

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 online through BRS. (Call 800-345-4277, or 518-783-1161 collect from overseas.)

Abbott, Michael G.

PD December 1987. TI Immigrant Earnings Differentials and Cohort Effects in Canada. AU Abbott, Michael G.; Beach, Charles M. AA Queen's University. SR Queen's Institute for Economic Research Discussion Paper: 705; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. PG 101. PR \$3.00 Canada and U.S.; \$3.50 Foreign. JE 823, 824, 813, 851. KW Cohort Effects. Earnings Differentials. Canada. Immigrant. Earnings.

AB This paper examines what has happened to immigrant earnings in Canada and tests two alternative hypotheses of Chiswick and Borjas. The paper uses a 1973 survey containing detailed information on immigrant status, family background, and a direct measure of work experience. It is found that earnings differentials of immigrant men have been widening since later 1960's. This is due to a steepening of earnings profilers for native workers (supporting Chiswick), a flattening of the years-since-migration earnings profile for immigrants (supporting Borjas), and a further flattening of the experience-earnings profile of immigrants.

Abel, Andrew

PD January 1988. TI Does the Consumption of Different Age Groups Move Together? A New Nonparametric Test of Intergenerational Altruism. AU Abel, Andrew; Kotlikoff, Laurence. AA Abel: University of Pennsylvania. Kotlikoff: National Bureau of Economic Research. SR National Bureau of Economic Research Working Paper: 2490; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 35. PR \$2.00. JE 921, 022. KW Life Cycle Model. Age Cohorts. Intergenerational Altruism. Savings. Consumption.

AB In recent years Robert Barro's (1974) ingenious model of intergenerational altruism has taken its place among the major theories of consumption and saving. Testing the Barro model by comparing average percentage changes in consumption across age cohorts is particularly advantageous because it is nonparametric; in determining whether the average consumptions of different age cohorts move together we place no restrictions on preferences beyond the assumptions of homotheticity and time separability. In particular, each Barro clan can have quite different preference parameters. The null hypothesis of our test is that cohort differences in the average percentage change in consumption are due simply to sampling and measurement error. Alternative hypotheses, suggested by the Life Cycle Model, are that (1) the percentage changes

in the average consumptions of any two cohorts are more highly correlated the closer in age are the two cohorts, and (2) the variance in the percentage change in consumption is a monotone function of the age of the cohort.

Aboites, Jaime

PD July 1987. TI Industrialisation et developpement agricole au Mexique: Une analyse du regime d'accumulation de long terme (1939-1985). AA Aboites: U.A.M. de Mexico. SR CEPREMAP Discussion Paper: 8727; CEPREMAP, 142 rue du Chevaleret, 75013 Paris, FRANCE. PG 89. PR 25 FF. JE 121. KW Regulation. Industrialization. Mexico. Production.

AB Basing itself upon the theory of regulation, this paper will analyze the dynamics of the regime of accumulation of the Mexican society since 1939. The main hypothesis of this study consist in considering that the development and crisis of the regime of accumulation, as well as the way in which it has entered the world economy, have been and still are determined by the transformation and industrialization process of the agricultural sector. This process is part of the re-organization of the wage labor relation and the articulation of non-capitalist and capitalist forms of mode production. This hypothesis is confronted with the conditions which have allowed for the stability of Mexican regime of accumulation during the period of development, from 1939 to 1970. We analyze afterwards the deterioration of that system at the beginning of the 70's: the obstacles it has faced and the different means which have been used to substitute oil exports for the agricultural activity. (In French).

Abouchar, Alan

PD April 1987. TI Two Notes on Pricing in the Public Sector-1. Keynesian Microeconomics and the Microeconomic of Keynes. 2. Good Economics and Bad Policy. AA University of Toronto. SR University of Toronto Institute for Policy Analysis Working Paper: 8707; Department of Economics, University of Toronto, Toronto, Ontario, CANADA M5S 1A1. PG 23. PR No Charge. JE 323, 322, 321. KW Public Sector Pricing. Costs. Taxes. Subsidies. Capital Expenditure.

AB While Keynes is remembered principally for his macroeconomics, his work has a number of microeconomic implications. However, the microeconomics that Keynes spoke or implied often conflicts with what is popularly interpreted as a Keynesian view, or clashes with today's microeconomic apparatus. Three points are discussed. The first is the tendency of the macroeconomic view to dominate our thinking about indirect taxes, rather than to

consider them as prices for commodities or services rendered in the public sector. The second is the general tendency to confuse capital expenditures with fixed costs, which he warned against in his treatment of the user cost of capital. The third is our proclivity for viewing employment as job creation. The present-day microeconomic apparatus divides costs into fixed and variable and neglects the distinction between expenditures and costs. As a result, many components of capital expenditure, whose consumption is related to various dimensions of output, tend to be omitted from the cost base for pricing policy. One consequence is that we are denied market information about whether users' benefits exceed the costs they impose so that it is impossible rationally to judge the value of public expenditures.

PD July 1987. **TI** Ambiguity and Spurious Precision in the Modern Microeconomic Cost Framework. **AA** Department of Economics, University of Toronto. **SR** University of Toronto Institute for Policy Analysis Working Paper: 8717; Department of Economics, University of Toronto, Toronto, Ontario, CANADA M5S 1A1. **PG** 30. **PR** Gratis - as long as in stock. **JE** 521, 522, 611, 022. **KW** Cost Analysis. Price Policy.

AB The Modern Microeconomic Cost Framework stresses "variable" and "fixed" costs; homogenizes the firm's output; and limits itself to a single period to gain insight into the way markets do and/or should behave. Simplifying thus, it confounds expenditures and costs; fixed facilities and fixed costs; time-incremental and output-incremental costs; fixed capital and sunk costs; and "drawing board time" and chronological time. The apparent precision of conclusions following therefrom is of little use in classifying a firm's expenditures even in simple one-site activities, such as a power plant or a cinema; and as is apparent through four econometric studies, MMCF provides little guidance for cost or price policy in network activities since variable and short-run marginal costs may be defined arbitrarily.

Abraham, Katherine G.

PD August 1987. **TI** Returns to Seniority in Union and Nonunion Jobs: A New Look at the Evidence. **AU** Abraham, Katherine G.; Farber, Henry S. **AA** Abraham: The Brookings Institution. Farber: Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 458; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 27. **PR** No Charge. **JE** 831, 921, 821. **KW** Seniority. Earnings. Income Stream. Unionism.

AB One of the most prominent features of United States unionism is the key role played by seniority. However, in cross-sectional data, the positive association between seniority and earnings is typically much stronger for nonunion workers than for union workers. This finding has puzzled previous researchers, since it seems inconsistent with the generalization that seniority is more important in the union sector than in the nonunion sector. We show that standard estimates of the return to seniority are likely to be biased upward and argue that the bias is likely to be larger in the nonunion sector than in the union

sector. Corrected estimates imply that the return to seniority is, in fact, larger in the union sector than in the nonunion sector.

Ahearne, John

PD December 1987. **TI** A Comparison of Nuclear Power Regulation in Canada and the United States. **AA** Vice President, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Paper: EM87-04; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, United States of America. **PG** 57. **PR** \$5.00 (United States funds only). **JE** 613, 723. **KW** Nuclear Power. Regulation. Regulatory Agency.

AB Over 100 nuclear power reactors operate in the United States, regulated by the United States Nuclear Regulatory Commission. The eighteen reactors in Canada are regulated by the Atomic Energy Control Board. This study examines the respective roles of the regulatory agencies, discusses the similarities and differences between the approach to the regulation of commercial nuclear power in the two countries, and comments on the weaknesses in the two approaches. The differences are due to the size of the industry, the number of operating companies, the types of reactors, the historical development of nuclear power in the countries, the cultures of the countries, and the different concepts of federalism. This paper was prepared as part of the Ontario Nuclear Safety Review, a comprehensive examination of the safety of the reactors in the Province of Ontario.

Aizcorbe, Ana M.

PD June 1987. **TI** Testing the Validity of Aggregates. **AA** Bureau of Labor Statistics. **SR** Bureau of Labor Statistics Working Paper: 163; Bureau of Labor Statistics, Office of Research and Evaluation, 441 G Street, N.W., Room 2126, Washington, DC 20212. **PG** 23 + appendix. **PR** No Charge. **JE** 215, 631. **KW** Nonparametric Tests. Consumer Theory. Aggregates. Tornquist Aggregate. Productivity Indices.

AB This paper considers two different approaches which may be used to test the validity of a particular aggregation practice. The first is a modification of nonparametric tests of consumer theory, which are normally used to test for separability. Unlike conventional methods, this approach places no restrictions on the functional form of the underlying technology. Second, a model is proposed which allows econometric testing of the validity of aggregates. These methods differ from conventional approaches in that they do not provide a test for the existence of valid aggregates. Rather if one has a particular aggregate in mind, these approaches may be used to test if that aggregation practice is valid. Both frameworks are applied to United States manufacturing data to test the validity of a Tornquist aggregate of capital and labor; an assumption used in constructing the Bureau of Labor Statistics multifactor productivity indices. While previous studies using conventional separability tests reject the existence of a valid aggregate for these data, the two approaches adopted here fail to provide any empirical evidence to support these claims.

Alesina, Alberto

TI Avoiding Speculative Attacks on EMS Currencies: A Proposal. **AU** Grilli, Vittorio; Alesina, Alberto.

PD December 1987. **TI** The Policies of Ambiguity. **AU** Alesina, Alberto; Cukierman, Alex. **AA** Alesina: Carnegie Mellon University. Cukierman: Tel Aviv University. **SR** National Bureau of Economic Research Working Paper: 2468; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 28. **PR** \$2.00. **JE** 022, 026, 113. **KW** Incomplete Information. Reelection. Politicians. Incentives. Dynamic Model. Voters.

AB Politicians have generally two motives: they wish to hold office as long as possible and wish to implement their preferred policies. Thus they face a trade-off between the policies which maximize their choices of reelection and their most preferred policies (or the policies most preferred by the constituency which they represent). This paper analyzes this trade-off in a dynamic electoral model in which the voters are not fully informed about the preferences of the incumbent. First, we show that in general there is incomplete policy convergence: the incumbent follows a policy which is intermediate between the other party ideal policy and his own ideal policy. Second, we show that under some circumstances, the incumbent has an incentive to choose procedures which make it more difficult for voters to pinpoint his preferences with absolute precision. Thus, politicians may prefer to be ambiguous and "hide", at least up to a certain extent, their true preferences. This result holds for a wide range of parameter values and, in some range, even if voters are risk averse.

Alger, Dan

PD September 1987. **TI** Making a Market: A New Approach to Gas Pipeline Regulation. **AU** Alger, Dan; O'Neill, Richard P.; Toman, Michael A. **AA** Alger: Office of Economic Policy, Federal Energy Regulatory Commission. O'Neill: Office of Pipeline and Producer Regulation, Federal Energy Regulatory Commission. Toman: Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Paper: EM87-02; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 36. **PR** \$5.00 (United States funds only). **JE** 723, 613. **KW** Natural Gas. Auctions. Regulation.

AB Natural gas pipeline markets are in disarray. Faced with increased upstream competition but continued use of traditional regulatory approaches, pipeline markets suffer from inflexible rates, misallocations due to non-price rationing, excessive price discrimination, and lack of adequate price signals to guide entry and exit decisions. Successful regulatory reform would see more flexible rates that allocate service to highest-valued uses and induce more efficient investment decisions, together with effective limits on undue discrimination. One promising way to achieve this reform would be the use of auctions to allocate pipeline capacity. The paper describes how this approach might operate and the ways that it would achieve the efficiency gains listed above.

Allard, Marie

PD 1987. **TI** Roy-Consistent Expectations. **AU** Allard, Marie; Bronsard, Camille; Richelle, Yves. **AA** Allard, Richelle: CORE. Bronsard: University of Montreal. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8734; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. **PG** 23. **PR** No Charge. **JE** 022. **KW** Expectations. Demand. Polemarchakis Theorem.

AB In this paper we define a new class of expectations which, under proper specification, implies either the exogenous expectations case or the static expectations one or the rational expectations hypothesis. This class allows thus to bridge the gap between arbitrary expectation functions (like those used in the temporary equilibrium framework - see Grandmont (1983)) and rational expectations. On the other hand, with this class of expectations it is shown that the short-run demands display some of the neo-classical properties, and this is a partial answer to the Polemarchakis (1983) theorem about the arbitrariness of the short-run demands.

Amsler, Christine

PD February 1988. **TI** The Case for the Consol: Evidence from British and American Money Demand Functions. **AA** Michigan State University. **SR** Michigan State Econometrics and Economic Theory Workshop Paper: 8714; Department of Economics, Michigan State University, East Lansing, Michigan 48824. **PG** 39. **PR** No Charge. **JE** 311. **KW** Money Demand. Interest Rate. Consol. Elasticity.

AB The evidence presented in this paper argues strongly that the interest rate which should be used to estimate money demand functions is the consol rate, not the three month Treasury bill rate. Once the comparison between the short rate and the long rate is made using a standard money demand function, likelihood ratio test statistics indicate that for both quarterly and annual data, British and American, the consol rate and only the consol rate should be included in the money demand function.

Anderson, Simon P.

PD July 1987. **TI** Spatial Price Policies and Duopoly. **AU** Anderson, Simon P.; DePalma, Andre; Thisse, Jaques Francois. **AA** Anderson: Universite Libre de Bruxelles. DePalma: Northwestern University. Thisse: CORE. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8737; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. **PG** 20. **PR** No Charge. **JE** 022, 612, 941. **KW** Spatial Price Policies. Regulation. Logit Model. Duopoly. Regulation. Government.

