** Principal-Agent Models. Transactions Costs. Performance Pay. Maximum Likelihood Estimation.

AB We apply agency theory to the payroll records of a copper mine that paid a production bonus to teams of workers. As with most incentive pay used by firms, the bonus was simpler in form than the optimal contract that balances incentives, insurance, and free-riding. We explore whether transactions costs help explain this discrepancy. We estimate an agency model for the payroll data using the method of maximum likelihood and find that incentives and free-riding within teams accounted for two- thirds of the bonus system's inefficiency relative to potential full information profits. The remaining one-third of the inefficiency is attributed to the form of the incentive contract as constrained by transactions costs. We discuss alternative explanations and the general empirical content of agency theory.

Ferreira, Carlos E.

PD August 1994. **TI** Formulations and Valid Inequalities for the Node Capacitated Graph Partitioning Problem.

AU Ferreira, Carlos E.; Martin, Alexander; de Souza, Cid C.; Weismantel, Robert; Wolsey, Laurence A. **AA** Ferreira: Universidade de Sao Paulo, Brazil. Martin and Weismantel: Konrad-Zuse-Zentrum Fur Informationstechnik Berlin. de Souza and Wolsey: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9437; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 25. **PR** not available. **JE** C61. **KW** Clustering Graph. Graph Partitioning. Equipartition. Knapsack. Integer Programming. Ear Decomposition.

AB We investigate the problem of partitioning the nodes of a graph under capacity restriction on the sum of the node weights in each subset of the partition. The objective is to minimize the sum of the costs of the edges between the subsets of the partition. This problem has a variety of applications, for instance in the design of electronic circuits and devices. We present alternatives integer programming formulations for this problem and discuss the links between these formulations. Having chosen to work in the space of edges of the multicut, we investigate the convex hull of incidence vectors of feasible multicuts. In particular, several classes of inequalities are introduced, and their strength and robustness are analyzed as various problem parameters change.

PD October 1994. **TI** The Node Capacitated Graph Partitioning Problem: A Computational Study. **AU** Ferreira, Carlos E.; Martin, Alexander; de Souza, Cid C.; Weismantel, Robert; Wolsey, Laurence A. **AA** Ferreira: Universidade de Sao Paulo, Brazil. De Souza: Universidade Estadual de Capinas, Brazil. Martin and Weismantel: Konrad-Zuse-Zentrum fur Informationstechnik Berlin. Wolsey: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9453; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 32. **PR** not available. **JE** C61, C63. **KW** Branch-and-Cut Algorithm. Clustering. Compiler Design. Equipartitioning. Finite Element Method. Graph Partitioning. Layout of Electronic Circuits. Separation Heuristics.

AB In this paper we consider the problem of K-partitioning the nodes of a graph with capacity restrictions on the sum of the node weights in each subset of the partition, and the objective of minimizing the sum of the costs of the edges between the subsets of the partition. Based on a study of valid inequalities, we present a variety of separation heuristics for cycle, cycle with ears, knapsack tree and path-block- cycle inequalities among others. The separation heuristics, plus primal heuristics, have been implemented in a branch-and-cut routine using a formulation including variables for the edges with nonzero costs and node partition variables. Results are presented for three classes of problems: equipartitioning problems arising in finite element methods and partitioning problems associated with electronic circuit layout and compiler design.

Ferrier, Gary D.

PD May 1994. **TI** Radial and Nonradial Technical Efficiency Measures on a DEA Reference Technology: A Comparison Using U.S. Banking Data. **AU** Ferrier, Gary D.; Kerstens, Kris; Eeckault, Philippe Vanden. **AA** Ferrier: University of Arkansas. Kerstens: Faculteit ETEW, K.U. Brussel. Eeckault: University Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9423; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 23. **PR** not available. **JE** C81. **KW** Radial Efficiency. Nonradial Efficiency. Technical Efficiency.

AB Technical efficiency measures can be classified as either radial or nonradial. While the theoretical question of which is the better type of measure is unresolved, the radial measures enjoy much greater popularity than the nonradial measures in the empirical literature. To assess the effect of choice of measure, this paper offers an empirical comparison of one radial and three nonradial measures of technical efficiency, relative to a variable returns to scale DEA model with strong disposability. The distributions and rankings of these efficiency scores are examined for a sample of U.S. banks, as is the ability of the radial efficiency measure to approximate its nonradial alternative.

Fielding, Antony

PD June 1994. **TI** GCE Advanced Level: Institutional Cost Effectiveness. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 94-19; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 31. **PR** 2 pounds. **JE** I20. **KW** Cost Effectiveness. Education. School Effects. Value Added.

AB Interest has centered on whether there are differences in cost- effectiveness for the provision of "A" Level courses by institutional types. The problem was addressed through analysis of covariance by Thomas (1990). The current exercise is a reorganization and reanalysis of the latter's data using multilevel models with regard to the hierarchical nature of the data and process. The original data used teaching group as the level of analysis. Broad comparability of the raw analysis and the original ones remains in terms of the ranking of institutional types. However, the methodology appears more soundly based. It appears that institutions devoted solely to post 16 education are more cost effective than school sixth forms when input and other process variable are controlled for. This study in contrast to official league tables based on raw performance indicators which deem school sixth forms to be generally more effective. Earlier papers have dealt with the student perspective from an earnings foregone viewpoint. The present paper examines effectiveness from the perspective of "cost to the provider.".

Flood, Robert

PD December 1994. **TI** Reserve Cycles. **AU** Flood, Robert; Perraudin, William; Vitale, Paulo. **AA** Flood: International Monetary Fund and National Bureau of Economic Research. Perraudin: Birkbeck College and Centre for Economic Policy Research. Vitale: University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9502; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 23. **PR** $10.00 (5 pounds), checks payable to University of Cambridge. **JE** F31, F32, O17. **KW** Exchange Rates. Foreign Exchange Reserves. Devaluations. Regime Shifts. Path Dependency. Argentina.

AB Many Third World countries appear locked into cycles of reserve loss, devaluation, and temporary reserve gains. This paper shows how a dual exchange rate system with leakages may generate cycles in reserves and the premium between official and parallel exchange rates. We study the dynamics of these cycles and their asymptotic behavior both analytically and numerically.

Florens, Jean-Pierre

PD February 1995. **TI** Duration Models. **AU** Florens, Jean-Pierre; Fougere, Denis; Mouchart, Michel. **AA** Florens: Universite des Sciences Sociales de Toulouse. Fougere: CNRS, CREST-ENSAE, Paris. Mouchart: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9516; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 45. **PR** not available. **JE** C23, C24. **KW** Aggregation. Censoring. Duration Models. Panel Data. Proportional Hazard.

AB This work has been prepared as Chapter 19 for the volume Econometrics of Panel Data. The main emphasis is on modeling whereas inference problems are only sketched. After a short review on the basic issues on marginal models (i.e. models involving a duration variable only) conditional models are reviewed, namely the proportional hazard model and the accelerated time model. Problems of aggregation and of heterogeneity are next examined. Competing risks models are presented with a particular emphasis on the identification of dependence among latent durations. Some examples of dependent durations are given. Finally, right-censoring is treated in the framework of competing risks models.

Flyer, Frederick

PD August 1994. **TI** The New Economics of Teachers and Education. **AU** Flyer, Frederick; Rosen, Sherwin. **AA** Flyer: New York University. Rosen: University of Chicago and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4828; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 31. **PR** $5.00. **JE** I21, I22, J13, J16. **KW** Family Structure. Teachers. Child Rearing. Education.

AB Rapidly growing costs of elementary and secondary education are studied in the context of the rising value of women's time. The three- fold increase in direct costs of education per student in the past three decades was caused by increasing demand and utilization of teacher and staff inputs, attributable to growing market opportunities of women and changes in the structure of families. Substitution of purchased teacher and staff inputs for own household time in the total production of children's education and maturation is a predictable economic response to these forces. On the supply side, the "flexibility option," that female teachers who take temporary leaves to raise children do not suffer subsequent wage loss upon reentry, is shown to be an important attraction of the teaching profession to women. Other college educated women suffer reentry wage losses of 10 percent per year of leave. The estimated value of flexibility on teaching is 5 percent of life-cycle earnings and will fall as labor force interruptions of women for child- rearing become less frequent. Both supply and demand considerations suggest that the direct costs of education per student will continue to increase in the future, independent of political and other organization reforms of schools.

Ford, J. L.

PD December 1994. **TI** Shackle's Axioms for Potential Surprise and Belief a Preliminary Experimental Assessment. **AU** Ford, J. L.; Ghose, Sudip. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 94-21; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 29. **PR** 2 pounds. **JE** A01, D00. **KW** Potential Surprise. Belief. Non-Additive Uncertainty. Non- Distributional Uncertainty. Conjunctions. Disjunctions. Laboratory Experiments.

AB This paper sets out Shackle's axioms on degrees of potential surprise and of belief as testable propositions. These embrace individual hypotheses, their conjunctions and their disjunctions. The paper reports the findings of laboratory experiments designed to evaluate their veracity, and Shackle's broader contention that a measure of uncertainty should be a non-additive, non-distributional, variable. There is support for that contention; some support for the degree of belief axiom, but little support for the basic axioms of potential surprise.

PD December 1994. **TI** Belief, Credibility, Disbelief, Possibility, Potential Surprise and Probability as Measures of Uncertainty: Some Experimental Evidence. **AU** Ford, J. L.; Ghose, Sudip. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 94-22; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 23. **PR** 2 pounds. **JE** A01, D00. **KW** Measures of Uncertainty. Principal Components. Factor Analysis. Confidence. Pre-Systematic Thought. Weight of Evidence.

AB This paper is concerned with alternative indicators of uncertainty and provides evidence obtained from laboratory experiments on their apparent propriety and on the possible relationships between them. By means of principal components and factor analysis the evidence gathered from different types of situations involving uncertainty suggests that uncertainty had three dimensions. The most important one being embodied in degree of potential surprise (Shackle's concept) and to a lesser extent in "confidence." The second factor is loaded in possibility (Shackle's concept) and the third in probability. It is suggested that the overall findings are consistent with a simple model of presystematic thought.

PD January 1995. **TI** Financial Innovation and Monetary Aggregates in the UK, 1977-1993. **AU** Ford, J. L.; Mullineux, Andy W. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 95-01; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 28. **PR** 2 pounds. **JE** E40, E50, G20. **KW** Monetary Aggregate. Financial Innovation. Implicit Interest. Advances in Technology. Cointegration. ECM. Causality.

AB This paper considers the effect of financial innovation on the measurement of the Divisia quantity (of "money") index, based on the Bank of England's M4 definition of money. The two major innovations incorporated (separately and jointly) into the index are the payment of implicit interest on check accounts and the technological advances made to the payments system through the emergence of the plastic card, ATMs and electronic funds transfer. A comparison is effected, by means of cointegration, ECM/causality modeling, of the relationship between output, the price level and the "ordinary" Divisia, the innovation- adjusted Divisia, and the simple sum, monetary aggregates. The Divisia aggregate dominate the simple sum aggregate; whilst the aggregate that makes an allowance of implicit interest payments is the superior Divisia aggregate.

PD January 1995. **TI** Principal Components Monetary Aggregates, Output, the Price Level, the Interest Rate and Cointegration: An Experiment for the UK, 1977- 1994. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 95-09; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 28. **PR** 2 pounds. **JE** E40, E50, G20. **KW** Principal Components. Monetary Aggregates. Demand for Money/Monetary Services. Cointegration. ECM. Causality.
AB This paper constructs monetary aggregates from the principal components of the real levels of the "monies" that compose the Bank of England's M4. The Divisia index of those monies has tended to produce better policy results in regard to output and the price level (or inflation), in terms of cointegration and ECM/causality modeling than has its simple sum counterpart. Here alternative fixed weight monetary aggregates are derived using principal components. Various aspects of those aggregates are considered, including the existence of a cointegrating demand equation for them which incorporates output, the price level and the rate of interest. Interpretations of the principal components in terms of the Keynesian triad are noted passim. The findings on their demand and their implications for output are compared with those obtained from the Divisia aggregate.

PD February 1995. **TI** The Money Multiplier, Simple Sum, Divisia and Innovation-Divisia, Monetary Aggregates: Cointegration Tests for the United Kingdom. **AU** Ford, J. L.; Morris, J. L. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 95-06; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 14. **PR** 2 pounds. **JE** E50, E51. **KW** Monetary Aggregate. Divisia Index. High-Powered Money Base. Cointegration. ECM/Causality.
AB This paper is concerned with the possibility of establishing a cointegrating relationship between various competing monetary aggregates and a high-powered money base for the United Kingdom, 1977-1994. The aggregates are constructed from the Bank of England's M4. Cointegrating equations are found for all aggregates; with little to choose between them; and the "ordinary" Divisia being at least as good as its simple sum counterpart. The ECM/causality results are not as promising; though they all suggest that high-powered money is weakly exogenous. The simple sum, followed closely by the Divisia adjusted for implicit interest on check accounts, provides the best dynamic results.

PD February 1995. **TI** The Primitive Uncertainty Construct: Possibility, Potential Surprise, Probability and Belief; Some Experimental Evidence. **AU** Ford, J. L.; Ghose, Sudip. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 95-07; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 13. **PR** 2 pounds. **JE** A10, C91, D80. **KW** Shackle. Potential Surprise. Possibility. Probability. Belief. Uncertain Situation. Experimental Design.
AB This paper investigates the nature of the primitive uncertainty measure by means of a laboratory experiment that consists of four uncertain situations. It considers the related pair of possibility and potential surprise associated with George Shackle; and the supposedly related pair, belief and probability. The assessment of the relative merits of potential measures of uncertainty is based upon modal responses and X sub 2 tests. It is found that the dominant uncertainty concept is potential surprise, and the subjects' explanations of their choice of an uncertainty concept gave substantial weight to possibility where it was felt that there was vagueness or doubt about the outcomes in a given situation.

PD February 1995. **TI** Shackle's Theory of Decision-Making Under Uncertainty: The Findings of a Laboratory Experiment. **AU** Ford, J. L.; Ghose, Sudip. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 95-08; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 27. **PR** 2 pounds. **JE** A10, C91, D81. **KW** Potential Surprise. Ascendancy Functions. Gambler-Preference Map. Focus-Outcomes. Laboratory Experiment. Perspective Theory. Expected Utility Theory.
AB Shackle's theory of decision-making under uncertainty and the background to it are outlined. A series of predictions (propositions) about action-choice, with a laboratory experiment in mind, are set out. An experimental design to test their veracity is described; and the results obtained from conducting such an experiment are presented. The behavior of one subject is compatible with all aspects of Shackle's approach to decision-making; there is partial corroboration of his approach from the behavior of other subjects. At the decision-making stage, however, potential surprise appears to be transformed into a probability. It is noted that more of the findings are consistent with Ford's perspective theory. When "utility" is linear in monetary outcomes the behavior of two subjects is consonant with expected utility theory.

PD February 1995. **TI** Ellsberg's Urns, Ambiguity and Measures of Uncertainty: Some Experimental Evidence. **AU** Ford, J. L.; Ghose, Sudip. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 95-12; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 13. **PR** 2 pounds. **JE** A10, C91, D81. **KW** Ambiguity. Measures of Uncertainty. Non-Additivity. Theories of Action-Choice.
AB The objective of this experiment was not only to see if the choices mirrored those obtained by Ellsberg and others, but mainly to inquire into the measures of uncertainty that the subjects deemed to be important and the values they declared for them. This permitted an assessment of non-additivity of (complementary) probabilities and the subjects' choices were then analyzed in terms of expected utility theory and the non-expected utility/non-ambiguity theories of Shackle and Ford. Forty percent of the subjects chose actions that were consistent with expected utility, but only one had additivity of (declared) probabilities; all, however, could be accounted for also by Shackle's theory; and half were compatible with Ford's theory. The actions of a further thirty percent could be accounted for by expected utility with sub-/super/additivity of probabilities.

Forges, Francoise

PD September 1994. **TI** Self-Fulfilling Mechanisms and Rational Expectations. **AU** Forges, Francoise; Minelli, Enrico. **AA** Forges: Universite Catholique de Louvian and

Chereheur Qualifie au F.N.R.S. Minelli: Universite Catholique de Louvian. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9444; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 22. **PR** not available. **JE** D82, C72. **KW** Communication Equilibrium. Nash Equilibrium. Rational Expectations Equilibrium.

AB In a Bayesian game G, the players first receive private information on the state of nature and then simultaneously choose an action. We assume that the vector of actions a generates a signal g(a). A mechanism for G is a mapping mu from the set of states of nature S to the product set of players' action A. Mu is self-fulfilling if, given the information revealed by mu (namely g(mu(s)) if the state of nature is s), no player can gain in unilaterally deviating from the action prescribed by the mechanism. Let SF(G) denote the set of payoffs achievable through an incentive compatible self-fulfilling mechanism. Examples show that SF(G) may not intersect the set N(G) of Nash equilibrium payoffs of G. Obviously, SF(G) and N(G) coincide if G is a game of complete information. Let E be an exchange economy with differential information. We associate a (Bayesian) market game G sub E with E. In G sub E, the signal generated by the players' actions is a vector of prices. We prove that the allocations achieved through a self- fulfilling mechanism in G sub E coincide with the rational expectations equilibrium allocations in E. In order to understand how self-fulfillingness can be achieved in a dynamic frame work, we analyze the relationship between SF(G) and the Nash equilibria of the infinitely repeated game G sub infinity generated by G. We show in particular that SF(G) can be interpreted as a set of inert solutions of G sub infinity.

PD October 1994. **TI** Self-Fulfilling Mechanisms in Repeated Games with Incomplete Information. **AU** Forges, Francoise; Minelli, Enrico. **AA** Forges: Universite Catholique de Louvain and Chercheur qualifie au F.N.R.S. Minelli: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9458; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 18. **PR** not available. **JE** D82, C72. **KW** Communication Equilibrium. Incomplete Information. Nash Equilibrium. Repeated Game.

AB We consider the class of two-person non-zero-sum infinitely repeated games with incomplete information where Nash equilibria have been characterized, namely games with lack of information on one side and games with private values. We show that in these models, every Nash equilibrium payoff can be achieved by means of a self-fulfilling mechanism, which receives a message from every player at the beginning of the game and then transmits a public signal. This signal can be interpreted as a characteristic of the players' strategies. The self- fulfilling property means that given the signal, there are equilibrium strategies whose characteristic coincides with the signal.

Forker, John

TI Directors' Perceptions of the Effects and Values of Share Option Rewards. **AU** Egginton, Don; Elliott, Geoffrey; Forker, John; Grout, Paul.

Forslund, Anders

PD June 1994. **TI** Wages in Sweden: New and Old Results. **AU** Forslund, Anders; Risager, Ole. **AA** Forslund: Uppsala University and National Institute of Economic Research. Risager: University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-22; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 31. **PR** no charge. **JE** J30. **KW** Wages. Productivity. Prices. Unemployment and Taxes.

AB This paper estimates wage equations for industry and other private sectors in Sweden. For industry, tests clearly reject the EFO model, according to which wages grow by the rate of change in productivity and world market prices, whereas the EFO guideline in the long run is met by the other sectors. For both sectors we find that a fall in taxes-income or payroll-lead to a fall in wage demands. Wages are also highly sensitive to open unemployment, whereas our results are ambiguous as regards the role of labor market programs.

PD July 1994. **TI** An Evaluation of the Swedish Active Labor Market Policy: New and Received Wisdom. **AU** Forslund, Anders; Krueger, Alan B. **AA** Forslund: Uppsala University. Krueger: Princeton University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4802; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 37. **PR** $5.00. **JE** J24, J64, J68, H41. **KW** Human Capital. Unemployment. Government Programs.

AB About 3% of GNP is spent on government labor market programs in Sweden, compared to 2% in Germany and less than 0.5% in the U.S. In Sweden these programs include extensive job training, public sector relief work, recruitment subsidies, youth programs, mobility bonuses, and unemployment benefits. Using country-level data, we provide new evidence that public relief workers displace other workers, especially in the construction sector. Our review of the previous literature suggests that job training programs have small effects on wages and re- employment in Sweden, but precise inferences are difficult because of small sample sizes. We also investigate alternative reasons for the stability of the Beveridge Curve in Sweden, and compare regional evolutions of employment and unemployment in Sweden and the U.S. Lastly, we present cross-country analysis for 1993 which, contrary to studies that use earlier data, shows that the extent of a country's active labor market programs is positively associated with the national unemployment rate.

Fougere, Denis

TI Duration Models. **AU** Florens, Jean-Pierre; Fougere, Denis; Mouchart, Michel.

Frank, Jeff

TI Seniority, Earnings and Unions. **AU** Booth, Alison L.; Frank, Jeff.

Freeman, Richard

TI Why Do Americans and Germans Work Different Hours? **AU** Bell, Linda; Freeman, Richard.

Friedman, Andrew L.

PD July 1994. **TI** Activity-Based Techniques and the Death of the Bean-Counter. **AU** Friedman, Andrew L.; Lyne, Stephen R. **AA** University of Bristol. **SR** University of Bristol Department of Economics Working Paper: 94/379;

Department of Economics, University of Bristol, Alfred Marshall Building, 8 Woodland Road, Bristol BS8 1TN, ENGLAND. **PG** 33. **PR** no charge. **JE** M40, L20. **KW** Management Accountants. Activity-Based Techniques. Bean-Counters. Future Scenarios.

AB In a study of eleven medium and large sized companies we found clear evidence that management accountants were seen by operational managers as "bean-counters". Furthermore, many management accountants recognized this image. All of the companies had attempted to implement activity- based techniques and this process had led to a substantial improvement in the bean-counter image. We propose five scenarios for the future of activity-based techniques and the management accountants' image as a bean-counter. These are based on our understanding of the history of management accounting and trends that are visible in recent years. Further, we suggest the most likely contingent variables which may lead to one or other of the scenarios becoming reality. Some of the scenarios are more likely to occur in the short or medium term, whereas others are long term possibilities. We conclude with our own view on the likely future for activity-based techniques, suggesting that there is a promising future for these techniques in the medium term.

Fries, Steven

PD October 1993. **TI** Debt In Industry Equilibrium. **AU** Fries, Steven; Miller, Marcus; Perraudin, William. **AA** Fries: EBRD. Miller: University of Warwick and Centre for Economic Policy Research. Perraudin: University of Cambridge and Centre for Economic Policy Research. **SR** University of Cambridge Department of Applied Economics Working Paper: 9401 ; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 28. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** G32, G33. **KW** Default Premia. Bankruptcy. Entry and Exit. Capital Structure.

AB This paper shows (i) how entry and exit of firms in a competitive industry affect the valuation of securities and optimal capital structure, and (ii) how, given a trade-off between the tax advantages and agency costs of debt, a firm will optimally adjust its leverage level after it is set up. We derive simple pricing expressions for corporate debt in which the price elasticity of demand for industry output plays a crucial role. When a firm optimally adjusts its leverage over time, we show that total firm value comprises the value of discounted cash-flows assuming fixed capital structure plus a continuum of options for marginal increases in debt.

PD October 1993. **TI** An Empirical Investigation of U.S. Bank Deposit Guarantees. **AU** Fries, Steven; Perraudin William. **AA** Fries: International Monetary Fund. Perraudin: University of Cambridge and Centre for Economic Policy Research. **SR** University of Cambridge Department of Applied Economics Working Paper: 9402; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 22. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** G21, G28. **KW** Deposit Insurance. Banking Policy. Continuous Time Econometrics.

AB This paper implements empirically an approach to deposit guarantee valuation in which bank equity is modeled as an American call option rather than as the European call one obtains from standard, Merton-type models with audits. Maximum likelihood techniques are applied to quarterly data on the market return and equity and deposit base values for a group of large U.S. money center and regional banks. Our econometric approach takes full account of time aggregation and involves consistent and simultaneous estimation of all model parameters.

PD September 1994. **TI** Optimal Bank Reorganization and the Fair Pricing of Deposit Guarantees. **AU** Fries, Steven; Mella-Barral, Pierre; Perraudin, William. **AA** Fries: EBRD. Mella-Barral: University of Cambridge. Perraudin: University of Cambridge and Centre for Economic Policy Research. **SR** University of Cambridge Department of Applied Economics Working Paper: 9417 Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 16. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** G21, G28. **KW** Bank Closure. Deposit Insurance. Bailouts.

AB When should regulators close a financially ailing bank? Acharya and Dreyfus (1989) suggest that banks should be shut even before they are insolvent, while FDIC practice in the U.S. has moved in the direction of early closure. In contrast, banking regulators in Japan continue to follow a more patient approach. This paper analyzes a series of models in which closure rules and bailout policies arise endogenously through the interaction of (i) regulators' attempts to minimize discounted, expected bankruptcy costs, and (ii) equity-holders' incentives to recapitalize banks. With bankruptcy costs, the socially optimal reorganization rule may be to delay the closure of a troubled bank for as long as equity-holders are willing to supply new capital.

Fung, K. C.

PD September 1994. **TI** Trade Liberalization and Trade Adjustment Assistance. **AU** Fung, K. C.; Staiger, Robert W. **AA** Fung: University of California, Santa Cruz. Staiger: University of Wisconsin and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4847; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 26. **PR** $5.00. **JE** F11, F13. **KW** Trade Liberalization. Trade Agreements.

AB We explore the relationship between trade adjustment subsidies and successful reciprocal trade liberalization. We consider economies that are faced with a periodic need to move resources out of a declining import-competing sector, and that are attempting to sustain cooperative but self-enforcing trade agreements in the face of these adjustment needs. If the limitations associated with enforcement of international trade agreements are sufficiently severe, trade adjustment assistance can facilitate reciprocal trade liberalization. We argue that this suggests a possible efficiency rationale for adjustment policies that treat resources differently when traded sectors are involved.

Gabszewicz, Jean J.

PD October 1994. **TI** Social Protection and Political Competition. **AU** Gabszewicz, Jean J.; Van Ypersele, Tanguy. **AA** University Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9457; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 16. **PR** not available. **JE** F21, F32, I18, I38.

KW Social Protection. Trade.
AB This paper analyzes how the level of social protection is determined when its choice depends on political competition. First this is done under autarky. Then the analysis is extended to take account of the existence of an international capital market. We show that social protection never increases under international competition and, in several circumstances, drastically decreases.

PD February 1995. **TI** "Buy It or Make It Yourself?" A Paradox. **AU** Gabszewicz, Jean J.; Garella, Paolo G. **AA** Gabszewicz: Universite Catholique de Louvain. Garella: Universita de Bologna. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9514; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 4. **PR** not available. **JE** C72, D21. **KW** Internalized Production.
AB In the present note we study how the strategic considerations in a duopoly affect the choice by the two firms whether or not to internalize production of an intermediate input. The failure to minimize costs is shown to be a possible outcome of a two-stage game representing the firms' decision process.

Ganszewicz, Jean J.

TI "Nice" Trivial Equilibria in Strategic Market Games: A Comment on Dubey-Shubik (1978). **AU** Cordella, Tito; Ganszewicz, Jean J.

Garella, Paolo G.

TI "Buy It or Make It Yourself?" A Paradox. **AU** Gabszewicz, Jean J.; Garella, Paolo G.

Gehrig, Thomas

PD November 1994. **TI** Competing Markets. **AA** Centre for Economic Policy Research and Universitat Basel, Switzerland. **SR** Centre for Economic Policy Research European Science Foundation Working Paper: 55; Centre for Economic Policy Research, 25-28 Old Burlington Street, London W1X 1LB, ENGLAND. **PG** 24. **PR** not available. **JE** H23, H87, L13. **KW** Two-Dimensional Spatial Competition. Thick Market Externalities. Agglomeration Economies. Transaction Costs.
AB In a model of two-dimensional spatial competition the notion of competition between market place is analyzed. While one dimension should be interpreted as geographical distance, the other dimension is some product characteristic such as maturity of a future contract. Initially, single product firms select a specific location and variety and later, at a second stage, they compete on price. In our framework, agglomeration economies arise endogenously due to savings in transportation costs for consumers. For many parameter constellations we demonstrate that entrants might prefer to settle in existing markets rather than set up their business somewhere in between. In particular, we show that the emergence of new marketplaces is less likely as transportation costs decline. These agglomeration economies provide organizers of marketplaces with some degree of market power. We analyze the case in which regulators impose transactions taxes and characterize equilibrium in the induced tax game between regulators. Equilibrium tax rates depend positively on transportation costs. Hence, the deregulation wave in financial markets may be understood as an equilibrium reaction to a significant decline in transportation costs.

Gerard-Varet, L.

TI On the Dixit-Stiglitz Model of Monopolistic Competition as Enforcement Mechanisms. **AU** d'Aspremont, Claude; Dos Santos Ferreira, Rodolphe; Gerard-Varet, L.

TI Market Power, Coordination Failures and Endogenous Fluctuations. **AU** d'Aspremont, Claude; Dos Santos Ferreira, Rodolphe; Gerard-Varet, L.

TI Moral Hazard in Teams with Uncertainty, and Transfers of Repetition as Enforcement Mechanisms. **AU** d'Aspremont, Claude; Gerard-Varet, L.

TI Imperfect Competition in an Overlapping Generations Model: A Case for Fiscal Policy. **AU** d'Aspremont, Claude; Dos Santos Ferreira, Rodolphe; Gerard-Varet, L.

Ghosal, Sayantan

TI Stable Trading Structures in Bilateral Oligopolies. **AU** Bloch, Francis; Ghosal, Sayantan.

TI Cournot Equilibria in Markets with a Continuum of Traders. **AU** Codognato, Giulio; Ghosal, Sayantan.

PD November 1994. **TI** Eductive Stability in a Two Period Economy. **AA** Universite Catholique de Louvian. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9463; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 19. **PR** not available. **JE** D51, D81, D84, D91. **KW** Perfect Foresight. Rational Expectations.
AB This paper examines the (local) strong rationality properties of the perfect foresight equilibrium in a two period general equilibrium model of an exchange economy with a single asset market linking the two time periods. All individuals know the model of the economy. However, they only know that period 2 prices lie in some open neighborhood of the equilibrium price. The perfect foresight equilibrium is eductively stable or is a locally strongly rational expectations equilibrium (SREE) if by using individual optimization and market clearing all individuals are able to converge to the equilibrium price. From an eductive point of view, there are two main sources of instability: (i) the effect of a change in the amounts of the asset held across individuals on period 2 commodity prices; (ii) the effect of a change in period 2 prices on the amount of the asset held across individuals. When these effects are weak, the perfect foresight equilibrium is eductively stable or is a locally SREE.

PD December 1994. **TI** Exchange and Optimality. **AU** Ghosal, Sayantan; Polemarchakis, Heracles M. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9472; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 14. **PR** not available. **JE** C70, C72, D60, D62. **KW** Social States. Optimality. Exchange.
AB A social state is irreducible if, and only if for any non-trivial partition of individuals with two groups, there exists another feasible social state at which every individual in the first group is equally well-off and someone strictly better-off. Competitive equilibria decentralize irreducible Pareto optimal social states.

Ghose, Sudip

TI Shackle's Axioms for Potential Surprise and Belief a

Preliminary Experimental Assessment. **AU** Ford, J. L.; Ghose, Sudip.

TI Belief, Credibility, Disbelief, Possibility, Potential Surprise and Probability as Measures of Uncertainty: Some Experimental Evidence. **AU** Ford, J. L.; Ghose, Sudip.

TI The Primitive Uncertainty Construct: Possibility, Potential Surprise, Probability and Belief; Some Experimental Evidence. **AU** Ford, J. L.; Ghose, Sudip.

TI Shackle's Theory of Decision-Making Under Uncertainty: The Findings of a Laboratory Experiment. **AU** Ford, J. L.; Ghose, Sudip.

TI Ellsberg's Urns, Ambiguity and Measures of Uncertainty: Some Experimental Evidence. **AU** Ford, J. L.; Ghose, Sudip.

Ghosh, Atish R.

PD July 1994. **TI** How Many Monies? A Genetic Approach to Finding Optimum Currency Areas. **AU** Ghosh, Atish R.; Wolf, Holger C. **AA** Ghosh: Princeton University. Wolf: New York University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4805; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 24. **PR** $5.00. **JE** E42, E58, F31, F36. **KW** Monetary Integration. Transaction Costs. Currency Areas.

AB Recent moves towards greater monetary integration in Western Europe-- and disintegration in Eastern Europe and the former Soviet Union--have rekindled interest in the theoretical and empirical aspects of optimal currency areas (OCA). In this paper, we examine the marginal benefit of increasing the number of currency unions within a given geographical area. We look at six regions; the United States, Europe, the G7, the DFA zone, the FSU and the world at large. Our results suggest that (i) contiguous monetary unions are typically dominated by noncontiguous unions; (ii) neither Europe nor the United States form an optimum currency area, for both regions the costs of adopting a single currency exceeds estimates of the transaction cost savings; (iii) Germany and the United States will almost never find it to their (economic) advantage to join monetary unions.