AB We assess here the effects of government regulation of spatial pricing policies. Two regulatory policies are considered. Under the first, firms are constrained to mill pricing. Under the second they are obliged to price uniformly over space. These policies are compared, in a duopoly model, to the unregulated market equilibrium characterised by spatial price discrimination. In contrast to the monopoly case, it is found that consumer surplus is highest under uniform delivered pricing and lowest under mill pricing, whereas profit and social surplus follows the opposite ranking. Government regulation to encourage

mill pricing may therefore benefit firms to the detriment of consumers.

Appleyard, Dennis R.

PD August 1987. TI Customs Unions with a Continuum of Goods. AU Appleyard, Dennis R.; Conway, Patrick; Field, Alfred J. AA University of North Carolina Chapel Hill. SR University of North Carolina Working Paper Series: 87-12; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. PG 47. PR No Charge. JE 411, 421. KW Ricardian Model. Endowment. Tariff. Trade Patterns.

AB This paper extends the Dornbusch-Fischer-Samuelson continuum-of-goods Ricardian model to three countries and applies the model to customs union theory. Comparative statics effects of endowment and tariff changes on trade patterns and welfare are developed. We demonstrate that trade creation and trade diversion must be redefined in a general equilibrium setting and that measurements based on partial equilibrium can overstate creation and understate diversion. Customs union desirability is also shown to depend upon the level of country development. Terms of trade effects, incompletely modeled in previous work, reveal the importance of assessing customs unions in general equilibrium.

Apps, Patricia F.

PD October 1987. TI Taxation and the Household. AU Apps, Patricia F.; Rees, Ray. AA Apps: Centre for Economic Policy Research, Research School of Social Sciences, Australian National University. Rees: Department of Economics University of Guelph. SR Australian National University Working Paper in Economics and Econometrics: 154; Department of Economics, Australian National University, P.O. Box 4, Canberra A.C.T. 2601, AUSTRALIA. PG 18. PR No Charge. JE 323, 024. KW Taxation. Household. Labor Supply. Welfare Function. Tax Policy.

AB Previous analyses of demand systems and the welfare effects of taxing male and female labour supplies suppress the analysis of household resource allocation by assuming a household utility function. This paper shows that this is only permissible if the household allocates income exactly in accordance with the distributional parameters of the usual kind of individualistic social welfare function. To analyze the implications of assuming this is not the case, we construct a simple but fairly general model of household resource allocation and use the properties of the equilibrium of this model to characterize the effects of tax policy on individual utilities, as determined by the household resource allocation process.

Arnott, Richard

PD September 1987. TI The Basic Analytics of Moral Hazard. AU Arnott, Richard J.; Stiglitz, Joseph E. AA Arnott: Queen's University. Stiglitz: Princeton University. SR Princeton University John M. Olin Program for the Study of Economic Organization and Public Policy: 7; Department of Economics/Woodrow Wilson School of Public and International Affairs Princeton University, Princeton, NJ 08544. PG 50. PR No Charge. JE 024, 022, 025. KW Insurance.

Moral Hazard. Accident. Expected Utility Theory.

AB This paper develops the basic analytics of moral hazard, for the two-outcome case where either a fixed damage accident occurs or it does not. The analysis focuses on the relationship between the insurance premium paid and the insurance benefits received in the event of an accident, and is conducted in benefit-premium space. The central message of the paper is that even when the underlying functions, the expected utility function and the function relating the accident probability to accident-prevention effort, are extremely well-behaved, the indifference curves and feasibility set (the set of insurance contracts which at least break even) are not -- indifference curves need not be convex and feasibility sets never are; price-and income-consumption lines may be discontinuous; and effort is not in general a monotonic or continuous function of the parameters of the insurance policies provided.

PD October 1987. TI Equilibrium in Competitive Insurance Markets with Moral Hazard. AU Arnott, Richard; Stiglitz, Joseph E. AA Arnott: Queen's University. Stiglitz: Princeton University. SR Princeton University John M. Olin Program for the Study of Economic Organization and Public Policy: 4; Department of Economics/Woodrow Wilson School of Public and International Affairs Princeton University, Princeton, NJ. PG 50. PR No Charge. JE 024, 022, 025. KW Insurance. Moral Hazard. Contracts. Nash Equilibrium.

AB This paper explores the existence and nature of Nash equilibrium in competitive insurance markets with moral hazard. As is by now well-known, moral hazard can generate nonconvexities. These nonconvexities are central to the paper. We distinguish between the case where insurance firms' can observe their clients' total purchases of insurance, and that where they cannot. In the observability case, equilibrium is characterized by exclusive contracts (whereby insurance firms prohibit their clients from purchasing additional insurance from other firms) with quantity rationing. When firms' cannot observe their clients' total insurance purchases, the analysis becomes considerably more complex. The existence and nature of equilibrium depend on what contract forms are desired admissible. It matters, for example, whether negative or random insurance policies are allowed and whether inactive policies - which are offered but not bought in equilibrium - are permitted. Depending on the set of admissible contracts, there may be no equilibrium, a unique equilibrium, multiple equilibria, or a dense set of equilibria. And whatever the set of admissible contracts, there may be equilibria with positive profits. In the concluding sections, we discuss the determinants of admissible contract forms and briefly consider to what extent our analysis can explain some features of actual insurance markets.

PD December 1987. TI Randomization with Asymmetric Information. AU Arnott, Richard; Stiglitz, Joseph E. AA Arnott: Queen's University. Stiglitz: Princeton University. SR Princeton University John M. Olin Program for the Study of Economic Organization and Public Policy: 9; Department of Economics/Woodrow Wilson School of Public & International Affairs Princeton University, Princeton, NJ 08544. PG 35. PR No

Charge. JE 024, 022, 025. KW Moral Hazard. Insurance. Adverse Selection. Premium Benefits.

AB It is by now well-known that, in the presence of moral hazard or adverse selection, randomization of insurance premia and benefits may be Pareto efficient. This paper: i) provides a typology of the various forms that randomisation may take; ii) derives necessary and/or sufficient conditions for the desirability of these various forms of randomisation; iii) obtains some simple characterisation theorems of the efficient random policies; iv) gives some intuition behind the results; and v) considers why randomisation appears to occur less often in practice than the theory suggests it should.

PD January 1988. TI The Basic Analytics of Moral Hazard. AU Arnott, Richard J.; Stiglitz, Joseph E. AA Arnott: Queen's University. Stiglitz: Princeton University. SR National Bureau of Economic Research Working Paper: 2484; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 55. PR \$2.00. JE 022, 024, 025. KW Moral Hazard. Insurance. Indifference Curves. Accident. Benefits.

AB This paper develops the basic analytics of moral hazard, for the two-outcome case where either a fixed damage accident occurs or it does not. The analysis focuses on the relationship between the insurance premium paid and the insurance benefits received in the event of an accident, and is conducted in benefit-premium space. The central message of the paper is that even when the underlying functions, the expected utility function and the function relating the accident probability to accident-prevention effort, are extremely well-behaved, the indifference curves and feasibility set (the set of insurance contracts which at least break even) are not -- indifference curves need not be convex and feasibility sets never are; price-and income-consumption lines may be discontinuous; and effort is not in general a monotonic or continuous function of the parameters of the insurance policies provided.

PD April 1988. TI Cigarette Smoking and Quitting: A Life-Cycle Approach. AU Arnott, Richard; Lewis, Frank D.; Olewiler, Nancy. AA Department of Economics, Queen's University. SR Queen's Institute for Economic Research Discussion Paper: 709; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. PG 60. PR \$3.00 Canada and United States; \$3.50 Foreign. JE 913, 921. KW Cigarette Smoking. Life-Cycle Model. Health Hazards.

AB We analyze the decisions to take up and to quit cigarette smoking with a life-cycle model in which lifetime is uncertain and depends on cigarette consumption. Cigarette smoking increases the current utility of some consumers but it also imposes private costs; the expenditure on cigarettes, the increase in future mortality rates, and the withdrawal cost of quitting. We derive empirical estimates of these costs from data on cigarette prices, income, and the effect of smoking and quitting on mortality rates. We find, for example, that the cost of smoking an additional year is quite low at young ages but rises sharply after age 35. We also analyze the effect on smoking participation at different ages of improved information about the health hazards.

Aron, Debra J.

PD December 1987. TI Competition, Relativism, and Market Choice. AU Aron, Debra J.; Lazear, Edward P. AA Aron: Northwestern University. Lazear: Hoover Institution, University of Chicago. SR Stanford Hoover Institute Working Paper in Economics: E-87-56; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 46. PR No Charge. JE 611, 621, 531, 022. KW Market Choice. Product Differentiation. Subgame Perfection. New Market.

AB Firms constantly evaluate their market choices. Is it better to focus efforts on the current market or to move into a new, perhaps related, product line? What are the characteristics of the firms that are likely to lead into a new market? When do other firms follow the lead? Firms that are behind in the current market, say in terms of market share, are most likely to lead into the new market. The firm that dominated the old market is most likely to follow when demand in a market is highly correlated across firms, when its dominance in the existing market is less pronounced, and when there is a large number of potential rivals in the industry.

Attanasio, Orazio P.

PD November 1987. TI Intertemporal Substitution, Risk Aversion and the Euler Equation for Consumption: Evidence from Aggregate and Average Cohort Data. AU Attanasio, Orazio P.; Weber, Guglielmo. AA Attanasio: Centre for Labour Economics, LSE. Weber: University College London. SR University College London Discussion Paper: 87-33; Department of Economics, University College London, Gower Street, LONDON, WC1E 6BT. PG 34. PR 1.50 pounds sterling. JE 026, 023, 313, 921. KW Risk Aversion. Intertemporal Substitution. Consumption. Cohort Data. Life Cycle Hypothesis. Expected Utility. Aggregation Bias.

AB In this paper we investigate the empirical relevance of two theoretical issues concerning life cycle consumer optimizing behavior: the possibility of disentangling the concepts of risk aversion and intertemporal substitution, and the plausibility of the assumptions needed for the dynamic view of intertemporal maximization to be correct. We use Selden's Ordinal Certainty Equivalence approach to separately identify the coefficient of relative risk aversion and the elasticity of intertemporal substitution and jointly estimate a consumption growth and two asset return Euler equations. We alternatively use aggregate data and average cohort data to assess the importance of aggregation bias. Finally, we provide an alternative interpretation of our results in the light of Kreps and Porteus (1978) analysis of behavior under uncertainty. Our empirical results suggest that both elasticity of intertemporal substitution and coefficient of risk aversion are higher than usually found in the traditional Expected Utility framework, and that aggregation bias leads to unwarranted rejections of theoretical restrictions.

PD December 1987. TI Intertemporal Substitution, Risk Aversion and the Euler Equation for Consumption: Evidence from Aggregate and Average Cohort Data. AU Attanasio, Orazio P.; Weber, Guglielmo. AA Attanasio: Centre for Labour Economics, London School of Economics. Weber: University College London.

SR London School of Economics Centre for Labour Economics Discussion Paper: 298; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, U.K. **PG** 33. **PR** No Charge. **JE** 921, 026, 023. **KW** Risk Aversion. Intertemporal Substitution. Consumption. Aggregation Bias. Dynastic.

AB In this paper we investigate the empirical relevance of two theoretical issues concerning life cycle consumer optimizing behaviour: the possibility of disentangling the concepts of risk aversion and intertemporal substitution, and the plausibility of the assumptions needed for the dynastic view of intertemporal maximization to be correct. We use Selden's Ordinal Certainty Equivalence approach to separately identify the coefficient of relative risk aversion and the elasticity of intertemporal substitution and jointly estimate a consumption growth and two asset return Euler equations. We alternatively use aggregate data and average cohort data to assess the importance of aggregation bias. Finally, we provide an alternative interpretation of our results in the light of Kreps and Porteus (1978) analysis of behaviour under uncertainty.

Auerbach, Alan J.

PD January 1988. **TI** Investment Tax Incentives and Frequent Tax Reforms. **AU** Auerbach, Alan J.; Hines, James R. Jr. **AA** Auerbach: University of Pennsylvania. Hines: Princeton University. **SR** National Bureau of Economic Research Working Paper: 2492; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 12. **PR** \$2.00. **JE** 323, 522. **KW** Taxes. Investment Incentives. Tax Code. Tax Changes. Adjustment Costs.

AB Despite the frequency of tax changes and their potential importance to investors, almost all of the analysis of tax-based investment incentives assumes investors never anticipate any tax changes. We depart from this approach by analyzing the historical pattern of United States corporate investment incentives over the period 1953-86, incorporating the feature of investor awareness that the tax code may change. Our analysis incorporates a predictive equation for future tax variables into a model of optimal investment subject to adjustment costs and uncertainty. We find that expectations of future tax changes significantly affect the incentive to invest only if adjustment costs are low. In this case, the incentive to invest in 1986 was strong, as investors are estimated to have anticipated the coming reduction in investment incentives.

Bagnoli, Mark

PD October 1987. **TI** Takeover Bids, Defensive Stock Repurchases, and the Efficient Allocation of Corporate Control. **AU** Bagnoli, Mark; Gordon, Roger; Lipman, Barton. **AA** Bagnoli and Gordon: University of Michigan. Lipman: Carnegie-Mellon University. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 88-8; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 36. **PR** No Charge. **JE** 611, 511, 022. **KW** Corporation. Takeover. Raider.