PD July 1994. **TI** Pricing in International Markets: Lessons from The Economist. **AU** Ghosh, Atish R.; Wolf, Holger C. **AA** Ghosh: Princeton University. Wolf: New York University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4806; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 17. **PR** $5.00. **JE** D41, F31, F32. **KW** Market Prices. International Markets. Law of One Price.

AB Export firms are often assumed to stabilize destination market prices in the face of nominal exchange rate changes in order to protect market share. We show that standard tests of such pricing to market fail to discriminate against the alternative hypothesis of menu costs. As a case study, we examine the characteristics and determinants of changes in the cover prices of The Economist magazine in a sample of twelve countries over the floating rate period. We find that, while the law of one price fails, there is no evidence of systematic attempts to offset nominal exchange rate movements. Instead, the findings are consistent with menu cost driven pricing behavior.

Ginsburgh, Victor A.

PD June 1994. **TI** Existence and Efficiency Properties of an Approximate Equilibrium when Asset Markets are Incomplete: A Welfare Approach. **AU** Ginsburgh, Victor A.; Keyzer, Michiel. **AA** Ginsburgh: Universite Libre de Bruxelles and Universite Catholique de Louvain. Keyzer: Vrije Universiteit Amsterdam. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9430; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 24. **PR** not available. **JE** D52. **KW** Incomplete Markets.

AB We show how the general equilibrium model with incomplete asset markets can be represented by a welfare program and we use this program to prove several well-known results. The approach is general in the sense that it uses a nonlinear specifications for returns on assets and does not require differentiability assumptions on utility functions. We show that the possibility of non-existence of equilibrium is linked to violation of a constraint qualification condition in the welfare program and that it cannot arise if this condition holds, but satisfaction of this condition may require (arbitrarily small) transfers between consumers, in which case the original budget constraints are only satisfied approximately. We give proofs that only use standard tools of convex programming and the Kakutani fixed point theorem. The efficiency results, as well as the well-known asset pricing rule and the non- arbitrage condition are obtained as straightforward properties of the welfare program evaluated in the fixed point. Since the proofs are constructive, it is possible to compute the solution by standard fixed point algorithms.

TI Do Art Experts Make Rational Estimates of Pre-Sale Prices? **AU** Bauwens, Luc; Ginsburgh, Victor A.

TI Price Discrimination with Costly Consumer Arbitrage. **AU** Anderson, Simon P.; Ginsburgh, Victor A.

Glaeser, Edward L.

TI Geographic Concentration in U.S. Manufacturing Industries: A Dartboard Approach. **AU** Ellison, Glenn; Glaeser, Edward L.

Goldberg, Linda S.

PD August 1994. **TI** Foreign Direct Investment, Exchange Rate Variability and Demand Uncertainty. **AU** Goldberg, Linda S.; Kolstad, Charles D. **AA** Goldberg: New York University and National Bureau of Economic Research. Kolstad: University of California, Santa Barbara. **SR** National Bureau of Economic Research Working Paper: 4815; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 19. **PR** $5.00. **JE** F21, F23, F31, D24. **KW** Multinational Firms. Real Exchange Rates. Production Capacity. Foreign Direct Investment.

AB Variable real exchange rates influence the country choice for location of production facilities by a multinational enterprise. With risk averse investors and fixed productive factors, a parent company should not be indifferent to the choice of production capacity locations, even when the expected costs of production are identical across countries. If a non-negative correlation exists between real export demand shocks and real exchange rate shocks, the multinational will optimally locate some if its productive capacity abroad. The share of production capacity optimally located abroad increases as exchange rate volatility rises and as export demand shocks become more correlated. These theoretical results are confirmed by empirical analysis of quarterly United States bilateral foreign-direct-investment flows with Canada, Japan, and the United Kingdom.

Gomory, Ralph

TI International Trade and Scale Economies--A New Analysis. **AU** Baumol, William; Gomory, Ralph.

Gomulka, Stanislaw

PD May 1994. **TI** Lessons From Economic Transformation and The Road Forward. **AA** London School of Economics. **SR** London School of Economics Centre for Economic Performance Occasional Paper: 5; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, ENGLAND. **PG** 12. **PR** no charge. **JE** P11, P17, P21, P27. **KW** Reform.

AB My primary purpose is to comment on the experiences so far by the formerly communist countries in transforming their economies with a view to proposing lessons for policy-making. Although my familiarity is greatest with the Polish experience I shall make use of the empirical evidence, both economic and political, from the whole area of Central and Eastern Europe and the Former Soviet Union (FSU), particularly Russia. I begin with a few general observations about the choice of reform strategy. This I follow with a discussion of the output collapse and the conduct of macroeconomic policies. The Ten Commandments of Mr. Klaus provide me with a further opportunity to comment on policies. Finally, I shall take a closer look at Russia and comment briefly on developments in Poland.

Gonzalo, Jesus

PD November 1994. **TI** Comovements in Large Systems. **AU** Gonzalo, Jesus; Pitarakis, Jean-Yves. **AA** Gonzalo: Boston University. Pitarakis: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9465; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 22. **PR** not available. **JE** C32, C52. **KW** Cointegration. Information Criteria. Large Systems. Likelihood Ratio Tests.

AB In this paper we study various methods for detecting the cointegrating rank as the number of variables gets large. We show that the use of standard tools will always lead to misleading inferences in such setting due to excessive size distortions. Particularly the LR test tends to produce too much cointegration. We introduce a new test statistic that displays excellent size properties in both small and large systems. In addition we propose a model selection procedure for selecting the cointegrating rank. A new criterion outperforms the standard information-theoretic criteria. (AIC, BIC).

Gorton, Gary

TI Noise Trading, Delegated Portfolio Management, and Economic Welfare. **AU** Dow, James; Gorton, Gary.

Gosling, Amanda

PD November 1994. **TI** The Changing Distribution of Male Wages in the UK, 1966-1992. **AU** Gosling, Amanda; Machin, Stephen; Meghir, Costas. **AA** Institute for Fiscal Studies and University College London. **SR** Institute for Fiscal Studies Working Paper: W94/13; Institute for Fiscal Studies, 7 Ridgmount Street, London WC1E 7AE, ENGLAND. **PG** 23. **PR** 3 pounds. **JE** D31, J31. **KW** Wage Dispersion. Cohort.

AB This paper uses 27 years of microeconomic data from the UK Family Expenditure Surveys to describe and explain changes in the distribution of male wages. We use quantile regressions to decompose the observed changes within and between education and experience groups. We find that the changing composition of employment and changes in the returns to observable skill can explain little of the increase in overall inequality. The returns to experience have not changed over our period and, though the wage premia associated with education have risen, the bulk of the increase has occurred within education groups, particularly amongst those with 11 or fewer years of education.

Gottardi, Piero

PD June 1994. **TI** The Survival Assumption and Existence of Competitive Equilibria When Asset Markets are Incomplete. **AU** Gottardi, Piero; Hens, Thorsten. **AA** University of Cambridge. **SR** University of Cambridge Economic Theory Discussion Paper: 202; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 23. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** D52, C62, G10. **KW** Incomplete Markets. Existence. Resource Relatedness.

AB The paper studies the role and the formulation of the survival assumption with incomplete markets. The authors are able to show the existence of a competitive equilibrium when the agents' endowments lie on the boundary of their consumption set. However, for this some additional assumptions with respect to the complete market case are needed. These are joint restrictions on the asset structure and the distribution of the endowments and preferences. In the second part of the paper a precise characterization of these conditions is provided, and it is shown that the findings allow a substantial improvement upon earlier results in the literature.

Grant, Simon

PD October 1994. **TI** Ausi Expected Utility: An Anticipated Utility Theory of Relative Disappointment Aversion. **AU** Grant, Simon; Kajii, Atsushi. **AA** Grant: Australian National University. Kajii: Universite Catholique de Louvain and University of Pennsylvania. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9445; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 15. **PR** not available. **JE** D81. **KW** Rank-Dependent Expected Utility.

AB In recent years there has been a growing theoretical, experimental and empirical challenge to Expected Utility Theory, the overwhelmingly dominant paradigm for modeling decision-making under risk. However, there has been relatively little work done in providing easily parameterized alternatives for applied work. In this paper we provide an axiomatization for a representation of preferences over lotteries that is only one parameter richer than expected utility. Our model is a special case of Quiggin's Rank Dependent Expected Utility. Moreover, we show that the same restriction on this parameter is required for: risk aversion; intuitive comparative static results for a reasonably general class of economically interesting choice problems; and accommodating some of the most well-known violations of Expected Utility Theory.

Gregory, Allan W.

PD June 1994. **TI** Measuring World Business Cycles. **AU** Gregory, Allan W.; Head, Allen C.; Raynauld, Jacques. **AA** Gregory and Head: Queen's University. Raynauld: Univesite de Montreal. **SR** Queen's Institute for Economic Research Discussion Paper: 902; Department of Economics, Queen's University, Kingston, Ontario K71 3N6, CANADA. **PG** 16. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** C32, E32. **KW** G7. Kalman Filter. Scoring.

AB Using Kalman filtering and dynamic factor analysis, we decompose fluctuations in real aggregate output, consumption, and investment for the G7 countries into factors that are i) common across all countries and aggregate, ii) common across aggregates within a country, and iii) specific to each data series. In quarterly data for the period 1970- 1993, fluctuations in all of the aggregates contain world and country- specific common components which are significant both statistically and economically. Over this period all seven countries experience business cycle episodes primarily attributable to the world cycle and other episodes driven primarily by the country-specific factor. The share of the variance of aggregate output accounted for by the world business cycle in our estimates ranges from 13% for the United Kingdom to 67% for France. Also, the world common component in growth rates is more strongly serially correlated than is output growth in any of the seven countries.

PD March 1995. **TI** Sources of Variation in International Real-Interest Rates. **AU** Gregory, Allan W.; Watt, David G. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 923; Department of Economics, Queen's University, Kingston, Ontario K71 3N6, CANADA. **PG** 18. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** E43, F40. **KW** Real Interest Rates. World Components. Kalman Filter. Scoring.

AB This paper analyzes the effects of inflation on ex-post real interest rates in an international framework. A dynamic factor model is estimated in which real interest rates are influenced by real interest and inflation factors that are common to all the countries, and by county- specific factors. We find that the source of domestic inflation is an important determinant of the effect of inflation on real interest rates. A common inflation factor has a negative effect on ex-post real interest rates lending support of a form of the Mundell-Tobin effect in international real interest rates, and that a country-specific inflation factor tends to have a positive effect.

Griffith, Rachel, Van Reenen, John

TI Dynamic Count Data Models of Technological Innovation. **AU** Blundell, Richard; Griffith, Rachel, Van Reenen, John.

Grilo, Isabel

TI Stackelberg, vs. Cournot/Bertrand Equilibrium. **AU** Amir, Rabah; Grilo, Isabel.

TI "Social Dumping" and Delocalization: Is There a Case for Imposing a Social Clause? **AU** Cordella, Tito; Grilo, Isabel.

Grinblatt, Mark

PD November 1994. **TI** An Analytic Solution For Interest Rate Swap Spreads. **AA** Centre of Economic Policy Research and University of California, Los Angeles. **SR** Centre for Economic Policy Research European Science Foundation Working Paper: 53; Centre for Economic Policy Research, 25-28 Old Burlington Street, London W1X 1LB, ENGLAND. **PG** 31. **PR** not available. **JE** G13. **KW** Swaps. Interest Rate Swaps.

AB This paper argues that liquidity differences between government securities and short term Eurodollar borrowings account for interest rate swap spreads. It then models liquidity as a state variable that follows an Ornstein-Uhlenbeck process and values it using the Vasicek (1977) one-factor term structure model. The interest rate swap spread for a swap of a particular maturity has a closed form solution: a simple integral. Numerical values for the parameters illustrate that many realistic "swap spread term structures" can be replicated. Parameter estimates are obtained using data on swap spreads provided by Salomon Brothers. Extensions of the model include a closed form solution using the CIR square root process.

Grout, Paul

TI Directors' Perceptions of the Effects and Values of Share Option Rewards. **AU** Egginton, Don; Elliott, Geoffrey; Forker, John; Grout, Paul.

Gustman, Alan L

PD August 1994. **TI** Retirement Research Using the Health and Retirement Survey. **AU** Gustman, Alan L; Mitchell, Olivia S.; Steinmeier, Thomas L. **AA** Gustman: Dartmouth College and National Bureau of Economic Research. Mitchell: University of Pennsylvania and National Bureau of Economic Research. Steinmeier: Texas Tech University. **SR** National Bureau of Economic Research Working Paper: 4813; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 16. **PR** $5.00. **JE** J14, H55, I11, G23. **KW** Social Security. Pensions. Health Insurance. Retirement Behavior.

AB This paper highlights unanswered research questions in the economics of retirement, and shows how these issues can be addressed using the new Health and Retirement Survey (HRS). Unique features of the survey are described including administrative records on earnings and social security benefits, and employer provided data on pensions and health insurance. Also collected are indicators of retirement plans, health status, family structure, income, wealth, and employer policies affecting job opportunities and constraints. Data from the first wave of the HRS are used to analyze retirement outcomes and constraints shaping retirement behavior.

Hakkio, Craig S.

TI The Distribution of Exchange Rates in the EMS. **AU** Engel, Charles; Hakkio, Craig S.

Haldrup, Niels

PD May 1994. **TI** A Note on the Distribution of the Least Squares Estimator of a Random Walk with Drift,--Some Analytical Evidence. **AU** Haldrup, Niels; Hylleberg, Svend. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-20; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus

C. DENMARK. **PG** 6. **PR** no charge. **JE** C12, C22. **KW** Unit Roots. Local Drift. Brownian Motion.

AB In this note we define the notion of a local drift in a unit root process. The theory provides a bridge between the apparent diverging asymptotic theories that apply when a drift is either present or absent in an integrated time series. Our asymptotic results help explaining the Monte Carlo results of Hylleberg and Mizon (1989) and Schmidt (1988).

Hall, Stephen

PD March 1994. **TI** Macroeconomic modeling of International Carbon Tax Regimes. **AU** Hall, Stephen; Mabey, Nick; Smith, Clare. **AA** London Business School. **SR** University of Birmingham Department of Economics Discussion Paper: 94-08; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 27. **PR** 2 pounds. **JE** C32, C53, Q20, Q25, A48. **KW** Carbon Dioxide. Energy Intensity. Cointegration.

AB An econometric model of fossil fuel demand has been estimated for eight OECD countries, relating coal, oil and gas demands to GDP and prices. In addition, for five of these countries, a model of endogenous technical progress has been estimated, representing the decline in energy intensity as a function of price and macroeconomic variables. This aims to include both price induced innovation in energy and structural change in the economy as long term determinants of energy consumption. A number of possible international carbon/energy tax agreements are simulated, showing the effects on carbon dioxide emissions and comparing the two models. It is shown that the endogenous technical change model does include an important element that is missed in the more conventional approach. However in the long run the magnitude of taxes required to stabilize or reduce emission would be large, and it is suggested that other non-price policies will become more important. There are important differences between countries in price responses, which must be taken into account in international modeling and policy formulation.

PD November 1994. **TI** Changes In Regime, Cointegration, Seasonality, and the Japanese Consumption Function. **AU** Hall, Stephen; Psaradakis, Zacharias; Sola, Martin. **AA** Hall: London Business School. Psaradakis: University of Bristol. Sola: Birkbeck College and London Business School. **SR** Birkbeck College Discussion Papers in Economics: 21/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 13. **PR** no charge. **JE** C22, E21. **KW** Cointegration. Consumption Function. Regime Changes. Markov Switching. Unit Roots.

AB In this paper we consider a model of cointegration where long-run parameters are subject to switching between several different cointegrating regimes. These shifts are allowed to be governed by the outcome of an unobserved Markov chain with unknown transition probabilities. We illustrate this approach using Japanese data on consumption and disposable income, and find that the data favor a Markov-switching long-run relationship over a standard temporally stable formulation.

Hansen, Niels Lynggard

TI Price Adjustment in Open Economies. **AU** Andersen, Torben M.; Hansen, Niels Lynggard

Hansen, Pierre

PD September 1994. **TI** The Profit-Maximizing Weber Problem. **AU** Hansen, Pierre; Peeters, Dominique; Thisse, Jacques-Francois. **AA** Hansen: GERAD and Ecole des Hautes Etudes Commerciales, Montreal. Peeters: Universite Catholique de Louvain. Thisse: Universite de Paris I-Sorbonne and CERAS-ENPC. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9440; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 20. **PR** not available. **JE** C61. **KW** Location Theory. Pricing.

AB We consider the location of a single-plant firm in a continuous space under five different pricing policies: (i) spatial discriminatory pricing; (ii) uniform delivered pricing; (iii) uniform mill pricing; (iv) zone pricing; and (v) mixed pricing where clients have the choice between pick-up or delivery. Global optimization methods are proposed for solving the corresponding problems and numerical experiments are reported on.

Hariharan, Govind

TI Protectionist Reputations and the Threat of Voluntary Export Restraint. **AU** Jans, Ivette; Wall, Howard J.; Hariharan, Govind.

Harris, Jeffrey E.

PD July 1994. **TI** A Working Model for Predicting the Consumption and Revenue Impacts of Large Increases in the U.S. Federal Cigarette Excise Tax. **AA** Massachusetts Institute of Technology and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4803; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 12. **PR** $5.00. **JE** L66, H22, D12. **KW** Cigarette Consumption. Excise Tax. Pricing. Taxation.

AB This report describes an easily computable model of the relation between cigarette prices and cigarette consumption in the United States. The model is used to predict the revenue impacts of Federal excise tax hikes ranging from $0.45 to $1.76 per pack.

Harsaae, Erik

PD January 1994. **TI** A Theory of the Monetary Trading System. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-12; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 145. **PR** no charge. **JE** E12, E40. **KW** Monetary Trades. Quantity Equation. Involuntary Unemployment. Marginal Efficiency of Capital (MEC). Market Rate of Interest, Liquidity Preference.

AB The paper discusses the relations between the Hicks-Hansen model and the corresponding exposition in Keynes's "General Theory". In this connection a model of the monetary trading system is suggested and its relation to traditional economic modeling discussed.

Harvey, Campbell R.

TI Time-Varying World Market Integration. **AU** Bekaert, Geert; Harvey, Campbell R.

Hatzius, Jan

PD September 1994. **TI** Regional Migration, Unemployment and Vacancies: Evidence from West German

Microdata. **AA** University Oxford. **SR** Oxford Applied Economics Discussion Paper Series: 164; Institute of Economics and Statistics, St Cross Building, Manor Road, Oxford OX1 3UL. **PG** 18. **PR** not available. **JE** J21, J23, J31, J61, J63. **KW** Unemployment. Wage Differentials. Labor Mobility. Germany.

AB Using a theoretical framework which combines insights from the human capital and matching approaches to labor mobility, the effects on the individual migration probability of unemployment at the personal, regional, and national level, vacancies, earnings differentials, and a host of individual characteristics are estimated from the West German Social-Economic Panel (SOEP). It is found that personal unemployment, high regional unemployment, and low vacancy rate encourage outmigration. By contrast, aggregate unemployment and interregional earnings differentials do not appear to have an independent effect. The results are used to calculate how varying the explanatory variables affects the individual migration probability. Furthermore, the effect of a typical regional unemployment differential on the regional outmigration rate is calculated, assessing the relative importance of individual and regional unemployment.

PD September 1994. **TI** The Unemployment and Earnings Effect of German Immigration. **AA** University of Oxford. **SR** Oxford Applied Economics Discussion Paper Series: 165; Institute of Economics and Statistics, St Cross Building, Manor Road, Oxford OX1 3UL. **PG** 25. **PR** not available. **JE** J61, J63, J64. **KW** Unemployment. Immigrant Workers. Germany.

AB A simple model is developed which implies that changes in the native unemployment rate and log native earnings are linearly related to the inflow of immigrant workers relative to the size of the labor force. Immigration may hurt or benefit natives, depending on the skill level of the immigrants, but must shift native unemployment and earnings in different directions. The equations are estimated using regional data from the 1984 to 1991 waves of the German Social-Economic Panel (SOEP). It is found that immigrants do not affect native unemployment. However, foreign immigrants lower, and East German immigrants raise, native earnings.

Hausmann, Ricardo

TI Why is Inflation Skewed? A Debt and Volatility Story. **AU** Aizenman, Joshua; Hausmann, Ricardo.

Hay, Donald

PD September 1994. **TI** The Investment Behaviour of Firms in an Oligopolistic Setting. **AU** Hay, Donald; Liu, Guy. **AA** University of Oxford. **SR** Oxford Applied Economics Discussion Paper Series: 162; Institute of Economics and Statistics, St Cross Building, Manor Road, Oxford OX1 3UL. **PG** 22. **PR** not available. **JE** D43, E22, L13, L60. **KW** Oligopoly. Industrial Organization. Investment Behavior. Manufacturing.

AB Industrial organization theory has identified strategic investment in capacity as an important element in competition in oligopolistic markets. In the paper, we specify a model of oligopolistic investment behavior, and test it with panel data for about 130 firms in 18 narrowly defined United Kingdom manufacturing industries in the 1970's and 1980's. The industries are distinguished according to their market characteristics as fragmented, dominant firm, and dominant group sectors. The results indicate pro-competitive behavior in dominant firm sectors, and non-cooperative behavior in the other sectors; there is no evidence of cooperative behavior.

Head, Allen C.

TI Measuring World Business Cycles. **AU** Gregory, Allan W.; Head, Allen C.; Raynauld, Jacques.

TI Trigger Strategies and the Cyclicality of Markups. **AU** Lapham, Beverly J.; Head, Allen C.

Heifetz, Aviad

PD January 1995. **TI** A Note on Consensus Without Common Knowledge. **AA** Tel Aviv University and Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9501; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 5. **PR** not available. **JE** C78. **KW** Common Knowledge. Consensus.

AB Parikh and Krazucki (1990) argued that a group of agents may sometimes reach a consensus when this consensus is not common knowledge among them. We suggest a way to formalize this phenomenon in a rigorous way, by incorporating the time stages into the state space.

PD January 1995. **TI** Common Belief in Monotonic Epistemic Logic. **AA** Tel Aviv University and Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9511; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 17. **PR** not available. **JE** D89. **KW** Common Belief, Finite Logic.

AB To what extent may a finitary logic express the notion of common belief? We devise a set of axioms for common belief in a system where beliefs are only required to be monotonic. These axioms are generally less restrictive than those suggested by Lismont-Mongin (1993) and Halpern-Vardi (1992). We prove completeness with respect to monotonic neighborhood models, in which the iterative definition for common belief may involve transfinite levels of mutual belief. We show that this definition is equivalent to the fixed-point type definition that Monderer and Samet (1989) elaborated in a probabilistic framework. We show further, that in systems as least at strong as the K-system, the three axiomatizations for common belief coincide, as do their semantic counterparts. In such systems, however, there are consistent sets of formulas that have no model. We conclude that the full contents of common belief cannot be expressed by a logic that admits only finite conjunctions.

Hens, Thorsten

TI The Survival Assumption and Existence of Competitive Equilibria When Asset Markets are Incomplete. **AU** Gottardi, Piero; Hens, Thorsten.

Heyes, Anthony G.

PD 1994. **TI** A Theory of Tradable Price Caps. **AA** Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 9/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 12. **PR** no charge. **JE** L12, L51. **KW** Natural Monopoly. Regulation. Incentives.

AB We analyze a regime in which one regulated monopolist can "buy" the right to charge a price above its endowed price cap by inducing (through cash payment) another regulated monopolist to price below its endowed price cap by enough to render the overall package "consumer-surplus- neutral." A regulatory regime that permits such trading will Pareto-dominate current regulatory structures in the United Kingdom and elsewhere. The difficulties in implementing price cap trading are considered in detail, and an analogy drawn between price cap trading and recent developments in "market-based" environmental regulation.

Hillier, Grant H.

PD September 1994. **TI** Quadratic Forms: Expansions, Moments and Applications to Regression Diagnostics. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9420; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 42. **PR** no charge. **JE** C44, C51, C63. **KW** Quadratic Forms. Expansions. Finite Groups. Moments.

AB Quadratic forms, and their powers, arise in a number of different contexts in statistics. Using the elementary theory of finite groups, we derive expansions for integer powers of such forms. The results are useful for evaluating the moments of statistics that are polynomials in the elements of a random vector whose moment generating function can be expanded in powers of a quadratic form. Applications to the general moments problem, and to the problem of obtaining expressions for the moments of various diagnostic statistics for the linear model, are given.

PD February 1995. **TI** The Union of Best Critical Regions: Complete Classes, p-Values, and Model Curvature. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9503; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 28. **PR** no charge. **JE** C12, C52. **KW** Neyman-Pearson Lemma. Best Critical Regions. Complete Classes. Curvature.

AB For most practical hypothesis testing problems the Neyman-Pearson lemma produces the negative conclusion that there is no uniformly best critical region (BCR), and this conclusion usually persists even when restrictions are placed on the class of tests considered. This paper suggests a measure of the intrinsic difficulty of a testing problem (possibly after reduction to a subclass of tests) based on the extent to which the BCR's vary with the alternative. We show that this measure can be related to complete class results, to the question of the robustness of inference based on p-values (which it can be used to quantify), and to curvature in one-parameter exponential models.

Holtz-Eakin, Douglas

PD August 1994. **TI** Infrastructure in a Structural Model of Economic Growth. **AU** Holtz-Eakin, Douglas; Schwartz, Amy Ellen. **AA** Holtz-Eakin: Syracuse University and National Bureau of Economic Research. Schwartz: New York University. **SR** National Bureau of Economic Research Working Paper: 4824; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 21. **PR** $5.00. **JE** E22, H54, O14. **KW** Public Capital. Neoclassical Growth. Infrastructure. Investment.

AB Researchers, commentators, and politicians have devoted steadily more attention to infrastructure in response to claims that inadequate accumulation of public capital has contributed to substandard U.S. economic growth. Despite this, the link between infrastructure and productivity growth remains controversial. In this regard, it is somewhat surprising that infrastructure research has developed in isolation from the large literature on economic growth. We develop a neoclassical growth model that explicitly incorporates infrastructure and is designed to provide a tractable framework within which to analyze the empirical importance of public capital accumulation to productivity growth. We find little support for claims of a dramatic productivity boost from increased infrastructure outlays. In a specification designed to provide an upper bound for the influence of infrastructure, we estimate that raising the rate of infrastructure investment would have had a negligible impact on annual productivity growth between 1971 and 1986.

Host, Viggo

PD March 1994. **TI** Sampling Designs, Estimators and Resampling Procedures in the New Danish Wage Statistics. **AU** Host, Viggo; Lund, Niels; Poulsen, Torben. **AA** Host and Lund: University of Aarhus. Poulsen: Danish Employers' Confederation. **SR** Aarhus Institute of Economics Memo: 1994-16; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 19. **PR** no charge. **JE** C13, C15, C42, J30. **KW** Ratio Estimate. Stratified Sampling. PPS-Sampling. Resampling. Jackknifing. Bootstrapping. Wage Statistics.

AB By the introduction of samples in the new Danish wage statistics we analyze different types of estimators based on different sampling designs. The performance of the estimators is evaluated by means of Monte Carlo methods using population data from three branches. We consider estimators of the ration type as well as estimators based on pps-sampling, i.e., random sampling of firms with probabilities proportional to size. Also resampled versions of the estimators are evaluated. The result of the simulations suggests that either a randomized pps-estimator or a bootstrapped stratified ratio-estimate is a preferable choice.

Hung, Victor T. Y.

PD November 1994. **TI** Technical Progress, Environmental Improvement and Economic Growth: How Does the Choice of Instruments Matter? **AU** Hung, Victor T. Y.; Chang, Pamela. **AA** Hung: University of Southampton. Chang: Wellesley College. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9424; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 24. **PR** no charge. **JE** H23, O32, Q28. **KW** Environmental Policy. Imperfect Competition. Innovation. Development.

AB In this paper, we provide some new insights into the trade-off between resources allocated to environmental improvement and resources allocated to economic growth. We find that it is not always true that market economies grow too much at the expense of the environment. When the pollution damage effect is small, the market may still under-invest both in economic growth and environmental quality because it ignores the knowledge spillovers effect, the consumer surplus effect, and pollution. We examine the effects of environmental instruments on R&D of environmental improvement. Our results show that when there is no economic growth, all instruments yield a one-time improvement in environmental quality but only the emission tax rate and the marketable permit can maintain a positive growth rate in pollution abatement innovations over time. With endogenous economic growth, the environment worsens under the emission allowance system and the technological standard. On the other hand, under the tax rate policy and the marketable permit system, the environment does maintain its one-time improvement in the steady state.

Hunt, Jennifer

PD August 1994. **TI** Firing Costs, Employment Fluctuations and Average Employment: An Examination of Germany. **AA** Yale University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4825; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 29. **PR** $5.00. **JE** E24, J65, L60. **KW** Employment Fluctuations. Manufacturing. Germany.

AB West Germany's Employment Promotion Act of 1985 facilitated the use of fixed term contracts and increased the number of dismissals above which the employer is required to establish a "social plan" (involving severance payments). The effect of this reduction in "firing costs" on movements in employment is assessed using manufacturing data by detailed industry for the period 1977-1992. A dynamic specification using the data as a panel, and allowing coefficients to vary by industry (random coefficients) is employed. Compared to the 1977-1981 period, adjustment of blue collar hours was more flexible from 1982-1988, and less flexible in the subsequent period. There is weaker evidence that adjustment of blue collar workers became less flexible in the years following the new legislation and that white collar workers' flexibility fluctuated over the period examined. The timing and direction of these changes, as well as the direction of relative changes in flexibility between industries with high and low sales variability, suggests they are not the result of the Employment Promotion Act.

Hutton, Eric

PD August 1994. **TI** Reference Point Dependence for Specification Bias from Quality Upgrading. **AU** Hutton, Eric; Whalley, John. **AA** Hutton: University of Western Ontario. Whalley: University of Western Ontario and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4816; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 15. **PR** $5.00. **JE** C68, D58, F13. **KW** General Equilibrium. Trade Barriers. Specification Bias.

AB This paper argues that whether estimates of the welfare cost of natural or artificial trade barriers that do not discriminate by quality are subject to positive or negative specification bias when using models which do not explicitly recognize quality variation depends on the reference point used in counterfactual equilibrium analysis. We use numerical general equilibrium techniques to generate counter examples to the widely held view that (in the competitive case) incorporating quality upgrading will tend to reduce the welfare costs of quality invariant trade barriers. To do this, we use a trade-distorted equilibrium as the reference point, rather than free trade.

Hutton, John

PD June 1994. **TI** Replacing the U.K. Income Tax with a Progressive Consumption Tax. **AU** Hutton, John; Kenc, Turalay. **AA** Hutton: University of York. Kenc: University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9413; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 19. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** H20. **KW** Direct Consumption Taxation. General Equilibrium. Equal Yield. Tax Reform. Temporal Efficiency.

AB This paper examines the incidence, welfare and growth consequences of changing the U.K. income tax system to a progressive consumption tax. It evaluates this change using a dynamic general equilibrium model of the U.K. economy and tax system. The model focuses on forward-looking investment decisions and adjustment dynamics and on intertemporal consumption decisions. The models permits one to make a satisfactory assessment of short-run effects of tax policy on asset values as well as long-term impacts on capital accumulation. Simulation results reveal that improvements in intertemporal efficiency through direct consumption taxation would generate substantial capital accumulation effects as well as welfare gains while deteriorations through switching to capital income taxation significantly reduces capital formation with welfare losses.

Hylleberg, Svend

TI A Note on the Distribution of the Least Squares Estimator of a Random Walk with Drift,--Some Analytical Evidence. **AU** Haldrup, Niels; Hylleberg, Svend.

Ianni, Antonella

TI Path Dependence and Learning From Neighbors. **AU** Anderlini, Luca; Ianni, Antonella.

Im, Kyung So

TI Dynamic Linear Models for Heterogeneous Panels. **AU** Pesaran, M. Hashem; Smith, Ron; Im, Kyung So.

Ioannides, Yannis M.

PD August 1994. **TI** Structural Estimation of Residential Mobility and Housing Tenure Choice. **AU** Ioannides, Yannis M.; Kan, Kamhon. **AA** Ioannides: Virginia Polytechnic Institute and State University. Kan: Universite Catholique de Louvain and Institute of Economics Academia Sinica, Taiwan. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9432; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 34. **PR** not available. **JE** C33, D35, R21, R23. **KW** Residential Mobility. Housing Tenure Choice. Dynamic Discrete Choice.