AB The objective of this paper is to define a simple form of "fair" competition between the manager and the raider for corporate control, and then explore the characteristics

of the resulting allocation process. In particular, we let the raider make one any-or-all bid for shares in the firm, and allow the manager to respond by declaring support or opposition, and if opposition by making a bid to repurchase a fixed number of the outstanding shares. In doing so, we rule out a variety of defensive tactics, such as greenmail, poison pills, or simply imposing endless delays on the process, since these tactics are available only to the manager and so are "unfair." Use of a repurchase bid as a defensive tactic has become more common recently, and we provide a formal analysis of when and why it can be used successfully.

PD November 1987. **TI** Private Provision of Public Goods can be Efficient. **AU** Bagnoli, Mark; Lipman, Barton. **AA** Bagnoli: University of Michigan. Lipman: Carnegie-Mellon University. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 88-9; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 21. **PR** No Charge. **JE** 614, 026, 024. **KW** Public Goods.

AB Economists have long believed that private provision of public goods will be inefficient, though recently some have argued that altruism may mitigate the inefficiencies. We have shown (Bagnoli and Lipman '1987) that private provision need not be inefficient. In a very natural model of private provision, we showed that the set of (undominated perfect) equilibrium outcomes is identical to the core. Here we consider the effect of altruism on private provision. Altruism essentially creates more public goods because the well-being of others becomes a public good. We show that our model of private provision still has efficient equilibria under a wide variety of circumstances. Interestingly, the equilibria may be inefficient when agents are concerned about the effect of private provision on the distribution of wealth. Intuitively, the game we consider is a very powerful instrument for efficient private provision, but must be supported by other instruments if the set of public goods is expanded too far.

PD December 1987. **TI** Why Are Buyers Represented by Seller's Agents When Buying a House? **AU** Bagnoli, Mark; Khanna, Naveen. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 88-7; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 17. **PR** No Charge. **JE** 932, 022. **KW** Housing. Real Estate. Contracts. Principal-Agent.

AB The essence of our explanation is that this form of contracting arises when the characteristics of the product sold cannot be communicated except by the buyer's own observation, a costly activity. Our model relies on the fact that the market functions poorly if the buyer incurs these costs. By poorly, we mean that the probability that the buyer searches at all is small and therefore the seller's expected profits are low. However, if the seller reduces these costs by employing the agent himself, the probability of selling the house and his expected profits rise. We present two versions of our model, a simplified version which highlights the explanation but yields other, unacceptable implications and a more complete model that does not have these faults.

PD January 1988. **TI** Pacman Refutes the Coase Conjecture: Durable-Goods Monopoly with Discrete Demand. **AU** Bagnoli, Mark; Salant, Stephen; Swiersbinski, Joseph. **AA** Bagnoli and Salant: University of Michigan. Swiersbinski: University of Washington. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 88-5; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 18. **PR** No Charge. **JE** 022, 026. **KW** Dynamic Game. Durable Goods. Monopoly.

AB We analyze a dynamic game between consumers with unit demands and the sole seller of a durable good. Unlike previous analyses, we assume there exists a finite collection of buyers rather than a continuum. We show that none of the main conclusions of the durable-goods literature survives this change in assumption. In particular, for any demand curve there exists a subgame-perfect equilibrium such that for discount factors near one the monopolist's profit approaches the profit attainable under perfect price discrimination. This contradicts Coase's conjecture (1972) -- proved formally for the continuum case by Gul, Sonnenschein, and Wilson (1986) -- that the monopolist's profit must always converge to zero. It also implies that renting or precommitting to a path of prices -- which Bulow (1982) and Stokey (1979) have shown, respectively, must always increase profit with a continuum of buyers -- may strictly reduce profits when the collection of buyers is finite. Hence, while in other contexts the assumption of a continuum of consumers has proved an innocuous and useful simplification, in the context of durable-goods monopoly it has proved misleading.

PD February 1988. **TI** Competition and Product Line Choice. **AU** Bagnoli, Mark; Barbeau, J. Bradley. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 88-3; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 20. **PR** No Charge. **JE** 022. **KW** Product Line. Rivalry. Competition. Multiple Products.

AB The lack of attention to questions of product line competition between multiproduct firms in the economics literature has been pointed out by Brander and Eaton (1984). The problem is important, in the sense that most firms compete with multiple products in more than one area of a market. Yet the literature still has not developed clear theories of the way in which rivalry between multiproduct firms results in patterns of product lines. There are attempts to explain product lines through an appeal to what is now referred to as an economies of scope argument. We agree that cost structures play an important role in determining a firm's product line but our focus is different. Our purpose is to determine how competition between firms affects this choice. As a result, we explicitly rule out economies of scope.

Bagwell, Kyle

PD June 1987. **TI** Repeated Search. **AU** Bagwell, Kyle; Peters, Michael. **AA** Bagwell: Department of Economics, Northwestern University. Peters: Department of Economics, University of Toronto. **SR** University of Toronto Institute for Policy Analysis Working Paper: 8711; Department of Economics, University of Toronto, Toronto, Ontario, CANADA M5S 1A1. **PG** 41.

PR Gratis - as long as in stock. **JE** 026, 022. **KW** Search. Boycott Equilibrium. Decreasing Returns. Repeated Search. Monopoly.

AB In this paper a repeated search model is studied to find out whether the repeat nature of sales can be used to limit the monopoly power that firms enjoy when search is costly. In the case with constant production costs most often studied in the literature, a simple argument indicates that repeated search can indeed limit monopoly power. It is shown here that non constant production costs make matters more interesting. We first consider boycott equilibria where buyers punish firms who exercise monopoly power by refusing to return in the future. It is shown that with decreasing returns these equilibria are not robust to alterations in the game tree that give a role to nature in assigning buyers to stores. This is so even if the alteration in the game tree is small in some appropriate sense. The test for robustness that is proposed here is similar to the test for perfection that is often applied to normal form games. Next we look at equilibria where traders' strategies are required to be symmetric. It is shown that equilibria where firms monopoly power is diminished cannot be supported at all if buyers search strategies are required to be symmetric. Again, this latter result applies when firms face decreasing returns to scale.

Baillie, Richard T.

PD November 1987. **TI** A Multivariate Generalized ARCH Approach to Modeling Risk Premia in Forward Foreign Exchange Rate Markets. **AU** Baillie, Richard T.; Bollerslev, Tim. **AA** Baillie: Department of Economics, Michigan State University. Bollerslev: Department of Economics, Northwestern University. **SR** Michigan State Econometrics and Economic Theory Workshop Paper: 8708; Department of Economics, Michigan State University, East Lansing, MI 48824. **PG** 26. **PR** No Charge. **JE** 431, 212, 211. **KW** Multivariate Time Series Models. Risk Premia. Exchange Rates. GARCH. Random Walk.

AB This paper is concerned with the modeling of time varying risk premia in the forward foreign exchange market. Under the assumption that daily spot exchange rates follow a random walk model an explicit time series representation is derived for the forward rate forecast errors that are implied by weekly data and one month forward rates. A four-dimensional model with this implied representation for a vector of four forward rate forecast errors imposed is estimated. To take account of the severe conditional heteroskedasticity in the data, the model parameterizes the conditional covariance matrix for the four currencies according to a multivariate GARCH model. A series of tests for the presence of a time varying risk premium motivated by different proxies for the intertemporal marginal rate of substitution is performed. Unlike many previous studies, relatively strong statistical evidence is found for the existence of a time varying risk premium. However, little support is forthcoming for the notion that the risk premium is a linear function of the conditional variances and covariances as suggested by the standard asset pricing theory literature.

Balas, E.

PD May 1987. **TI** The Perfectly Matchable Subgraph

Polytope of an Arbitrary Graph. AU Balas, E.; Pulleyblank, W. R. AA Balas: University of Pittsburgh. Pulleyblank: University of Waterloo. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87470-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 26. PR No Charge. JE 213. KW Bipartite Case. Edmond-Gallai Structure Theorem. Subgraph Polytope.

AB The Perfectly Matchable Subgraph Polytope of a graph $G = (V, E)$, denoted by $PMS(G)$ is the convex hull of the incidence vectors of those X subset or equal to V which induce a subgraph having a perfect matching. We describe a linear system whose solution set is $PMS(G)$, for a general (nonbipartite) graph G . We show how it can be derived via a projection technique from Edmonds' characterization of the matching polytope of G . We also show that this system can be deduced from the earlier bipartite case, by using the Edmonds-Gallai structure theorem. Finally, we characterize which inequalities are facet inducing for $PMS(G)$, and hence essential.

Baldwin, Richard

PD January 1988. TI Some Empirical Evidence on Hysteresis in Aggregate US Import Prices. AA Columbia Business School. SR National Bureau of Economic Research Working Paper: 2483; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 42. PR \$2.00. JE 431, 411. KW Exchange Rate. Pass-Through Relationship.

AB This paper empirically investigates the hypothesis that hysteresis has occurred in United States aggregate non-oil import prices. We find strong evidence that a shift has occurred in the exchange rate pass-through relationship in the 1980s, and that the nature of the shift is consistent with the hysteresis hypothesis. Results on two specific structural models of this phenomenon (the beachhead model and the bottleneck model) are less conclusive. The data broadly support both models, but neither by itself can provide a convincing accounting of all the evidence.

Ball, Laurence

PD December 1987. TI Real Rigidities and the Non-Neutrality of Money. AU Ball, Laurence; Romer, David. AA Ball: New York University. Romer: National Bureau of Economic Research. SR National Bureau of Economic Research Working Paper: 2476; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 48. PR \$2.00. JE 023, 131, 133, 134, 226. KW Prices. Shocks. Nominal Friction. Imperfect Information. Cost of Adjustment. Efficiency Wages. Neutrality.

AB Rigidities in real prices are not sufficient to create rigidities in nominal prices and real effects of nominal shocks. And, by themselves, small frictions in nominal adjustment, such as costs of changing prices, create only small non-neutralities. But this paper shows that substantial nominal rigidity can arise from a combination of real rigidities and small nominal frictions. The paper shows the connection between real and nominal rigidity given the presence of nominal frictions both in general and for several specific sources of real rigidity: costs of

adjusting real prices, asymmetric demand arising from imperfect information, and efficiency wages.

Ball, Michael

PD April 1987. TI Two Terminal Steiner Tree Polyhedra. AU Ball, Michael; Liu, Wei guo; Pulleyblank, William. AA Ball: University of Maryland. Liu, Pulleyblank: University of Waterloo. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87466-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 36. PR No Charge. JE 213. KW Directed Graph. Steiner Tree. Polynomial.

AB Given a directed graph G , a source node s and demand nodes t and r , a (directed) two terminal Steiner tree is a minimal tree containing s , r and t and whose arcs are directed from s towards r and t . We describe several different linear programming formulations of the problem of finding a minimum weight two terminal Steiner tree, for the case of nonnegative weights. These include a "compact" representation, in which the number of inequalities and variables is polynomial in the size of G and all coefficients have values 0, 1, -1 and a "natural" formulation having one variable for each arc of G , but an exponential number of constraints whose coefficients can take on arbitrary values. We relate these formulations to the convex hull of the incidence vectors of the two terminal Steiner trees as well as the dominant of this polytope.

Bar, Ilan A.

PD December 1987. TI Monitoring Workers as a Screening Device. AA Department of Economics, Tel Aviv University. SR Tel Aviv Foerder Institute for Economic Research Working Paper: 32-87; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. PG 19. PR No Charge. JE 821, 825, 833, 022. KW Screening. Monitoring. Workers' Bonds. Efficiency Wages.

AB The fact that firms monitor their workers poses a problem for economists. Apparently, when unlimited bonding is possible, firms will make their employees post large bonds, large enough to induce the workers not to shirk and save the firm its monitoring expenditures. However, the apparent lack of employees' explicit bonds and the existence of monitoring imply that firms are unable, or unwilling, to demand large bonds. In this paper I emphasize the following rationale for limited bonding. When workers' productivity and the utility which they get from "on the job leisure" are negatively correlated, firms can use their ability to detect shirking in order to screen their workers. In this case the profit maximizing solution might be the one in which the low productivity workers signal their low quality by shirking. Hence the firm might prefer to limit the size of the bond in order to induce its low quality, but not its high productivity, employees to shirk. The resulted saving on labor costs from having a better pool of workers can be larger than the combined costs of monitoring and the reduced effort of the shirking workers who were not screened out.

PD December 1987. TI Optimal Money Holding under Uncertainty: A Comment. AA Department of Economics, Tel Aviv University. SR Tel Aviv Foerder

Institute for Economic Research Working Paper: 35-87; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. PG 12. PR No Charge. JE 026, 022. KW K-Convexity. Trigger-Target Rule. Transactions Demand. Money Demand.

AB Milbourne (JER, 1983) presents a problem of money demand under uncertainty and claims that the optimal rule is the two-targets-two-thresholds (u, a, z, h) rule. However, this paper shows that Milbourne's proof of this result is wrong. Moreover, an example is presented in which the optimal rule is more complicated than the (u, a, z, h) policy. Hence we conclude that simple trigger-target rules are not, in general, optimal in discrete time money demand problems.

PD January 1988. **TI** Consumer Durables and the Optimality of Usually Doing Nothing. **AU** Bar, Ilan Avner; Blinder, Alan S. **AA** Bar-Ilan: Tel-Aviv University. **Blinder:** Princeton University. **SR** National Bureau of Economic Research Working Paper: 2488; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 45. PR \$2.00. JE 921, 023. KW Durable Goods. PIH. Permanent Income Hypothesis. Representative Agent. Aggregation.

AB This paper develops a simple but important point which is often overlooked: It is quite possible that the best policy for a rational, optimizing agent is to do nothing for long periods of time -- even if new, relevant information becomes available. We illustrate this point using the market for durable goods. Lumpy costs in durables transactions lead consumers to choose a finite range, not just a single level, for their durables consumption. The boundaries of this range change with new information and, in general, obey the permanent income hypothesis. However, as long as the durable stock is within the chosen region, the consumer will not change her stock. Hence individuals will make durable transactions infrequently and their consumption can differ substantially from the prediction of the strict PIH. Such microeconomic behavior means that aggregate data cannot be generated by a representative agent; explicit aggregation is required. By doing that, we showed that time series of durable expenditures should be divided to two separate series: One on the average expenditure per purchase and the other on the number of transactions. The predictions of the PIH hold for the former, but not for the latter.

Barahona, Francisco

PD November 1987. **TI** Compositions of Graphs and Polyhedra II: Stable Sets. **AU** Barahona, Francisco; Mahjoup, Ali Ridha. **AA** Barahona: University of Waterloo. Mahjoup: King Saud University. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87464-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 23. PR No Charge. JE 213. KW Stable Sets. Polytope. Two-Node Cutset. H-Perfect Graphs.

AB We study a technique to derive the stable set polytope for graphs having a two-node cutset. This technique also allows us to find new facet defining inequalities of the Stable Set Polytope. We derive a compact system for the stable set problem in series parallel

graphs. We apply this technique to characterize complicated facet defining inequalities for graphs not contractible to $K_{sub(5)}$. The stable set problem is polynomial for this class of graphs. We also study compositions of h-perfect graphs.

PD December 1987. **TI** On Via Minimization. **AA** University of Waterloo, Ontario. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87491-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 11. PR No Charge. JE 213. KW Minimizing Vias. Max Cut Problem. Heuristic Solution. Linear Programming.

AB Minimizing the number of vias in a two layer circuit reduces to a max cut problem in a planar graph. Several authors have proved this. In this note we present a similar reduction that makes clear the planarity of the resulting graph. We show how to solve this problem in $O((n \text{ raised to } 3/2) \log n)$ time, where n is the number of nodes of the graph. The previously known bound for this problem was $O(n \text{ cubed})$. We apply known results of Polyhedral Combinatorics to derive a min-max relation. If a heuristic is applied, we show how to use Linear Programming Duality to derive information about the quality of the heuristic solution.

Barbeau, J. Bradley

TI Competition and Product Line Choice. **AU** Bagnoli, Mark; Barbeau, J. Bradley.

Bardhan, Pranab

PD November 1987. **TI** Alternative Approaches to the Theory of Institutions in Economic Development. **AA** University of California Berkeley. **SR** University of California at Berkeley Working Paper in Economics: 8761; IBER, 156 Barrows Hall, University of California at Berkeley, Berkeley 94720. PG 19. PR No Charge. JE 112, 053. KW Institutions. Marxist. Imperfect Information. Transaction Costs. Institution Formation.

AB In this paper we discuss three alternative approaches to an endogenous economic theory of institutions as represented by the Marxist, transaction-cost and imperfect-information schools. We show that they share some similarities both in their strengths and weaknesses. Some of the concerns expressed, though not often rigorously analyzed, in the Marxist approach need to be seriously addressed in the other theories, just as the Marxists can profitably draw upon the latter in building firmer microfoundations for their theory of institutions.

Basar, Tamer

TI Dynamic Strategic Monetary Policies and Coordination in Interdependent Economies. **AU** Turnovsky, Stephen J.; Basar, Tamer; dOrey, Vasco.

Bauwens, Luc

TI Bayesian Specification Analysis and Estimation of Simultaneous Equation Models Using Monte Carlo Methods. **AU** Zellner, Arnold; Bauwens, Luc; Van Dijk, Herman.

Beach, Charles M.

TI Immigrant Earnings Differentials and Cohort Effects in Canada. **AU** Abbott, Michael G.; Beach, Charles M.

Beenstock, Michael

PD March 1988. **TI** An Econometric Investigation of North-South Interdependence. **AA** The Hebrew University. **SR** Centre for Economic Policy Research Discussion Paper: 230; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 39. **PR** 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. **JE** 123, 131, 133, 423. **KW** North-South interdependence. LDCs. Dutch Disease. Simulation Study. Feedback Effects.

AB In Centre for Economic Policy Research Discussion Paper Nos. 164 and 165 I presented econometric models of the industrialized countries (North) and the oil-importing developing countries (South). This paper links the two models so that the economic interdependence between North and South can be investigated. A series of simulations are presented in which the effects of Northern shocks on the South are considered as well as the effects of Southern shocks on the North. The paper concludes with simulations that take account of feedback effects between North and South.

PD April 1988. **TI** Fixed Investment and the Technology Gap in the UK. **AU** Beenstock, Michael; Whitbread, Chris. **AA** Beenstock: The Hebrew University. Whitbread: City University Business School. **SR** Centre for Economic Policy Research Discussion Paper: 229; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 25. **PR** 1 pound (\$2.00) individuals, 1.50 pounds (\$3.00) companies, libraries, institutions. **JE** 621, 522, 423. **KW** Aggregate Investment. Technology. Neo-classical Investment. Trade Unions.

AB United Kingdom investment is explained in terms of the international diffusion of technology, where the United States is assumed to be a technological leader and the United Kingdom a technological laggard. The gap between United Kingdom and United States capital-labor ratios is decomposed into four components: an adjustment gap, an information gap, an appropriate technology gap and a resistance gap. The factors that might influence the gap are hypothesized and it is found that the model gives a reasonable account of business investment since 1960.

Beltratti, Andrea

TI United States Military Expenditure and the Dollar: A Note. **AU** Grilli, Vittorio; Beltratti, Andrea.

Benard, Jean

PD 1987. **TI** Socialist Incentive Schemes and Price Planning. **AA** CEPREMAP. **SR** CEPREMAP Discussion Paper: 8735; CEPREMAP, 142, rue du Chevaleret, 75013 Paris, FRANCE. **PG** 30. **PR** 20 FF. **JE** 027, 021, 113. **KW** Price. Incentive Mechanism. Central Planning. Decentralisation. Hierarchy. Incentives. Soviet Union.

AB Socialist central economic planning, as it has been practiced and theorized in Soviet Union and most Eastern

European countries, has long neglected the issues of decentralization and pricing. This is certainly no longer the case since the reforms of the late sixties. But, as organizational and management rules have evolved faster than pricing rules, the gap between these two sets of structural economic behaviors seems to have enlarged. The basic problem is: can decentralized incentive organization of production be consistent with centralized optimal pricing, or, else, with decentralized, i.e. market, general equilibrium pricing? We will try to address this problem by successively considering the role of prices and the various ways of price setting in two types of national economic organization: closed hierarchy and open hierarchy. After having summarized the various incentive schemes, which have been discussed in the recent literature and their link to a general equilibrium price setting, we show how the current Soviet central pricing methods are not suitable. We conclude that, instead of simulating the market mechanisms, the planning system should better play it for current decisions and allocations, and combine macroeconomic indicative planning and market mechanisms for long range decisions.

Benassy, Jean Pascal

PD July 1987. **TI** The Objective Demand Curve in General Equilibrium with Price Makers. **AA** CEPREMAP. **SR** CEPREMAP Discussion Paper: 8719; CEPREMAP, 142, rue du Chevaleret, 75013 PARIS, FRANCE. **PG** 27. **PR** 20 FF. **JE** 021, 022. **KW** Objective Demand Curve. Imperfect Competition. General Equilibrium. Existence.

AB Objective demand curves in general equilibrium with explicitly modelled price makers have been defined so far in a number of specific cases. This paper gives a general definition of such an objective demand curve. The associated general equilibrium concept is defined and sufficient existence conditions are given.

Benavie, Arthur

PD March 1987. **TI** Price Level Determinacy and Nominal Interest Rate Pegging. **AU** Benavie, Arthur; Froyen, Richard T. **AA** University of North Carolina, Chapel Hill. **SR** University of North Carolina Working Paper Series: 87-2; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. **PG** 23. **PR** No Charge. **JE** 311, 023. **KW** Interest Rate Peg. Monetary Theory. Price Level.

AB The possible instability of the price level if the nominal interest rate is arbitrarily set at some level is a subject of long-standing interest in monetary theory. This paper reexamines this issue within a stochastic macromodel, considering both a "pure" interest rate peg and an interest rate peg as the limiting form of two money supply rules. Our analysis suggests that either method of achieving a complete interest rate peg constitutes a well-formulated monetary policy. Both result in a determinate price level and money supply. As far as the stochastic properties of the model are concerned, these strategies are shown to be equivalent.

Bera, Anil K.

TI A Joint Test For ARCH and Bilinearity in the

Regression Model. AU Higgins, Matt L.; Bera, Anil K.

Berger, Allen N.

PD April 1988. TI The Price-Concentration Relationship in Banking. AU Berger, Allen N.; Hannan, Timothy H. AA Board of Governors of the Federal Reserve. SR Board of Governors of the Federal Reserve System Finance and Economics Discussion Series: 23; Division of Research and Statistics, Federal Reserve Board, Washington, D.C. 20551. PG 23. PR No Charge. JE 611, 635. KW Profits. Market Concentration. Market Structure. Firm Performance.

AB The commonly observed positive correlation between market concentration and profitability may be explained by non-competitive pricing behavior, as argued by the structure-performance hypothesis, or by the greater efficiency of firms with dominant market shares, as argued by the efficient structure hypothesis as it is usually formulated. While these two hypotheses imply an observationally equivalent relationship between profits and concentration, they have differing implications for the relationship between prices and concentration. By employing survey price data in place of profit data, this paper seeks to test the structure-performance hypothesis in a manner that excludes the usual interpretation of the efficient structure hypothesis as an alternative explanation of the results. The results strongly support the structure-performance hypothesis as it relates to banking and are robust with respect to model specification, measurement of concentration, and econometric technique. The paper also examines how the price-concentration relationship varies over time.

Bergin, James

PD October 1987. TI Continuous Time Repeated Games of Complete Information. AA Queen's University. SR Queen's Institute for Economic Research Discussion Paper: 706; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. PG 41. PR \$3.00 Canada and United States; \$3.50 Foreign. JE 026. KW Folk Theorem. Repeated Games. Complete Information. Continuous Time.

AB This paper provides a formulation of continuous time repeated games of complete information. A substantial part of the paper is concerned with the definition of a continuous time strategy and the association of outcomes to strategies. The set of equilibria relative to these strategies is characterized in the remainder of the paper.

Bergstrom, Ted

PD December 1987. TI A Test For Efficiency in the Supply of Public Education. AU Bergstrom, Ted; Roberts, Judy; Rubinfeld, Dan; Shapiro, Perry. AA University of Michigan. SR University of Michigan Center for Research on Economic and Social Theory Working Paper: 88-2; Department of Economics, University of Michigan, Ann Arbor, MI 48109. PG 21. PR No Charge. JE 912, 022. KW Public Education. Education. Schools.

AB This paper devises and applies a statistical test for efficient provision of local public education. The test is based on the "Samuelson condition" of equality between the sum of marginal rates of substitution and marginal

cost. The econometric method is a micro-based approach to the estimation of the marginal rate of substitution function. This method accounts for possible "Tiebout bias" caused by the fact that individuals may choose their school districts in accordance with their tastes for education.

PD February 1988. TI Notes on Peak Load Pricing. AU Bergstrom, Ted; MacKie, Mason Jeff. AA University of Michigan. SR University of Michigan Center for Research on Economic and Social Theory Working Paper: 88-12; Department of Economics, University of Michigan, Ann Arbor, Michigan 48109. PG 16. PR No Charge. JE 613, 723. KW Public Utility. Peak Load Pricing. Energy Demand.

AB Consider a public utility that provides its product at two different times, morning and afternoon. Capacity that is in place can be used both in the morning and in the afternoon, but the amount consumed in either period can be no larger than the utility's capacity. Let us assume that if the same price is charged for the use of the facility in the morning as in the afternoon, consumers demand more in the afternoon than in the morning. Therefore we will speak of the afternoon as the "peak" demand period and the morning as the "off-peak" period. Suppose that it becomes possible to record the time of consumption and to charge different prices for morning consumption than for afternoon consumption. In this paper we study the effects of a change from uniform pricing in the morning and afternoon to "peak-load" pricing, where a lower price is charged in the off-peak relative to the peak demand period.

Berndt, Ernst

TI Rates of Return and Capital Aggregation Using Alternative Rental Prices. AU Harper, Michael; Berndt, Ernst; Wood, David.

Bewley, Truman F.

PD March 1988. TI Knightian Decision Theory and Econometric Inference. AA Yale University. SR Yale Cowles Foundation Discussion Paper: 888; Yale University, Cowles Foundation, Box 2125, Yale Station, New Haven, CT 06520. PG 46. PR \$2.00. JE 211, 511. KW Decision Theory. Classical Statistics. Probability intervals. Subjective Probability. Bayesian.

AB In this paper, I attempt to reconcile the apparent definiteness of econometric practice with the vagueness of subjective probabilities assumed in Knightian decision theory. I argue that some standard uses of classical inference are Knightian in spirit, even though the formal justification of classical methods uses the frequentist notion of probability. Classical confidence regions may be viewed as defining sets of posterior means corresponding to a standardized set of prior distributions. Tests of the null hypothesis that a parameter equals a particular value may be viewed as determining whether it is rational, from a Knightian point of view, to act as if the null hypothesis were true. This interpretation of the tests seems to correspond fairly well to practice and to the informal story told by classical statisticians. Hence, one could argue that to this extent classical statisticians act unconsciously as Knightian decision makers. If one accepts this argument, then it is of interest to know what level of uncertainty aversion corresponds to the popular 5% significance level.