AB This study is devoted to studying households' decisions about moving and about whether to rent or own after moving. It employs dynamic discrete choice models which condition households' decisions on their circumstances at every point in time during the length of the observation while accounting for individual heterogeneity. The results show that key dynamic elements, captured by mean of lagged dependent variables, as well as household heterogeneity, are very significant determinants of the tenure choice and mobility decisions. Moreover, homeowners are found to be responsive to housing market conditions in adjusting their housing stock. Housing price appreciation is found to be discouraging renters from moving and owning. Finally, our results reject the proportional monetary transaction costs specification suggesting that monetary transaction cost might be fixed.

PD August 1994. **TI** The Nature of Two-Direction Intergenerational Transfers of Money and Time: An Empirical Analysis. **AU** Ioannides, Yannis M.; Kan, Kamhon. **AA** Ioannides: Virginia Polytechnic Institute and State University. Kan: Universite Catholique de Louvain and Institute of Economics, Academia Sinica, Taiwan. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9433; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 30. **PR** not available. **JE** C25, C35, J13, J14. **KW** Inter Vivos Intergenerational Transfers. Altruism. Exchange.

AB This paper studies the nature and pattern of inter vivos two-sided intergenerational transfers of money and time between parents and adult children. We use an analytical model that incorporates altruistic and exchange behavior to describe the interaction between parents and their children. Using the 1988 cross-section of the PSID, we examine empirically the existence of altruism and exchange between two successive generations. The empirical findings support the notion that intergenerational transfers are motivated by altruism. They do not support the presence of an exchange motive.

Jafarey, Saqib

PD January 1995. **TI** Wage Determination and Capital Decisions in a Dynamic Monopoly Union Model (with an application to Greek manufacturing). **AU** Jafarey, Saqib; Kaskarelis, Yannis; Miaouli, Natasha. **AA** Jafarey: University of Essex. Kaskarelis: University of Macedonia. Miaouli: Athens University of Economics and Business. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9507; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 15. **PR** not available. **JE** D42, J23, J42, J51, L12. **KW** Unions.

AB This paper uses a dynamic monopoly union model to analyze the joint determination of wages, employment and investment in the absence of binding contracts. The union maximizes a utilitarian utility function while the firm faces a neoclassical investment problem with adjustment costs. Concentrating on noncommitment equilibria, we solve for Markov strategies. When the model is tested for Greek manufacturing during the period 1954-1991, the data does not reject the theoretical predictions.

Jans, Ivette

PD April 1994. **TI** Protectionist Reputations and the Threat of Voluntary Export Restraint. **AU** Jans, Ivette; Wall, Howard J.; Hariharan, Govind. **AA** Jans: University of Nebraska. Wall: West Virginia University and Birkbeck College. Hariharan: SUNY and West Virginia University. **SR** Birkbeck College Discussion Papers in Economics: 6/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 12. **PR** no charge. **JE** F12, F13, H11. **KW** Protectionism. VER. Yano Effect. Government Welfare.

AB Voluntary export restraints, or VERs, are often administered such that each firms' post-VER output allocation is positively related to its output under free trade. When this is true, a credible threat of a future VER will induce foreign firms to dump in the current period, decreasing the domestic price (the Yano effect), and possibly increasing welfare. We show that if an importing government's preferences are private information and if the government makes a series of VER decisions, there may exist and incentive for a welfare-maximizing government that normally prefers free trade to maintain a protectionist reputation by imposing a VER.

Jepsen, Gunnar Thorlund

PD January 1994. **TI** Is There Aversion Against Moonlighting? **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-19; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 12. **PR** no charge. **JE** H26. **KW** Shadow Economy. Tax Evasion. Moonlighters. Wage-Contracting.

AB The existence of risk aversion is part of most models of tax evasion. An analysis of an empirical concerning applications for subsidies to repair and maintenance of private houses and apartments seems to indicate that the aversion against moonlighting is very low and independent of the size of the job done. The conclusions to be drawn from this are important for the design of policy against moonlighting.

PD November 1994. **TI** Gulerod Og/eller Pisk Analise af Effekten af Tilskud/Skatterfradrag til Boligforgedringer pa Tendensen til at Arbejde Sort. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-33; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 21. **PR** no charge. **JE** H26. **KW** Shadow Economy. Tax Evasion. Wage Contracting.

AB An analysis of the approved applications for subsidies to investments in private houses in Denmark indicates a significant effect on converting working in the gray sector to the (legal) sector of a rise in the subsidy rate from 1991 to 1993 in spite of the fact that there seems to be a very low degree of aversion against working in the gray sector.

Jovanovic, Boyan

PD August 1994. **TI** The Transfer of Human Capital. **AU** Jovanovic, Boyan; Nyarko, Yaw. **AA** Jovanovic: New York University and National Bureau of Economic Research. Nyarko: New York University. **SR** National Bureau of Economic Research Working Paper: 4823; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 32. **PR** $5.00. **JE** J24, I21, O15. **KW** Human Capital. Productive Knowledge. Growth. Training Programs.

AB Most of our productive knowledge was handed down to us by previous generations. The transfer of knowledge from the old to the young is therefore a cornerstone of productivity growth. We study this process in a model in which the old sell knowledge to the young--old workers train the young, and charge them for this service. We take an information- theoretic approach in which training occurs if a young agent watches an old worker perform a task. This assumption has plenty of empirical support--in their first three months on the job, young workers spend about five times as long watching others work as they do informal training programs. Equilibrium is not constrained Pareto optimal. The old have private information, and this gives rise to an adverse selection problem: some old agents manage to sell skills that the young would not buy (if only they knew exactly what they were buying). We derive the implications for the lifetime of technological lines, and we show that the model generates a negative relation between a firm's productivity and its probability of failure.

Kajii, Atsushi

PD January 1994. **TI** On the Role of Paper Money in General Equilibrium Model Without Transactions Costs. **AA** University of Pennsylvania. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9408; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 10. **PR** not available. **JE** D50, D52, E41. **KW** Competitive Equilibrium. Money. Satiation.

AB It is well known that a competitive equilibrium may fail to exist when preferences are possibly satiated. We show that this non-existence problem does not arise if one of the commodities is paper money. Moreover, an equilibrium is Pareto efficient in the economy with money. This paper therefore gives an economic solution to the classical problem of non-existence of competitive equilibria cause by satiation.

TI Ausi Expected Utility: An Anticipated Utility Theory of Relative Disappointment Aversion. **AU** Grant, Simon; Kajii, Atsushi.

Kaminsky, Graciela L.

PD July 1994. **TI** The Real Exchange Rate and Fiscal Policy During the Gold Standard Period: Evidence from the United States and Great Britain. **AU** Kaminsky, Graciela L.; Klein, Michael. **AA** Kaminsky: Board of Governors of the Federal Reserve System. Klein: Tufts University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4809; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 20. **PR** $5.00. **JE** F31, H50, C32. **KW** Foreign Exchange. Vector Autoregression. Tariffs. Government Spending.

AB We study the determinants of the dollar/pound real exchange rate from 1879 to 1914 focusing on the role of fiscal policy. We present a simple dynamic model of the real exchange rate to frame our analysis. The econometric results are based upon the decomposition of the sources of the innovation of the real exchange rate drawn from a structural vector autoregression model. We find little evidence that changes in tariffs and government spending affected the real exchange rate. There is some stronger empirical evidence that shocks to deficits were associated with the fluctuations in the real exchange rate.

Kan, Kamhon

TI Structural Estimation of Residential Mobility and Housing Tenure Choice. **AU** Ioannides, Yannis M.; Kan, Kamhon.

TI The Nature of Two-Direction Intergenerational Transfers of Money and Time: An Empirical Analysis. **AU** Ioannides, Yannis M.; Kan, Kamhon.

Kapur, Sandeep

TI Liquidity and Financial Intermediation. **AU** Dutta, Jayasri; Kapur, Sandeep.

PD February 1994. **TI** Technological Diffusion With Social Learning. **AA** Birkbeck University. **SR** Birkbeck College Discussion Papers in Economics: 4/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 15. **PR** no charge. **JE** O31. **KW** Learning. Diffusion. Technological Change.

AB This paper attributes the slow diffusion of innovations to an informational externality in the adoption process. When a new technology arrives each firm is uncertain about its profitability but can learn progressively from the adoption experience of other firms. Given this prospect of "social" learning every firm prefers that other firms adopt before it does, since this enables a better-informed adoption decision. In the absence of any explicit coordination the firms could end up in a sequence of waiting contests. This results in staggered adoptions, even when all firms are identical. The pace of diffusion, determined endogenously in this model, depends on some fundamental characteristics of the innovation and of the learning process. Further, the aggregate outcome is consistent with the initial, rising section of empirically observed S-shaped pattern of diffusion curves.

TI Liquidity Preference and Financial Intermediation. **AU** Dutta, Jayasri; Kapur, Sandeep.

Kashyap, Anil K.

PD August 1994. **TI** The Impact of Monetary Policy on Bank Balance Sheets. **AU** Kashyap, Anil K.; Stein, Jeremy C. **AA** Kashyap: University of Chicago and National Bureau of Economic Research. Stein: Massachusetts Institute of Technology and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4821; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 43. **PR** $5.00. **JE** E52, G11. **KW** Monetary Policy Transmission. Lending View. Portfolio Choice.

AB This paper uses disaggregated data on bank balance sheets to provide a test of the lending view of monetary policy transmission. We argue that if the lending view is correct, one should expect the loan and security portfolios of large and small banks to respond differentially to a contraction in monetary policy. We first develop this point with a theoretical model; we then test to see if the model's predictions are borne out in the data.

Kaskarelis, Yannis

TI Wage Determination and Capital Decisions in a Dynamic Monopoly Union Model (with an application to Greek manufacturing). **AU** Jafarey, Saqib; Kaskarelis, Yannis; Miaouli, Natasha.

Keen, Michael

TI Efficiency and the Fiscal Gap in Federal Systems. **AU** Boadway, Robin W.; Keen, Michael.

Kehoe, Patrick J.

TI Putty-Clay Capital and Energy. **AU** Atkeson, Andrew; Kehoe, Patrick J.

Keil, Manfred

PD July 1994. **TI** Internal Migration and Unemployment in Germany: An Anglo-Irish Perspective. **AU** Keil, Manfred; Newell, Andrew. **AA** Keil: Northeastern University. Newell: London School of Economics. **SR** London School of Economics Centre for Economic Performance Discussion Paper: 201; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, UNITED

KINGDOM. **PG** 14. **PR** no charge. **JE** J61. **KW** Migration. Unemployment. Wages.
AB The paper analyzes the effect on the migration rate of a number of labor market variables; in particular, relative wage levels and growth rates, and the relative unemployment rates in the home and foreign country. We study the Ireland-United Kingdom migration rate and use the estimates to predict migration between the two parts of unified Germany. We conclude that magnitudes of unemployment differences and wage differentials are such that currently observed substantial migration flows will not slow down for the foreseeable future.

Kelsey, David

TI Non-Additive Beliefs and Game Theory. **AU** Eichberger, Jurgen; Kelsey, David.

PD January 1994. **TI** Induced Preferences and Decision Making Under Risk and Uncertainty. **AU** Kelsey, David; Milne, Frank. **AA** Kelsey: University of Birmingham. Milne: Queen's University, Canada. **SR** University of Birmingham Department of Economics Discussion Paper: 94-03; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 19. **PR** 2 pounds. **JE** D81. **KW** Uncertainty Aversion. Induced Preferences. Dutch Book. Rank Dependent. Expected Utility.
AB In this paper we suggest a new interpretation of non-additive probabilities. We study a decision-maker who follows the Savage axioms. We show that if (s)he is able to take unobservable actions which influence the probabilities of outcomes then it can appear to an outsider as if his/her subjective probabilities are non-additive. We make a related analysis of models with objective probabilities and show that the induced preferences can have the rank dependent expected utility form. Implications for multi-period decisions are explored. We show that such preferences are not vulnerable to "Dutch books".

TI Signaling Games With Uncertainty. **AU** Eichberger, Jurgen; Kelsey, David.

TI Uncertainty Aversion and Preference for Randomization. **AU** Eichberger, Jurgen; Kelsey, David.

Kenc, Turalay

TI Replacing the U.K. Income Tax with a Progressive Consumption Tax. **AU** Hutton, John; Kenc, Turalay.

PD January 1995. **TI** European Pension Systems: A Simulation Analysis. **AU** Kenc, Turalay; Perraudin, William. **AA** Kenc: University of Cambridge. Perraudin: Birkbeck College and Centre for Economic Policy Research. **SR** University of Cambridge Department of Applied Economics Working Paper: 9505; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 19. **PR** $10.00 (5 pounds), checks payable to University of Cambridge. **JE** H55, J26, J65. **KW** Pensions. International Comparisons. Simulation Models. Retirement Decisions. Borrowing Constraints.
AB Pension systems in different countries vary widely in such aspects as the dependence of benefits on earlier labor income, the minimum permitted retirement age, and limits on labor supply after retirement. Little is known, however, about the economic significance of these differences. The gap in our knowledge is all the more serious in that various countries have embarked upon, or are at present contemplating, substantial reforms in their retirement benefit systems. This paper uses a simulation model of a rational, utility-maximizing household facing the detailed pension provisions of eight European countries to quantify the impact on savings, labor supply, retirement age decisions, and welfare.

Kendall, Jon D.

TI Pass-Through of Exchange Rates and Purchasing Power Parity. **AU** Feenstra, Robert C.; Kendall, Jon D.

Kerstens, Kris

TI Radial and Nonradial Technical Efficiency Measures on a DEA Reference Technology: A Comparison Using U.S. Banking Data. **AU** Ferrier, Gary D.; Kerstens, Kris; Eeckault, Philippe Vanden.

PD February 1995. **TI** Technical Efficiency Measures on DEA and FDH: A Reconsideration of the Axiomatic Literature. **AU** Kerstens, Kris; Vanden Eeckaut, Philippe. **AA** Kerstens: K.U. Brussel. Vanden Eeckaut: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9513; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 23. **PR** not available. **JE** C69. **KW** Nonradial Efficiency. Productive Efficiency. Technical Efficiency. Radial Efficiency.
AB The aim of this paper is to evaluate both radial and nonradial measures of technical efficiency based on two popular non-parametric reference technologies, known as Data Envelopment Analysis (DEA) and the Free Disposal Hull (FDH). In addition to the traditional radial measurement, a series of alternative technical efficiency measures proposed in the theoretical literature are presented and discussed. In particular, the axioms satisfied by these efficiency measures are summarized and some of these properties are illustrated using numerical examples. Another property is proposed guaranteeing the insensitivity of the efficiency measure to the number of dimensions in the analysis. The latter is especially important in applied work. Furthermore, additional arguments on e.g., the cost interpretation of these efficiency measures are examined.

Keyzer, Michiel

TI Existence and Efficiency Properties of an Approximate Equilibrium when Asset Markets are Incomplete: A Welfare Approach. **AU** Ginsburgh, Victor A.; Keyzer, Michiel.

Kiefer, Nicholas M.

TI Liquidity, Information, and Infrequently Traded Stocks. **AU** Easley, David; Kiefer, Nicholas M.; O'Hara, Maureen; Paperman, Joseph B.

TI Cream-Skimming or Profit-Sharing? The Curious Role of Purchased Order Flow. **AU** Easley, David; Kiefer, Nicholas M.; O'Hara, Maureen.

Kim, Youngse

PD October 1993. **TI** Adjustments, Evolution and Equilibrium Selection in Coordination Games. **AA** University of Cambridge. **SR** University of Cambridge Economic Theory Discussion Paper: 195; Department of Applied Economics, University of Cambridge,

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Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 16. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C72, D81. **KW** Coordination Game. Adjustment Dynamics. Stochastic Evolution. Global Perturbation. Risk Dominance.

AB We investigate dynamic processes in the context of societal games played by randomly formed groups of players. The class of games we study are multiperson coordination games with multiple Pareto rankable strict Nash equilibria. We focus on two types of dynamic process to resolve equilibrium selection indeterminacy: (1) deterministic adjustment dynamics with patient players, and (2) stochastic evolutionary dynamics with myopic players. Roughly speaking, the dynamical equilibrium outcome obtained with patient players corresponds to the static equilibrium assuming correlated play by a players' opponents, while the long-run state obtained with noisy myopic players corresponds to the static equilibrium selection predicted by independent play of a player's opponents. Surprisingly, the limit equilibrium selected under the first type of dynamics coincides with the selection from global perturbation. We also show that, if and only if the group size is two (i.e. for two-person, bimatrix games), the dynamic outcome from either type of process happens to coincide with equilibrium selection by risk dominance. For any strategic-form pure coordination game, a much stronger result can be obtained that supports Pareto efficiency, regardless of the underlying dynamics.

Klein, Michael

TI The Real Exchange Rate and Fiscal Policy During the Gold Standard Period: Evidence from the United States and Great Britain. **AU** Kaminsky, Graciela L.; Klein, Michael.

Kletzer, Kenneth M.

TI Capital Mobility, Fiscal Policy and Growth Under Self-Financing of Human Capital Formation. **AU** Buiter, Willem H.; Kletzer, Kenneth M.

Knight, John

PD April 1995. **TI** Fiscal Decentralisation, Redistribution and Reform in China. **AU** Knight, John; Shi, Li. **AA** Knight: University of Oxford. Shi: Chinese Academy of Social Sciences. **SR** Oxford Applied Economics Discussion Paper Series: 168; Institute of Economics and Statistics, St Cross Building, Manor Road, Oxford OX1 3UL. **PG** 23. **PR** not available. **JE** H22, H23. **KW** Taxation. Tax Revenue. Laffer Curve. China.

AB The fiscal relationships between the central and provincial governments in China are examined within a principal-agent framework. The provincial governments, which act as the main tax-collectors, retained an increasing proportion of the revenue collected over the 1980's and the extent of fiscal redistribution by the center from the rich to the poor provinces correspondingly declined. Revenue effort was found to be sensitive to the various marginal tax rates imposed by the central government on the provinces: the Laffer curve is alive and well and living in China. The policy implications are examined.

Knight, John L.

PD July 1994. **TI** Estimation of Stationary Stochastic Processes Via the Empirical Characteristic Function. **AU** Knight, John L.; Satchell, Stephen E. **AA** Knight: University of Western Ontario. Satchell: University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9411; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 12. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C13. **KW** Moving Average. Estimation of Empirical Characteristic Functions. Stationary Stochastic Process. ARMA Models.

AB In this paper the authors employ a procedure called the characteristic function method to estimate a MA(1) model. The procedure is straightforward to apply and leads, in principle, to asymptotically efficient results. A simple Monte Carlo procedure is carried out to investigate these findings.

Kolstad, Charles D.

TI Foreign Direct Investment, Exchange Rate Variability and Demand Uncertainty. **AU** Goldberg, Linda S.; Kolstad, Charles D.

Koop, Gary

PD December 1994. **TI** Posterior Analysis of Stochastic Frontier Models Using Gibbs Sampling. **AU** Koop, Gary; Steel, Mark F. J.; Osiewaslki, Jacek. **AA** Koop: University of Toronto. Steel: Tilburg University. Osiewaslki: Academy of Economics, Krakow and Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9461; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 12. **PR** not available. **JE** C29, C63. **KW** Gibbs Sampling. Posterior Inferences. Stochastic Frontier.

AB In this paper we describe the use of Gibbs sampling methods for making posterior inferences in stochastic frontier models with composed error. We show how Gibbs sampling methods can greatly reduce the computational difficulties involved in analyzing such models. Our findings are illustrated in an empirical example.

PD January 1995. **TI** The Components of Output Growth: A Cross-Country Analysis. **AU** Koop, Gary; Osiewalski, Jacek; Steel, Mark F. J. **AA** Koop: University of Toronto. Osiewalski: Academy of Economics, Krakow and Universite Catholique de Louvain. Steel: Tilburg University. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9503; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 28. **PR** not available. **JE** C49, O33. **KW** Growth. Stochastic Frontier Analysis. Productive Efficiency. Technical Efficiency.

AB This paper uses a stochastic frontier analysis to investigate sources of output and productivity growth in 17 OECD countries. Empirical results indicate that no one individual component predominated as an explanation of output growth; and in this sense, we conclude that no single key explanation exists as to why countries grow. Overall, input and technical change explain most of the output growth observed in our sample of countries. Efficiency growth also appears to play an important role in several low to middle income countries. Our conclusions, however, must be qualified by the fact that our estimates of the components of output growth have substantial standard deviations and that several findings are sensitive to changes in model structure.

Kremer, Michael

PD August 1994. **TI** Young Workers, Old Workers, and

Convergence. **AU** Kremer, Michael; Thomson, Jim. **AA** Kremer: Massachusetts Institute of Technology and National Bureau of Economic Research. Thomson: University of Melbourne. **SR** National Bureau of Economic Research Working Paper: 4827; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 45. **PR** $5.00. **JE** J24, F21. **KW** Human Capital. Rational Expectations. Capital Flows.

AB The human capital of young and old workers are imperfect substitutes both in production and in on-the-job training. This helps explain why capital does not flow from rich to poor countries, causing instantaneous convergence of per capita output. If each generation chooses its human capital optimally given that of the previous and succeeding generations, human capital follows a unique rational expectations path. For moderate substitutability, human capital within each sector oscillates relative to that in other sectors, but aggregate human capital converges to the steady state monotonically, at rates consistent with those observed empirically.

Krueger, Alan B.

TI An Evaluation of the Swedish Active Labor Market Policy: New and Received Wisdom. **AU** Forslund, Anders; Krueger, Alan B.

PD August 1994. **TI** New Evidence on Workplace Education. **AU** Krueger, Alan B.; Rouse, Cecilia. **AA** Princeton University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4831; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 25. **PR** $5.00. **JE** I21, J24, J31. **KW** Training Programs. Worker Performance. Education.

AB This paper presents an analysis of the impact of a workplace education program that was administered by a community college at two companies. One of the companies we study is in the manufacturing sector and the other is in the service sector. The analysis relies on longitudinal administrative data and cross-sectional survey data. We examine a broad range of outcome variables, including workers' earnings, performance awards, job attendance, and subjective performance measures. Our main finding is that the program had a small, positive impact on earnings at the manufacturing company, but an insignificant impact at the service company. We also find that the training program had a positive association with the incidence of job bids, upgrades, performance awards, and job attendance. At the manufacturing company, occupational courses, such as blue print reading, had the largest impact.

Kulasi, Farida

TI The Savings-Investment Association. **AU** Coakley, Jerry; Kulasi, Farida; Smith, Ron.

TI The Feldstein-Horioka Puzzle and Capital Mobility. **AU** Coakley, Jerry; Kulasi, Farida; Smith, Ron.

Lambrecht, Bart

PD August 1994. **TI** Option Games. **AU** Lambrecht, Bart; Perraudin, William. **AA** Lambrecht: University of Cambridge. Perraudin: University of Cambridge and Centre for Economic Policy Research. **SR** University of Cambridge Department of Applied Economics Working Paper: 9414; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 13. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** D82, C73, G13. **KW** Preemption. Timing Games. Option Values.

AB Optimal stopping decisions under uncertainty occur in a wide variety of economic contexts. This paper describes a way of incorporating strategic behavior and asymmetric information into such problems. It derives optimal stopping rules when each agent's payoff is affected by the actions of other agents and these latter are of unknown type. It proves an illustrative application of this approach to a market microstructure problem, solving for the optimal trading rules of informed investors under fixed transaction cost.

Lane, Philip

TI Are Windfalls a Curse? A Non-Representative Agent Model of the Current Account and Fiscal Policy. **AU** Tornell, Aaron; Lane, Philip.

Lapham, Beverly J.

PD November 1994. **TI** Trigger Strategies and the Cyclicality of Markups. **AU** Lapham, Beverly J.; Head, Allen C. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 911; Department of Economics, Queen's University, Kingston, Ontario K71 3N6, CANADA. **PG** 18. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** L13, L16, E32. **KW** Markups. Oligopoly. Trigger Strategies.

AB An environment capable of generating both counter-and procyclical movements in markups through the interaction of opposing factors is considered. This framework can account for observed variations in the cyclical behavior of markups across industries. Technology shocks and endogenous labor supply are introduced into a model with implicit collusion and periodic reversion to non-collusive behavior. Within either a collusive or non-collusive regime, markups are positively correlated with output. Switches between regimes, however, result in opposing movements in markups and output, reducing the overall correlation of the two series. Our findings imply that weak cyclicality of markups is not inconsistent with a large role for changes in market power in accounting for cyclical fluctuations. Offsetting effects may make the overall correlation of the markup with output low, while still allowing for the instability of the cartel to have important cyclical implications.

Larudee, Mehrene

TI Uneven Development and the Liberalization of Trade and Capital Flows: The Case of Mexico. **AU** Skott, Peter; Larudee, Mehrene.

Lawrence, Robert Z.

PD August 1994. **TI** Trade, Multinationals, and Labor. **AA** Harvard University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4836; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 40. **PR** $5.00. **JE** F14, F23, O47. **KW** Multinational Firms. Productivity Growth. International Competition.

AB This paper summarizes and extends previous research on the relationship between low-wage international competition and wage performance in the Developed Countries in the 1980's. The first section argues that poor average U.S. wage performance reflects slow domestic productivity growth rather than international competition. The second section presents evidence which rejects the view that Stolper-Samuelson effects are important in the U.S., Germany, and Japan. In all three countries, neither the wholesale nor the import prices of unskilled- labor intensive products have experienced relative declines. At the same time, despite the rise in relative skilled worker wages in the U.S. over the 1980's, the ration of non-production to production workers grew faster than in the 1960's and 1970's. This suggests that technological change in U.S. manufacturing was particularly biased in favor of white collar workers. The third section explores the employment and wage behavior in U.S. multinational parents and their foreign-owned manufacturing affiliates between 1977 and 1989. Overall the data point to the dominant impact of a commonly shared technological change rather than the impact of trade and increased international sourcing. Developments at home and abroad were remarkably similar. Employment fell, both in U.S. parents and in affiliates in developed countries and grew only modestly in developing countries. In foreign affiliates in both developed and developing countries, the relative compensation of non-production workers increased and the ratio of production to non- production workers fell. While U.S. parent sourcing from overseas affiliates grew rapidly, the increase accounted for only a small share of total sales. The final section discusses the issue of international labor standards.

Layard, Richard

PD July 1994. **TI** Who Gains and Who Loses From Russian Credit Expansion? **AU** Layard, Richard; Richter, Andrea. **AA** London School of Economics. **SR** London School of Economics Centre for Economic Performance Discussion Paper: 200; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 17. **PR** no charge. **JE** P52. **KW** Credit Growth. Inflation. Inflation Tax Russia.

AB This paper traces (a) the effect of credit expansion on inflation and (b) the effect of inflation on the real liquidity of households and enterprises. From April 1992 to September 1993 households paid an inflation tax equal to 13.3% of GDP and received almost no new credits. Enterprises received new credits worth 26% of GDP and "paid" an inflation tax equal to 13% of GDP--a net "gain" of 13% of GDP. Households received negligible credits and "paid" an inflation tax equal to 13% of GDP.

Layard,Richard

PD August 1994. **TI** Unemployment: The Way Forward For Europe. **AA** London School of Economics. **SR** London School of Economics Centre for Economic Performance Occasional Paper: 7; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, ENGLAND. **PG** 11. **PR** no charge. **JE** J64, J68. **KW** Employment Policy. Unemployment.

AB Mr. Delors has instituted a Europe-wide debate on how to reduce unemployment and Commissioner Flynn has called for unemployment to be reduced to 5 per cent by the year 2000. They are absolutely right. The unemployment we have endured for the last ten years in an absolute disgrace. It is not only a source of misery to millions but an economic waste that could be avoided by sensible policies. In Europe in the last 10 years we have on average had 10 per cent of our workforce unemployed. If we cut this to 5 per cent, we should increase our national income by as much as our whole expenditure on education. But how is it to be done? I believe the key to progress lies in preventing long-term unemployment. If governments decided now to prevent any more long-term unemployment beyond the year 2000 they could do so. The new structures could be put in place step by step in a way that was quite feasible. And once long- term unemployment had been abolished no one would be out of work for more than a year--which is at least one definition of full employment.

Lee, In Ho

PD June 1994. **TI** Asymmetric Business Cycles. **AU** Lee, In Ho.; Chalkley, Martin. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9411; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 15. **PR** no charge. **JE** D83, E32, C15. **KW** Search. Learning and Information. Business Fluctuations. Cycles.

AB This paper attempts to explain the asymmetric movement of economic time series over business cycles. It is well documented that a variety of economic time series including the unemployment rate exhibit asymmetry in the sense that the arrival of a recession is prompt while the recovery from a recession appears protracted. We explain the asymmetry based on a consideration of the difficulty in information aggregation under risk aversion of agents. A model is constructed for an economy in which the underlying state of nature changes according to a symmetric first order Markov process. Risk averse agents make investment choices which partially reveal their private information as to the underlying state. Risk aversion prevents individual agents from investing promptly on good news while it encourages them to disinvest easily on bad news. When this cautious response at the individual level is combined with idiosyncratic individual noise, an economy-wide asymmetric movement of time series is generated. The model also explains the positive autocorrelation of a time series. Since the movement of a series in one direction reveals more information movements are reinforced. A numerical simulation is carried out to derive the empirical distribution of an asymmetric time series. This demonstrates that a simple model is capable of generating rich dynamics similar to those portrayed by economic time series.

PD June 1994. **TI** Durable Goods Monopoly under Technological Innovation. **AU** Lee, In Ho; Lee, Jonghwa. **AA** Lee, I.: University of Southampton. Lee, J.: University of California, Los Angeles. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9413; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 17. **PR** no charge. **JE** D42, D92, O33. **KW** Durable Goods. Monopolist. Technological Innovation.

AB This paper studies the impacts of the technological innovation on the durable goods monopoly market equilibrium in a simple two period model. We consider the technological innovation as a means to reduce the durability since a new technology makes the economic life of the upgrade policy in order to maintain the monopoly power under the technological innovation. Contrary to the standard claim that the reduced durability strengthens the market power of the monopolist, the technological innovation is shown to weaken the market power of the monopolist under some conditions. When the monopolist may choose whether to invest in the innovation at a cost, a perverse welfare implication follows in which the monopolist overinvests when the social gain from the innovation is small while he underinvests when it is big.

Lee, Jong-Wha

PD July 1994. **TI** Trade Barriers and Trade Flows Across Countries and Industries. **AU** Lee, Jong-Wha; Swagel, Phillip. **AA** Lee: Korea University and National Bureau of Economic Research. Swagel: Northwestern University. **SR** National Bureau of Economic Research Working Paper: 4799; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 23. **PR** $5.00. **JE** F13, F14, F42. **KW** International Trade. Import Competition. Protection. Trade Barriers.

AB We use disaggregated data on trade flows, production, and trade barriers for 41 countries in 1988 to examine the political and economic determinants of non-tariff barriers, as well as the impact of protection (both tariff and non-tariff) on trade flows. We use an econometric framework that allows for the simultaneous determination of trade barriers and trade flows. Our results are consistent with political- economy theories of the determinants of protection: even after accounting for industry-specific factors, nations tend to protect industries that are weak, in decline, and threatened by import competition. Countries also give more protection to large industries; these might be thought of as politically important. Nations use tariffs, non-tariff barriers, and exchange rate controls as complementary instruments of protection.

Lee, Jonghwa

TI Durable Goods Monopoly under Technological Innovation. **AU** Lee, In Ho; Lee, Jonghwa.

Lee, Kevin C.

PD May 1994. **TI** Economic Fluctuations in a Model of Output Growth in the G7 Economies, 1960-1991. **AA** University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9409; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 25. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C32, E32, F43. **KW** Business Cycle Fluctuations. Persistence. International Output Growth. Impulse Response.

AB Recently developed methods in time series analysis are employed to investigate output growth across the G7 economies. The methods accommodate the interdependencies that exist between economies' growth, and provide the means for analyzing the sources of shocks to output growth and for examining the time profiles of the effects of shocks. Sophisticated dynamic adjustments in output are identified, due to lagged responses to shocks, the feedback of effects across countries, and the differential speeds of response to different types of shock. Among the global shocks considered, those to oil prices and world trade have the largest persistent effect on output.

Leite Moteiro, Manuel

PD December 1994. **TI** Redistributive Policy with Labour Mobility Across Countries. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9470; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 22. **PR** not available. **JE** F11, F22, I38. **KW** Labor Mobility. Redistribution.