Bhattacharya, Sudipto

PD November 1987. TI Motivating Exchange of Knowledge in R&D Ventures: First-Best Implementation. AU Bhattacharya, Sudipto; Glazer, Jacob; Sappington, David. AA Bell Communications Research, Inc. SR Bell Communications Research Inc. Economics Discussion Paper: 39; Bell Communications Research, Inc. 455 South Street, Morristown, N.J. 07960-1961. PG 36. PR No Charge. JE 026, 621. KW R&D. Innovation. Incentives.

AB We consider a two-stage model of research and Development (R&D). In the second stage, researchers simultaneously choose unobservable effort levels to develop an innovation of known value. In the first stage, researchers who are randomly endowed with different levels of research knowledge can transfer some or all of their realized knowledge to competitors. We examine the ability of two incentive mechanisms to ensure both efficient sharing of knowledge and subsequent expenditure of the efficient levels of R&D effort, i.e., to attain the First-Best outcome. The Full-Surplus mechanism, in which less knowledgeable agents pay their expected profits from continued second-stage participation to the most knowledgeable agent, is shown to ensure the First-Best outcome. The Tie-Surplus mechanism, in which such inter-agent transfers are not feasible, can also implement the First-Best outcome in some circumstances, but will not always do so. Asymptotically, as the optimal number of researchers becomes large, the performance of these two mechanisms converge.

Bigelow, John

PD January 1988. TI Warranties Without Commitment to Market Participation. AU Bigelow, John; Cooper, Russell; Ross, Thomas W. AA Bigelow: University of Missouri. Cooper: University of Iowa, Hoover Institution. Ross: Carleton University, Hoover Institution. SR Stanford Hoover Institute Working Paper in Economics: E-88-3; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PR No Charge. JE 611, 514, 022. KW Product Warranties. Bankruptcy. Coordination Failures. Warranty.

AB In this paper, we consider the provision of product warranties when the exit of existing firms is possible. When firms' precommitment to market participation is credible, warranties can provide insurance against product failure to risk averse consumers. In the absence of such precommitment, firms have the option of leaving the market if continued participation is not profitable, thereby avoiding outstanding warranty obligations. Thus, the value of a warranty today depends on the likelihood that the firm will remain in business in the future which depends, in turn, on future profits. Since future profits depend on future sales, warranty contracts generate an intertemporal linkage between consumers of different generations. For economies in which credible commitment to participation is not feasible, this linkage creates the possibility of multiple, Pareto-ordered equilibria. In the optimistic equilibrium, warranties have value and firms have an incentive to remain in the market while, in the pessimistic equilibrium, consumers do not value warranties, choose not to buy from the firm, and thereby

induce exit. These possibilities are examined for alternative market structures. In addition, we consider the government's role in influencing the selection of an equilibrium.

Birge, John R.

PD July 1987. TI Bounding the Expectation of Convex Functions with Limited Distribution Information. AU Birge, John R.; Dula, Jose H. AA Birge: University of Michigan. Dula: CORE. SR Universite Catholique de Louvain CORE Discussion Paper: 8733; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. PG 21. PR No Charge. JE 213. KW Integration. Stochastic Programming. Moment Problem. Duality. Limited Information. Convex Functions.

AB This paper considers bounds on the expectation of a convex function of a random variable when only limited information is available about the underlying distribution. The problem is presented as a generalized moment problem. A special class of functions is shown to have an easily computable solution to this problem with first and second moment constraints. Extensions are given for general convex functions on finite intervals or with finitely valued recession functions.

Blanchard, Olivier

PD January 1988. TI Consumption: Beyond Certainty Equivalence. AU Blanchard, Olivier; Mankiw, Gregory N. AA Blanchard: Massachusetts Institute of Technology. Mankiw: National Bureau of Economic Research. SR National Bureau of Economic Research Working Paper: 2496; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 10. PR \$2.00. JE 022, 026. KW Consumption Function. Uncertainty. Risk.

AB This paper discusses the recent research on the consumption function that has attempted to relax the assumption of certainty equivalence. While there remain many open questions, both theoretical and empirical, it is clear that the assumption of certainty equivalence can be misleading. Under more plausible specifications of preferences toward risk, uncertainty lowers the level of consumption, increases the expected rate of growth of consumption, and increases the response of consumption to news about income. Moreover, changes in the amount of uncertainty are a potentially important source of fluctuations in consumption.

Blinder, Alan S.

TI Consumer Durables and the Optimality of Usually Doing Nothing. AU Bar, Ilan Avner; Blinder, Alan S.

PD January 1988. TI The Challenge of High Unemployment. AA Princeton University. SR National Bureau of Economic Research Working Paper: 2489; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 37. PR \$2.00. JE 821, 023, 024. KW Heterogeneity. Involuntary Unemployment. Aggregate Demand.

AB It is argued that policymakers, macroeconomists and microeconomists should all take high unemployment more seriously. The shortcomings of existing theories of unemployment are discussed, and a new definition of

involuntary unemployment is proposed. A model is sketched in which falling aggregate demand leads to "Keynesian" unemployment because labor is heterogeneous and relative wages matter. Microeconomic theory is criticized for assuming away unemployment and, in the process, radically changing the answers to some basic questions in trade theory and public finance. Finally, some speculative explanations are offered for the low unemployment now found in states like New Jersey and Massachusetts.

Blomstrom, Magnus

PD January 1988. TI Multinational Firms and Manufactured Exports from Developing Countries. AU Blomstrom, Magnus; Kravis, Irving; Lipsey, Robert. AA National Bureau of Economic Research. SR National Bureau of Economic Research Working Paper: 2493; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 25. PR \$2.00. JE 442, 423, 441, 121. KW World Markets. LDC Exports. Comparative Advantage. United States. Japan. Sweden.

AB Multinational firms have played an important role in leading the developing countries into world markets. Multinationals from the United States, Japan and Sweden have all increased their shares of LDC exports of manufactures since the mid-1960s or mid-1970s. Their importance was particularly notable in Latin America, while their role in the Asian NICs decreased. The comparative advantages of United States and Swedish multinationals' affiliates in developing countries resembled those of their home countries more than those of their host countries, while Japanese affiliates' exports are more similar to those of their host countries. There are some cases in which the advantage of the multinationals as exporters seems to be that they are able to combine company comparative advantages with the location advantages of producing in the developing countries.

Blundell, Richard

PD 1987. TI Unemployment Female Labour Supply. AU Blundell, Richard; Ham, John; Meghir, Costas. AA Blundell and Meghir: Department of Economics, University College London. Ham: University of Toronto, Canada. SR University College London Discussion Paper: 86-12A; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. PR No Charge. JE 824, 826, 813. KW Labor Force Participation. Labor Supply. Employment. Married Women.

AB The definition of labour force participation in the standard labour supply model stands in sharp contrast to that used in compiling the labour force statistics. In the labour supply models only those supplying positive hours of work are considered to be labour force participants. On the other hand, participation in the labour force statistics is often defined to include not only those supplying positive hours but also those actively searching for work. This paper is an attempt to reconcile these concepts by allowing unemployed workers to enter a generalization of the standard labour supply model. This turns out to be a convenient way to enter demand side factors directly into the determination of an individual's labour market

position. The model is applied with some success to the working behaviour of married women in the UK Family Expenditure Survey.

Boadway, Robin W.

PD May 1987. TI Ex Post Versus Ex Ante Optimal Policies for Risky Activities. AU Boadway, Robin W.; Wildasin, David E. AA Boadway: Queen's University and CORE. Wildasin: Indiana University and CORE. SR Universite Catholique de Louvain CORE Discussion Paper: 8738; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. PG 34. PR No Charge. JE 321, 323, 023. KW Government. Random Shocks. Taxes. Subsidies. Fiscal Policy. Representative Agent.

AB This paper analyzes the role of government policy when random shocks affect particular industries, occupations, or regions. Workers can freely choose an industry or occupation ex ante, and can relocate, but only at a cost, once uncertainty is resolved. The policy instruments available to the government are per capita taxes and subsidies. These are chosen either to maximize ex post utilitarian aggregate welfare, treating the initial assignment of workers as exogenously fixed (ex post optimal policy), or to maximize the ex ante expected utility of a representative worker, taking the effect of policy choice on the ex ante allocation of labor into account (ex ante optimal). Ex ante and ex post optimal policies are compared, with or without institutional constraints on the set of instruments. Optimal policies range from complete equalization of net incomes across workers to no equalizing transfers at all depending on the instruments available and the nature of relocation costs.

Bollerslev, Tim

TI A Multivariate Generalized ARCH Approach to Modeling Risk Premia in Forward Foreign Exchange Rate Markets. AU Baillie, Richard T.; Bollerslev, Tim.

Boorstein, Randi

PD December 1987. TI Quality Upgrading and its Welfare Costs in United States Steel Imports, 1969-74. AU Boorstein, Randi; Feenstra, Robert C. AA Boorstein: Federal Trade Commission. Feenstra: University of California, Davis. SR National Bureau of Economic Research Working Paper: 2452; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 28. PR \$2.00. JE 631, 621, 616. KW Quality. Imports. Welfare Cost.

AB In this paper we measure the quality change which has occurred in United States steel imports during the 1969-74 VRA, using an index number method. Under this approach, the yearly changes in unit values is broken into three components: a quality-adjusted or pure price index; a quality index, which measures changes in the product mix; and a supplier index, which measures changes in the source of supply. We also derive a measure of welfare cost, which equals the inverse of a Paasche price index minus the inverse of an exact price index. Over the 1969-74 VRA period we find quality upgrading of 7.4 percent in United States steel imports, which occurs most strongly in the first year. The welfare cost of quality change varies around one percent of import expenditure during 1970-73. This cost is

at least as large as the conventional deadweight loss triangle, but smaller than the transfer of quota rents.

Borenstein, Severin

PD December 1987. TI How to Carve a Medical Degree: Human Capital Assets in Divorce Settlements. AU Borenstein, Severin; Courant, Paul N. AA University of Michigan. SR University of Michigan Center for Research on Economic and Social Theory Working Paper: 88-4; Department of Economics, University of Michigan, Ann Arbor, MI 48109. PG 34. PR No Charge. JE 916, 921, 851. KW Divorce. Human Capital. Court Settlement.

AB Many states in the United States now have "no-fault" divorce laws that allow either party to end a marriage without obtaining agreement from his or her spouse. Along with the increased ease of divorce have come new rules governing alimony payments and the division of marital property at divorce. Alimony payments are no longer virtually automatic in cases where one spouse has a significantly higher income than the other. Largely as a result of this shift, spouses who support their mates in acquiring human capital, usually in the form of a professional degree, are now attempting to claim some remuneration for that support when divorce occurs. In this paper, we review the approaches that courts have recently taken in dividing human capital assets and we propose an alternative rule for such division. We show that our proposed rule should be no more difficult to apply than those currently used, that it is likely to increase the efficiency of financing graduate education, and that it provides for more equitable division of the returns to education than do the approaches currently in use.

Bos, Dieter

PD December 1987. TI Equitability and Income Taxation. AU Bos, Dieter; Tillmann, Georg. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-143; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 21. PR No Charge. JE 323, 024, 026. KW Income Taxation. Equitability. Incomplete Information.

PD December 1987. TI Privatization of Public Firms: A Government Trade Union Private Shareholder Cooperative Game. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-116; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 19. PR No Charge. JE 026, 614, 831. KW Privatization. Public Enterprises. Cooperative Game.

AB This paper presents a positive theory of privatization. No welfare arguments enter the analysis. The government is conceived as an institution which wants to draw some money from selling its property and so willingly cooperates with private shareholders who also are interested in the value of the firm. The paper is organized as follows. In section 2 we present the actors of our model and describe their objectives. Then, in section 3, the two-tier optimization approach is described, where tier one is the privatization game and tier two is the adjustment

game in the firm. In section 4 we derive the results of the tier-one game: what is the optimum extent of privatization, and of employees' shares? In section 5 we derive the results of the tier-two game: when does the trade union's interest in keeping jobs lead to inefficient production, what are the optimal input and pricing policies?

Boyer, Robert

PD July 1987. TI Formalizing Growth Regimes Within a Regulation Approach: A Method for Assessing the Economic Consequences of Technological Change. AA CEPREMAP, CNRS, E.H.E.S.S. SR CEPREMAP Discussion Paper: 8715; CEPREMAP, 142, rue du Chevaleret, 75013 Paris, FRANCE. PG 44. PR 20 FF. JE 111, 023. KW Regulation Theory. Growth Theory. Macroeconomic Models.

AB Basically the present paper has tentatively combined two lines of analysis: on one side the regulation approach which stresses the succession of various accumulation regimes, on the other a renewal of post Keynesian theory of growth. By reference to previous researches, some steps have been made towards a better integration between macro modelling and the historical analysis. First a whole family of macro models has been proposed in order to substantiate the basic hints or results of "regulation". Second, the hypothesis of full-employment, often made in the Sixties by post-Keynesians, is removed in order to deal with cases in which labor forces and employment trends might be diverging. Third the cumulative causation model proposed by N. Kaldor (and especially the so-called Kaldor-Verdoorn relations) are dealt by a more detailed and precise approach, in order to explain possible structural shifts in this model. Fourth special attention has been devoted to the issue related to the technological change, industrial relations and wage labor nexus, and the dialectical links between them. Finally, this framework is used to analyze the likely outcome of various strategies during the crisis.