AB It is generally believed that international labor mobility lowers the level of redistribution each country wishes to undertake. This paper considers a model with two countries where each government redistributes income between two types of individuals. Using a general equilibrium model it is shown that there are situations where the level of redistribution in one of the two countries is in fact higher than in the absence of individual mobility. This higher level of redistribution is explained by the migration induced changes in the structure of the population in both countries, namely by the increase in the proportion of high income individuals in the country that may experience excessive redistribution.

Lewbel, Arthur

TI Tax Reform and Welfare Measurement: Do We Need Demand System Estimation? **AU** Banks, James; Blundell, Richard; Lewbel, Arthur.

Lipman, Bart

TI Evolution with State-Dependent Mutations. **AU** Bergin, James; Lipman, Bart.

Lismont, Luc

PD January 1994. **TI** On the Logic of Common Belief and Common Knowledge. **AU** Lismont, Luc; Mongin, Philippe. **AA** Lismont: G.R.E.Q.E. Mongin: Centre National de la Recherche Scientifique, France and Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9405; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 21. **PR** not available. **JE** D10, D11, D80, D81, D83, D84, D89. **KW** Common Belief. Common Knowledge. Kripke Structures. Neighborhood Structures. Partitional Model. Modal Propositional Logic. Epistemic Logic.

AB The paper surveys the currently available axiomatizations of common belief (CB) and common knowledge (CK) by means of modal propositional logics. (Throughout, knowledge--whether individual or common--is defined as true belief). Section 1 introduces the formal method of axiomatization followed by epistemic logicians, especially the syntax- semantics distinction, and the notion of a soundness and completeness theorem. Section 2 explains the syntactical concepts, while briefly discussing their motivations. Two standard semantic constructions, Kripke structures and neighborhood structures, are introduced in sections 3 and 4, respectively. It is recalled that Aumann's partitional model of CK is a particular case of a definition in terms of Kripke structures. The paper also restates the well-known fact that Kripke structures can be regarded as particular cases of neighborhood structures. Section 3 reviews the soundness and completeness theorems proved with respect to the former structures by Fagin, Halpern, Moses and Vardi, as well as, related results by Lismont. Section 4 reviews the corresponding theorems derived with respect to the latter structures by Lismont and Mongin. A general conclusion of the paper is that the axiomatization of CB does not require as strong systems of individual belief as was originally thought--only monotonicity has thus far proved indispensable. Section 5 explains another consequence of general relevance: despite the "infinitary" nature of CB, the axiom systems if this paper admit of effective decision procedures, i.e., they are decidable in the logician's sense.

Liu, Guy

TI The Investment Behaviour of Firms in an Oligopolistic Setting. **AU** Hay, Donald; Liu, Guy.

Lubrano, Michel

TI Identification Restrictions and Posterior Densities in Cointegrated Gaussian VAR Systems. **AU** Bauwens, Luc; Lubrano, Michel.

Lund, Niels

TI Sampling Designs, Estimators and Resampling Procedures in the New Danish Wage Statistics. **AU** Host, Viggo; Lund, Niels; Poulsen, Torben.

Lyne, Stephen R.

TI Activity-Based Techniques and the Death of the Bean-Counter. **AU** Friedman, Andrew L.; Lyne, Stephen R.

Mabey, Nick

TI Macroeconomic modeling of International Carbon Tax Regimes. **AU** Hall, Stephen; Mabey, Nick; Smith, Clare.

Machin, Stephen

TI Estimating the Effect of Minimum Wages on Employment From the Distribution of Wages: A Critical View. **AU** Dickens, Richard; Machin, Stephen; Manning, Alan.

TI The Effect of Minimum Wages on UK Agriculture. **AU** Dickens, Richard; Machin, Stephen; Manning, Alan; Metcalf, David; Wadsworth, Jonathan; Woodland, Stephen.

TI The Changing Distribution of Male Wages in the UK, 1966-1992. **AU** Gosling, Amanda; Machin, Stephen; Meghir, Costas.

Mackinnon, James G.

PD January 1995. **TI** Numerical Distribution Functions for Unit Root and Cointegration Tests. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 918; Department of Economics, Queen's University, Kingston, Ontario K7l 3N6, CANADA. **PG** 14. **PR** \$3.00 + GST Canada; \$3.50 U.S. and Foreign. **JE** C22. **KW** Unit Root Tests. Dickey-Fuller Tests. Cointegration Tests. Engle- Granger Tests. Response Surfaces. Critical Values. Approximate P Values. Simulation Methods.

AB This paper employs response surface regressions based on simulation experiments to calculate distribution functions for some well-known unit root and cointegration test statistics. The principal contributions of the paper are a set of data files that contain estimated response surface coefficients and a computer program for utilizing them. This program, which is freely available via the Internet, can easily be used to calculate both asymptotic and finite-sample critical values and P values for any of the tests. Graphs of some of the tabulated distribution functions are provided. There is also an empirical example.

MacKinnon, James G.

PD January 1995. **TI** Approximate Bias Correction in Econometrics. **AU** MacKinnon, James G.; Smith, Jr. Anthony A. **AA** MacKinnon: Queen's University. Smith: Carnegie Mellon University. **SR** Queen's Institute for Economic Research Discussion Paper: 919; Department of Economics, Queen's University, Kingston, Ontario K7l 3N6, CANADA. **PG** 15. **PR** \$3.00 + GST Canada; \$3.50 U.S. and Foreign. **JE** C13. **KW** Bias Function. Mean Squared Error. Simulation. Finite Samples.

AB This paper discusses ways to reduce the bias of consistent estimators that are biased in finite samples. It is necessary that the bias function, which relates parameter values to bias, should be estimable by computer simulation or by some other method. If so, bias can be reduced or, in some cases that may not be unrealistic, even eliminated. In general, several evaluations of the bias function will be required to do this. Unfortunately, reducing bias may increase the variance, or even the mean squared error, of an estimator. Whether or not it does so depends on the shape of the bias function. The techniques of the paper are illustrated by applying them to two problems: estimating the autoregressive parameter in an AR(1) model with a constant term, and estimation of a logit model.

Maddison, David

TI Uncertainty, Learning and International Environmental Policy Co- ordination. **AU** Ulph, Alistair; Maddison, David.

Magnanti, Thomas L.

PD May 1994. **TI** Optimal Trees. **AU** Magnanti, Thomas L.; Wolsey, Laurence A. **AA** Magnanti: Massachusetts Institute of Technology. Wolsey: University Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9426; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 132. **PR** not available. **JE** C61. **KW** Tree Optimization.

AB A number of basic results concerning tree optimization problems are presented. As well as treating the polynomially solvable problems of finding minimum weight spanning trees and rooted subtrees of a tree, attention is paid to various NP-hard models including the Steiner tree problem, the problem of packing subtrees of a tree or of a more general graph and very recent work on hierarchical embedding of trees on trees. More generally this study is used to introduce many of the key ideas from the branch of combinatorial optimization known as polyhedral combinatorics (the study of integer polyhedra).

Maher, Maria

TI Investment Decisions: The Role of Market Structure in Vertically Separated Network Industries. **AU** Doyle, Chris; Maher, Maria.

TI Specific Investment, Hold-Up, and Commitment Through Dual-Class Common Stock. **AU** Doyle, Chris; Maher, Maria.

Malnero, Amador

TI Nonparametric Approaches to the Assessment of the Relative Efficiency of Bank Branches. **AU** Tulkens, Henry; Malnero, Amador.

Mamuneas, Theofanis P.

TI Infrastructure and Public R&D Investments, and the Growth of Factor Productivity in U.S. Manufacturing Industries. **AU** Nadiri, M. Ishaq; Mamuneas, Theofanis P.

Manne, Alan S.

PD January 1994. **TI** Greenhouse Gas Abatement-Toward Pareto-Optimal Decisions Under Uncertainty. **AU** Manne, Alan S.; Olsen, Timothy R. **AA** Stanford University. **SR** University of Birmingham Department of Economics Discussion Paper: 94-06; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 08. **PR** 2 pounds. **JE** Q20, Q28, Q29, Q30, Q39, Q43. **KW** Climate Change. Global Warming. Abatement and Impact Costs. Uncertainty.

AB This paper examines the economic logic of integrated assessment- balancing the costs against the benefits of greenhouse gas abatement. "Stylized facts" are employed in a multi-region computable general equilibrium model with a public good. Shares in global emissions are determined outside the model- based upon some form of international agreement- and emission rights are tradable between regions. The analysis is confined to Pareto-optimal (cooperative) solutions. We focus on the sensitivity of initial decisions to low-probability, high-consequence scenarios associated with cumulative emissions. For simplicity, there are only two regions, two tradable goods, two time periods and two states-of-world. With the particular form of public good model adopted here (production rather than utility function effects), it turns out that a Pareto-optimal hedging strategy is independent of the emission shares allocated to each region. Equity issues may be separated from those of economic efficiency. We conjecture that similar results will extend to cases in which there are additional regions, tradable goods, time periods and states-world.

Manning, Alan

PD June 1994. **TI** How Do We Know That Real Wages are Too High? **AA** London School of Economics. **SR** London School of Economics Centre for Economic Performance Discussion Paper: 195; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 29. **PR** no charge. **JE** J00. **KW** Minimum Wage. Involuntary Unemployment. Labor Market. Market-Clearing Levels. Simple Efficiency Wage Model. General Equilibrium.

AB It is a common belief that the wages that we observe are above the level that would prevail in a competitive labor market and also it is common to believe that wage moderation should be encouraged as a way to keep unemployment down. This paper considers whether we can have confidence in these beliefs. It presents a number of models designed to cast doubt on the conventional wisdom. First, we show that in an efficiency wage model in which there is involuntary unemployment, a binding minimum wage may increase employment. We then present a general equilibrium matching model in which there is involuntary unemployment but wages are below market-clearing levels and raising wages can reduce unemployment. We then consider the empirical evidence on employment and wage determination to argue that it is just as consistent with this model as with models in which wages are at or above market-clearing levels.

TI Estimating the Effect of Minimum Wages on Employment From the Distribution of Wages: A Critical View. **AU** Dickens, Richard; Machin, Stephen; Manning, Alan.

TI The Effect of Minimum Wages on UK Agriculture. **AU** Dickens, Richard; Machin, Stephen; Manning, Alan; Metcalf, David; Wadsworth, Jonathan; Woodland, Stephen.

Marceau, Nicolas

TI Time-Consistent Criminal Sanctions. **AU** Boadway, Robin W.; Marceau, Nicolas; Marchand, Maurice.

Marchand, Maurice

TI Time-Consistent Criminal Sanctions. **AU** Boadway, Robin W.; Marceau, Nicolas; Marchand, Maurice.

TI Interregional Redistribution Through Tax Surcharge. **AU** Cremer, Helmuth; Marchand, Maurice; Pestieau, Pierre.

Marimon, Ramon

PD January 1993. **TI** On Adaptive Learning in Strategic Games. **AU** Marimon, Ramon; Mc Grattan, Ellen. **AA** Marimon: Universitat Pompeu Fabra, University of Cambridge and University of Minnesota. Mc Grattan: Duke University and Federal Reserve Bank of Minneapolis. **SR** University of Cambridge Economic Theory Discussion Paper: 190; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 36. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C70. **KW** Adaptive Learning. Strategic Form Games. Evolutionary Models.

AB The paper provides an overview of adaptive learning in strategic form games. A general class of adaptive learning rules is defined and it is shown that this class covers most rules studied in the literature. It is also shown how evolutionary models can be integrated in this general framework. Finally, the asymptotic behavior of adaptive learning algorithms is analyzed, and the equilibria that these algorithms select are characterized.

PD May 1993. **TI** Expectations and Learning Under Alternative Monetary Regimes: An Experimental Approach. **AU** Marimon, Ramon; Sunder, Shyam. **AA** Marimon: University of Cambridge and University of Minnesota. Sunder: Carnegie Mellon University. **SR** University of Cambridge Economic Theory Discussion Paper: 189; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 25. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** E42. **KW** Overlapping Generations. Alternative Policy Regimes.

AB This paper designs and analyses experimental versions of monetary overlapping generation economies under alternative policy regimes. Economies with a constant level of real deficit financed through seignorage, economies in which the level of deficit is adapted in order to follow a monetary policy with a target rate of inflation, and economies with preannounced changes in deficit levels are reported here. The paper also examines the behavior of an economy with no stationary competitive equilibrium. The times series are compared to rational expectations equilibrium paths and to adaptive learning dynamics.

Martin, Alexander

TI Formulations and Valid Inequalities for the Node Capacitated Graph Partitioning Problem. **AU** Ferreira, Carlos E.; Martin, Alexander; de Souza, Cid C.; Weismantel, Robert; Wolsey, Laurence A.

TI The Node Capacitated Graph Partitioning Problem: A Computational Study. **AU** Ferreira, Carlos E.; Martin, Alexander; de Souza, Cid C.; Weismantel, Robert; Wolsey, Laurence A.

Mason, Robin

PD February 1995. **TI** Imperfect Competition and Chemical Accumulation in the Environment. **AA** University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9509; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 29. **PR** $10.00 (5 pounds), checks payable to University of Cambridge. **JE** C72, C73, L13, Q28. **KW** Environmental Regulation. Product Durability. Differential Games.

AB One of the major problems facing regulators is the accumulation of chemicals in the environment. The first question asked by this paper is: What form of market failure is responsible for excessive product accumulation? Conditions are given under which the usual externality arguments are supplemented by the effects of imperfect competition in the product market. A common response to the problem of accumulation is to threaten regulation; for example, by banning a chemical from further use once it has reached some critical level of concentration in a natural resource. The apparent objective of such an approach is to signal society's disapproval of excessive accumulation. The actual effect of a regulatory threat is examined when manufacturers act strategically. It is shown that the anticipation of moderate levels of regulation lead to an increase in product accumulation, as firms attempt to influence the production decisions of their rivals. The conclusions are supported by a case study from the pesticide industry.

Mc Cabe, B.P.M

PD July 1994. **TI** Testing a Time Series for Difference Stationarity. **AU** Mc Cabe, B.P.M.; Tremayne, A. R. **AA** Mc Cabe: University of Cambridge and University of British Columbia. Tremayne: University of Sydney. **SR** University of Cambridge Department of Applied Economics Working Paper: 9420; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 12. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C12, C22, C51. **KW** Autoregression. Brownian Motion. Difference Stationarity. Locally Best Invariant. Random Coefficient. Random Walk. Weak Convergence.

AB This paper addresses the problem of testing the hypothesis that an observed series is difference stationary. The alternative hypothesis is that the series is another non-stationary process; in particular, an autoregressive model with a random parameter is used. A locally best invariant test is developed assuming Gaussianity and a representation of its asymptotic distribution as a mixture of Brownian motions is found. The performance of the test in finite samples is investigated by simulation. An example is given where the difference stationary assumption for a well-known data series is rejected.

Mc Grattan, Ellen

TI On Adaptive Learning in Strategic Games. **AU** Marimon, Ramon; Mc Grattan, Ellen.

Meghir, Costas

TI The Changing Distribution of Male Wages in the UK, 1966-1992. **AU** Gosling, Amanda; Machin, Stephen; Meghir, Costas.

Melard, Guy

TI Forecast Intervals in ARCH Exponential Smoothing. **AU** Broze, Laurence; Melard, Guy; Scaillet, Olivier.

Mella-Barral, Pierre

PD August 1994. **TI** New Methods for Estimating Nonlinear Continuous Time Interest Rate Processes. **AU** Mella-Barral, Pierre; Perraudin, William. **AA** Mella-Barral: University of Cambridge. Perraudin: University of Cambridge and Centre for Economic Policy Research. **SR** University of Cambridge Department of Applied Economics Working Paper: 9416; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 21. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C13, C22, G13. **KW** Continuous Time Econometrics. Finite Difference. Maximum Likelihood.

AB This paper describes a new a approach to estimating non-linear diffusion processes based on numerical solution of the Kolmogorov equations that characterize the processes' conditional densities. As an illustration, we apply these techniques to the estimation of U.S. interest rate processes. Our estimates differ significantly from those obtained using Generalized Method of Moments on an approximate, discrete time version of the continuous time model. Monte Carlos suggest that the latter approach, which neglects time aggregation, yields biased estimates. As is shown, this finding has important implications for bond and fixed-interest derivative pricing.

TI Optimal Bank Reorganization and the Fair Pricing of Deposit Guarantees. **AU** Fries, Steven; Mella-Barral, Pierre; Perraudin, William.

PD November 1994. **TI** Sequential Reorganisation of Corporate Debt Contracts. **AA** University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9501; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 29. **PR** $10.00 (5 pounds), checks payable to University of Cambridge. **JE** G12, G32, G33. **KW** Debt Reorganization. Corporate Bonds. Agency Costs.

AB This paper analyzes the pricing and efficiency implications of sequential debt reorganization within a fully dynamic, continuous time model. Polar cases are considered in which the balance of bargaining power in debt contract renegotiation favors either debtors or creditors. Simple closed form solutions are derived for equity and debt values, as well as for the agency costs resulting from the conflict of interest among the different stakeholders. The optimal initial leverage and the debt capacity of the firm are calculated when the debt is either privately held by a single bank or publicly traded by many bond-holders. In both cases, a complete comparative analysis of the evolution of the firm's capital structure is provided.

Mertens, Jean-Francois

PD April 1994. **TI** Repeated Games Part B: The Central Results. **AU** Mertens, Jean-Francois; Sorin, Sylvain; Zamir, Shmuel. **AA** Mertens: Universite Catholique de Louvain. Sorin: Ecole Normale Superieure and Universite Paris X, Nanterre. Zamir: The Hebrew University of Jerusalem. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9421; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 205. **PR** not available. **JE** C73. **KW** Repeated Games.
AB Jointly with the previous and following papers, this is a thorough treatment of repeated games.

PD April 1994. **TI** Repeated Games Part C: Further Development. **AU** Mertens, Jean-Francois; Sorin, Sylvain; Zamir, Shmuel. **AA** Mertens: Universite Catholique de Louvain. Sorin: Ecole Normale Superieure and University Paris X, Nanterre. Zamir: the Hebrew University of Jerusalem. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9423; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 23. **PR** not available. **JE** C73. **KW** Repeated Games.
AB Jointly with the two previously listed papers, this is a thorough treatment of repeated games.

PD January 1995. **TI** The Speed of Convergence in Repeated Games with Incomplete Information on One Side. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9506; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 15. **PR** not available. **JE** C72, C73. **KW** Game. Non-Cooperative. Two-Person. Zero-Sum. Repeated. Incomplete. Asymmetric. Private. Differential Information. General Information Functions. Error Term. Speed of Convergence.
AB In a repeated two-person zero-sum game with incomplete information on one side, the values v sub n of the n-stage games converge to the value v sub infinity of the infinite game with worst case error distribution (ln n/n) to the 1/3.

PD April 1995. **TI** Repeated Games Part A: Background Material. **AU** Mertens, Jean-Francois; Sorin, Sylvain; Zamir, Shmuel. **AA** Mertens: Universite Catholique de Louvain. Sorin: Ecole Normale Superieure and Universite Paris X, Nanterre. Zamir: The Hebrew University of Jerusalem. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9420; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 210. **PR** not available. **JE** C73. **KW** Repeated Games.
AB Jointly with the next two papers, this is a thorough treatment of repeated games.

Mestre, Ricardo

TI On the Power of Co-Integration Test: Dimension Invariance vs Common Factors. **AU** Banerjee, Anindya; Dolado, Juan J.; Mestre, Ricardo.

Metcalf, David

TI Spanish Pay Setting Institutions and Performance Outcomes. **AU** Milner, Simon; Metcalf, David.

TI The Effect of Minimum Wages on UK Agriculture. **AU** Dickens, Richard; Machin, Stephen; Manning, Alan; Metcalf, David; Wadsworth, Jonathan; Woodland, Stephen.

TI The Effect of Minimum Wages on UK Agriculture. **AU** Dickens, Richard; Machin, Stephen; Manning, Alan; Metcalf, David; Wadsworth, Jonathan; Woodland, Stephen.

Miaouli, Natasha

TI Wage Determination and Capital Decisions in a Dynamic Monopoly Union Model (with an application to Greek manufacturing). **AU** Jafarey, Saqib; Kaskarelis, Yannis; Miaouli, Natasha.

Michel, Philippe

PD October 1994. **TI** Fiscal Policy in a Growth Model with Both Altruistic and Non Altruistic Agents. **AU** Michel, Philippe; Pestieau, Pierre. **AA** Michel: University of Aix-Marseille II. Pestieau: Universite Catholique de Louvain and Universite de Liege and Paris X. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9449; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 14. **PR** not available. **JE** E13, E21, E47. **KW** Altruism. Ricardian Equivalence. Fiscal Policy.
AB This paper examines the long-run behavior of an overlapping- generations model with a population consisting of altruistic and non- altruistic agents. It also studies the effect of fiscal policy on aggregate capital accumulation and on the welfare of both types of agents. It shows that an increase in the relative number of non- altruists is Pareto-improving in the steady-state. It also shown that the introduction of public debt or unfunded social security has no effect on the long-run equilibrium but implies a transfer of resources from the non-altruistic to the altruistic agents. Finally, it indicates that inheritance taxation hurts not only the altruists but also the non-altruists.

TI Education Subsidies and Endogenous Growth: Implications of Demographic Shocks. **AU** Docquier, Frederic; Michel, Philippe.

Miller, Marcus

TI Debt In Industry Equilibrium. **AU** Fries, Steven; Miller, Marcus; Perraudin, William.

Milne, Frank

TI Induced Preferences and Decision Making Under Risk and Uncertainty. **AU** Kelsey, David; Milne, Frank.

PD July 1994. **TI** Standardized Variables and Optimal Risky Investment. **AU** Milne, Frank; Neave, Edwin H. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 906; Department of Economics, Queen's University, Kingston, Ontario K71 3N6, CANADA. **PG** 21. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** D81, G11. **KW** Stochastic Dominance. Portfolio Choice.
AB This paper studies the optimal risky investment problem with fewer restrictions on utilities, and more structure on risks, than does the current literature. It uses discrete random variables defined on a common domain, hereafter called standardized variables, to obtain new results without important loss of generality. The optimal amount of investment in a single risky asset does not always decrease as risk increases in the

Rothschild-Stiglitz (1970, 1971) sense. However, by using standardized variables to define wealth dependent measures if risk and return, the paper finds necessary and sufficient conditions on risks such that an increase in risk does cause decreasing optimal risky investment. The paper thus complements the R-S results. For investment in two risky assets, the paper uses standardized variables to find conditions on risks such that the riskier asset's demand to decrease (increase) as the Arrow-Pratt absolute risk aversion index increase (decreases), and thereby complements Ross' (1981) results.

PD July 1994. **TI** Standardized Variables. Risks. Preference. **AU** Milne, Frank; Neave, Edwin H. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 907; Department of Economics, Queen's University, Kingston, Ontario K71 3N6, CANADA. **PG** 16. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** D81, G11. **KW** Stochastic Dominance. Portfolio Choice.

AB This paper examines the expected utility effects of adding one risk to another. In comparison to related works, it places fewer restrictions on utilities and more structure on risky asset returns. The paper, entailing little loss of generality, uses discrete variables defined on a common domain (hereafter standardized variables) to find sufficient conditions for either of two (dependent or independent) variables to dominate their sum in the second degree. It then finds (higher order) sufficient conditions for either of the variables to dominate their sum in the third degree. While utilities are only restricted to be increasing concave, the expected utility differences for the respective risk positions are the same as if the investors were respectively proper or standard risk averse (Pratt-Zeckhauser 1987, Kimball 1993).

Milner, Simon

PD June 1994. **TI** Spanish Pay Setting Institutions and Performance Outcomes. **AU** Milner, Simon; Metcalf, David. **AA** London School of Economics. **SR** London School of Economics Centre for Economic Performance Discussion Paper: 198; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 95. **PR** no charge. **JE** J51, J53. **KW** Spain. Industrial Relations. Collective Bargaining. Minimum Wages. Labor Market.

AB Links between Spanish industrial relations institutions and performance outcomes are examined. Part I considers changes in various institutions since the end of the Franco period: the structure of collective bargaining; trade union organization; the activities and structure of management; the scope of bargaining; and the extent of informal bargaining. It goes on the see how such changes have affected macroeconomic performance. Part II examines the flexibility of the industrial wage structure. It considers how the relative job performance by sector is influenced by the flexibility in the pay structure and by minimum wage legislation.

Mincer, Jacob

PD August 1994. **TI** The Production of Human Capital and the Lifecycle of Earnings: Variations on a Theme. **AA** Columbia University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4838; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** not available. **PR** $5.00. **JE** J24, C21, D91. **KW** Training. Life Cycle. Human Capital. Labor Supply.

AB After a brief summary of Ben Porath's 1967 model approach, I inquire into the empirical validity and some implications of his insights. Section 2 is an attempt to answer the question: Are the shapes and magnitudes of growth in wage profiles largely attributable to human capital investments? Section 3 tests the proposition that over the working age capacity wages (i.e., wages before netting out investment) decline before observed wages do. Implied timing of labor supply provides the test. The findings shed light on developments in the U.S. labor market in the past several decades. In section 4 some implications are drawn from Ben Porath's model for interpersonal differences and historical changes in life-cycle human capital investments. The positive correlation between schooling and training, predicted by the model is found in cross-sections. It also shows up in parallel movements in schooling and training in the 1980's as the demand for human capital increased. Once again, observed U.S. patterns are highlighted.

PD August 1994. **TI** Investment in U.S. Education and Training. **AA** Columbia University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4844; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 38. **PR** $5.00. **JE** I21, J24, J31. **KW** Wage Differential. Human Capital. Education.

AB The current high rates of return to human capital stimulate a supply response via increased investments in education and training. The increased human capital stock exerts downward pressures on the rates of return that reduce the skill differential in wages. This paper reports estimates of: the responses of investments in post-secondary education, measured by enrollments, to changes in the rate of return; responses of investment in job training, measured by incidence; and effects of accumulated human capital stocks, measured by educational attainment, on educational wage differentials. Enrollment responses and attainment effects are shown to be separated by a time lag of about a decade. The parameter estimates are based on annual CPS and NCES data, covering a recent 25 year period. If demands for human capital cease their acceleration, the rate of return is expected to decline about 25% over the current decade, judging by the estimated parameters and lags.

Minelli, Enrico

TI Self-Fulfilling Mechanisms and Rational Expectations. **AU** Forges, Francoise; Minelli, Enrico.

TI Self-Fulfilling Mechanisms in Repeated Games with Incomplete Information. **AU** Forges, Francoise; Minelli, Enrico.

Mintz, Jack

PD December 1994. **TI** Optimality Properties of Alternative Systems of Taxation of Foreign Capital Income. **AU** Mintz, Jack; Tulkens, Henry. **AA** Mintz: University of Toronto. Tulkens: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9478; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 29. **PR** not available. **JE** F21, F32, H21. **KW** Optimal Taxation. International Trade.

AB Foreign source capital income taxes are examined from the point of view of optimal taxation. In the framework of a simple economy with international real capital flows, a taxonomy of alternative systems of such taxation is first presented, showing how crediting and other tax parameters induce what are called source-based, residence-based and related systems. Next, tax rates are determined that are optimal from a single country's point of view, given those of the others. The achievability of these rates under the various systems is analyzed. Finally, tax rates that are optimal from an international point of view are considered. Again, achievability of an international optimum under that various systems is considered, leading to the main conclusion that (i) a residence based system in all countries can achieve an international fiscal optimum; (ii) this is not the case with a source system; (iii) the former however cannot be sustained as an equilibrium.

Mirman, Leonard J.

TI Dynamic Capital Interactions, Externalities and Trade. AU Datta, Manjira; Mirman, Leonard J.

Mitchell, Olivia S.

TI Retirement Research Using the Health and Retirement Survey. AU Gustman, Alan L; Mitchell, Olivia S.; Steinmeier, Thomas L.

Modica, Salvatore

PD December 1993. TI Unawareness: A Formal Theory of Unforeseen Contingencies. Part II. AU Modica, Salvatore; Rustichini, Aldo. AA Universite Catholique de Louvain and Universita de Palermo. SR Universite Catholique de Louvain CORE Discussion Paper: 9404; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. PG 27. PR not available. JE D10, D11, D80, D81, D83, D84, D89. KW Modal Logic. Unawareness. Uncertainty.

AB In this paper we conclude the research initiated in Modica and Rustichini [6]. We claim here, as we did in that paper, that simple uncertainty is not an adequate model of a subject's ignorance, because a major component of it is the inability to give a complete description of the states of the world, and we provide a formal model of unawareness. In Modica and Rustichini [6] we showed a difficulty in the project, in that without a weakening of the inference rules of the logic one would face the unpleasant alternative between full awareness. We give a formal definition of unawareness, we study a system of modal logic where non full awareness is possible, and prove that a satisfactory solution to the problem can be found by introducing limited reasoning ability of the subject.

Mollgaard, H. Peter

PD September 1994. TI Strategic Inventories in Two Period Oligopoly. AA University of Aarhus. SR Aarhus Institute of Economics Memo: 1994-29; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. PG 26. PR no charge. JE D43. KW Dynamic Oligopoly. Strategic Stocks.

AB A general model of two-period duopoly is set up and it is shown how inventories can serve a strategic purpose, for example by providing a commitment to raise second period output. The strategic effect of inventories depends on the convexity of the cost function, on the cost of storage and on whether the "business regime" is competitive, Bertrand, Cournot or cooperative. It is shown how the model encompasses existing models in the literature. A closed form of the strategic inventories is then found for a parameterized two period, n-firm oligopoly.

Moner-Colonques, Rafael

TI Optimal Licensing in a Spatial Model. AU Caballero-Sanz, Francisco; Moner-Colonques, Rafael; Sempere-Monerris, Jose.

Mongin, Philippe

TI On the Logic of Common Belief and Common Knowledge. AU Lismont, Luc; Mongin, Philippe.

TI A Note on Affine Aggregation. AU De Meyer, Bernard; Mongin, Philippe.

Morris, J. L.

TI The Money Multiplier, Simple Sum, Divisia and Innovation-Divisia, Monetary Aggregates: Cointegration Tests for the United Kingdom. AU Ford, J. L.; Morris, J. L.

Morris, Stephen

PD October 1993. TI Price Bubbles and Learning. AA University of Pennsylvania and University of Cambridge. SR University of Cambridge Economic Theory Discussion Paper: 191; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. PG 14. PR $5.00 (2.50 pounds), checks payable to University of Cambridge. JE D83, G12. KW Price Bubbles. Learning. Common Prior Assumption.

AB As traders learn about the true distribution of some asset's returns, a price bubble occurs as each trader anticipates the possibility of re- selling the asset to another trader before complete learning has occurred. Reasonable "ignorance" priors lead to large bubbles during the learning process. This phenomenon explains a paradox concerning the pricing of initial public offerings. The result casts light on the significance of the common prior assumption in economic models.

PD November 1993. TI Trade and Almost Common Knowledge. AA University of Pennsylvania and University of Cambridge. SR University of Cambridge Economic Theory Discussion Paper: 194; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. PG 17. PR $5.00 (2.50 pounds), checks payable to University of Cambridge. JE D82, G10. KW No Trade. Almost Common Knowledge.

AB Suppose that there is some transaction cost for trading, an upper bound on any individual's conceivable gains from trade and no ex ante gains from trade. Then, for p sufficiently close to one, it cannot be the case that every iterated statement of the form, "everyone believes with probability at least p that everyone believes with probability at least p.... that everyone is prepared to accept the trade," is true. In the language of Monderer and Samet (1989), there can be no common p- belief trade. On the other hand, for any p, it is possible that every iterated statement of the form "A believes with probability at least p that B believes with probability at least p... that everyone is prepared to accept the trade," is true. In the language of this paper, iterated p-belief trade is possible, for any p. These results cast further light on the important question of the robustness of economic models to their common knowledge assumptions.

PD November 1993. **TI** The Common Prior Assumption in Economic Theory. **AA** University of Pennsylvania and University of Cambridge. **SR** University of Cambridge Economic Theory Discussion Paper: 199; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 23. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** D82, G10. **KW** Common Prior Assumption. Heterogeneity of Beliefs.

AB This paper surveys some arguments which are made for and against the common prior assumption in economic theory. While the common prior assumption is not implied by economists' usual notion of rationality, there are methodological reasons why indiscriminate use of heterogeneity of prior beliefs in economic theory is viewed with suspicion. However, it is argued that in certain well-defined circumstances it is crucial to allow for heterogeneity of prior beliefs and it is possible to derive insightful and powerful implications from the assumption. Examples are cited in support of this claim.