PD October 1987. TI Technical Flexibility and Macro Stabilization: A Tentative Analysis. AU Boyer, Robert; Coriat, Benjamin. AA Boyer Robert: CEPREMAP, CNRS, E.H.E.S.S. Coriat Benjamin: Universite de Lille I et Paris VII. SR CEPREMAP Discussion Paper: 8731; CEPREMAP, 142 rue du Chevaleret, 75013 Paris, FRANCE. PG 78. PR 25 FF. JE 111, 131, 133, 023. KW Technological Change. Growth. Wage Flexibility. Stability.

AB Basically, the paper analyzes some of the linkages between key characteristics about technology and productive systems and the regularities concerning accumulation at the macro level. A first part presents a very simple growth model in Kaldorian style and compares its predictions with stylized historical facts. Growth (or crisis) is analyzed according to the compatibility (or the contradictions) between the determinants of productivity and the mechanisms of income distribution. The exceptional post World War II growth is then related to a very special accumulation regime, the fordism, characterized by important increasing returns to scale and a capital labor accord upon productivity sharing. The roots of the present crisis are related to the decay of these two pillars. A second part investigates the present major

changes in the technological system observed since the Seventies. A taxonomy for productive flexibility is presented and two consequences of flexible manufacturing are stressed upon: the likely changes in the various economies of scale and in investment decisions. A third part proposes some prospective views and opposes flexible specialisation to flexible automation. If the first one could be only a method for coping with the crisis, the second might be a way out of it. Furthermore, wage flexibility does not appear as a substitute to productive flexibility, whereas profit sharing might not be the panacea.

Branson, William H.

PD January 1988. TI The Real Exchange Rate, Employment and Output in Manufacturing in the U.S. and Japan. AU Branson, William H.; Love, James P. AA Princeton University. SR National Bureau of Economic Research Working Paper: 2491; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 43. PR \$2.00. JE 431, 421, 131, 122, 226. KW United States. Tradeable Goods. Depreciation. Dollar. Yen.

AB In the spring of 1981 the United States dollar began a four-year period of real appreciation that took it to a peak of more than 50 percent by first quarter 1985. Since then, the dollar has depreciated substantially, but remains above its 1980 level. During the same period, the Japanese yen first depreciated by 12 percent in real terms from 1981 to 1982, and then appreciated by some 30 percent to 1986. These swings in real exchange rates effects on the relative competitiveness of United States and Japanese industry, and have effects on employment and output in sectors producing tradeable goods. This paper presents estimates of these effects.

Brito, Dagobert

PD December 1987. TI Information and Multi-Period Optimal Income Taxation with Government Commitment. AU Brito, Dagobert; Hamilton, Jonathan H.; Slutsky, Steven M.; Stiglitz, Joseph E. AA Brito: Rice University. Hamilton and Slutsky: University of Florida. Stiglitz: Princeton University. SR National Bureau of Economic Research Working Paper: 2458; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PR \$2.00. JE 323, 024, 023, 921, 914. KW Tax. Intertemporal Models. Self-Selection. Consumers. Ability.

AB The optimal income taxation problem has been extensively studied in one-period models. When consumers work for many periods, this paper analyzes what information, if any, that the government learns about abilities in one period can be used in later periods to attain more redistribution than in a one-period world. When the government must commit itself to future tax schedules, the gains come from relaxing self-selection constraints by intertemporal nonstationarity. The effect of nonstationarity is analogous to that of randomization in one-period models. In a model with two ability classes it is shown that the key use of information is that only a single lifetime self-selection constraint for each type of consumer must be imposed. Some necessary and sufficient conditions for randomization or nonstationarity are given. The planner can make additional use of the information when

individual and social rates of time discounting differ. In this case, the limiting tax schedule is a nondistorting one if the government has a lower discount rate than individuals.

Broadman, Harry G.

PD December 1987. TI How Natural is Monopoly? The Case of Bypass in Natural Gas Distribution Markets. AU Broadman, Harry G.; Kalt, Joseph P. AA Broadman: Professional Staff; United States Senate Governmental Affairs Committee. Kalt: Kennedy School of Government, Harvard University. SR Resources for the Future, Energy and Materials Division Discussion Paper: EM87-05; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, United States of America. PG 60. PR \$5.00 (United States funds only). JE 723, 613, 611, 612. KW Natural Gas. Bypass. Natural Monopoly. Regulation. AB It has been a long-held tenet that markets characterized as "natural monopolies", especially public utility markets, should be subject to not only price, or rate, regulation, but also entry regulation. Within the past decade, however, as dissatisfaction with much of the nation's regulatory system has mounted, the rationale for and indeed the practice of protecting utilities from competitors has come increasingly under attack. Numerous court cases and administrative rulings by regulatory agencies have pointed to the benefits of allowing users of a utility's services to "bypass" the utility and instead transact for these services with either new entrants or incumbent members of the industry "upstream" or "downstream" from the utility. This paper provides an assessment of the costs and benefits of bypass in natural gas local distribution markets. It develops a conceptual framework for analyzing the extent of natural monopoly in such markets and the desirability of institutionally protecting LDCs from competitive entry. The approach is to weave together stylized facts about downstream gas markets with insights from the theoretical and empirical literature on the economics of regulation, contestability, and sustainability. It describes the various regulatory and legislative changes in the gas industry that have increased the incidence of proposals for and in some cases the consummation of bypass. It also reviews the involvement of state legislatures, PUCs, and the courts in the natural gas bypass issue.

Brock, William

PD December 1987. TI Is the Business Cycle Characterized by Deterministic Chaos? AU Brock, William; Sayers, Chera. AA Brock: University of Wisconsin. Sayers: University of North Carolina Chapel Hill. SR University of North Carolina Working Paper Series: 87-15; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. PG 36. PR No Charge. JE 131, 133, 212. KW Deterministic Chaos. Business Cycle. Chaos. Nonlinear.

AB Tests are conducted on United States macroeconomic data for the presence of low dimensional deterministic chaos where "deterministic chaos" is defined as in Grandmont's (1985) Walras-Bowley lecture or in Brock (1986). The idea is to test for evidence of endogenous instability causing the business cycle. Low order

autoregressions are hard to reject with our methods. Evidence of chaos is weak but our tests may be too weak to detect it. Evidence of nonlinearity is present in employment 1950-I to 1983-IV; unemployment 1949-I to 1982-IV; monthly post war industrial production; and pig iron production 1877-1937.

Bronsard, Camile

TI Roy-Consistent Expectations. AU Allard, Marie; Bronsard, Camile; Richelle, Yves.

Buchner, Heinz Jurgen

PD October 1987. TI Steuerhinterziehung und subjektiv empfundene Steuerlast. AA University of Bonn. SR Universität Bonn Sonderforschungsbereich 303 - Discussion Paper: A-83; Sonderforschungsbereich 303 an der Universität Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 14. PR No Charge. JE 321. KW Tax Evasion. Tax Burden.

PD November 1987. TI Der Einfluß der Steuerhinterziehung auf direkte und indirekte Steuern. AA University of Bonn. SR Universität Bonn Sonderforschungsbereich 303 - Discussion Paper: A-100; Sonderforschungsbereich 303 an der Universität Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 17. PR No Charge. JE 321. KW Tax Evasion. Direct Taxes. Indirect Taxes.

Buiter, Willem H.

PD February 1988. TI Can Public Spending Cuts Be Inflationary?. AA Yale University, NBER, CEPR, Centre for Labour Economics, LSE. SR London School of Economics Centre for Labour Economics Discussion Paper: 303; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. PG 55. PR No Charge. JE 134, 321, 322. KW Public Sector Deficit. Seigniorage. Inflation. Public Spending. Budget Deficit. AB The paper uses a "demand for seigniorage revenue" and "supply of seigniorage revenue" approach to determine the consequences of cuts in public spending for the rate of inflation. Monetary financing is viewed as the residual financing mode, with tax rates and public debt-GDP ratios held constant. In a small open economy with an exogenous real interest rate, cuts in public consumption spending will lower the inflation rate in the revenue-efficient region of the seigniorage Laffer curve. When there are cuts in public sector capital formation, the inflation rate can rise even in the seigniorage-efficient region. This will be the case if the expenditure effect (which reduces the deficit one-for-one) is more than offset by direct and indirect revenue effects (which raise the deficit) and by an adverse money demand effect. When the real interest rate is endogenous, the scope for inflation-increasing public spending cuts is enhanced.

Bulow, Jeremy

PD April 1988. TI Multilateral Developing-Country Debt Rescheduling Negotiations: A Bargaining-Theoretic Framework. AU Bulow, Jeremy; Rogoff, Kenneth. AA Bulow: Stanford University. Rogoff: University of Wisconsin. SR International Monetary Fund Working

Paper: WP/88/35; International Monetary Fund, Washington D.C. 20431. PG 13. PR No Charge. JE 433, 431. KW Sovereign Debt. Negotiations. Trade. Interest Rates. Debtor Nations.

AB This paper employs a dynamic bargaining-theoretic framework to analyze multilateral sovereign debt rescheduling negotiations. The analysis illustrates how various factors, such as the debtor's gains from trade and the level of world interest rates, affect the relative bargaining power of various parties to a rescheduling agreement. If creditor-country taxpayers have a vested interest in maintaining normal levels of trade with debtor countries, then they can sometimes be bargained into making sidepayments. The benefits from unanticipated creditor-country sidepayments accrue to both lenders and borrowers. But the benefits from perfectly anticipated sidepayments accrue entirely to borrowers.

Byrnes, Patricia

PD April 1987. TI The Effect of Unions on Productivity: U.S. Surface Mining of Coal. AU Byrnes, Patricia; Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K. AA University of North Carolina, Chapel Hill. SR University of North Carolina Working Paper Series: 87-8; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. PG 49. PR No Charge. JE 825, 831, 226, 632. KW Unions. Performance. Productivity. Surface Mining. Coal.

AB The neoclassical view of unions is that they have monopoly power and use it to create costly resource misallocation that decreases productivity. The collective voice view is that unions reduce labor turnover and engage in a host of other activities that increase productivity. These conflicting predictions have generated a growing body of empirical research. Most of this work has followed the same modelling approach, in which the effect of unions on performance is investigated by (1) measuring performance by output per unit of labor, (2) holding constant the input mix, and (3) using statistical techniques to estimate a parametric production function. In this study a different modelling approach is employed to investigate the effect of unions on performance. Performance is measured by output per unit of input, thereby avoiding the need to hold constant the input mix. Observed output per unit of input is compared with maximum feasible output per unit of input by computing a nonparametric production frontier, using programming techniques, thereby eliminating the possibility of parametric misspecification. Performance is compared in union and nonunion establishments, using two large samples of United States surface mines. In both samples union mines are more productive.

Calomiris, Charles W.

PD January 1988. TI Firm Heterogeneity, Internal Finance, and Credit Rationing. AU Calomiris, Charles W.; Hubbard, Glenn R. AA Calomiris: Northwestern University. Hubbard: National Bureau of Economic Research. SR National Bureau of Economic Research Working Paper: 2497; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 30. PR \$2.00. JE 315, 311, 522, 321,

022. **KW** Credit Constraint. Intertemporal Models. Imperfect Information. Tax Policy. General Equilibrium.

AB In actual markets, many loan contracts are offered, both "full-information" and "information intensive". Our focus in this paper is on firm heterogeneity in credit markets; we analyze mechanisms by which credit markets sort borrowers in the presence of differing degrees of asymmetric information; we emphasize the potential for credit rationing in equilibrium and the response of credit allocation to borrower-specific shocks. Our approach suggests that external finance will be differentially available to entrepreneurs -- holding constant their project opportunities -- according to their internal net worth position. That is, there is an important link for many firms between internal finance and investment spending. We develop a simple general equilibrium model of credit allocation, in which different loan contracts are offered to different types of borrowers. The extent to which different borrowers can obtain credit depends on the distribution of internal finance, aggregate net worth levels, and whether projects are observable.

Calvo, Guillermo

PD March 1988. **TI** Controlling Inflation: The Problem of Non-Indexed Debt. **AA** University of Pennsylvania. **SR** International Monetary Fund Working Paper: WP/88/29; International Monetary Fund, Washington D.C. 20431. **PG** 19. **PR** No Charge. **JE** 311, 321, 134, 322. **KW** Government Debt. Inflation. Price Index. Budget Deficits.

AB We show that the presence of nominal non-indexed government debt could give rise to more than one equilibrium inflation rate. Conditions for this to occur are discussed in terms of ad hoc and micro-founded models. Solutions to the indeterminacy problem are examined; one solution is shown to be price indexation of debt instruments.

Camen, Ulrich

PD September 1987. **TI** Reconciling Actual and Optimal Monetary Policy in Switzerland Under Fixed Exchange Rates and Floating. **AU** Camen, Ulrich; Genberg, Hans; Salemi, Michael. **AA** Camen, Genberg: The Graduate Institute of International Studies. Salemi: University of North Carolina Chapel Hill. **SR** University of North Carolina Working Paper Series: 87-13; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. **PG** 40. **PR** No Charge. **JE** 311, 431, 133. **KW** Monetary Policy. Switzerland. Exchange Rates.