PD January 1994. **TI** Alternatives Notions of Knowledge. **AA** University of Pennsylvania and University of Cambridge. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9402; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 18. **PR** not available. **JE** D11, D81, D84. **KW** Belief. Non-Expected Utility.

AB In a finite state world with subjective expected utility maximizers, there an unambiguous notion of what it means to know an event: an event is known if it is assigned probability one. But when should a non- expected utility maximizer be said to know an event? Consider a lexicographic expected utility maximizer. Does he know an event if it is assigned probability one by the first sets of beliefs, or only if it is assigned probability one by each of the lexicographic sequence of beliefs? This paper considers alternative definitions of knowledge in terms of preferences, and shows what these alternative notions imply in different non-expected utility settings.

PD February 1994. **TI** A Curious Property of Belief Operators. **AA** University of Pennsylvania and University of Cambridge. **SR** University of Cambridge Economic Theory Discussion Paper: 198; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 9. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** D82, G10. **KW** Belief Operators. Common Priors.

AB When two individuals have non-trivial information and a common prior, there exists a non-empty strict subset of the state space which believe with a probability of at least a half whenever it true (a "half evident" event). If they have different priors or there are more than two individuals, then there may be no p-evident event, for any $p > 0$.

Motta, Massimo

TI Tougher Price-Competition or Lower Concentration: A Trade-Off for Antitrust Authorities? **AU** d'Aspremont, Claude; Motta, Massimo.

Mouchart, Michel

TI Duration Models. **AU** Florens, Jean-Pierre; Fougere, Denis; Mouchart, Michel.

Mullineux, Andy W.

PD January 1994. **TI** Small and Medium Sized Enterprise Financing in the UK: Lessons from Germany. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 94-02; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 28. **PR** 2 pounds. **JE** G20, G30. **KW** Small Business. Banking.

AB Small and medium sized enterprises (SMEs) are the key to job creation in the 1990s. Banks naturally ration credit to this sector, which in the UK has a strong historical preference for short term, (non-equity) finance, usually via overdrafts. The government should intervene to ensure an adequate supply of suitably priced finance to this key sector and to encourage greater provision and usage of long term debt finance. In this way, relationship banking and long-termism, prevalent in Germany, loan guarantees and long term loans are provided, through specialized institutions, to the Mittelstand. The UK government should establish a small business bank to disburse subsidized loan guarantees and long term fixed interest loans. The activities of the bank could be wound down as long term lending and borrowing becomes established.

TI Financial Innovation and Monetary Aggregates in the UK, 1977-1993. **AU** Ford, J. L.; Mullineux, Andy W.

TI One Divisia Money for Europe? **AU** Drake, Leigh; Mullineux, Andy W.

Nadiri, M. Ishaq

PD August 1994. **TI** Infrastructure and Public R&D Investments, and the Growth of Factor Productivity in U.S. Manufacturing Industries. **AU** Nadiri, M. Ishaq; Mamuneas, Theofanis P. **AA** Nadiri: New York University and National Bureau of Economic Research. Mamuneas: New York University. **SR** National Bureau of Economic Research Working Paper: 4845; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** not available. **PR** $5.00. **JE** H54, D24. **KW** Public Finance. Infrastructure. Total Factor Productivity.

AB In this paper we examine the effects of publicly financed infrastructure and R&D capital on the cost structure and productivity performance of twelve two-digit U.S. manufacturing industries. A general framework is developed to measure contribution of demand, relative input prices, technical change, as well as publicly financed capital on total factor productivity growth. The magnitude of the contribution of these sources vary considerably across industries: in some changes in demand dominates while in others changes in technology or relative prices are the main contributors. Publicly financed infrastructure and R&D capital contribute to productivity growth. However, the magnitudes of their contribution varies considerably across industries and on the whole they are not the major contributors to TFP in these industries.

Nannestad, Peter

PD January 1994. **TI** It's the Government's Fault! A Cross-Section Study of Economic Voting. **AU** Nannestad, Peter; Paldam, Martin. **AA** University of Aarhus.

SR Aarhus Institute of Economics Memo: 1994-1; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 22. **PR** no charge. **JE** D72. **KW** Economic Voting. Egotropic. Sociotropic.

AB The relationship between voters' support for the government and fourteen items tapping their evaluation of the economic situation is analyzed. One data set is collected under Conservative rule and another under Social Democratic rule. The answers are first aggregated into three factors. Two are egotropic: the economic situation factor of the family and the unemployment situation factor. The third is sociotropic: the peoples' worry about the economic development in the country. The impact of the economic situation is strongly significant, and greater than found in comparable studies. The Danish welfare man demands collective solutions to individual grievances. The unemployment situation is mostly significant, but it proves hard to get the macroeconomic worry significant. We have thus found a clear case of pocketbook voting.

PD January 1994. **TI** The Egotropic Welfare Man. A Pooled Cross-Section Study of Economic Voting in Denmark, 1986-1992. **AU** Nannestad, Peter; Paldam, Martin. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-2; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 17. **PR** no charge. **JE** D72. **KW** Economic Voting. Egotropic. Sociotropic.

AB The weights of egotropic and sociotropic factors in economic voting are analyzed, using the Markus model. The 28 quarterly surveys show that pocketbook voting dominates in the Welfare State of Denmark. The egotropic economic conditions variable has a reliable and sizable impact on the probability of supporting the government. The five sociotropic variables tried are shown to have less reliable and smaller effects. The results are much more egotropic for Denmark than the closest comparable ones for the USA. There are small, but significant movements in the coefficients over time, so the relative effects may change in the long run. We use the Culture Hypothesis to explain, why the welfare man is egotropic. The same hypothesis predicts the Americans to be more sociotropic.

PD March 1995. **TI** The Grievance Asymmetry Revisited. A Micro Study of Economic Voting in Denmark, 1986-92. **AU** Nannestad, Peter; Paldam, Martin. **AA** University of Aarhus. **SR** Aarhus Department of Economics Memo: 1995-4; Department of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 14. **PR** no charge. **JE** D72. **KW** Economic Voting. Asymmetric Reactions. Information Asymmetry. Risk Aversion.

AB From an analysis of the economic voting of 17,100 Danes, it is demonstrated that the reaction is about three times larger to a deterioration in the economy than to an improvement. The results points to the importance of economic stability in the welfare function. It provides an explanation of the costs of ruling. It thus explains, why government change.

Ncube, Mthuli

PD March 1994. **TI** Modeling UK Mortgage Defaults Using a Hazard Approach Based on American Options. **AU** Ncube, Mthuli; Satchell, Stephen E. **AA** Ncube: London School of Economics. Satchell: University of Cambridge and Birkbeck College. **SR** University of Cambridge Department of Applied Economics Working Paper: 9408; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 17. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** R21. **KW** Hazard. Housing. Mortgage Defaults. American Put Option. Inverse Gaussian Distribution. Beta Distribution.

AB This paper develops a model for predicting the number of mortgage defaults (arrears plus repossessions) in the UK market. Mortgage holdings are viewed as American options and this assumption generates a hazard model based on the Inverse Gaussian distribution which is the distribution of the first-passage time under Brownian motion. The paper generalizes the notion of a loan-to-value distribution with a scaled beta distribution across mortgages to model the impact of house price changes. This relates mortgage distress with negative equity. The model has direct implications for the valuation of mortgage-backed securities under default-risk. UK mortgage defaults are predicted for the period 1987 to 1996.

Neave, Edwin H.

TI Standardized Variables and Optimal Risky Investment. **AU** Milne, Frank; Neave, Edwin H.

TI Standardized Variables. Risks. Preference. **AU** Milne, Frank; Neave, Edwin H.

Nesterov, Yurii E.

TI Oligopolistic Competition and the Optimal Provision of Products. **AU** Anderson, Simon P.; de Palma, Andre; Nesterov, Yurii E.

PD November 1994. **TI** Self-Scaled Cones and Interior-Point Methods in Nonlinear Programming. **AU** Nesterov, Yurii E.; Todd, Michael J. **AA** Nesterov: Universite Catholique de Louvain. Todd: Cornell University. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9462; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 41. **PR** not available. **JE** C50, C25. **KW** Nonlinear Programming. Conical Form. Interior Point Algorithms. Self- Concordant Barrier. Self-Scaled Barrier. Path-Following Algorithms. Potential-Reduction Algorithms.

AB This paper provides a theoretical foundation for efficient interior- point algorithms for nonlinear programming problems expressed in conic form, when the cone and its associated barrier are self-scaled. For such problems we devise long-step and symmetric primal-dual methods. Because of the special properties of these cones and barriers, our algorithms can take steps that go typically a large fraction of the way to the boundary of the feasible region, rather than being confined to a ball of unit radius in the local norm defined by the Hessian of the barrier.

Newbery, David M.

PD October 1994. **TI** Regulatory Policies and Reform in the Electricity Supply Industry. **AA** University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9421; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 40. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** L51, L94, L32. **KW** Electricity. Regulation. Restructuring. Privatization. De-

Integration. Budget Deficit.
AB The paper draws lessons from the experience of regulation and reforms in developed countries' electricity supply for developing countries. It examines the pressures for reform and contrasts excess supply in developed countries with financial stress in developing countries. It draws on experience in Britain, Germany, Scandinavia, U.S. and Latin America and compares various proposals for restructuring and regulation. It also notes that while de-integration and privatization have greatly increased productivity in Britain, the challenge to developing countries wishing to privatize is to develop an efficient structure and a system of regulation that provides adequate assurances for private investment.

Newell, Andrew
TI Internal Migration and Unemployment in Germany: An Anglo-Irish Perspective. **AU** Keil, Manfred; Newell, Andrew.

Nickell, Stephen
PD April 1995. **TI** How Does Financial Pressure Affect Firms? **AU** Nickell, Stephen; Nicolitsas, Daphne. **AA** University of Oxford. **SR** Oxford Applied Economics Discussion Paper Series: 170; Institute of Economics and Statistics, St Cross Building, Manor Road, Oxford OX1 3UL. **PG** 11. **PR** not available. **JE** J23, D21. **KW** Employment. Wages. Cash Flow. Financial Pressure.
AB This paper investigates the impact on company behavior of increases in financial pressure. The best measure of this we find is the ratio of interest payments to cash flow. An increase in this measure has a large negative effect on employment controlling for current and expected wages and demand. It also has a small negative impact on pay raises and a small positive effect on productivity.

PD April 1995. **TI** Labour Market Dynamics in OECD Countries. **AA** University of Oxford. **SR** Oxford Applied Economics Discussion Paper Series: 171; Institute of Economics and Statistics, St Cross Building, Manor Road, Oxford OX1 3UL. **PG** 24. **PR** not available. **JE** E24, J63, J64. **KW** Dynamics. Unemployment. Adjustment Costs. Labor Market.
AB The title accurately reflects the subject matter of the paper and we come to the following conclusions. First, we note that the well documented difficulties in hiring faced by firms in the tight labor market of a boom provides a perfectly satisfactory explanation of both asymmetric employment cycles and countercyclical job reallocation. Second, employment adjustment costs are significantly inversely correlated with the speed of labor demand adjustment across the OECD economies. Third, the degree of hysteresis in the wage equation is positively related to long-term unemployment and negatively related to the proportion of small firms in the economy (where insider power is lower). The long-term unemployment rate is strongly relate to the duration of benefits. Finally, we find that unemployment persistence in the OECD countries is positively related to employment adjustment costs and benefit durations, and negatively related to employer coordination in wage bargaining.

Nicolitsas, Daphne
TI How Does Financial Pressure Affect Firms? **AU** Nickell, Stephen; Nicolitsas, Daphne.

Nielsen, Claus Kastberg
PD March 1994. **TI** Gradualist Trade Reform: Virtue of Vice? **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-13; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 21. **PR** no charge. **JE** D72, D82, E61, F61. **KW** Economic Reform. Trade Liberalization. Adverse Selection. Moral Hazard.
AB Optimal trade reform under asymmetric information is analyzed in a two-period specific factor model with costly mobility. The reform must be complemented with a transfer scheme to "buy" votes and alleviate a binding political constraint. The optimality of sequential and gradualist reforms are analyzed. Sequential reform may be a virtue. A change of transfer scheme may allow the government to reduce the impact of adverse selection. Gradualist reform may be a vice. Adverse selection leads to an unambiguous informational argument for faster reform rather than slower reform. Moral hazard leads to an unambiguous informational argument for slower reform rather than faster reform.

Nyarko, Yaw
TI The Transfer of Human Capital. **AU** Jovanovic, Boyan; Nyarko, Yaw.

O'Hara, Maureen
TI Liquidity, Information, and Infrequently Traded Stocks. **AU** Easley, David; Kiefer, Nicholas M.; O'Hara, Maureen; Paperman, Joseph B.

TI Cream-Skimming or Profit-Sharing? The Curious Role of Purchased Order Flow. **AU** Easley, David; Kiefer, Nicholas M.; O'Hara, Maureen.

Olsen, Timothy R.
TI Greenhouse Gas Abatement-Toward Pareto-Optimal Decisions Under Uncertainty. **AU** Manne, Alan S.; Olsen, Timothy R.

Olson Lanjouw, Jean
PD August 1994. **TI** Economic Consequences of a Changing Litigation Environment: The Case of Patents. **AA** Yale University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4835; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 33. **PR** $5.00. **JE** K41, K42, O31. **KW** Patent Infringement. Litigation. Innovation. Germany.
AB A model of patent infringement is developed to analyze the relationship between litigation and aspects of the legal environment such as the probability that the patent is found valid, the size of legal fees, and their allocation across agents. Potential challengers first decide whether to infringe and then the patentee decides whether or not to prosecute. The outcome of this game has a fundamental impact on the value of patent protection to a patentee. This model is then linked to a patent renewal model which explicitly incorporates the legal parameters of interest from the litigation game. Estimates of the renewal model allow the empirical estimation of the private value of a patent protection. Simulations are presented for Germany which show the quantitative impact of changes in the legal environment on the value generated by the patent system and hence the incentives created for innovation.

Orphanides, Athanasios

TI Leverage as a State Variable for Employment, Inventory Accumulation, and Fixed Investment. **AU** Calomiris, Charles W.; Orphanides, Athanasios; Sharpe, Steven A.

Orszag, J. Michael

PD February 1995. **TI** On a Field Theoretic Approach to Statistical Macroeconomics. **AA** Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 1/95; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 25. **PR** no charge. **JE** C52, C82, O33. **KW** Endogenous Technology. Statistical Macroeconomics.

AB This paper presents some basic results on a statistical macroeconomic model in which production technology is not fixed but is endogenous. The basic idea is to formulate a macroeconomic theory in terms of an integral with respect to functions and to consider models such as the representative agent model as approximations to these functional integrals. The representative agent approximation does not appear to be a good approximation because it may diverge as the economy gets closer to equilibrium. Such divergence is related to the flatness of the microeconomic profit function.

PD April 1995. **TI** Cumulative Waveletgram Test For Randomness. **AA** Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 5/95; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 14. **PR** no charge. **JE** C19, C49. **KW** Periodogram. Randomness. Wavelet. Waveletgram.

AB A new test for randomness based on the cumulative waveletgram of a time series is proposed. The test is based on a minor modification of the cumulative periodogram test; since the cumulative periodogram test relies on the use of Fourier basis functions, its power is limited in cases in which the deviations from randomness are transient of the structure of the time series changes over time as may be the case with much financial and macroeconomic time series data. The cumulative waveletgram uses instead orthonormal wavelet basis functions which have frequency-dependent support and are thus able to measure time-varying fluctuations more accurately. The cumulative waveletgram has essentially the same statistical distribution as the cumulative periodogram test and performs well against a wide variety of alternatives, including data generating processes corresponding to linear stationary time series models.

PD May 1995. **TI** Hiring-Risk and Labor Market Equilibrium. **AU** Orszag, J. Michael; Zoega, Gylfi. **AA** Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 7/95; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 11. **PR** no charge. **JE** J23, J41, J64. **KW** Hiring Cost. Quitting. Incentive Wages. Uncertainty.

AB This paper introduces asymmetric information about workers' abilities into the turnover-training model of equilibrium unemployment. This makes hiring an investment under uncertainty. We show that an increase in the level of uncertainty reduces the rate of hiring, raises the optimal wage, and reduces steady-state employment. This result can cast light on differences in the rates of unemployment across social groups if the variance of unobservable abilities differs across the groups. Discrimination against groups with a high variance of unobservable abilities is profit maximizing. Moreover, the rate of unemployment within these groups is higher, other things equal.

Osiewalski, Jacek

TI The Components of Output Growth: A Cross-Country Analysis. **AU** Koop, Gary; Osiewalski, Jacek; Steel, Mark F. J.

Osiewaslki, Jacek

TI Posterior Analysis of Stochastic Frontier Models Using Gibbs Sampling. **AU** Koop, Gary; Steel, Mark F. J.; Osiewaslki, Jacek.

Paldam, Martin

TI It's the Government's Fault! A Cross-Section Study of Economic Voting. **AU** Nannestad, Peter; Paldam, Martin.

TI The Egotropic Welfare Man. A Pooled Cross-Section Study of Economic Voting in Denmark, 1986-1992. **AU** Nannestad, Peter; Paldam, Martin.

PD February 1994. **TI** A Rational-Voter Explanation of the Cost of Ruling. **AU** Paldam, Martin; Skott, Peter. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-3; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 10. **PR** no charge. **JE** D72. **KW** Cost of Ruling. Demand for Change. Median Voter Model.

AB It is well known that average government loses votes--the so-called cost of ruling. We show that the loss can be explained as a perfectly rational demand for change in a median voter model, once the model is amended to let the two parties be visibly different.

TI The Grievance Asymmetry Revisited. A Micro Study of Economic Voting in Denmark, 1986-92. **AU** Nannestad, Peter; Paldam, Martin.

Paperman, Joseph

TI Liquidity, Information, and Infrequently Traded Stocks. **AU** Easley, David; Kiefer, Nicholas M.; O'Hara, Maureen; Paperman, Joseph B.

Patel, Urjit R.

TI Budgetary Aspects of Stabilisation and Structural Adjustment in India. **AU** Buiter, Willem H.; Patel, Urjit R.

Pearson, Peter J.G

PD April 1994. **TI** Environmental Quality, Electricity and Development: A Review of the Issues. **AA** University of Surrey. **SR** University of Birmingham Department of Economics Discussion Paper: 94-09; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 45. **PR** 2 pounds. **JE** Q28, Q40. **KW** Electricity. Environment. Development.

AB Inter-county differences in environmental problems and priorities, not least those related to energy, were an underlying cause of the difficulties that arose in reaching workable international environmental agreements at the 1992 Rio Earth Summit. Countries in different development situations do and should give different priorities to the pursuit of environmental quality in the energy sector, compared with: (a) environmental problems associated with other areas of economic and social activity; and (b) energy policy objectives other than environmental quality. This paper focuses mainly on electricity. Section 2 notes how electricity raises issues about conflicts and complementarities between environment and development. Subsequent sections address: the growth of electricity capacity; recent performance and future expansion of the DC electricity sector; the growth of environmental effects; relations between electricity, economic development and environmental quality; environmental priorities and pressures for change; and objectives, priorities, conflicts and tradeoffs. The penultimate section explores a simple approach to the analysis of the supply of and demand for environmental quality and reviews recent attempts to model relationships between environmental quality and development. The paper argues that variations in environmental priorities at different levels of development are more than interesting; they reflect differing aspirations and constraints, and they matter both because of their significant influence on domestic policy priorities, and it is here that there also exist significant inter-country differences. For the electricity section in DCs, while there seems to be much potential for improvements in economic efficiency that might also yield environmental quality benefits, it is far from clear how easy it will be to realize these advances. Reforms of the electricity sector and the implied resolution of conflicts between policy objectives seem likely to prove more difficult to achieve than some commentators have suggested. Whereas some modeling of the relationships between energy-related environment quality and development has been carried out, it is clear that much remains to be done.

Peeters, Dominique

TI The Profit-Maximizing Weber Problem. **AU** Hansen, Pierre; Peeters, Dominique; Thisse, Jacques-Francois.

Perotti, Roberto

TI The Welfare State and Competitiveness. **AU** Alesina, Alberto; Perotti, Roberto.

Perraudin William

TI An Empirical Investigation of U.S. Bank Deposit Guarantees. **AU** Fries, Steven; Perraudin William.

Perraudin, William

TI Debt In Industry Equilibrium. **AU** Fries, Steven; Miller, Marcus; Perraudin, William.

PD June 1994. **TI** Continuous Time International Arbitrage Pricing: Theory and Estimation. **AU** Perraudin, William; Sorensen, Bent E. **AA** Perraudin: University of Cambridge and Centre for Economic Policy Research. Sorensen: Brown University. **SR** University of Cambridge Department of Applied Economics Working Paper: 9410; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 18. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** F30, F31, G12, C32. **KW** Arbitrage Pricing Theory. International Asset Pricing. Exchange Rates.

AB This paper formulates a continuous time, multi-factor International Arbitrage Pricing Model with stochastic interest rates. The yield curve in each country is consistent with Vasicek's (1997) closed-economy equilibrium fixed-interest model. The authors assume that exchange rates are driven by heteroskedastic Brownian and jump factors and that a simple parameterized pricing kernel generates risk premia. To estimate the model, they apply the GMM techniques developed in Ho, Perraudin and Sorensen (1992). This approach allows fully for time aggregation unlike most past empirical work on models with stochastic volatility. Finally, they investigate the implications of their estimates for option pricing, comparing the implied option prices with those obtained from a standard Black-Scholes model.

PD June 1994. **TI** Information Flows in the Foreign Exchange Market. **AU** Perraudin, William; Vitale, Paolo. **AA** Cambridge University. **SR** University of Cambridge Department of Applied Economics Working Paper: 9412; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 20. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** D82, F31, G14, G15. **KW** Foreign Exchange. Market-Microstructure.

AB A striking feature of the market for foreign exchange is dealers' ignorance of the order flow of other market-makers. Such decentralized markets may be contrasted with most stock markets in which information on trades is public knowledge. In this paper, the authors examine the efficiency and other characteristics of decentralized markets. Interdealer trades serve as a means by which dealers sell each market crashes than centralized ones, and will be privately efficient as long as it is possible to make large numbers of interdealer trades between customer transactions. Decentralized markets also generate greater volatility and departures from weak form efficiency.

TI Option Games. **AU** Lambrecht, Bart; Perraudin, William.

TI New Methods for Estimating Nonlinear Continuous Time Interest Rate Processes. **AU** Mella-Barral, Pierre; Perraudin, William.

TI Optimal Bank Reorganization and the Fair Pricing of Deposit Guarantees. **AU** Fries, Steven; Mella-Barral, Pierre; Perraudin, William.

PD November 1994. **TI** Framework for the Analysis of Pension and Unemployment Benefit Reform in Poland. **AU** Perraudin, William; Pujol, Thierry. **AA** Perraudin: Birkbeck College and University of Cambridge. Pujol: International Monetary Fund. **SR** University of Cambridge Department of Applied Economics Working Paper: 9423; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 17. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** H55, J26, J65. **KW** Pension Reform. Poland. Economies in Transition. Simulation Models.

AB Pension reform in Poland is an urgent priority. Benefit expenditures have placed considerable pressure on public finances, hampering stabilization efforts. Demographic developments will exacerbate this pressure although probably less than some estimates have suggested. The main long-term argument for reform is that the current system induces severe microeconomic distortions. To analyze possible reforms, this paper employs a simulation model of a utility-maximizing household facing the detailed rules of the current Polish pension system. The reforms considered are designed to reduce the dead-weight losses associated with current arrangements and to alleviate the inequality engendered by the present system.

TI Reserve Cycles. **AU** Flood, Robert; Perraudin, William; Vitale, Paulo.

TI European Pension Systems: A Simulation Analysis. **AU** Kenc, Turalay; Perraudin, William.

Pesaran, M. Hashem

PD November 1993. **TI** Forecasting Ultimate Resource Recovery. **AU** Pesaran, M. Hashem; Samiei, Hossein. **AA** Pesaran: University of Cambridge and University of Pennsylvania. Samiei: International Monetary Fund. **SR** University of Cambridge Department of Applied Economics Working Paper: 9320; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 19. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C13, L71. **KW** Oil Reserves. Oil Production. Hubbert's Model.

AB In this paper we analyze Hubbert's model of ultimate resource recovery and its extension to include economic and political factors by Kaufmann (1991) and Cleveland and Kaufmann (1991). The emphasis of the paper is on methodological and econometric issues. We examine the implications of alternative assumptions on the structure of the error term, parameter identification and appropriate estimation procedures. Using data on oil production in the U.S. lower 48 states, the paper reports the results of estimating the various specifications of the model and its extensions by the maximum-likelihood method, as well as the implied estimate for ultimate resource recovery and its standard error. When economic factors are taken into account this estimate becomes time-dependent, and we find that in this case the estimates of the ultimate recoverable reserves are higher than those obtained from the various specifications of Hubbert's original model.

PD November 1993. **TI** Limited-Dependent Rational Expectations Models With Future Expectations. **AU** Pesaran, M. Hashem; Samiei, Hossein. **AA** Pesaran: University of Cambridge and University of Pennsylvania. Samiei: International Monetary Fund. **SR** University of Cambridge Department of Applied Economics Working Paper: 9321; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 28. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C15, C24, F31. **KW** Expectations. Limited Dependence. Rational Expectations. Exchange- Rate Target Zones.

AB This paper examines limited-dependent rational expectations (LD-RE) models containing future expectations of the dependent variable. Limited-dependence is of a two-limit tobit variety which may, for example arise as a result of a policy of imposing limits on the movement of the dependent variables by means of marginal as well as intra- marginal interventions. We show that when the forcing variables are serially independent the model has an analytical solution which can be computed by backward recursion. With serially correlated forcing variables, we discuss an approximate solution method, as well as a numerically exact method that, in principle, can be implemented by stochastic simulation, although in practice it is limited by available computational capacity. The paper discusses some properties of the approximate solutions and reports the results of a limited number of Monte Carlo experiments in order to illustrate the computational feasibility of using the exact solution when the fundamentals are serially independent and the approximate solution when they are serially correlated.

PD March 1994. **TI** The Use of Recursive Model Selection Strategies in Forecasting Stock Returns. **AU** Pesaran, M. Hashem; Timmermann, Allan. **AA** Pesaran: University of Cambridge. Timmermann: Birkbeck College. **SR** University of Cambridge Department of Applied Economics Working Paper: 9406; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 39. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C52, C53, G11, G12. **KW** Recursive Model Selection. Model Uncertainty. Forecasting Stock Returns. Portfolio Selection Rules.

AB This paper presents an attempt to allow for "model and parameter uncertainty" in forecasting stock returns and proposes a recursive model selection strategy whereby, at each point in time, investors only use historically available information to determine the choice of a forecasting model and its parameters before predicting excess returns and making their portfolio decisions. The approach of the paper assumes that investors search across a set of linear regression or Logit models and use standard model selection criteria to choose a model which is then utilized to compute one-step ahead forecasts of excess returns on stock based on historical observations. Empirical results for monthly stock returns in the U.S. over the period 1960(1)-1992(12) are presented together with portfolio returns based on recursively selected forecasting models.

PD March 1994. **TI** The Use of Recursive Model Selection Strategies In Forecasting Stock Returns. **AU** Pesaran, M. Hashem; Timmermann, Allan. **AA** Pesaran: University of Cambridge. Timmermann: Birkbeck College and Centre of Economic Research. **SR** Birkbeck Discussion Paper in Financial Economics: 3/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 39. **PR** no charge. **JE** C52, C53, G11, G12. **KW** Recursive Model Selection. Model Uncertainty. Forecasting Stock Returns. Portfolio Selection Rules. S&P 500.

AB Many recent studies conclude that stock returns can be predicted by means of publicly available information, such as time series data on financial and macroeconomic variables. However, since both the forecasting models and their parameter estimates used in these studies are generally obtained on the basis of the entire sample of available observations, clearly no investor could have been in the position to know the forecasting model and exploit this in an appropriate investment strategy at the beginning of the sample. This causes important difficulties for the interpretation of the evidence on predictability of stock returns in general and its importance to portfolio selections. This paper presents an attempt to allow for the "model and parameter uncertainty" in forecasting stock returns and proposes a recursive model selection strategy whereby, at each point in time, investors only use historically available information to determine the choice of a forecasting model and its parameters before predicting excess returns and making their portfolio decisions. The approach of the paper assumes that investors search across a set of linear regression or Logit models and use standard model selection criteria to choose a model which is then utilized to compute one-step ahead forecasts of excess returns on stocks based on historical observations. The paper also addresses the uncertainty that surrounds the choice of model selection criterion. Empirical results for monthly stock returns in the U.S. over the period 1960(1)-1992(12) are presented together with portfolio returns based on recursively selected forecasting models.

TI Multivariate Rational Expectations Models and Macroeconomic Modeling: A Review and Some New Results. **AU** Binder, Michael; Pesaran, M. Hashem.

PD June 1994. **TI** A Floor and Ceiling Model of U.S. Output. **AU** Pesaran, M. Hashem; Potter, Simon M. **AA** Pesaran: University of Cambridge. Potter: University of California, Los Angeles. **SR** University of Cambridge Department of Applied Economics Working Paper: 9407; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 25. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C22, C51, C52, E32. **KW** Nonlinearity. Threshold Autoregression. Floor. Ceiling.

AB Building on previous nonlinear time series models the paper examines further the form on nonlinearity in U.S. Output. A model of U.S. Output is developed that allows for floor and ceiling effects to alter the dynamics of output growth. The model estimated on post-Korean War quarterly data, displays features similar to nonlinear trade cycle models of the 1940's and 1950's. In particular, the restriction that the sum of the coefficients on the lags of the growth rate is one not rejected, allowing the nonlinear model to be estimated in differences of growth rates. Thus, as predicted by many of the earlier theoretical models, this empirical model suggests that the turning points of the business cycle provide new initial conditions for the ensuing growth process. This history dependence of the behavior of the economy is not present in linear or approximately linear models such as standard implementations of Real Business Cycle theory.

PD September 1994. **TI** Long-Run Structural Modeling. **AU** Pesaran, M. Hashem; Shin, Yongcheol. **AA** University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9419; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 36. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C10, C30, D10, E10. **KW** Cointegration. Identification. Long-Run. Structural Modeling. VAR Models. Almost Ideal Demand Systems.

AB This paper develops a general framework for *identification, estimation and hypothesis testing in* cointegrating systems when the long-run relations are subject to general (possibly) non-homogeneous restrictions, obtained from economic theory or other relevant a priori information. This is an important departure from the purely statistical methods of identification of long-run relations advanced in the literature by Johansen and Phillips. The paper provides appropriate numerical algorithms for the Full Information Maximum Likelihood estimation of the long-run relations subject to identifying exactly and/or over-identifying restrictions, and develops tests of the over- identifying restrictions on the long-run relations.

PD October 1994. **TI** Iranian Economy During the Pahlavi Era. **AA** University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9418; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 13. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** O10, O53, N15. **KW** Iranian Economy. Industrialization. Development Process. Pahlavis.

AB This paper provides an account of the main economic developments in Iran under the Pahlavis (1921-1978). It starts with a brief review of economic conditions under the Qajars, and discusses the main driving force behind Reza Shah's economic policies. The paper argues that while Reza Shah's economic program was driven more by nationalist fervor than by a coherent development strategy, there is no doubt that his economic and social reforms were instrumental in rescuing Iran from the political and economic anarchy that had afflicted the country in the aftermath of the First World War.

PD January 1995. **TI** Dynamic Linear Models for Heterogeneous Panels. **AU** Pesaran, M. Hashem; Smith, Ron; Im, Kyung So. **AA** Pesaran and Im: University of Cambridge. Smith: Birkbeck College. **SR** University of Cambridge Department of Applied Economics Working Paper: 9503; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 32. **PR** $10.00 (5 pounds), checks payable to University of Cambridge. **JE** C12, C13, C33. **KW** Slope Heterogeneity. Mean Group. Pooled Data. Cross-Section. Hausman Test.

AB Earlier work by Pesaran and Smith (1995) indicated that the traditional panel procedures (such as the fixed and random effect estimators) which pool the data and impose slope homogeneity can be very misleading in dynamic models where the slopes differ. Neither Instrumental Variables nor the Generalized Method of Moments approach such as Anderson-Hsiao (1982) solves the problem; since in general any instrument which is uncorrelated with the disturbances of the pooled regression will also be uncorrelated with the included regressors. However, when the slope coefficients are randomly distributed across groups the cross-section does provide a consistent estimate of the long- run effect. This paper briefly reviews the conclusions of the authors' earlier work; adds some new results on the estimators including estimating the variance of the mean group estimator (i.e., the average of the time-series estimates across groups); discusses the properties of Hausman-type tests for slope heterogeneity; and uses Monte Carlo simulations to examine the performance of the estimators and tests in small samples. These confirm the general conclusions based on the asymptotic results.

PD January 1995. **TI** Planning and Macroeconomic Stabilization in Iran. **AA** University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9508; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 13. **PR** $10.00 (5 pounds), checks payable to University of Cambridge. **JE** E61, E63, E66, O21. **KW** Economic Plan. Stabilization Policy. Iran.

AB This paper presents an account of the main economic developments in the Iranian economy over the period of the First Five-year Economic, Social and Cultural Development Plan (1989/1990-1993/1994) of the Islamic Republic, provides an overall evaluation, and examines the objectives and economic rationales behind the Second Five-year Economic, Social and Cultural Development Plan (covering the period 1995/1996- 1999/2000) which has recently been approved by the Majlis (the Consultative Assembly of the Islamic Republic). The emphasis of the paper is on the government's stabilization and liberalization programs, rather than the structural details of the plans.

PD February 1995. **TI** An Autoregressive Distributed Lag Modeling Approach to Cointegration Analysis. **AU** Pesaran, M. Hashem; Shin, Yongcheol. **AA** University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9514; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 33. **PR** $10.00 (5 pounds), checks payable to University of Cambridge. **JE** C12, C13, C15, C22, C32. **KW** Autoregressive Distributed Lag Model. Cointegration. I(1) Regressors. Model Selection.
AB This paper examines the use of the traditional autoregressive distributed lag (ARDL) models for the analysis of long-run relations when the underlying variables are I(1). It is shown that after appropriate augmentation of the order of the ARDL model (i) the OLS estimators of the short-run parameters are square-root T-consistent, (ii) the covariance matrix of these estimators is asymptotically singular such that the estimators of the short-run coefficients on the trended or I(1) variables are asymptotically perfectly collinear with the estimators of the coefficients on the lagged dependent variables, and (iii) the ARDL-based estimators of the long-run coefficients are super-consistent, and valid inferences on the long-run parameters can be made using standard normal asymptotic theory. Therefore, the traditional ARDL approach justified in the case of trend-stationary regressors is in fact equally valid even if the regressors are first-difference stationary. The paper also examines the relationship between the ARDL procedure and the fully modified OLS approach of Phillips and Hansen to estimation of cointegrating relations.

PD March 1995. **TI** A Discrete-Time Version of Target Zone Models with Jumps. **AU** Pesaran, M. Hashem; Ruge-Murcia, Francisco J. **AA** Pesaran: University of Cambridge. Ruge-Murcia: Universite de Montreal and C.R.D.E. **SR** University of Cambridge Department of Applied Economics Working Paper: 9513; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 29. **PR** $10.00 (5 pounds), checks payable to University of Cambridge. **JE** C24, F31. **KW** Rational Expectations. Stochastic Bounds. Target Zone Models. Credibility. Realignment Probability. Foreign Exchange.
AB This paper develops a Limited-Dependent Rational Expectations (LD-RE) model where the bounds can be fixed for an extended period, but are subject to occasional jumps. In this case, the behavior of the endogenous variable is affected by the agents' expectations about both the occurrence and the size of the jump. The RE solution for the one- sided and two-sided band are derived and shown to encompass the cases of perfectly predictable and stochastically varying bounds examined by earlier literature. It is demonstrated that the solution for the one- sided band exists and is unique when the coefficient of the expectational variable is less than one. In the case of a two-sided band, the RE solution exists for all the parameter values and is unique if the coefficient of the expectational variable is less than or equal to one. These results hold even when the jump probability is stochastically varying and the error terms are conditionally heteroskedastic. A model of exchange rate determination in a target zone is estimated using data for the Frank/Mark exchange rate. Empirical results provide support for the non-linear model with time-varying realignment probability and indicate that the agents correctly anticipated most of the observed changes in the central parity.

Pestieau, Pierre

PD March 1994. **TI** The Penalty for Tax Evasion When Taxes are Set Optimally. **AU** Pestieau, Pierre; Possen, Uri M.; Slutsky, Steven M. **AA** Pestieau: Universite de Liege, University de Paris I and Universite Catholique de Louvain. Possen: Cornell University. Slutsky: University of Florida. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9416; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 12. **PR** not available. **JE** D61, H26. **KW** Tax Evasion.
AB This paper considers why limited penalties are used to punish tax evaders. The basic model has all individuals drawing an income from the same random distribution. The individuals must decide whether to report truthfully or understate their incomes. Two types of individuals exist who differ in either their degree of risk aversion or their initial wealth endowment. The government chooses tax rates, audit probabilities, and penalties for evasion to maximize an expected ex post social welfare function. Penalties are at their upper bound if individuals feel unlimited harm from such penalties or if the optimum has everyone reporting truthfully. However, when the maximum penalty inflicts limited harm, it can be optimal to have some individuals falsely report and have the penalty less than its upper bound.

TI Fiscal Policy in a Growth Model with Both Altruistic and Non Altruistic Agents. **AU** Michel, Philippe; Pestieau, Pierre.

TI Interregional Redistribution Through Tax Surcharge. **AU** Cremer, Helmuth; Marchand, Maurice; Pestieau, Pierre.

Piggott, John

PD August 1994. **TI** The Tax Unit and Household Production. **AU** Piggott, John; Whalley, John. **AA** Piggott: University of New South Wales. Whalley: University of Western Ontario and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4820; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 18. **PR** $5.00. **JE** D13, D51, H21, H22. **KW** Taxation. Household Production. General Equilibrium.
AB The conventional wisdom is that taxing individuals rather than households is superior from an efficiency point of view under progressive income taxation. This is because it leads to secondary workers, whose labor supply elasticity is high, being taxed at a lower marginal rate than primary workers, whose labor supply elasticity is low. But once household production is taken into account, things are more complicated since tax design should also not distort the input use of family members' time in household production. We use a simple general equilibrium model of household production parameterized using Australian data whose results clearly show that welfare effects can be either positive or negative when changing an existing income tax from an individual to a household basis. In so doing, we are able to investigate the comparative static effects of changing the tax unit from an individual to the household basis in a richer model than that used thus far in the

literature, since we capture both Ramsey considerations from differential labor supply elasticities, and factor input distortions into household production. Our results challenge conventional wisdom, and suggest that household unit taxation deserves more sympathetic consideration than is currently the case.

Pitarakis, Jean-Yves

TI Comovements in Large Systems. **AU** Gonzalo, Jesus; Pitarakis, Jean-Yves.

Pochet, Y.

PD June 1994. **TI** Algorithms and Reformulations for Lot Sizing Problems. **AU** Pochet, Y.; Wolsey, Laurence A. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9427; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 54. **PR** not available. **JE** C61. **KW** Lot-Sizing Models. Mixed Integer Programming Formulations. Valid Inequalities. Separation Algorithms.

AB In this paper we give a "personal" survey of the research on the polyhedral approach to lot-sizing problems developed over the last ten years. Most results concern the formulation and reformulations of single-item problems which can be used to tighten the formulation of practical multi-item problems which can be used to tighten the formulation of practical multi-item and multi-stage problems. The discussion is restricted to exact algorithms, and more specifically to *extended linear programming reformulations, cutting planes* and separation algorithms. The large body of work on heuristic algorithms is not discussed. The single item lot-sizing subproblems that we discuss in some detail are the uncapacitated lot-sizing problem (ULS), the uncapacitated lot-sizing problem with start-up costs (ULSS), the constant capacity lot-sizing problem (CCLS) and the varying capacity lot-sizing problem (CLS). We give also references to the work done on the reformulations of other single-item, multi-item single stage and multi-item multistage lot-sizing problems.

Poddar, Sougata

TI Network Structure and Entry in the Deregulated Airline Industry. **AU** Berechman, Joseph; Poddar, Sougata; Shy, Oz.

Polemarchakis, Heracles M.

PD June 1994. **TI** Prices, Asset Markets and Indeterminacy. **AU** Polemarchakis, Heracles M.; Siconolfi, P. **AA** Polemarchakis: Universite Catholique de Louvain. Siconolfi: Columbia University. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9429; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 15. **PR** not available. **JE** D50, D52. **KW** Incomplete Asset Market. Trading Constraints. Indeterminacy.

AB Competitive equilibrium allocations are indeterminate when the net trades in commodities are constrained, while the asset market is incomplete.

TI Money and Monetary Policy in General Equilibrium. **AU** Dreze, Jacques H.; Polemarchakis, Heracles M.

TI Equilibrium Selections. **AU** Allen, Beth; Dutta, Jayasri; Polemarchakis, Heracles M.

TI Exchange and Optimality. **AU** Ghosal, Sayantan; Polemarchakis, Heracles M.

PD December 1994. **TI** A Role for Monetary Policy when Prices Reveal Information: An Example. **AU** Polemarchakis, Heracles M.; Seccia, Giulio. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9474; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 8. **PR** not available. **JE** D52, D82, E52. **KW** Monetary Policy. Information.

AB In an example, monetary policy can determine the information revealed by prices, and thus it can be effective, even desirable.

Poletti, Clara

TI Yardstick Contracts and Internal Firm Inefficiency. **AU** Bertoletti, Paolo; Poletti, Clara.

Pollitt, Michael G.

PD September 1994. **TI** Productive Efficiency in Electricity Transmission and Distribution Systems. **AA** Brasenose College. **SR** Oxford Applied Economics Discussion Paper Series: 161; Institute of Economics and Statistics, St Cross Building, Manor Road, Oxford OX1 3UL. **PG** 23. **PR** not available. **JE** L12, L94. **KW** Electric Systems. Productive Efficiency. UK.

AB This paper presents a Data Envelopment Analysis (DEA) and an OLS analysis of productive efficiency (cost efficiency) in 129 electricity transmission and 145 electricity distribution systems operating in the accounting year 1990. The transmission data contains U.S. electric systems while the distribution data includes 136 U.S. and UK companies. The paper tests the null hypothesis that privately owned and publicly owned electricity systems do not have significantly different costs. The results of the analysis indicate two things: firstly, a strong inability to reject the null hypothesis in favor of the alternative hypothesis that privately owned firms are more efficient; and secondly, a relatively high level of technical efficiency within the United Kingdom companies in the year immediately prior to privatization.

PD November 1994. **TI** Technical Efficiency in Electric Power Plants. **AA** University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9422; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 20. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** L94. **KW** Electric Utilities. Productive Efficiency. Data Envelopment Analysis. Parametric Programming Approach. Deterministic Statistical Frontier Method.

AB Across the world governments are considering the privatization of state-owned electricity supply industries. This paper looks at the technical (input) efficiency of an international sample of 768 publicly and privately owned thermal electric power plants operating in 1989. The data are analyzed by creating four subsamples and using four measures of technical efficiency. The results suggest that, while the subsidies and electricity pricing are delinked as in Britain, and delinking or removal might lower electricity prices by 10 per cent.

Possen, Uri M.

TI The Penalty for Tax Evasion When Taxes are Set Optimally. **AU** Pestieau, Pierre; Possen, Uri M.; Slutsky, Steven M.

Potter, Simon M.

TI A Floor and Ceiling Model of U.S. Output. **AU** Pesaran, M. Hashem; Potter, Simon M.

Poulsen, Torben

TI Sampling Designs, Estimators and Resampling Procedures in the New Danish Wage Statistics. **AU** Host, Viggo; Lund, Niels; Poulsen, Torben.

Powell, Lisa

PD July 1994. **TI** The Impact of Child Care Costs on Female Labour Supply: Evidence from Canada. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 905; Department of Economics, Queen's University, Kingston, Ontario K7l 3N6, CANADA. **PG** 15. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** J13, J22. **KW** Child Care. Female Labor Supply.

AB This paper provides estimates for Canada of the effect of child care costs on female labor supply. This is done by linking two Statistics Canada microdata sources. Specifically, the data used in this paper are from the 1988 National Child Care Survey and the 1988 Monthly (September) Labour Force Survey. The paper provides child care price elasticities for labor force participation for married women and compares the results with those found by U.S. researchers. The paper also provides labor supply elasticities incorporating the effects of child care costs. The results show that the market wage has a significant positive effect on both the mother's labor force participation decision and her hours of work supplied. Child care costs are found to have a significant negative effect on hours of work conditional upon employment and a negative but insignificant effect on labor force participation.

Poyago-Theotoky, Joanna

PD June 1994. **TI** Research Joint Ventures and Product Innovation: Part II Some Welfare Aspects. **AA** University of Nottingham and University of Bristol. **SR** University of Bristol Department of Economics Working Paper: 94/378; Department of Economics, University of Bristol, Alfred Marshall Building, 8 Woodland Road, Bristol BS8 1TN, ENGLAND. **PG** 31. **PR** no charge. **JE** O31, D43, L13. **KW** Product Innovation. Horizontal and Vertical Differentiation. R&D Cooperation. Welfare Comparison.

AB This paper considers a model of horizontal and vertical product differentiation; by spending on R&D firms may improve the quality of their product. R&D cooperation in the form of a RJV among a subset of innovating firms introduces the possibility of a much better product being produced relative to the non-cooperation in R&D case. Given Bertrand competition the RJV sets a common price for the improved good. It is shown that, even under this extreme form of cooperation, there are clear instances where social welfare is enhanced relative to the non- cooperative outcome. Furthermore, welfare in the socially managed economy is always higher in the case of firms cooperating in R&D.

Prasad, Kislaya

TI Learning by Observation Within the Firm. **AU** Dutta, Jayasri; Prasad, Kislaya.

Preston, Ian

TI Income or Consumption in the Measurement of Inequality and Poverty? **AU** Blundell, Richard; Preston, Ian.

TI A Comparison of the Properties of Nonparametric Estimates of the Generalized Entropy Class of Inequality Indices. **AU** Duncan, Alan; Preston, Ian.

Psaradakis, Zacharias

TI Changes In Regime, Cointegration, Seasonality, and the Japanese Consumption Function. **AU** Hall, Stephen; Psaradakis, Zacharias; Sola, Martin.

PD February 1995. **TI** Modelling Long Memory In Stock Market Volatility: A Fractionally Integrated Generalised ARCH Approach. **AU** Psaradakis, Zacharias; Sola, Martin. **AA** Psaradakis: University of Bristol. Sola: Birkbeck College and London Business School. **SR** Birkbeck Discussion Paper in Financial Economics: 2/95; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 12. **PR** no charge. **JE** C22, G12. **KW** ARCH. FIGARCH. Fractional Integration. Long Memory. Stock Prices. Volatility.

AB This paper investigates empirically the short-run dynamics and long- run dependence in U.K. stock market volatility. Using daily stock returns for 22 companies, we show that the apparent long-memory and persistence of stock volatility may, on balance, be adequately described by a GARCH model that allows for a fractional degree of integration in variance. This implies that shocks to the optimal linear forecast of future volatility die out eventually, albeit at a slow hyperbolic rate of decay.

Pujol, Thierry

TI Framework for the Analysis of Pension and Unemployment Benefit Reform in Poland. **AU** Perraudin, William; Pujol, Thierry.

Qizilbash, Mozaffar

PD August 1994. **TI** Decisions and Moral Character. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9417; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 17. **PR** no charge. **JE** D72, D74, D78, D81. **KW** Decision Theory. Moral Character. Conflict. Multiple Objectives. Pluralism.

AB This paper gives an account of decision making in the face of conflicting objectives, where such conflicts cannot be trivially represented on one all things considered ordering. Agents are described as choosing their moral characters by acting in particular ways in the face of conflicting objectives. It is argued that a theory of decisions in which agents effectively choose their own characters will encompass various other theories of behavior which have been generated by decision theory. Implications for "positive" and "normative" economics are drawn. It is argued that "normative" economics will have to be more concerned with the moral character of politicians.

PD August 1994. **TI** Bribery, Efficiency Wages and Political Protection. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in

Economics and Econometrics: 9418; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 18. **PR** no charge. **JE** K42, D72, J38. **KW** Corruption-Deterrence. Efficiency Wages. Illegal Markets. Price Controls. Political Protection.

AB It has long been argued that sufficiently high wages deter bribery. However, this is only the case if there is no political protection of illegal traders. In the absence of protection, higher wages to officials raise the bribe and may deter corruption by making it prohibitively costly to the firm. If there is type one political protection these results are reversed: sufficiently low wages deter bribery. It is argued that corruption-deterrence strategies involving high rewards for reporting and moral costs to officials fare better in these circumstances.

PD August 1994. **TI** Corruption, Temptation and Guilt: Moral Character in Economic Theory. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9419; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 28. **PR** no charge. **JE** D11. **KW** Moral Character. Corruption. Temptation. Ethical Preference.

AB The agents of economic theory are typically more sophisticated than the "social moron" of Sen's famous critique of economic man. Their moral character has been described mostly according to their preferences about contravening social and moral norms. However, the description of moral character is less refined than is desirable. A formal notion of temptation is defined which helps to refine the description so that agents can be continent and incontinent along lines which take their inspiration of Aristotle. It is argued that the introduction of continent agents will alter our predications in important cases.

PD November 1994. **TI** Capabilities, Virtue and Development. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9425; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 20. **PR** no charge. **JE** O12. **KW** Capability Approach. Development. Virtue. Higher-Order Desires.

AB The paper considers three capability approaches to the concept of development in economics. It is argued that each fails as an account of development acceptable to people with diverging conceptions of the good life. Sen's approach fails because of the incompleteness of his accounts of the good life, valuable functionings, and interpersonal comparisons. It also fails to give adequate importance to negative freedom and the means of freedom. Approaches inspired by Nussbaum's and Frankfurt's work are free of most of these criticisms but fail to give an account of the good life which is acceptable for a consensual view of development.

PD December 1994. **TI** Obligation, Human Frailty and Utilitarianism. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9426; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 17. **PR** no charge. **JE** D63, D64, I31. **KW** Utilitarianism. Normative Theory. Calculative Abilities. Obligation. Virtue.

AB James Griffin has argued that the limits of human capacities have important implications for normative theories like utilitarianism. His argument is based on aversion of the principle of "ought implies can". This principle often fails, particularly, in contexts involving weakness of the will. It is argued that Griffin's argument that information and knowledge limitations have implications for normative theories holds despite these difficulties. However, such limitations further narrow the scope of normative theories because it is difficult to define the extent to which agents ought to develop their capacities. Thus, the relevance of normative theories like utilitarianism is further reduced.

Rasmussen, Bo Sandemann

TI Optimal Fiscal Policy in Open Economies with Labor Market Distortions. **AU** Andersen, Torben M.; Rasmussen, Bo Sandemann; Sorensen, Jan Rose.

Raubitschek, Ruth R.

PD July 1994. **TI** High-Cost Domestic Joint Ventures and International Competition: Do Domestic Firms Gain? **AU** Raubitschek, Ruth R.; Spencer, Barbara J. **AA** Raubitschek: U.S. Department of Justice. Spencer: University of British Columbia and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4804; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 36. **PR** $5.00. **JE** D43, L13, L22. **KW** Imperfect Competition. Input Market. Joint Venture.

AB This paper develops the idea that when markets are imperfectly competitive, final producers may gain from a joint venture that produces part of their input requirements even though marginal cost exceeds the input's market price. Production by the joint venture lowers the market price of the input and this can raise profits sufficiently from final product sales to make the joint venture worthwhile. Also, use of a joint venture internalizes the positive externality from a lower input price. These results are motivated by a setting in which domestic firms are dependent on foreign oligopolistic suppliers for a key input.

Ravn, Morten Overgaard

PD 1994. **TI** Stylized Facts and Regime Changes--Are Prices Procyclical? **AU** Ravn, Morten Overgaard; Sola, Martin. **AA** Ravn: University of Aarhus. Sola: Birkbeck College and London Business School. **SR** Birkbeck College Discussion Papers in Economics: 3/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 23. **PR** no charge. **JE** C22, E31. **KW** Growth and Inflation. Regime Switching. Countercyclical Prices.

AB Recent research has found prices to be countercyclical. We investigate whether this finding appears only to be the result of a few major real shocks. We allow for changes in regime to answer this question using recent data on output growth and inflation rates in the U.S., Japan, Germany, and U.K. While we find that both output growth and inflation have changed mean and variance over time, there is not much evidence of this being caused by a few major real shocks since the covariance between the series is negative most of the time for all of the four economies. We also investigate whether prices leads output, or output leads prices, but find no evidence in support of either assumption.

PD May 1994. **TI** Stylized Facts and Regime Changes--Are Prices Procyclical? **AU** Ravn, Morten Overgaard; Sola, Martin. **AA** Ravn: University of Aarhus. Sola: Birkbeck

College and London Business School. **SR** Aarhus Institute of Economics Memo: 1994-17; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 23. **PR** no charge. **JE** C22, E31. **KW** Growth and Inflation. Regime Switching. Countercyclical Prices.

AB Recent research had found prices to be countercyclical. We investigate whether this finding appears only to be the result of a few major real shocks. We allow for changes in regime to answer this question using recent data on output growth and inflation rates in the U.S., Japan, Germany, and the United Kingdom. While we find that both output growth and inflation have changed mean and variance over time, there is not much evidence of this being caused by a few major real shocks since the covariance between the series is negative most of the time for all of the four economies. We also investigate whether prices leads output, or output leads prices, but find no evidence in support of either assumption.

PD November 1994. **TI** Minimum Wages: Curse or Blessing. **AU** Ravn, Morten Overgaard; Sorensen, Jan Rose. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-32; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 26. **PR** no charge. **JE** D90, E24, I29. **KW** Overlapping Generations. Human Capital Accumulation. Intergenerational Externality. Minimum Wages.

AB In this paper we consider the effects of a minimum wage legislation in an overlapping generations model. In our model there is an intergenerational externality in the accumulation of human capital since the production of human capital of every new generation depends positively on the average human capital stock of the preceding generation. This externality means that the competitive equilibrium allocation is sub-optimal, and every generation accumulates too little human capital. We show that in the case of identical agents, a minimum wage above the market wage can increase human capital accumulation and welfare. Furthermore, the first-best allocation can be attained through the implementation of a minimum wage. Next, we introduce a cross-agent heterogeneity in the form that agents differ in their effectiveness in producing human capital. In this case a (binding) minimum wage produce unemployment, and it may increase or decrease human capital accumulation.

Ray, Indrajit

PD March 1994. **TI** Deriving Correlated Equilibrium as the Stable Standard of Behavior of a Social Situation: A Note. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9411; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 11. **PR** not available. **JE** C72. **KW** Correlated Equilibrium.

AB We study the concept of correlated equilibrium within the framework of social situations, and give an interpretation of the notion of mediated equilibrium. We find the unique optimistic stable standard of behavior (OSSB) of an appropriately defined situation is nothing but the set of correlated equilibria. We generalize this situation in a natural way to accommodate coalitional deviations, and thus get a new refinement of the set of correlated equilibrium, as the unique OSSB of this generalized situation. We analyze our concept using several examples.

Raynauld, Jacques

TI Measuring World Business Cycles. **AU** Gregory, Allan W.; Head, Allen C.; Raynauld, Jacques.

Renstrom, Thomas I.

PD January 1995. **TI** Trade Unions, Employee Share Ownership and Wage Setting: A Supply- Side Approach to the Share Economy. **AU** Renstrom, Thomas I.; Roszbach, Kasper. **AA** Renstrom: University of Birmingham. Roszbach: University of Rochester and Stockholm School of Economics. **SR** University of Birmingham Department of Economics Discussion Paper: 95-10; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 35. **PR** 2 pounds. **JE** J51, J30, D63, D72, G11. **KW** Trade Unions. Profit Sharing. Distribution. Voting. Portfolio Choice.

AB Employee share ownership is growing increasingly important. This paper studies employee share ownership in an economy with one monopoly union for each firm. We modify an implicit contract model by adding dividend income to the usual wage income. Union members differ in exogenous stock endowments and choose wages under majority rule. As a result, wages are decreasing in stock endowments and a skewed distribution of stock-capital leads to a higher wages and lower employment. Switching to a more equal distribution can increase employment and production. An optimal portfolio rule suggests that macroeconomic gains can be made from limiting the diversification of portfolios. Last, we show how the transfer of shares to employees can be made economically feasible.

PD February 1995. **TI** Endogenous Taxation: An OLG Approach. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 95-11; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 17. **PR** 2 pounds. **JE** D33, D72, D91, E61, E62, H20, H31. **KW** Endogenous Taxation. Fiscal Policy. Overlapping Generations. Political Equilibrium. Voting.

AB The paper develops an overlapping generations framework of endogenous taxation. There are three types of heterogeneity among individuals: age, productivity, and bequest motives. The heterogeneity gives rise to a redistributive conflict and therefore to different preferences over fiscal policy. Linear taxes are levied on consumption expenditure, wage income and capital income. These tax rates and the provision of a public good become endogenous through a majority-voting rule. The dynamic politico-economic equilibrium is examined both at the outside the steady state. The focus is on the underlying characteristics of the economy that gives rise to a particular fiscal structure.

Richter, Andrea

TI Who Gains and Who Loses From Russian Credit Expansion? **AU** Layard, Richard; Richter, Andrea.

Risager, Ole

PD May 1994. **TI** On the Effects of Firing Costs When Investment is Endogenous. **AU** Risager, Ole; Sorensen, Jan Rose. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-18; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 16. **PR** no charge. **JE** J23. **KW** Job Security. Firing Costs. Profitability. Investment and

Employment.
AB This paper analyzes how job security policies, which in practice result in higher firing costs, affect employment in a model that recognizes that these policies also affect profitability and investment. The results show that the effects depend crucially on the exact assumption about goods demand. If goods demand is very elastic, firing costs have large negative effects on trend employment and investment, whereas the effects are small when demand is inelastic or not very elastic. The paper also analyzes the relationship between trend employment, investment and firing costs under alternative assumptions about the substitution elasticity between labor and capital.

TI Wages in Sweden: New and Old Results. AU Forslund, Anders; Risager, Ole.

PD September 1994. TI Employment Protection, Trade Union Behavior and International Capital Mobility. AU Risager, Ole; Sorensen, Jan Rose. AA University of Aarhus. SR Aarhus Institute of Economics Memo: 1994-30; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. PG 22. PR no charge. JE F21, J23. KW Job Security. Trade Union Behavior. Wages. Employment and International Capital Mobility.
AB The paper analyzes how job security policies, which in practice results in higher firing costs, affect employment and investment in a two country model with free trade in goods and capital. The effects depend crucially on the behavior of wages. If wages are determined by trade unions, job security gives rise to a trade-off between achieving low employment variability over the business cycle and a good employment and investment performance in the long run.

Ritter, Christian

PD January 1994. TI Another Look at the American Electrical Utility Data. AU Ritter, Christian; Simar, Leopold. AA Universite Catholique de Louvain. SR Universite Catholique de Louvain CORE Discussion Paper: 9407; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. PG 7. PR not available. JE C23, C81. KW Exploratory Data Analysis. Ordinary Least Squares. Normal-Gamma Composed Errors. Maximum Likelihood.
AB The American electric utility data, which are frequently analyzed in the context of frontier models, can be explained by a linear model without inefficiencies. The observed maximum likelihood for this linear model is very mildly smaller than the maximum likelihood for more flexible stochastic frontier models and the log-likelihood-ration statistic for an approximate chi-square test of the simple least squares model against normal-exponential and normal-gamma stochastic frontier models is far from significant.

PD September 1994. TI Pitfalls of Normal-Gamma Stochastic Frontier Models. AU Ritter, Christian; Simar, Leopold. AA Universite Catholique de Louvain. SR Universite Catholique de Louvain CORE Discussion Paper: 9441; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. PG 11. PR not available. JE C80. KW Identifiability. Least Squares. Likelihood. Profile. Simulation.
AB Although conceptually pleasing, normal-gamma frontier models lead to difficult estimation problems. It is shown here that unless the sample size reaches several thousands of observations the shape parameter of the gamma density is hard to estimate, and that this carries over to estimates of the stochastic frontier, the individual inefficiencies, and the allocation of the overall variance to the stochastic frontier and to the inefficiencies.

Rizzo, John A.

PD August 1994. TI Optimal Regulation of Multiply-Regulated Industries: The Case of Physician Services. AU Rizzo, John A.; Sindelar, Jody L. AA Rizzo: Yale University. Sindelar: Yale University and National Bureau of Economic Research. SR National Bureau of Economic Research Working Paper: 4822; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 18. PR $5.00. JE I11, I18. KW Health Care. Physician Services. Coordination Failure.
AB This paper models the physician services market which is regulated by two government agencies. The Health Care Financing Administration (HCFA) sets Medicare physician fees through the newly implemented Resource Based Relative Value Scale (RBRVS). The Agency for Health Care Policy and Research (AHCPR) sets practice guidelines for quality. We analyze welfare losses which occur when agencies fail to coordinate their regulatory activities. Specifically, we consider the welfare impacts for cost, quality, practice characteristics, and quantity of care. Perceived ills in the market for physician services, such as excessive expenditures and overly intensive treatment, may be traced to coordination failures. Thus, even if physicians were to act as perfect agents for their patients, and even if moral hazard were to be eliminated, coordination failure could cause the critical problems associated with the physician services market to persist. Although the model is applied to the market for physician services, it can be readily generalized to other settings involving multiple regulators.

Robinson, Peter

PD July 1994. TI The British Labour Market in Historical Perspective: Changes in the Structure of Employment and Unemployment. AA London School of Economics. SR London School of Economics Centre for Economic Performance Discussion Paper: 202; Centre for Economic Performance, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. PG 86. PR no charge. JE J21. KW Labor Force and Employment Size and Structure.
AB The paper uses Department of Employment data, the New Earnings, General Household and Labor Force Surveys and the Censuses of Population to look at changes in the structure of employment and unemployment in Britain over the post-war period. Trends such as rising female labor force participation and part-time employment have been ongoing for four decades. Other purported trends, e.g. rising temporary employment are not shown in the data at all. Growth in employment is coming solely in professional and managerial occupations, replacing manual and lower paid work for both men and women. The relative labor market position of less well qualified men has not deteriorated when considering the whole period 1979-93 and falling aggregate unemployment appears to benefit all groups in the labor market. There has been a trend towards labor market withdrawal due to sickness and early retirement for both men and women. The trends for men are

matched in the U.S., Canada and Germany, throwing doubt on the relevance of further education and training initiatives as a means of reversing labor market withdrawal.

Rogers, John H.

TI How Wide Is the Border? **AU** Engel, Charles; Rogers, John H.

Rongve, Ian

TI Estimation and Inference for Normative Inequality Indices. **AU** Beach, Charles M.; Rongve, Ian.

Rosen, Sherwin

TI The New Economics of Teachers and Education. **AU** Flyer, Frederick; Rosen, Sherwin.

Roszbach, Kasper

TI Trade Unions, Employee Share Ownership and Wage Setting: A Supply- Side Approach to the Share Economy. **AU** Renstrom, Thomas I.; Roszbach, Kasper.

Rouse, Cecilia

TI New Evidence on Workplace Education. **AU** Krueger, Alan B.; Rouse, Cecilia.

Ruge-Murcia, Francisco J.

TI A Discrete-Time Version of Target Zone Models with Jumps. **AU** Pesaran, M. Hashem; Ruge-Murcia, Francisco J.

Rustichini, Aldo

TI Unawareness: A Formal Theory of Unforeseen Contingencies. Part II. **AU** Modica, Salvatore; Rustichini, Aldo.

PD October 1994. **TI** State Dependent Utility. **AU** Rustichini, Aldo; Dreze, Jacques H. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9443; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 46. **PR** not available. **JE** D81. **KW** State-Dependent Utility.
AB The Theory of State Dependent Utility studies the behavior under uncertainty of a decision-maker whose utility over consequences may depend on the state in which they occur. There is by now a vast literature on the topic, that this paper review, trying at the same time to provide an unifying point of view, which will be further developed by the authors in a paper to follow. The present paper is organized in two main sections. In the first we examine the main theoretical contributions to the field, while in the second we present and discuss some of the applications and of the empirical work related to the Theory of State Dependent Utilities.

TI Equilibria with Social Security. **AU** Boldrin, Michele; Rustichini, Aldo.

TI Moral Hazard and Conditional Preferences. **AU** Dreze, Jacques H.; Rustichini, Aldo.