AB This paper concerns Swiss monetary policy under fixed exchange rates and floating. It asks how well, for reasonable specifications of the Swiss National Bank objective function, observed SNB policy can be reconciled with policy that would have been optimal, in the control theory sense, given those preferences and a characterization of the economic environment. The paper is an application of the inverse control problem. Vector autoregressions are used to characterize both the environment and the feedback rule of the Swiss National Bank. A maximum likelihood procedure is used to compute objective function weights that best reconcile the observed feedback rule with an optimal one. The paper provides empirical examples

that gauge the relative importance to the SNB of stability in money growth, inflation, and the interest rate.

Campbell, John Y.

PD January 1988. **TI** International Evidence on the Persistence of Economic Fluctuations. **AU** Campbell, John Y.; Mankiw, Gregory N. **AA** Campbell: Princeton University. Mankiw: National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2498; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 31. **PR** \$2.00. **JE** 131, 132, 121. **KW** ARMA Models. Output. Monte Carlo. Growth. Fluctuations.

AB This paper presents new evidence on the persistence of fluctuations in real GNP. Two measures of persistence are estimated non-parametrically using post-war quarterly data from Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. These estimates are compared with Monte Carlo results from various AR(2) processes. For six out of seven countries, the results indicate that a 1 percent shock to output should change the long-run univariate forecast of output by well over 1 percent. Low-order ARMA models for output growth are also estimated, and yield similar conclusions. Finally, the persistence in relative outputs of different countries is examined.

PD February 1988. **TI** Stock Prices, Earnings and Expected Dividends. **AU** Campbell, John Y.; Shiller, Robert J. **AA** Campbell: Princeton University. Shiller: Yale University. **SR** Yale Cowles Foundation Discussion Paper: 858; Yale University, Cowles Foundation, Box 2125, Yale Station, New Haven, CT 06520. **PG** 40. **PR** \$2.00. **JE** 313, 132, 131. **KW** Stock Market. Dividends. Stock Prices. Volatility.

AB This paper presents estimates indicating that, for aggregate United States stock market data 1871-1986, a long historical average of real earnings is a good predictor of the present value of future real dividends. This is true even when the information contained in stock prices is taken into account. We estimate that for each year the optimal forecast of the present value of future real dividends is roughly a weighted average of moving average earnings and current real price, with between 2/3 and 3/4 of the weight on the earnings measure. This means that simple present value models of stock prices can be strongly rejected.

Card, David

PD November 1987. **TI** Supply and Demand in the Labor Market. **AA** Industrial Relations Section, Princeton University. **SR** Princeton Industrial Relations Section Working Paper: 228; Industrial Relations Section, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 23. **PR** \$1.00 plus postage. **JE** 821, 824. **KW** Labor Supply. Labor Demand. Employment. Unemployment. Wage. Labor Market.

AB This paper presents a survey of recent microeconomic studies of the labor market, focusing on research that emphasizes the possible failure of measured wage rates to separate individual supply and demand decisions. On both the demand and supply sides of the labor market there is evidence that forces from the other

side of the market influence employment outcomes through some mechanism other than the wage. On the supply side, this evidence takes the form of correlations between individual labor supply outcomes and market-level measures of employment demand in the individual's local labor market. On the demand side, it takes the form of correlations between firms' employment decisions and measures of their employees' outside opportunities. Both sets of findings are inconsistent with simple supply and demand models, and suggest the need for alternative models of the labor market, which permit an uncoupling of short-run employment decisions from wage rates.

Case, Karl E.

PD February 1988. TI The Efficiency of the Market for Single Family Homes. AU Case, Karl E.; Shiller, Robert J. AA Case: Wellesley. Shiller: Yale University. SR National Bureau of Economic Research Working Paper: 2506; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 21. PR \$2.00. JE 932, 921. KW Housing Prices. Market Efficiency. Seasonality.

AB Tests of weak-form efficiency of the market for single family homes are performed using data on repeat sales prices of 39,210 individual homes, each for two sales dates. Tests were done for Atlanta, Chicago, Dallas, and San Francisco/Oakland for 1970-86. While evidence for seasonality in real housing prices is weak, we do find some evidence of inertia in housing prices. A city-wide real log price index change in a given year tends to be followed by a city-wide real log price index change in the same direction (and between a quarter to a half as large in magnitude) in the subsequent year. However, the inertia cannot account for much of the variation in individual housing real price changes. There is so much noise in individual housing prices relative to city-wide price index changes that the R-squared in forecasting regressions for annual real price change in individual homes is never more than .04.

Cave, Jonathan

PD December 1987. TI A Median Choice Theorem. AU Cave, Jonathan; Salant, Stephen. AA Cave: The Rand Corporation. Salant: The University of Michigan. SR University of Michigan Center for Research on Economic and Social Theory Working Paper: 88-8; Department of Economics, University of Michigan, Ann Arbor, MI 48109. PG 6. PR No Charge. JE 025. KW Median Voter Theorem. Cartels. Preferences.

AB This paper presents a Median Voter Theorem for a class of one-dimensional voting situations where individual preferences need not be single-peaked, but nonetheless satisfy a strong regularity condition. This condition arises when cartels with identical marginal costs vote on quotas and also arises in the case of both agricultural marketing boards and prorationing boards restricting extraction from common properties.

Cecchetti, Stephen

PD December 1987. TI The Case of the Negative Nominal Interest Rates: New Estimates of the Term Structure of Interest Rates During the Great Depression. AA Ohio State University. SR National Bureau of

Economic Research Working Paper: 2472; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 36. PR \$2.00. JE 322, 313, 042. KW Term Structure. Institutional. United States Treasury Bonds. Nominal Yield. Securities.

AB During the 1930s and early 1940s United States Treasury bonds and notes had negative nominal yields as they approached maturity. But since an investor can always hold cash, this is impossible. Any bond must have a positive nominal yield. This paper poses a resolution to this puzzle: in addition to making coupon payments, Treasury securities were options that gave the owner the right to buy a new security on a future date. The paper proposes a method for valuing this 'exchange privilege' and computing the yield to the coupon bearing component of these composite bond/options. The case of the negative nominal interest rates demonstrates that the construction of accurate data requires close examination of the institutional environment, even when studying financial markets. The corrected bond and note yields are used to calculate new estimates of the term structure of interest rates from 1929 to 1949. These new data allow one to follow changes in both the level and the shape of the yield curve during the Great Depression.

Cerchi, Marlene

PD October 1987. TI Cointegration and Stock Prices: The Random Walk on Wall Street Revisited. AU Cerchi, Marlene; Havenner, Arthur. AA University of California at Davis. SR University of California at Davis Research Program in Applied Macro and Macro Policy: 51; Department of Economics, University of California at Davis, Davis, CA 95616. PG 27. PR No Charge. JE 521, 313, 132. KW State Space Modeling. Cointegration. Stock Prices. Unit Roots. Common Factor. Efficient Markets. Rational Expectations.

AB One of the more famous and empirically regular instances of unit roots occurs in stock price series, where they are consistent with rational expectations and efficient markets under certain assumptions. In this paper we investigate the dynamic behavior of five stock prices over the volatile period from January, 1972, through December, 1979 finding that the series are cointegrated with one dominant common trend, a component with an estimated root of .95. In addition, we find a lesser trend and two complex roots in the cycle model. These findings are validated by out of sample forecasts beginning in January, 1980. In addition to mean squared error criteria, the forecasts are evaluated nonparametrically in two separate applications of a test due to Henriksson and Merton.

Chew, S. H.

PD June 1987. TI A Unifying Approach to Axiomatic Non-Expected Utility Theories. AU Chew, S. H.; Epstein, Larry G. AA Chew: Department of Political Economy, Johns Hopkins University. Epstein: Department of Economics, University of Toronto. SR University of Toronto Institute for Policy Analysis Working Paper: 8709; Department of Economics, University of Toronto, Toronto, Ontario, CANADA M5S 1A1. PG 36. PR Gratis - as long as stock lasts. JE 022, 026. KW Non-Expected Utility. Separability. Transitive Preferences.

AB This paper unifies the two principal thrusts in the literature on axiomatic theories of transitive preferences which generalize expected utility theory; namely, the betweenness-conforming theories and the rank-dependent theories. The unification is achieved in two respects. First, new axiomatizations are provided for the existing theories based on separability restrictions in outcome space. These axiomatizations bring into clear focus both the similarities and the differences between the existing theories. Second, an axiomatization is provided for a new class of preferences which includes existing classes as special cases.

Chick, Victoria

PD December 1986. **TI** Keynes's 'General Theory after 50 Years: What Remains?'. **AA** Department of Economics, University College London. **SR** University College London Discussion Paper: 86-18; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 12. **PR** No Charge. **JE** 031. **KW** Keynes's 'General Theory. Employment. Speculation.

AB Keynes is best known for policy proposals intended only for high-unemployment emergencies. Taking the subjects of the 'General Theory in turn I conclude that the Theory of employment and the speculative theory of interest are still valid, though they have nearly been lost to view through re-interpretation. But changes in monetary institutions require changes to the monetary theory Keynes move in 1936.

PD February 1987. **TI** Speculation, The Rate of Interest and the Rate of Profit. **AA** University College London (Department of Economics). **SR** University College London Discussion Paper: 87-01; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 10. **PR** No Charge. **JE** 431, 023. **KW** Speculation. Rate of Interest. Natural Rate. Speculative Demand. Foreign Exchange.

AB Classical theory saw the rate of interest as determined by the real forces of productivity and thrift. If monetary influences were allowed at all, they permitted temporary departures of the rate of interest from this 'natural' rate, but in the end the 'real' forces dominated: market rates adjusted to the 'natural' rate. Keynes's theory of speculative demand - for money and securities acknowledged for the fact that dealings in existing securities, at low transactions costs, could create divergences between monetary and real rates - or, more properly, between the rate of interest and the rate of profit - which were more than temporary. Furthermore, the causality was reversed: the money rate, by determining how much investment took place, influenced the 'real' rate, not the other way round. Today the most active arena of speculation is the foreign exchanges, not the bond market, and doubtless the theory of expectations underlying Keynes's theory could be greatly improved. Nevertheless, the theory is sound, and we should be aware that there have been several modern attempts to displace it in favour of the more comfortable classical theory.

PD March 1987. **TI** On the Place of 'Value and Capital in Monetary Theory. **AA** University College

London. **SR** University College London Discussion Paper: 87-04; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 24. **PR** 1.50 pounds sterling. **JE** 031. **KW** Hicks. 'Value and Capital. Monetary Theory.

AB Although 'Value and Capital is not primarily a treatise on monetary theory, there is much for monetary theorists to learn from it. The present essay particularly explores the relationship between the treatment of money and the method of analysis adopted. Within 'Value and Capital two methods are used: static and temporary equilibrium. It is shown that Hicks was aware, even before writing 'Value and Capital, of the limitations of the first method in dealing with real-life money - limitations which have only recently been generally acknowledged. The demonstration of Equivalence of liquidity preference and loanable funds theories also depends on method - in this case the one-period nature of temporary equilibrium. Amongst the narrower concerns of monetary theory, Hicks's treatment of the demand for money and the role of the rate of interest foreshadowed many of the important developments of the 1950s and debates of the 1960s and 70s. 'Value and Capital's contributions to monetary theory turn out to be many, varied and rich.

Coats, Warren

PD April 1988. **TI** Does the SDR System Generate Permanent Resource Transfers? **AU** Coats, Warren; Furstenberg, Reinhard; Isard, Peter. **AA** The International Monetary Fund. **SR** International Monetary Fund Working Paper: WP/88/33; International Monetary Fund, Washington D.C. 20431. **PG** 22. **PR** No Charge. **JE** 431, 432. **KW** Resources. Transfers. Interest Rates.

AB The paper analyzes whether the SDR system generates permanent resource transfers--i.e., transfers of resources that do not involve equivalent quid pro quos. It is argued that SDR allocation only gives rise to permanent resource transfers if the SDR interest rate is uncompetitive or if holding SDRs is perceived to be risky, and that the use of SDRs gives rise to permanent resource transfers only if the SDR interest rate is uncompetitive. These conclusions are reconciled with the fact that SDR allocation can provide reserves to many countries at terms more favorable than the costs of borrowing or earning reserves.

Cockburn, Iain

PD December 1987. **TI** Industry Effects and Appropriability Measures in the Stock Market's Valuation of R&D and Patents. **AU** Cockburn, Iain; Griliches, Zvi. **AA** Cockburn: National Bureau of Economic Research. Griliches: Harvard University. **SR** National Bureau of Economic Research Working Paper: 2465; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 30. **PR** \$2.00. **JE** 621, 313, 611. **KW** Innovations. Knowledge Capital. Stock Market. Patents. R&D.

AB This paper examines the stock market's valuation of a firm's innovative activity. We estimate the market's relative valuation of firms' tangible and intangible assets, focusing on knowledge capital in the form of accumulated

"stocks" of R&D and patents. We tried to improve upon our estimates of the stock market's valuation of knowledge capital embodied in such "stocks" by bringing in measures of the appropriability environment facing a firm from the Yale Survey on Industrial Research and Development. The responses to Survey questions about the effectiveness of patents as a mechanism for protecting the returns from innovation turn out to be of some use: there is evidence of an interaction between industry level measures of the effectiveness of patents and the market's valuation of a firm's past R&D and patenting performance, as well as its current R&D moves. We find no evidence, however, that other appropriability mechanisms differ enough across industries to leave measurable traces in our data.

Cohen, Linda R.

TI Economics, Politics, and Government Research and Development. AU Noll, Roger G.; Cohen, Linda R.

Conway, Patrick

PD June 1986. TI International Trade and Immiserization with Asymmetric Returns to Scale. AA University of North Carolina, Chapel Hill. SR University of North Carolina Working Paper Series: 86-8; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. PG 36. PR No Charge. JE 411, 111. KW Returns to Scale. International Trade. Economic Growth. Immiserization.