Ryan, Cillian

PD December 1994. **TI** Liberalizing International Goods Versus Assets Trade When Capital is Intermediated by Banks. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 94-15; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 16. **PR** 2 pounds. **JE** F01. **KW** Economic Integration. Asymmetric Information.
AB The substitutability of goods and asset trades has been frequently addressed in international economic theory. However, these models have typically neglected the process whereby capital is intermediated in the economy. More realistically, this paper suggests that with asymmetric information problems in capital markets, goods and asset trade liberalization can have quite different effects and the two are not in general substitutable. The results arise due to the general features of a debt contract. It is shown that asset trade liberalization partially can offset the problems associated with asymmetric information and it is always welfare improving. By contrast freer trade in goods may not be, even where trade reduces the variability of project returns.

Ryder, H.

TI Two-sided Search, Marriages and Matchmakers. **AU** Bloch, F.; Ryder, H.

Samiei, Hossein

TI Forecasting Ultimate Resource Recovery. **AU** Pesaran, M. Hashem; Samiei, Hossein.

TI Limited-Dependent Rational Expectations Models With Future Expectations. **AU** Pesaran, M. Hashem; Samiei, Hossein.

Samuels, John

TI Mergers, Motivation and Directors' Remuneration. **AU** Abell, Peter; Samuels, John; Cranna, Michael.

Satchell, Stephen E.

TI Modeling UK Mortgage Defaults Using a Hazard Approach Based on American Options. **AU** Ncube, Mthuli; Satchell, Stephen E.

TI Estimation of Stationary Stochastic Processes Via the Empirical Characteristic Function. **AU** Knight, John L.; Satchell, Stephen E.

Scaillet, Olivier

TI Forecast Intervals in ARCH Exponential Smoothing. **AU** Broze, Laurence; Melard, Guy; Scaillet, Olivier.

TI Quasi Indirect Inference for Diffusion Processes. **AU** Broze, Laurence; Scaillet, Olivier; Zakoian, Jean-Michel.

Schwartz, Amy Ellen

TI Infrastructure in a Structural Model of Economic Growth. **AU** Holtz-Eakin, Douglas; Schwartz, Amy Ellen.

Seccia, Giulio

TI A Role for Monetary Policy when Prices Reveal Information: An Example. **AU** Polemarchakis, Heracles M.; Seccia, Giulio.

Sempere-Monerris,

TI Optimal Licensing in a Spatial Model. **AU** Caballero-Sanz, Francisco; Moner-Colonques, Rafael; Sempere-Monerris, Jose.

Serrano, Roberto

TI Multilateral Bargaining With Imperfect Competition. **AU** Baliga, Sandeep; Serrano, Roberto.

TI Negotiations with Side-Deals. **AU** Baliga, Sandeep; Serrano, Roberto.

Shadman-Mehta, Fatemeh

TI Real Wages, Skill Mismatch and Unemployment Persistence. **AU** Sneessens, Henri R.; Shadman-Mehta, Fatemeh.

Sharpe, Steven A.

TI Leverage as a State Variable for Employment, Inventory Accumulation, and Fixed Investment. **AU** Calomiris, Charles W.; Orphanides, Athanasios; Sharpe, Steven A.

Shearer, Bruce

TI Incentives, Team Production, Transactions Costs, and the Optimal Contract: Estimates of an Agency Model Using Payroll Records. **AU** Ferrall, Christopher; Shearer, Bruce.

Shi, Li

TI Fiscal Decentralisation, Redistribution and Reform in China. **AU** Knight, John; Shi, Li.

Shi, Shouyong

PD September 1994. **TI** Unemployment and the Dynamic Effects of Factor Income Taxation. **AU** Shi, Shouyong; Wen, Quan. **AA** Shi: Queen's University. Wen: University of Windsor. **SR** Queen's Institute for Economic Research Discussion Paper: 909; Department of Economics, Queen's University, Kingston, Ontario K7l 3N6, CANADA. **PG** 27. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** E24, D62, H20, J64. **KW** Search. Unemployment. Taxation.

AB This paper introduces search unemployment into an intertemporal maximization model with capital accumulation. It characterizes the decentralized search equilibrium, examines the dynamic effects of factor income taxation and calculates the welfare cost of the taxation. Four tax policies are considered: labor income taxation, capital income taxation, the subsidy to job search and the subsidy to hiring. It is found that the dynamic effects and welfare costs of these policies are quite different from the standard model without unemployment. The differences illustrate the importance of the labor market frictions.

PD January 1995. **TI** Money and Prices: A Model of Search and Bargaining. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 916; Department of Economics, Queen's University, Kingston, Ontario K7l 3N6, CANADA. **PG** 36. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** C78, E40. **KW** Money. Prices. Search. Bargaining.

AB This paper makes commodities divisible and incorporates bargaining into the search theoretic model of money to determine the purchasing power of money (or price). It is shown that two monetary equilibria always coexist where fiat money is universally accepted. The two equilibria differ in price, output, welfare and the velocity of money. Sunspot monetary equilibria exist in which money is universally accepted in all states of the economy. Multiplicity has novel implications on the effectiveness of currency exchange market intervention.

PD January 1995. **TI** Credit and Money in a Search Model with Divisible Commodities. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 917; Department of Economics, Queen's University, Kingston, Ontario K7l 3N6, CANADA. **PG** 30. **PR** $3.00 + GST Canada; $3.50 U.S. and Foreign. **JE** E40, C78. **KW** Credit. Money. Search. Return Dominance.

AB This paper examines the competition between money and credit in a search model with divisible commodities. It is shown that fiat money can be valuable even though it yields a lower rate of return than the coexisting credit. The competition between money and credit increases efficiency. The monetary equilibrium with credit Pareto dominates the monetary equilibrium without credit whenever the two coexist. When a credit is repaid with money, the doing it eliminates the weak monetary equilibrium found in previous search models. With numerical examples, we rank three different monetary equilibria and examine the properties of the interest rate.

Shiells, Clinton R.

TI Bias in U.S. Import Prices and Demand. **AU** Feenstra, Robert C.; Shiells, Clinton R.

Shiller, Robert J.

PD August 1994. **TI** Home Equity Insurance. **AU** Shiller, Robert J.; Weiss, Allan N. **AA** Shiller: Yale University and National Bureau of Economic Research. Weiss: Case Shiller Weiss, Inc. **SR** National Bureau of Economic Research Working Paper: 4830; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 32. **PR** $5.00. **JE** G13, G22, D11. **KW** Insurance. Homeowners. Financial Hedging. Derivative Securities.

AB Home equity insurance policies, policies insuring homeowners against declines in the price of their homes, bear some resemblance both to ordinary insurance and to financial hedging vehicles. A menu of choices for the design of such policies is presented here, and conceptual issues are discussed. Choices include pass-through futures and options, in which the insurance company in effect serves as a retailer to homeowners of short positions in real estate futures markets or of put options on real estate. Another choice is a life-event-triggered insurance policy, in which the homeowner pays regular fixed insurance premia and is entitled to a claim if both there is a sufficient decline in the real estate price index and a specified life event (such as a move beyond a certain geographical distance) occurs. Pricing of the premia to cover loss experience is derived, and tables of break-even policy premia are shown, based on estimated models of Los Angeles housing prices 1971-1991.

Shin, Yongcheol

TI Long-Run Structural Modeling. **AU** Pesaran, M. Hashem; Shin, Yongcheol.

TI An Autoregressive Distributed Lag Modeling Approach to Cointegration Analysis. **AU** Pesaran, M. Hashem; Shin, Yongcheol.

Shy, Oz

TI Network Structure and Entry in the Deregulated Airline Industry. **AU** Berechman, Joseph; Poddar, Sougata; Shy, Oz.

Siandra, Eduardo

PD February 1992. **TI** Optimal Mix of Pension Systems. **AA** University of Cambridge. **SR** University of Cambridge Economic Theory Discussion Paper: 196; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 14. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** D91, H55. **KW** Dynamic Inefficiency. Intergenerational Risk-Sharing. Pay-As-You-Go. Pensions. Stochastic OLG Models.

AB This paper explores the possibilities of optimally combining funded and unfunded pension systems to achieve better insurance in several stochastic environments. An OLG model with an aggregate stochastic storage technology illustrates how risk aversion makes more stringent the condition to rule out the pay-as-you-go system from the optimal mix. In a stochastic analog of Diamond (1965) it is shown that transfers from young to old may be optimal even in a dynamically efficient world.

PD February 1994. **TI** Partnerships, Search and Money. **AA** University of Cambridge. **SR** University of Cambridge Economic Theory Discussion Paper: 197; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 14. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** C78, D83, E40, J64. **KW** Anonymous Trading. Barter. Quid Pro Quo. Partnerships. Permanent Employment. Personalized Trading. Money. Search. Trust.

AB This paper presents a model in which agents can engage in personalized and anonymous trading. Personalized trading takes the form of long-term partnerships, and anonymous exchange assumes the form of one-shot deals. In general, if ability is observable, then in equilibrium high ability individuals trade in a personalized way by forming partnerships among them. Instead, failures in observability can give rise to a "lemons" problem, namely, high ability people trade anonymously. In general, the presence of trust, patient trades or high market frictions make personalized trading more prevalent. Finally, the introduction of money, under pretty general model specifications, makes anonymous trading more widespread, provided that monetary exchange is more efficient than barter. Paradoxically, in this case, monetary exchange goes with higher frictional unemployment.

Siconolfi, P.

TI Prices, Asset Markets and Indeterminacy. **AU** Polemarchakis, Heracles M.; Siconolfi, P.

Silk, Alvin J.

PD August 1994. **TI** Costs, Institutional Mobility Barriers, and Market Structure: Advertising Agencies as Multiproduct Firms. **AU** Silk, Alvin J.; Berndt, Ernst R. **AA** Silk: Harvard University. Berndt: Massachusetts Institute of Technology and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4826; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 33. **PR** $5.00. **JE** M37, L82. **KW** Economies of Scale. Economies of Scope. Advertising.

AB What accounts for the diversity and limited concentration that has long characterized the organization of the advertising agency industry? This question is addressed by treating an advertising agency as a multiproduct firm. The firm's product line or service mix is defined in terms of the set of different media categories where an agency places the advertising messages which it creates on behalf of its clients. Evidence is presented indicating that the structure of demand and costs in the advertising agency industry conforms to the conditions that MacDonald and Slivinski (1987) showed were required for an industry to sustain an equilibrium with diversified firms. Building on this framework, we formulate a set of three hypotheses relating to the realization of product-specific scale and scope economies. The first two hypotheses posit that given low fixed costs and minimal entry barriers, both media-specific scale and scope economies are available and can be exploited by relatively small-size agencies. The third hypotheses suggests that large agencies may experience diseconomies of scope as a consequence of excessive diversification induced by two pervasive industry institutional phenomena: (i) "bundling" of agency services to match client demand for a mix of media advertising; and (ii) "conflict policy" which prohibits an agency from serving competing accounts and operates as a mobility constraint. Utilizing a multiproduct cost function, we estimate media-specific scale and scope economies for a cross-section of 401 U.S. agencies in 1987. The results obtained support the set of three hypotheses outlined above. The paper concludes with a discussion of the implications of these findings for the restructuring currently underway in the industry wherein strategies favored by major agencies a decade ago are now being reversed or drastically revised. In particular, the resurgence of interest in small agencies and the trend away from the longstanding reliance on fixed commissions rates as the preferred method of agency compensation are in line with our findings on the presence of size-related cost economies. Furthermore, the abandonment of "one stop shopping" and the "unbundling" of the traditional mix of services are interpreted in light of institutional practices which may influence decisions relating to agency efficiency and diversification.

Silverstone, Brian

TI Okun's Coefficient: A Comment. **AU** Attfield, Clifford L. F.; Silverstone, Brian.

Simar, Leopold

TI Another Look at the American Electrical Utility Data. **AU** Ritter, Christian; Simar, Leopold.

TI Pitfalls of Normal-Gamma Stochastic Frontier Models. **AU** Ritter, Christian; Simar, Leopold.

Simos, Theodore

PD February 1995. **TI** Gaussian Estimation of a Continuous Time Dynamic Model with Common Stochastic Trends. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9512; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 14. **PR** not available. **JE** C32, C35. **KW** Linear Stochastic Differential Equations.

AB We consider the estimation of a first order system of linear stochastic differential equations driven by an observable vector of stochastic trends a vector of stationary innovations. We derive both the exact discrete model and the Gaussian likelihood function in the case the system comprises stock and flow variables and is observed at equispaced points in time.

Simpson, Robert

TI The Impact of the Law on Industrial Disputes in the 1980's: Report of a Survey of Printing Employers. **AU** Elgar, Jane; Simpson, Robert.

TI The Impact of the Law on Industrial Disputes in the 1980's: Report of a Survey of Construction Employers. **AU** Elgar, Jane; Simpson, Robert.

TI The Impact of the Law on Industrial Disputes in the 1980's: Report of a Survey of Education Authorities. **AU** Elgar, Jane; Simpson, Robert.

Sinclair, Peter J. N.

PD May 1994. **TI** On the Optimum Trend of Fossil Fuel Taxation. **AA** University of Birmingham. **SR** University of Birmingham Department of Economics Discussion Paper: 94-16; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 13. **PR** 2 pounds. **JE** E43, Q38. **KW** Global Warming. Carbon Tax. Interest Rate. Fossil Fuel Taxation.

AB The interest rate should fall with global warming. Remedial policy should allow for this endogeneity. In the simplest infinite-horizon model yielding a steady-state, one can derive the trend that an ad valorem fossil fuel tax should take to internalize the externality from emissions. It is negative. If implemented, it would reduce fossil fuel depletion, and raise the rates of interest and growth to the values they would have had without global warming. The case for a falling fossil fuel tax is reinforced by the possibilities of future emission abatement, and learning about the damage emissions do.

TI On the Disincentive and Risk-Sharing Properties of Debt: A Model With Debt, Equity and Endogenous Default. **AU** Fender, John; Sinclair, Peter J. N.

Sindelar, Jody L.

TI Optimal Regulation of Multiply-Regulated Industries: The Case of Physician Services. **AU** Rizzo, John A.; Sindelar, Jody L.

Sjostrom, Tomas

TI The Theory of Implementation when the Planner is a Player. **AU** Baliga, Sandeep; Corchon, Luis C.; Sjostrom, Tomas.

Skott, Peter

TI A Rational-Voter Explanation of the Cost of Ruling. **AU** Paldam, Martin; Skott, Peter.

PD July 1994. **TI** Uneven Development and the Liberalization of Trade and Capital Flows: The Case of Mexico. **AU** Skott, Peter; Larudee, Mehrene. **AA** Skott: University of Aahrus. Larudee: University of Kansas. **SR** Aarhus Institute of Economics Memo: 1994-23; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 31. **PR** no charge. **JE** F12, F15, O11, O41, O54. **KW** Increasing Returns. Uneven Development. Trade Liberalization. Capital Mobility. NAFTA.

AB A dual economy model is used to analyze the preconditions for successful industrialization under different trading and investment regimes. Assuming increasing returns to scale in industry and decreasing returns in agriculture, it is shown that protectionism may aid economic development at some points in a country's development process but retard it at others, that the desirable degree of openness depends on the stage of development already attained and that improvements in agricultural productivity may reduce the overall rate of growth under a free trade regime. Applying the model to Mexico, it is argued that liberalization is likely to bring long run industrialization in the Mexican case but that this strategy implies substantial costs to a large segment of the population in the short and medium term.

Slotsve, George A.

TI Distribution-Free Statistical Inference for Inequality Dominance with Crossing Lorenz Curves. **AU** Beach, Charles M.; Davidson, Russell; Slotsve, George A.

Slutsky, Steven M.

TI The Penalty for Tax Evasion When Taxes are Set Optimally. **AU** Pestieau, Pierre; Possen, Uri M.; Slutsky, Steven M.

Smith, Ann Marie

TI Productivity Measurement for a Distribution Firm. **AU** Diewert, W. Erwin; Smith, Ann Marie.

Smith, Clare

TI Macroeconomic modeling of International Carbon Tax Regimes. **AU** Hall, Stephen; Mabey, Nick; Smith, Clare.

Smith, Jr. Anthony A.

TI Approximate Bias Correction in Econometrics. **AU** MacKinnon, James G.; Smith, Jr. Anthony A.

Smith, Peter

PD January 1995. **TI** The Role of Public Finance in Economic Development: An Empirical Investigation. **AU** Smith, Peter; Wahba, Jackline. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9427; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 19. **PR** no charge. **JE** H11, O11. **KW** Public Finance. Economic Development. Government Expenditure. Government Revenue.

AB This paper focuses on the role of government finance in economic development. The effects of various kinds of public spending and revenue (mainly taxes) are examined. An empirical investigation of 56 developing countries is used to assess this role of the government and to evaluate whether it is facilitating or hindering the process of economic development. The findings suggest that government finance played a positive role. Thus, one would not accept the conclusion that some economists have advanced that there has been a government failure in development.

TI Car Ownership and Government Policy: Analysis and Evaluation of Singapore's Vehicle Quota Scheme. **AU** Chin, Anthony; Smith, Peter.

Smith, Richard

TI Likelihood Ratio Specification Tests. **AU** Chesher, Andrew; Smith, Richard.

Smith, Ron

TI The Savings-Investment Association. **AU** Coakley, Jerry; Kulasi, Farida; Smith, Ron.

TI Dynamic Linear Models for Heterogeneous Panels.
AU Pesaran, M. Hashem; Smith, Ron; Im, Kyung So.

TI The Feldstein-Horioka Puzzle and Capital Mobility.
AU Coakley, Jerry; Kulasi, Farida; Smith, Ron.

Smith, Tony E.

TI Efficiency Wages, Involuntary Unemployment and Urban Spatial Structure. AU Zenou, Yves; Smith, Tony E.

Sneessens, Henri R.

TI Technical Development, Competition from Low-Wage Economies and Low- Skilled Unemployment. AU Dreze, Jacques H.; Sneessens, Henri R.

PD October 1994. TI Real Wages, Skill Mismatch and Unemployment Persistence. AU Sneessens, Henri R.; Shadman-Mehta, Fatemeh. AA University Catholique de Louvain. SR Universite Catholique de Louvain CORE Discussion Paper: 9450; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. PG 29. PR not available. JE J31, J41. KW Employment. Skill Mismatch. Unemployment. Wages.
AB We develop a model of equilibrium unemployment with endogenous real wages and productivity. We use a framework with explicit quantity constraints and aggregation over micromarkets to derive a Beveridge curve and discuss the relationship between shifts in the Beveridge curve and equilibrium unemployment. We also distinguish skilled and unskilled labor, so that shifts in the aggregate UV-curve can be the outcome of either frictions on the skilled labor market or skill mismatch. Frictions are assumed to be exogenous and are estimated by a linear trend. Skill mismatch is endogenous and depends, a.o., on the skilled/unskilled relative wage. There is a tight relationship and interaction between skill mismatch and equilibrium unemployment. We estimate the model on French annual data, over the period 1962-1989. We exploit these results to propose tentative explanations of observed unemployment rises and Beveridge curve shifts, and to discuss a few economic policy options.

Snower, Dennis J.

PD 1994. TI Evaluating Unemployment Policies: What do the Underlying Theories Tell Us? AA Birkbeck College. SR Birkbeck College Discussion Papers in Economics: 15/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. PG 44. PR no charge. JE E32, E63, J21, J23, J32, J41, J51, J64, J65, J68. KW Demand-Management. Employment Policy. Laissez-Faire. Structural Policy. Supply-Side.
AB The paper surveys unemployment policies for advance market economies and evaluates them by examining the predictions of the underlying macroeconomic theories. The basic idea is that, for the most part, different unemployment policy prescriptions rest on different macroeconomic theories, and our confidence in the prescriptions should depend -- at least in part -- on theories' ability to predict some salient stylized facts about unemployment behavior. The paper considers four types of policies: laissez faire, demand-management policies, supply-side policies, and structural policies.

PD July 1994. TI The Low-Skill, Bad-Job Trap. AA Birkbeck College. SR Birkbeck College Discussion Papers in Economics: 14/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. PG 18. PR no charge. JE D21, D62, D82, D83, E24, J22, J23, J31, J63. KW Skilled Labor. Training Policy. Unskilled Labor.
AB The paper explains how a country can fall into a "low-skill, bad-job trap", in which workers acquire insufficient training and firms provide insufficient skilled vacancies. In particular, the paper argues that in countries where a large proportion of the workforce is unskilled, firms have little incentive to provide good jobs (requiring high skills and providing high wages), and if few good jobs are available, workers have little incentive to acquire skills. In this context, the paper examines the need and effectiveness of training policy, and provides a possible explanation for why Western countries have responded so differently to the broad-based shift in labor demand from unskilled to skilled labor.

PD November 1994. TI The Simple Economics Of Benefit Transfers. AA Birkbeck college. SR Birkbeck College Discussion Papers in Economics: 16/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. PG 38. PR no charge. JE J23, J24, J31, J32, J64. KW Unemployment. Employment Vouchers. Unemployment Benefits. Employment Creation.
AB The paper examines the employment and unemployment implications of permitting unemployed people to use part of their unemployment benefits to provide employment vouchers to the firms that hire them. This opportunity to transfer unemployment benefits into employment subsidies -- "benefit transfers" for short -- would help replace the unemployment trap by an incentive to work. The vouchers rise with people's unemployment durations and with the amount of training provided. The policy would be costless to the government since the cost of the employment vouchers is set equal to the amount saved on unemployment benefits. It would not be inflationary since the long-term unemployed, on whom the vouchers are targeted, have little influence on wage setting.

Sola, Martin

TI Stylized Facts and Regime Changes--Are Prices Procyclical? AU Ravn, Morten Overgaard; Sola, Martin.

PD February 1994. TI Fitting the Moments: A Comparison of Arch and Regime Switching Models For Daily Stock Returns. AU Sola, Martin; Timmermann, Allan. AA Sola: Birkbeck College. Timmermann: Birkbeck College and Centre for Economic Policy Research. SR Birkbeck Discussion Paper in Financial Economics: 1/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. PG 17. PR no charge. JE C23. KW ARCH. Markov Switching. Daily Stock Returns. Skewness.
AB Autoregressive conditional heteroskedasticity (ARCH) models have won widespread use in studies of high-frequency returns in financial markets. The success of ARCH models can be explained by the fact that they can generate kurtosis and persistence in the conditional volatility, two of the features often found in financial data. This paper provides a theoretical and empirical comparison of ARCH models and the two-state Markov Switching (MS) model suggested by Hamilton (1988). We prove that, in common with ARCH models, the MS model is capable of generating kurtosis and persistence in the volatility of the process and, in contrast with standard ARCH

models, it can also generate skewness in returns. Investigating daily stock returns for 22 United Kingdom companies we find evidence that, on balance, the MS model provides a better characterization of the moments of the data than the ARCH models do.

TI Stylized Facts and Regime Changes--Are Prices Procyclical? **AU** Ravn, Morten Overgaard; Sola, Martin.

TI Changes In Regime, Cointegration, Seasonality, and the Japanese Consumption Function. **AU** Hall, Stephen; Psaradakis, Zacharias; Sola, Martin.

TI Modelling Long Memory In Stock Market Volatility: A Fractionally Integrated Generalised ARCH Approach. **AU** Psaradakis, Zacharias; Sola, Martin.

Solomou, Solomos

PD April 1994. **TI** Real Effective Exchange Rates 1870-1913: The Core Industrial Countries. **AU** Solomou, Solomos; Catao, Luis. **AA** Solomou: University of Cambridge. Catao: International Monetary Fund. **SR** University of Cambridge Department of Applied Economics Working Paper: 9404; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 5. **PR** $5.00 (2.50 pounds), checks payable to University of Cambridge. **JE** F31, N11, N43. **KW** Gold Standard. Real Effective Exchange Rates.

AB This paper constructs multilateral real effective exchange rates for Britain, France, Germany and America during the period 1870-1913. The time-series properties of these series suggest that the path of real exchange rates during the classical gold standard period followed random walks. These series are used to analyze the determinants of long-run export movements.

Sorensen, Bent E.

TI Continuous Time International Arbitrage Pricing: Theory and Estimation. **AU** Perraudin, William; Sorensen, Bent E.

Sorensen, Jan Rose

TI On the Effects of Firing Costs When Investment is Endogenous. **AU** Risager, Ole; Sorensen, Jan Rose.

TI Optimal Fiscal Policy in Open Economies with Labor Market Distortions. **AU** Andersen, Torben M.; Rasmussen, Bo Sandemann; Sorensen, Jan Rose.

TI Employment Protection, Trade Union Behavior and International Capital Mobility. **AU** Risager, Ole; Sorensen, Jan Rose.

TI Minimum Wages: Curse or Blessing. **AU** Ravn, Morten Overgaard; Sorensen, Jan Rose.

PD February 1995. **TI** Coordination of Fiscal Policy Among a Subset of Countries. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1995-2; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 9. **PR** no charge. **JE** F42, J51. **KW** Counterproductive Policy Coordination. Unemployment.

AB We set up a general equilibrium model with unemployment due to labor unions having wage bargaining power. There is a number of produced goods which are imperfect substitutes in consumption, and there is a number of countries producing each good. It is shown that coordination of fiscal policy among all countries is first best, non coordination at all is second best, whereas coordination among countries producing the same type of good (countries which are "most" alike) is only third best. In spite of that, countries producing the same good have an incentive to coordinate their policies.

Sorin, Sylvain

TI Repeated Games Part B: The Central Results. **AU** Mertens, Jean-Francois; Sorin, Sylvain; Zamir, Shmuel.

TI Repeated Games Part C: Further Development. **AU** Mertens, Jean-Francois; Sorin, Sylvain; Zamir, Shmuel.

TI Repeated Games Part A: Background Material. **AU** Mertens, Jean-Francois; Sorin, Sylvain; Zamir, Shmuel.

Spencer, Barbara J.

TI High-Cost Domestic Joint Ventures and International Competition: Do Domestic Firms Gain? **AU** Raubitschek, Ruth R.; Spencer, Barbara J.

Staiger, Robert W.

PD September 1994. **TI** Differences in the Uses and Effects of Antidumping Law Across Import Sources. **AU** Staiger, Robert W.; Wolak, Frank A. **AA** Staiger: University of Wisconsin and National Bureau of Economic Research. Wolak: Stanford University and National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 4846; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** not available. **PR** $5.00. **JE** K33, F14. **KW** Antidumping Law. Imports. Domestic Output.

AB This paper studies the differences in the uses and effects of U.S. antidumping law on imports and domestic output across the major regions exporting to the United States. Building on previous work (Staiger and Wolak, 1994), we extend our attempt to characterize the implications of the use of antidumping law for the behavior of U.S. imports and domestic output, and to distinguish between "outcome filers" (firms for which the prospect of an antidumping duty is an important ingredient in the decisions to file) and "process filers" (firms for which filing is driven largely by a desire to secure the trade-restricting effects of the investigation process itself). In our earlier work we allowed for the coexistence of outcome-and process-filing industries, and found evidence consistent with the presence of process filers in some industries. However, we restricted the filing strategy of firms in a given domestic industry to be the same across all imports in that industry regardless of their country of origin. In this paper we abstract from cross-industry heterogeneity in antidumping filing strategies and explore instead the heterogeneity of filing strategies against different import-source countries, allowing for the possibility that domestic firms may pursue independent filing strategies with respect to imports from different countries. We argue that the most likely target countries for process filers are those whose export production is primarily destined for the U.S. market and accounts for a relatively large and stable U.S. market share. These characteristics point to Canada and Mexico as countries against which process filing by U.S. firms is likely to occur. Analyzing the filing behavior against Canada and Mexico as well as four other regions, we find evidence in the filing behavior and in the nature of the trade impacts which accompany filing to suggest that Mexico and Canada are indeed the most likely targets of antidumping petitions filed by process filers in the United States.

TI Trade Liberalization and Trade Adjustment Assistance. AU Fung, K. C.; Staiger, Robert W.

Steel, Mark F. J.

TI Posterior Analysis of Stochastic Frontier Models Using Gibbs Sampling. AU Koop, Gary; Steel, Mark F. J.; Osiewaslki, Jacek.

TI The Components of Output Growth: A Cross-Country Analysis. AU Koop, Gary; Osiewalski, Jacek; Steel, Mark F. J.

Stein, Jeremy C.

TI The Impact of Monetary Policy on Bank Balance Sheets. AU Kashyap, Anil K.; Stein, Jeremy C.

Steinmeier, Thomas L.

TI Retirement Research Using the Health and Retirement Survey. AU Gustman, Alan L; Mitchell, Olivia S.; Steinmeier, Thomas L.

Stoker, Thomas M.

TI Consumption and the Timing of Income Risk. AU Blundell, Richard; Stoker, Thomas M.

Sunder, Shyam

TI Expectations and Learning Under Alternative Monetary Regimes: An Experimental Approach. AU Marimon, Ramon; Sunder, Shyam.

Sutter, Alain

PD December 1994. TI Optimal Placement of Add/Drop Multiplexers: Heuristic and Exact Algorithms. AU Sutter, Alain; Vanderbeck, Francois; Wolsey, Laurence A. AA Sutter: CNET, France Telecom, Issy-les-Moulineaux. Vanderbeck: Cambridge University. Wolsey: Universite Catholique de Louvain. SR Universite Catholique de Louvain CORE Discussion Paper: 9479; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. PG 14. PR not available. JE C61. KW Communications. Assignment of Equipment. Comparison of Safety Policies. Integer Programming. Decomposition Algorithms.

AB We study a problem that has arisen recently in the design of telecommunications transmission networks at France Telecom. Given a set of centers in a city or conglomeration linked together on a ring architecture, given the expected demands between the centers and an essentially unlimited availability of rings of fixed capacity on the network, assign demand pairs and corresponding add/drop multiplexers to the rings so as to satisfy the demands and minimize the number of "costly" multiplexers installed. Heuristics based on simulated annealing and IP column generation algorithms have been developed for the basic problem and several variants. The column generation algorithms provide tight lower bounds that permit us to validate the effectiveness of the heuristics, and in many instances to derive guaranteed minimum cost solutions.

Swagel, Phillip

TI Trade Barriers and Trade Flows Across Countries and Industries. AU Lee, Jong-Wha; Swagel, Phillip.

Takahashi, Harutaka

PD March 1995. TI The von Neumann Fact and Optimal Cycles with Small Discounting. AA Queen's University and Meiji Gakuin University. SR Queen's Institute for Economic Research Discussion Paper: 920; Department of Economics, Queen's University, Kingston, Ontario K7l 3N6, CANADA. PG 14. PR $3.00 + GST Canada; $3.50 U.S. and Foreign. JE E61, C62, E13, O21. KW Capital Intensity Conditions. Cycles. Optimal Growth. Turnpike Properties. Two-Sector Model. Von Neumann Facet.

AB This paper presents a standard two-sector optimal growth model with general neoclassical production functions: strictly quasi-concave, twice continuously differentiable homogeneous of degree one functions. The following two results will be established when the discount factor is sufficiently close to 1: a) under either capital intensity condition defined at an optimal steady states (OSS), a dynamical system displays simple dynamics: any optimal path converges either to OSS or to a cycle of period two. b) given the capital intensity condition such that the consumption sector is more capital intensive, and the discount factor is sufficiently close to one, then under some combination of parameters of technologies, a depreciation rate and a discount factor, any optimal path converges to a cycle of period two. In a subsidiary argument, it will also be established that if the discount factor is sufficiently close to one and some other conditions of parameter values hold for such a discount factor, the Turnpike Property holds.

PD March 1995. TI The von Neumann Facet and the Turnpike Properties for a Neoclassical Optimal Growth Model with Many Capital Goods II. AA Queen's University and Meiji Gakuin University. SR Queen's Institute for Economic Research Discussion Paper: 921; Department of Economics, Queen's University, Kingston, Ontario K7l 3N6, CANADA. PG 16. PR $3.00 + GST Canada; $3.50 U.S. and Foreign. JE C61, C62, E13, O21. KW Capital Intensity Condition. Neoclassical Technology. Optimal Growth. Turnpike Properties, Multi-Sector Model. Von Neumann Facet.

AB We will study a multi-sector discrete-time optimal growth model with a neoclassical non-joint technology and show the Neighborhood Turnpike; any optimal path will be trapped in the neighborhood of an associated optimal steady state and its neighborhood can be chosen as small as possible by taking the discount factor close enough to one and the full Turnpike; any optimal path converges to an associated optimal steady state path when discount factors are close enough to one. These two Turnpike properties will provide the firm theoretical background for an application of a neoclassical optimal growth model with heterogeneous capital goods to economic analysis.

Thisse, Jacques-Francois

TI A Nonadditive Probability Model of Individual Choice. AU Billot, Antoine; Thisse, Jacques-Francois.

TI The Profit-Maximizing Weber Problem. AU Hansen, Pierre; Peeters, Dominique; Thisse, Jacques-Francois.

Thomson, Jim

TI Young Workers, Old Workers, and Convergence. AU Kremer, Michael; Thomson, Jim.

Timmermann, Allan

PD November 1993. TI Why Do Dividend Yields Forecast Stock Returns? AA Birkbeck College and Centre for Economic Policy Research. **SR** Birkbeck Discussion Paper in Financial Economics: 2/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 8. **PR** no charge. **JE** G12. **KW** Asset Pricing.

AB The paper presents a continuous time version of Lucas' (1978) asset pricing model which is capable of explaining the observed increase in the correlation between stock returns and dividend yields as a function of the length of the holding period provided that certain weak conditions on agents' utility are satisfied.

TI Fitting the Moments: A Comparison of Arch and Regime Switching Models For Daily Stock Returns. **AU** Sola, Martin; Timmermann, Allan.

TI The Use of Recursive Model Selection Strategies in Forecasting Stock Returns. **AU** Pesaran, M. Hashem; Timmermann, Allan.

TI The Use of Recursive Model Selection Strategies In Forecasting Stock Returns. **AU** Pesaran, M. Hashem; Timmermann, Allan.

PD November 1994. **TI** Excess Volatility and Predictability of Stock Prices in a Trend- Stationary Dividend Model With Learning. **AA** Centre for Economic Policy Research and University of California, San Diego. **SR** Centre for Economic Policy Research European Science Foundation Working Paper: 51; Centre for Economic Policy Research, 25-28 Old Burlington Street, London W1X 1LB, ENGLAND. **PG** 27. **PR** not available. **JE** G12. **KW** Recursive Learning. Excess Volatility. Predictability of Stock Returns.

AB To what extent can agents' learning and incomplete information about the "true" underlying model explain findings of excess volatility and predictability of returns in the stock market? In this paper we analyze a model of recursive learning in the stock market when dividends follow a trend-stationary, autoregressive process. Two different learning rules are analyzed, both of which will converge asymptotically to the rational expectations equilibrium. A learning rule based on projections of future dividends is found to generate substantial excess volatility in stock prices even in very large samples, and this type of learning also seems capable of explaining the positive correlation between stock returns and the lagged dividend yield.

Todd, Michael J.

TI Self-Scaled Cones and Interior-Point Methods in Nonlinear Programming. **AU** Nesterov, Yurii E.; Todd, Michael J.

Tornell, Aaron

PD August 1994. **TI** Are Windfalls a Curse? A Non-Representative Agent Model of the Current Account and Fiscal Policy. **AU** Tornell, Aaron; Lane, Philip. **AA** Tornell: Harvard University and National Bureau of Economic Research. Lane: Harvard University. **SR** National Bureau of Economic Research Working Paper: 4839; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 29. **PR** $5.00. **JE** F11, F13, E62. **KW** Terms of Trade. Current Account. Growth. Fiscal Process.

AB In several countries temporary terms of trade improvements have led to a deterioration of the current account. Furthermore, many of these countries failed to attain greater post-boom growth rates. The point we make is that the structure of the fiscal process is critical in determining outcomes. If fiscal control is unitary, then the consumption-smoothing effect is operative, and representative-agent models of the current account have predictive power. However, if control is divided among several fiscal claimants, a voracity effect appears which counteracts the consumption-smoothing effect, leading to a deterioration of the current account in response to a positive shock. We model the interaction among fiscal claimants as a dynamic game and show that in equilibrium aggregate appropriation increases more than the windfall itself. This results in a deterioration of the current account. We also show that all the windfall is dissipated, with the country experiencing no increase in its growth rate. Lastly, we analyze the experiences of seven countries which have enjoyed large windfalls.

Tremayne, A. R.

TI Testing a Time Series for Difference Stationarity. **AU** Mc Cabe, B.P.M.; Tremayne, A. R.

Tronzano, Marco

PD October 1994. **TI** Assessing The Credibility of a Target Zone: An Alternative Approach Applied to France (1988-1993). **AA** University of Genoa and Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 18/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 27. **PR** no charge. **JE** C11, E65, F31. **KW** Credibility. Target Zones. Monetary Policy. Fiscal Policy.

AB The theoretical framework developed in Baxter (1985) is adapted to test the credibility of French economic policy since the last EMS realignment. In line with the findings from the target zone literature, a significant increase in credibility is documented for the 1988-1991 period; however, unlike the above literature, significant credibility decreases are detected both before and during the recent EMS crisis. The final section of the paper extends Baxter's testing strategy, and applies a Bayesian unit-root test to French real public debt.

Tulkens, Henry

PD October 1994. **TI** Nonparametric Approaches to the Assessment of the Relative Efficiency of Bank Branches. **AU** Tulkens, Henry; Malnero, Amador. **AA** Tulkens: Universite Catholique de Louvain and Facultes Universitaires Saint-Louis. Malnero: Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9447; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 18. **PR** not available. **JE** C81. **KW** Market Productivity. Productive Efficiency. Technical Efficiency.

AB This paper applies to a multibranch Belgian bank various nonparametric measurement techniques of productive efficiency. On the one hand, using a panel of monthly data, we assess efficiency over time, using contemporaneous, sequential and intertemporal frontiers, as well as Malmquist productivity indexes. The combination of these four methods allows us to characterize a market productivity increase in the summer. On the other hand, using a regionally split cross section, we assess efficiency within and between regions, by means of regional frontier comparisons. The results show that the Brussels region dominates those in the rest of the country.

TI A Core-Theoretic Solution for the Design of Cooperative Agreements on Transfrontier Pollution. **AU** Chander, Pakash; Tulkens, Henry.

TI Optimality Properties of Alternative Systems of Taxation of Foreign Capital Income. **AU** Mintz, Jack; Tulkens, Henry.

Ulph, Alistair

PD April 1994. **TI** Who Gains From Learning About Global Warming? **AU** Ulph, Alistair; Ulph, David. **AA** Ulph, A.: University of Southampton and Centre for Social and Economic Research on the Global Environment. Ulph, D.: University College London and Centre for Social and Economic Research on the Global Environment. **SR** University of Birmingham Department of Economics Discussion Paper: 94-11; Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UNITED KINGDOM. **PG** 26. **PR** 2 pounds. **JE** C73, D62, D80, F20, Q20. **KW** Global Warming. Dynamic Games. Uncertainty. Learning. Irreversibility. International Agreements.

AB In this paper we bring together two previously separate strands of literature dealing with global warming-the literature on the analysis of strategic interactions between independent national governments confronted with a dynamic problem of the global commons, which has ignored issues of uncertainty and learning, and the literature on uncertainty, learning and irreversibility, which has assumed a single decision-making authority. The integration of these two literatures changes significantly the predictions derived from the separate literatures, especially the predictions about the effect of uncertainty and learning. Thus we show the following: (i) in situations where a single decision-maker would use the prospect of learning to delay cutting emissions, strategic interactions can cause countries to accelerate the cutting of emissions; (ii) while a single decision-market is always better off when there is the possibility of learning, countries can now be worse off with the possibility of learning, and would not be prepared to pay anything for better information; this has the further implication that there is now an important additional source of gains from international agreements, of at least international coordination. There are two sources for these reversals of the conventional wisdom. One is that there may be states of the world where some countries have much higher damage costs than their expected values while others have much lower than expected damage costs; The strategic response in such states impose significant costs on all countries, in particular case where some countries face much higher uncertainty about potential damages than others. Both these sources of difficulty are plausible features of the global warming problem.

PD August 1994. **TI** Strategic Environmental Policy and International Trade--The Role of Market Conduct. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9415; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 25. **PR** no charge. **JE** F12, F13, H23, Q28. **KW** Environmental Policy. Imperfect Competition. International Trade. Strategic Behavior. Market Conduct.

AB In this paper I analyze the incentives for governments and producers to act strategically in imperfectly competitive markets when there is Bertrand competition; strategic behavior by governments takes the form of distortions to their environmental policy from the first-best rule of equating marginal damage and marginal abatement costs; strategic behavior by producers implies inefficient investment in R&D. I contrast the outcomes with Bertrand competition with those in Cournot competition, which I analyzed in an earlier paper (Ulph (1993a.)). The main findings are: when only governments act strategically, they will set environmental policy that is too tough and the distortion will be greater if governments use emission standards rather than emission taxes; both results are the opposite of what happened in Cournot competition. When only producers act strategically, they under-invest in R&D, (in Cournot they over-invest) but it is not possible to give a universal ranking of policy instruments. When governments and producers act strategically, then this reduces the extent of government distortion of environmental policy, which is the same result as with Cournot, but for very different reasons; when governments use emission taxes then with Bertrand competition they set taxes below the first-best level, the reverse of what happens when only governments act strategically.

PD September 1994. **TI** Environmental Policy and International Trade--A Survey of Recent Economic Analysis. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9423; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 38. **PR** no charge. **JE** F01, H23, Q28. **KW** International Trade. Trade Policy. Environmental Policy. Ecological Dumping. Trade Liberalization.

AB Recent debates over further moves toward trade liberalization have led to a number of claims by environmentalists that such moves would be damaging to the environment, in part because in the absence of trade policy instruments, governments may attempt to protect their domestic industries by relaxing their environmental policies, resulting in a general "harmonizing down" of environmental policies. A number of policy prescriptions such as the "harmonization upward" of environmental standards, enforced by the use of counter-veiling environmental import duties, and the rejection of specialization of production--have followed from this critique. Other participants in the debate have made the argument that governments should impose very tough environmental policies to try to give their domestic industries a long-term competitive advantage through developing "green" technologies ahead of their rivals. Traditional economic analysis has rejected the claims of environmentalists, arguing that provided governments implement appropriate environmental policies then the standard arguments for free trade apply and that most of the policy prescriptions of environmentalists would be damaging economically and perhaps even environmentally. Recently, a number of studies have extended the traditional analysis by drawing on the literature on imperfectly competitive markets and strategic trade policy to evaluate the incentives for government to distort their environmental policies. While these studies can provide some support for the claims mentioned above, that support is very fragile. In this paper, after reviewing briefly the traditional analysis of trade and environmental policy, I survey this recent literature to assess just how much recent economic analysis lends support for the claims made in these recent debates.

PD October 1994. **TI** Trade, Strategic Innovation and Strategic Environmental Policy--A General Analysis. **AU** Ulph, Alistair; Ulph, David. **AA** Ulph, A.: University of Southampton. Ulph, D.: University College London. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9416; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 30. **PR** no charge. **JE** F12, F13, H23, Q28. **KW** Environmental Policy. International Trade. Imperfect Competition. Innovation. Strategic Behavior.

AB There has been much debate recently about the nature of environmental policy that will be set by governments concerned about the competitive advantage their industries might obtain in a world of fierce trade competition. Some claim governments will set environmental policies that are too lax, while others claim that policies will be excessively tough (in order to spur firms to innovate). Both these claims relate to the possibility that governments may distort their environmental policies for strategic reasons, and to test this claim requires modeling environmental policy in a world of imperfect competition where there are strategic gains to governments trying to manipulate markets through their environmental policies, and to producers trying to manipulate markets through their R&D decisions. There is now a considerable literature which adapts the literature on strategic international trade to include environmental policy, but this literature suffers from some limitations. Most of the models consider the cases where either only the government acts strategically or only producers act strategically. A proper analysis would allow for both sets of agents to act strategically. In this paper we allow for both governments and producers to act strategically, and for producers' R&D to reduce both costs of production and emissions, but without imposing special functional forms. We show that despite this extra generality the papers by Ulph (1993a) and Ulph (1994) effectively encompass the entire set of qualitative results that can be obtained. More precisely, if firms undertake both types of R&D, then the qualitative results we obtain are essentially the same as in Ulph (1994), while if firms undertake only process R&D then the results of Ulph (1993a) apply even with general functional forms.

PD April 1995. **TI** Uncertainty, Learning and International Environmental Policy Co- ordination. **AU** Ulph, Alistair; Maddison, David. **AA** Ulph: University of Southampton and CSERGE. Maddison: CSERGE. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9507; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 20. **PR** no charge. **JE** C73, D81, D62, F02, Q20. **KW** Global Warming. Uncertainty. Learning. Irreversibility. Value of Information. Dynamic Games. International Agreements.

AB In this paper we construct a simple model of global warming which captures a number of key features of the global warming problem: (i) environmental damages are related to the stock of greenhouse gases in the atmosphere; (ii) the global commons nature of the problem means that there are strategic interactions between the emissions policies of the governments of individual nation states; (iii) there is uncertainty about the extent of the future damages that will be incurred by each country from any given level of concentration of greenhouse gases but there is the possibility that at a future date better information about the true extent of environmental damages may become available; an important aspect of the problem is the extent to which damages in different countries may be correlated; (iv) current emissions of greenhouse gases are irreversible. In the first part of the paper we consider a simple model with two symmetric countries and show that the value of perfect information is an increasing function of the correlation between damages in the two countries in both the cooperative and non-cooperative equilibria. However, while the value of perfect information is always non-negative in the cooperative equilibrium, in the non-cooperative equilibrium there is a critical value of the correlation coefficient such that the value of perfect information will be negative for all values of the correlation coefficient below this critical value. In the second part of the paper, we construct an empirical model of global warming distinguishing between OECD and non- OECD countries and show that in the non-cooperative equilibrium the value of perfect information for OECD countries is negative when the correlation coefficient between environmental damages for OECD and non- OECD countries is negative. The implications of these results for international agreements are discussed.

Ulph, David

TI Who Gains From Learning About Global Warming? **AU** Ulph, Alistair; Ulph, David.

TI Trade, Strategic Innovation and Strategic Environmental Policy--A General Analysis. **AU** Ulph, Alistair; Ulph, David.

van Garderen, Kees Jan

PD April 1995. **TI** Curved Exponential Models in Econometrics. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9508; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 22. **PR** no charge. **JE** C13, C31, C32, C51. **KW** Curved Exponential Families. Regression Equations. VARMA Models.

AB Curved exponential models have the property that the dimension of the minimal sufficient statistic is larger than the number of parameters in the model. Many econometric models share this feature. The first part of the paper shows that, in fact, econometric models with this property are necessarily curved exponential. We give a method for determining the order of the model and a simple rule for constructing a set of minimal sufficient statistics, based on partial scores and likelihood ratios. The difference in dimension between parameter and statistic, and the curvature of these models, have important consequences for inference. It is not the purpose of this paper to contribute significantly to the theory of CEMs, other than to show that the theory applies to many econometric models and to highlight some multivariate aspects. Using the methods developed in the first part, we show that demand systems, the single structural equation model, the seemingly unrelated regressions and autoregressive models, are all curved exponential models.

Van Ypersele, Tanguy

TI Social Protection and Political Competition. **AU** Gabszewicz, Jean J.; Van Ypersele, Tanguy.

Van Zandt, Timothy

PD January 1995. **TI** Continuous Approximations in the Study of Hierarchies. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9502; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM.

PG 26. **PR** not available. **JE** C61, C69. **KW** Approximation. Continuity. Discrete.
AB Large organizations are typically modeled as hierarchies. Hierarchies are discrete structures (trees), but researchers frequently use continuous approximations. The purpose of this note is to study the validity of these approximations. We show that modeling hierarchies with a continuum of tiers is not a good approximation. We also show that ignoring rounding operators and integer constraints in formula derived from discrete models can be a valid approximation, when hierarchies are suitably large. This is made precise by tight bounds on the relative errors of the approximations.

Vanden Eeckaut, Philippe

PD October 1994. **TI** Noise vs. Inefficiency Evidence from Mass Transit. **AU** Vanden Eeckaut, Philippe; Wunsch, Pierre. **AA** Vanden: Universite Catholique de Louvain. Wunsch: Universite Catholique de Louvain and Facultes Universitaires Saint-Louis. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9451; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 20. **PR** not available. **JE** C21, C22, C23, C81. **KW** Efficiency. Frontier Analysis. Inefficiency. Technical Efficiency.
AB This paper was motivated by troubling empirical results. The data are time-series from a mass transit company in Brussels. Previous studies, based on a deterministic (non-parametric) method, had found ample evidence of inefficiencies for many observations. These are not spotted by the classical Aigner-Lovell-Schmidt stochastic model. Our knowledge of the firm leads us to believe that the deterministic model gives, in this case, a more accurate picture of reality. The failure of the A.L.S. model in our example motivates us to comment on the modeling of inefficiency in the frontier analysis literature. Our investigation leaves us with the feeling that there may be many relevant cases for which the stochastic model as proposed today is inappropriate. The problems identified are likely to be worse for time-series but are probably also relevant for cross-sections.

TI Technical Efficiency Measures on DEA and FDH: A Reconsideration of the Axiomatic Literature. **AU** Kerstens, Kris; Vanden Eeckaut, Philippe.

Vanderbeck, Francois

PD April 1994. **TI** An Exact Algorithm for IP Column Generation. **AU** Vanderbeck, Francois; Wolsey, Laurence A. **AA** Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9419; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 12. **PR** not available. **JE** C61. **KW** Integer Programming. Partitioning.
AB An exact column generation algorithm for integer programs with a large (implicit) number of columns is presented. The family of problems that can be treated includes not only standard partitioning problems such as bin packing and certain vehicle routing problems in which the columns generated have 0-1 components and a right hand side vector of 1's, but also the cutting stock problem in which the columns and right hand side are nonnegative integer vectors. We develop a combined branching and subproblem modification scheme that generalizes existing approaches, and also describe the use of lower bounds to reduce tailing- off effects.

TI Optimal Placement of Add/Drop Multiplexers: Heuristic and Exact Algorithms. **AU** Sutter, Alain; Vanderbeck, Francois; Wolsey, Laurence A.

Vastrup, Claus

PD December 1994. **TI** Danish Foreign Economic Policy After 1967. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1994-34; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 19. **PR** no charge. **JE** N14, N24. **KW** Danish Economic Policy. Danish Foreign Trade. Denmark and Economic Integration in Europe.
AB First, some structural aspects of Danish foreign trade are dealt with (openness, exports of agricultural and industrial goods). Also, during the last 25 years the importance of national and bilateral regulations has been reduced significantly. Accordingly, today international regulations and the overall economic situations are much more important for the foreign economic relations of Denmark. Second, it is argued that the driving forces for Denmark with respect to European integration have been the income advantages, and especially the economics of agricultural exports. Third, on the basis of the Danish experiences it is concluded that for a small, open economy a tight fiscal policy is necessary whenever the economy runs a deficit on its current accounts. Furthermore, low activity and unemployment in such situations have to be dealt with by gradually increasing the competitive position of the country. It is only with a surplus on the current accounts that it has been possible for Denmark to relax fiscal policy in the early 1990s. Fourth, since the Second World War the exchange rate policy of Denmark had been to join fixed exchange rate systems of her major export markets whenever possible. The only exemption is the EMU in the recent Maastricht Treaty. But even with such affinity to stable exchange rates, unilateral devaluations of the Danish krone occurred in the late 1970s and early 1980s. However, over the last ten years Danish economic policy had concentrated firmly on keeping the exchange rate fixed within the EMS.

PD March 1995. **TI** Tysklands Okonomi Efter Genforeningen. **AA** University of Aarhus. **SR** Aarhus Institute of Economics Memo: 1995-3; Institute of Economics, University of Aarhus, Building 350, Universitetsparken, DK-8000 Aarhus C, DENMARK. **PG** 20. **PR** no charge. **JE** E65. **KW** German Unification. Five New Eastern German States. European Integration.
AB The economy aspects of the German unification are reviewed and the economic position and attitudes of the new Germany are considered with special reference to European integration. [This paper is in Danish.].

Ventura, Luigi

PD October 1994. **TI** A Few Remarks on Imperfect Competition with Incompleteness of Markets. **AA** University "G. D'Annunzio" and Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9446; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 15. **PR** not available. **JE** D43, D52. **KW** Imperfect Competition. Incomplete Markets.
AB This work illustrates a few examples where imperfect competition is mixed with incompleteness of markets. The behavior of strategic agents is analyzed in different non competitive contexts and it is also shown under what conditions

imperfect competition can Pareto improve on competitive outcome. An "indirect transfer price effect" is shown to be at work in a framework of market incompleteness and imperfect competition.

PD December 1994. **TI** On a Shareholder Constrained Efficient Criterion for Strategic Firms. **AA** University G. D'Annunzio and Universite Catholique de Louvain. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9466; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 13. **PR** not available. **JE** D21, D43, D51, D52, L13, L21. **KW** Imperfect Competition. Incomplete Markets. Profit Maximization. Strategic Firm. Utility Maximization.
AB In this note the decision problem of a strategic firm in a general equilibrium setting is analyzed. It is shown that under many respects the problems arising are similar to those encountered in an incomplete markets set-up, and a well known criterion used under incompleteness of markets can be applied to the imperfectly competitive framework. It is also shown under what conditions profit maximization leads to the same production decision as utility maximization.

Vickers, John
TI The Access Pricing Problem. **AU** Armstrong, Mark; Vickers, John.

Vitale, Paolo
TI Information Flows in the Foreign Exchange Market. **AU** Perraudin, William; Vitale, Paolo.

PD December 1994. **TI** Risk-Averse Traders with Inside Information. **AA** University of Cambridge. **SR** University of Cambridge Department of Applied Economics Working Paper: 9504; Department of Applied Economics, University of Cambridge, Sidgwick Avenue, Cambridge CB3 9DE, UNITED KINGDOM. **PG** 25. **PR** \$10.00 (5 pounds), checks payable to University of Cambridge. **JE** D82, G14, C61. **KW** Insider Trading. LEQG. Market Liquidity. Price Efficiency. Risk- Aversion.
AB This paper generalizes Kyle's (1985) model to the case in which the informed trader is risk-averse. Solution methods are based on Whittle's (1990) analysis of LEQG dynamic programming problems. Risk-aversion increases the informativeness of prices and reduces the depth of the market in the first auctions of the model and increases it in the last periods. The volume of the transactions affects the liquidity of the market and increases these effects.

Vitale, Paulo
TI Reserve Cycles. **AU** Flood, Robert; Perraudin, William; Vitale, Paulo.

von Thadden, Ernst-Ludwig
PD November 1994. **TI** Optimal Liquidity Provision and Dynamic Incentive Compatibility. **AA** Centre for Economic Policy Research and Institut fur Volkswirtschaft. **SR** Centre for Economic Policy Research European Science Foundation Working Paper: 52; Centre for Economic Policy Research, 25-28 Old Burlington Street, London W1X 1LB, ENGLAND. **PG** 19. **PR** not available. **JE** D51, D92, G20, G21. **KW** Liquidity. Deposit Contracts. Banking. Dynamic Programming.
AB The paper analyzes the problem of optimal liquidity provision in a simple continuous-time general equilibrium model under uncertainty. It argues that liquidity provision is subject to moral-hazard problems due to the unobservability of households' characteristics and characterizes incentive-compatible deposit contracts as second-best mechanisms to provide liquidity.

Wahba, Jackline
PD June 1994. **TI** The Transmission of Dutch Disease and Labour Migration. **AA** University of Southampton. **SR** University of Southampton Discussion Paper in Economics and Econometrics: 9412; Department of Economics, University of Southampton, Southampton S09 5NH, ENGLAND. **PG** 23. **PR** no charge. **JE** F13, F22. **KW** Labor Migration. Dutch Disease. Developing Countries. International Trade.
AB This paper examines the effects of the oil-boom in the Gulf states in the framework of a Dutch disease model. The model indicates that labor immigration may offset the effects of Dutch disease in the Gulf states. However, this may effectively shift the symptoms of Dutch disease to labor-exporting countries. So, the theoretical model shows that through labor migration, Dutch disease can be transmitted to sending countries.

TI The Role of Public Finance in Economic Development: An Empirical Investigation. **AU** Smith, Peter; Wahba, Jackline.

Wall, Howard J.
TI Estimating the Value of Amenities With Migration Data. **AU** Douglas, Stratford; Wall, Howard J.

TI Protectionist Reputations and the Threat of Voluntary Export Restraint. **AU** Jans, Ivette; Wall, Howard J.; Hariharan, Govind.

PD October 1994. **TI** Is Military Expenditure Really a Luxury Good?: An International Panel Study of LDC's. **AA** Birkbeck College and West Virginia University. **SR** Birkbeck College Discussion Papers in Economics: 13/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 8. **PR** no charge. **JE** H41. **KW** Military Expenditures.
AB This paper reconsiders cross-sectional studies that suggest that the share of a country's income that goes toward military expenditure increases with income. Because these studies do not consider fixed effects for each country, their results are driven by heterogeneity bias. I develop an alternative model that is capable of accounting for fixed effects. Using this model I demonstrate that, contrary to previous studies, the share of military expenditure actually decreases with a country's income, all else constant.

TI The Revealed Costs of Unemployment. **AU** Douglas, Stratford; Wall, Howard J.

TI Customs Union of Free Trade Area? The Role of Political Asymmetries. **AU** Bandyopadhyay, Subhayu; Wall, Howard J.

Watt, David G.
TI Sources of Variation in International Real-Interest Rates. **AU** Gregory, Allan W.; Watt, David G.

Weismantel,

TI Formulations and Valid Inequalities for the Node Capacitated Graph Partitioning Problem. AU Ferreira, Carlos E.; Martin, Alexander; de Souza, Cid C.; Weismantel, Robert; Wolsey, Laurence A.

TI The Node Capacitated Graph Partitioning Problem: A Computational Study. AU Ferreira, Carlos E.; Martin, Alexander; de Souza, Cid C.; Weismantel, Robert; Wolsey, Laurence A.

Weiss, Allan N.

TI Home Equity Insurance. AU Shiller, Robert J.; Weiss, Allan N.

Wen, Quan

TI Unemployment and the Dynamic Effects of Factor Income Taxation. AU Shi, Shouyong; Wen, Quan.

Whalley, John

TI Reference Point Dependence for Specification Bias from Quality Upgrading. AU Hutton, Eric; Whalley, John.

TI The Tax Unit and Household Production. AU Piggott, John; Whalley, John.

Winters, L. Alan

TI Controlling Greenhouse Gases: A Survey of Global Macroeconomic Studies--A Revision of Discussion Paper 91-25. AU Clarke, Rosemary; Boero, Gianna; Winters, L. Alan.

TI Energy Pricing For Sustainable Development In China. AU Clarke, Rosemary; Winters, L. Alan.

Wolak, Frank A.

TI Differences in the Uses and Effects of Antidumping Law Across Import Sources. AU Staiger, Robert W.; Wolak, Frank A.

Wolf, Holger C.

TI How Many Monies? A Genetic Approach to Finding Optimum Currency Areas. AU Ghosh, Atish R.; Wolf, Holger C.

TI Pricing in International Markets: Lessons from The Economist. AU Ghosh, Atish R.; Wolf, Holger C.

TI Terms of Trade, Productivity, and the Real Exchange Rate. AU De Gregorio, Jose; Wolf, Holger C.

Wolsey, Laurence A.

TI An Exact Algorithm for IP Column Generation. AU Vanderbeck, Francois; Wolsey, Laurence A.

TI Optimal Trees. AU Magnanti, Thomas L.; Wolsey, Laurence A.

TI Algorithms and Reformulations for Lot Sizing Problems. AU Pochet, Y.; Wolsey, Laurence A.

TI Optimal Placement of Add/Drop Multiplexers: Heuristic and Exact Algorithms. AU Sutter, Alain; Vanderbeck, Francois; Wolsey, Laurence A.

Wood, Andrew

TI How Many Jobs Does Construction Expenditure Generate? AU Ball, Michael; Wood, Andrew.

TI Does Building Investment Affect Economic Growth? Some Long-Run Evidence From the UK. AU Ball, Michael; Wood, Andrew.

TI Housing Investment: Long-Run International Trends and Volatility. AU Ball, Michael; Wood, Andrew.

Wunsch, Pierre

TI Noise vs. Inefficiency Evidence from Mass Transit. AU Vanden Eeckaut, Philippe; Wunsch, Pierre.

PD October 1994. TI Cost and Efficiency of Major Urban Transit Systems in Europe. AA Universite Catholique de Louvain and Facultes Universitaires St Louis. SR Universite Catholique de Louvain CORE Discussion Paper: 9454; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. PG 22. PR not available. JE R41. KW Mass Transit. Urban Transit.

AB This paper is an attempt at evaluating the overall performance of transit systems in major European cities. We rely on parametric and non- parametric methods to make intermodal and intercity comparisons. We identify economies of density, vehicle capacity and higher vehicle speed. We also find a high correlation between costs and subsidies. Concerning intermodal comparisons, results suggest that streetcars do not fill a significant gap between buses and subways. We conclude with the identification of some plausible role models in the sector. Privatized British firms are among the first on our list in terms of technical performance.

Zakoian, Jean-Michel

TI Quasi Indirect Inference for Diffusion Processes. AU Broze, Laurence; Scaillet, Olivier; Zakoian, Jean-Michel.

Zamir, Shmuel

TI Repeated Games Part B: The Central Results. AU Mertens, Jean-Francois; Sorin, Sylvain; Zamir, Shmuel.

TI Repeated Games Part C: Further Development. AU Mertens, Jean-Francois; Sorin, Sylvain; Zamir, Shmuel.

TI Repeated Games Part A: Background Material. AU Mertens, Jean-Francois; Sorin, Sylvain; Zamir, Shmuel.

Zandt, Timothy Van

PD March 1994. TI Hidden Information Acquisition and Static Choice. AA Princeton University. SR Universite Catholique de Louvain CORE Discussion Paper: 9417; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. PG 10. PR not available. JE D83. KW Hidden Information.

AB This note explores the consequence of hidden information acquisition for static decision theory. We show that any choice correspondence in the observable problem can be consistent with some well-behaved choice correspondence in an unobservable meta-problem with costly information acquisition. This illustrates how choices may not satisfy standard assumptions because a decision maker's decision process (in this case, information acquisition) depends on her choice set. It also illustrates the importance of modeling the source of violations of standard assumptions, rather than simply weakening axioms on preferences.

Zenou, Yves

PD December 1994. **TI** Efficiency Wages, Involuntary Unemployment and Urban Spatial Structure. **AU** Zenou, Yves; Smith, Tony E. **AA** Zenou: Universite Catholique de Louvain. Smith: University of Pennsylvania. **SR** Universite Catholique de Louvain CORE Discussion Paper: 9476; Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 24. **PR** not available. **JE** J41, J31, D21. **KW** Efficiency Wages. Unemployment. Labor Markets.

AB A labor market model is developed within an urban spatial context, where it is shown that efficiency-wage policies can lead to significant levels of involuntary unemployment. Commuting cost differences between workers and nonworkers tend to increase unemployment, and competition for land tends to segregate workers and nonworkers, with nonworkers relegated to the urban fringe. These findings are extended to a two-city system, where it is shown that even with free mobility of workers, significant wage and unemployment differentials can exist between cities characterized by different levels of productivity.

Zoega, Gylfi

TI Unemployment Persistence, Structural Factors and Hysteresis: Can Expansionary Policies Reduce the Level of Equilibrium Unemployment? **AU** Bianchi, Marco; Zoega, Gylfi.

PD September 1994. **TI** Sunk Costs As a Source of Unemployment Hysteresis. **AA** Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 12/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 21. **PR** no charge. **JE** E24, J41, J64. **KW** Hysteresis. Hiring Cost. Incentive Wages. Insiders-Outsiders.

AB This paper derives a model of unemployment hysteresis in which the pattern and rate of unemployment, and the response of unemployment to transitory labor demand shocks, depends on the history of past extrema of the demand-shift variables. Thus, two economies with the same degree of real wage rigidity and exposed to identical shocks can suffer different levels of unemployment. The persistence of changes in unemployment is shown to be a function of the size of the shocks.

TI Quitting Externalities, Employment Cyclicality and Firing Costs. **AU** Booth, Alison L.; Zoega, Gylfi.

PD December 1994. **TI** Public Consumption and Unemployment. **AA** Birkbeck College. **SR** Birkbeck College Discussion Papers in Economics: 20/94; Birkbeck College, Department of Economics, 7/15 Gresse Street, London W1P 1PA, ENGLAND. **PG** 15. **PR** no charge. **JE** E24, J23, J32, J64, J68. **KW** Asymmetric Information. Efficiency Wages. Public Consumption. Unemployment.

AB This paper introduces public consumption into an efficiency wage model of the labor market. The effect of a simultaneous rise in taxes and public consumption on unemployment is derived. There arises an unambiguous positive relationship between the size of the public sector and equilibrium unemployment if public and private consumption are substitutes and wages are taxed. The impact of taxes on consumption on unemployment, although in general not equal to zero, is ambiguous.

TI Hiring-Risk and Labor Market Equilibrium. **AU** Orszag, J. Michael; Zoega, Gylfi.