AB This paper examines the implications of external asymmetric returns to scale in production for the pattern of international trade and economic growth. In a two-country, two-good, two-factor world one good is assumed to have a technology characterized by decreasing returns to scale; the other is characterized by increasing returns. Graham's (1923) contention that the country specializing in the decreasing-returns good will lose from entering trade (static immiserization) is confirmed for certain cases of technological asymmetry. Kaldor's (1978) view that the process of economic growth could be slowed or reversed for the decreasing-returns country in international trade is also affirmed, although immiserization is less likely. Emmanuel's (1972) criterion of unequal exchange is shown to be neither necessary nor sufficient for dynamic immiserization.

PD June 1986. TI Graham Immiserization: A Dynamic Analysis. AA University of North Carolina, Chapel Hill. SR University of North Carolina Working Paper Series: 86-7; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. PG 34. PR No Charge. JE 411, 111, 026. KW Autarky. Noncooperative Games.

AB This paper examines the stability of Graham equilibrium and the dynamics of transition from autarky for economies external to the firm but internal to the region. It extends the present literature by examining a two-factor model, thus providing results comparable to those of the factor-proportions trade theories. It also establishes the existence and stability of equilibrium through reference to noncooperative game theory; aggregating from individual firm behavior for a region improves the stability properties of incomplete-specialization equilibria, and allows the existence of

complete-specialization in both goods.

TI Customs Unions with a Continuum of Goods. AU Appleyard, Dennis R.; Conway, Patrick; Field, Alfred J.

Cooley, Thomas F.

PD November 1987. TI Inflation and Stock Returns with Complete Markets. AU Cooley, Thomas F.; Sonstelie, Jon. AA Cooley: University of Rochester. Sonstelie: University of California Santa Barbara. SR University of Rochester Center for Economic Research Working Paper: 112; Department of Economics, University of Rochester, Rochester, NY 14627. PR No Charge. JE 313, 311, 134, 023. KW Stock Returns. Inflation. Asset Prices.

AB Many studies have documented a negative correlation between stock returns and both expected and unexpected inflation. One set of theories about this correlation holds that it is coincidental, resulting from exogenous shocks to real output that are positively correlated with stock returns but negatively correlated with inflation. A competing view is that the negative correlation between stock returns and inflation is directly causal resulting from the existence of nominal contracts between firms and other economic agents including the government. This paper develops a general equilibrium model of asset prices that implies a set of restrictions on the data that enable us to test the competing theories of the inflation asset return correlation. Our empirical results reject the hypothesis that this correlation is due to real shocks.

Cooper, Russell

PD October 1987. TI Approaches to the Solution of Intertemporal Consumer Demand Models. AU Cooper, Russel J.; McLaren, Keith R. AA Department of Econometrics and Operations Research, Monash University. SR Monash Department of Econometrics and Operations Research Working Paper: 11/87; Department of Econometrics and Operations Research, Faculty of Economics and Politics, Monash University, Clayton, Victoria 3168, AUSTRALIA. PG 37. PR No Charge. JE 022, 921, 821. KW Intertemporal Model. Allocation Model. Demand Equations.

AB The derivation of systems of demand equations based on the maximization of a static utility function subject to a budget constraint is now well established with many applications available in the literature. But this paradigm has at least two (related) restrictions. First, it is essentially an allocation model, treating total expenditure as exogenously given. Second, by its nature it cannot adequately handle decisions which are intrinsically intertemporal in nature. The prime examples here are the consumption/savings and work/leisure choices. It could be argued that there are remarkably few applications of intertemporal optimization models to consumer decision making. One reason for this may be the commonly held view that solutions of such models are intractable in all but the simplest of cases. The purpose of this paper is to provide a general overview of the methods available to solve such models. If appropriate attention is paid to the specification of the model and the choice of a solution method, it is possible to solve a much wider class of

problems.

PD November 1987. **TI** Inventories and the Propagation of Sectoral Shocks. **AU** Cooper, Russell; Haltiwanger, John. **AA** Cooper: University of Iowa, Hoover Institution. Haltiwanger: University of Maryland. **SR** Stanford Hoover Institute Working Papers in Economics: E-87-53; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 53. **PR** No Charge. **JE** 131, 133, 226. **KW** Inventory. Imperfect Competition. Real Business Cycle Model. Demand Linkages.

AB This paper studies the dynamic properties of an imperfectly competitive economy with inventory holdings. In particular, we focus on the serial correlation in aggregate output and employment produced by the holding of inventories in one sector of the economy and the co-movement between sectors of an economy over the cycle resulting from demand linkages. This is then contrasted with a simple, competitive real business cycle model with inventories. We find that the predictions of these models with regards to the co-movement of employment may differ. Based on this, we present empirical evidence of the co-movement of employment over the business cycle which is consistent with the predictions of the model of imperfect competition with inventory holdings and demand linkages.

PD December 1987. **TI** Selection Criteria in Coordination Games: Some Experimental Results. **AU** Cooper, Russell; DeJong, Douglas V.; Forsythe, Robert; Ross, Thomas W. **AA** Cooper: University of Iowa, Hoover Institution. DeJong: University of Iowa. Forsythe: University of Iowa. Ross: Carleton University, Hoover Institution. **SR** Stanford Hoover Institute Working Paper in Economics: E-87-54; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 63. **PR** No Charge. **JE** 026. **KW** Coordination Games. Equilibrium Selection. Nash Equilibrium. Strategy. Pareto Outcome.

AB We study the selection of an equilibrium for coordination games: symmetric, simultaneous move, complete information games which have multiple, Pareto-ranked Nash equilibria. We design an experiment to explore regularities in the observed outcomes for this class of games. With replication, we find that the Nash equilibrium concept accurately predicts the strategies chosen by players in these games. However, the equilibrium outcome is not always the Pareto-dominant equilibrium so that coordination failures can arise. Moreover, we find that altering the payoffs of a dominated strategy can influence the selection of a Nash equilibrium. Our results are consistent with a modified version of Harsanyi's tracing procedure in which players initially place some positive probability that their opponent is a cooperative player even though the cooperative strategy may be dominated by another strategy.

TI Warranties Without Commitment to Market Participation. **AU** Bigelow, John; Cooper, Russell; Ross, Thomas W.

PD March 1988. **TI** Uncertainty and the Choice of Trade Policy in Oligopolistic Industries. **AU** Cooper, Russell; Riezman, Raymond. **AA** Cooper: University of

Iowa, Hoover Institution. Riezman: University of Iowa. **SR** Stanford Hoover Institute Working Paper in Economics: E-88-16; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 38. **PR** No Charge. **JE** 026, 323, 321, 422. **KW** Trade Policy. Profit Shifting. Subsidies. Quantity Controls. Government Policy. Uncertainty.

AB This paper investigates the design of trade policies in an uncertain world. Governments in each of two countries select between direct quantity controls and subsidies in an attempt to shift profits in favor of domestic, imperfectly competitive firms. The equilibrium of this bilateral policy game depends critically on the variability of the environment. In a world of uncertainty, both governments would choose to regulate the behavior of their firms through direct quantity controls. With a sufficient amount of uncertainty, both governments regulate their firms through subsidies. This result reflects an important tradeoff between the strategic advantages of direct quantity controls and the flexibility gained by the use of subsidies.

Coriat, Benjamin

TI Technical Flexibility and Macro Stabilization: A Tentative Analysis. **AU** Boyer, Robert; Coriat, Benjamin.

Corker, Robert

PD April 1988. **TI** Tax Policy and Business Investment in the United States: Evidence from the 1980s. **AU** Corker, Robert; Evans, Owen; Kenward, Lloyd. **AA** The International Monetary Fund. **SR** International Monetary Fund Working Paper: WP/88/34; International Monetary Fund, Washington D.C. 20431. **PG** 31. **PR** No Charge. **JE** 522, 323, 023. **KW** Fixed Investment. Business Investment. Capital. Simulation. Tax Policy.

AB This paper examines the behavior of business fixed investment in the United States in the 1980s. A background discussion of the long-term behavior of the components of business fixed investment is provided, setting the context for the empirical analysis. A standard neoclassical model of business fixed investment is specified and estimated, with output and the cost of capital the primary explanatory variables. Simulation experiments are then conducted with a view to assessing the importance of various contributing factors--in particular tax policy--in influencing the behavior of business fixed investment during the economic expansion that began in late 1982.

Cornet, Bernard

PD September 1987. **TI** Topological Properties of the Set of Attainable Production Plans in a Nonconvex Production Economy. **AA** CORE. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8746; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. **PG** 20. **PR** No Charge. **JE** 021, 022. **KW** Survival Assumption. General Equilibrium. Nonconvex Production Sets.

AB We show that in a general equilibrium model with 1 goods and n firms with (possibly) nonconvex production

sets, the so-called survival assumption, along with standard assumptions, implies that the set of (resp. efficient) attainable production plans is homeomorphic to the closed unit ball of $R(\ln)'resp.R'(l-1)n$.

Corrado, Carol

PD April 1988. TI The Use of High-Frequency Data in Model-Based Forecasting at the Federal Reserve Board. AU Corrado, Carol; Haltmaier, Jane. AA Board of Governors of the Federal Reserve System. SR Board of Governors of the Federal Reserve System Finance and Economics Discussion Series: 24; Division of Research and Statistics, Federal Reserve Board, Washington, D.C. 20551. PG 71. PR No Charge. JE 132. KW Forecasting. Filtering. Federal Reserve Board.

AB This paper reviews an approach to forecasting that incorporates high frequency data on current and prospective United States economic activity into near-term projections of GNP and related items in a systematic, replicable way. An overview of the analytic structure of the FRB Model Linkage Project is presented and its special features illustrated. These include: filtering of sectoral transactions measures into estimates of monthly GNP, generation of near-term projections at the monthly and quarterly frequency that are consistent with a pooled forecast of competing models, and procedures for interpreting release announcements within an explicit statistical framework.

Coullard, Colette

PD August 1986. TI Representation of Bicircular Matroids. AU Coullard, Collette; del, Greco John G.; Wagner, Donald K. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 86431-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 20. PR No Charge. JE 213. KW Bicircular Matroids. Incidence Matrix.

AB Since two different graphs can have the same bicircular matroid, the first aim of this paper is to characterize the class of graphs having the same bicircular matroid. A bicircular matroid can be represented by a matrix over the reals that has at most two nonzeros per column. Such a matrix can be viewed as an incidence matrix of a graph. The second aim of this paper is to show that for a given class of graphs $G(1), \dots, G(t)$ having the same bicircular matroid M , there exists a class or row-equivalent matrices $N(1), \dots, N(t)$ each representing M , such that $N(i)$ is an incidence matrix of $G(i)$ for $1 \leq i \leq t$.

PD November 1987. TI On Cycle Cones and Polyhedra. AU Coullard, Colette; Pulleyblank, William. AA Coullard: Purdue University. Pulleyblank: University of Waterloo. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87486-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 25. PR No Charge. JE 213. KW Cycle Polytope. Halin Graphs. Incidence Vectors.

AB The cycle polytope of a graph is the convex hull of the incidence vectors of the cycles of the graph. In this paper we provide a complete linear defining system for the cycle polytope for Halin graphs. In addition, we give a short proof of Seymour's characterization of the cone

generated by the incidence vectors of cycles for an arbitrary graph.

Courant, Paul N.

TI How to Carve a Medical Degree: Human Capital Assets in Divorce Settlements. AU Borenstein, Severin; Courant, Paul N.

Cowell, Frank A.

PD November 1987. TI Unwillingness to Pay: Tax Evasion and Public Good Provision. AU Cowell, Frank A.; Gordon, James P. F. AA London School of Economics. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-142; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 21. PR No Charge. JE 321, 024. KW Tax Evasion. Public Good. Tax Enforcement.

AB We examine the effect of random tax enforcement in a simplified model of public goods supply. Individuals who might actually like an increase in the public good supply at the expense of their own private consumption will, nevertheless, want to opt out of paying their share of the required taxes: but if they evade some portion of their taxes they may be caught and penalised. The responsiveness of taxpayers to tax and enforcement parameters is shown to depend critically on the extent of provision of publicly supplied goods and the "publicness" of these goods in terms of their non-rivalness and non-excludability. In particular the model has interesting implications for the effects on the size of the black economy of the size of the public sector, the type of public good supplied, and the degree of conformity between taxpayers.

Cremer, H.

PD December 1987. TI Bequests, Filial Attention and Fertility. AU Cremer, H.; Pestieau, P. AA Cremer: Universite de Liege. Pestieau: CORE. SR Universite Catholique de Louvain CORE Discussion Paper: 8752; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. PG 16. PR No Charge. JE 841, 921, 026. KW Parents. Children. Family Size.

AB The purpose of this paper is to show within a simple setting how the demand for children may be affected by the type of parent-children interaction, ranging from conflict with threat to more harmonious settlement. We consider the case where parents offer bequests to their children in exchange for attention. The type of parent-children interaction is formalized by the solution concept that is used to determine the bequest-attention allocation for any given number of children. When choosing their number of children, parents anticipate the outcome of this exchange procedure and accordingly choose the family size that provides them the highest utility level. Three different assumptions about the nature of parent-children exchange are considered and their implications as for the demand for children compared. The first is a market equilibrium that could emerge if parents could buy attention and children could sell their caring capacity. In the second exchange setting we assume that the levels of bequest and attention are determined in a non-cooperative

sequential game between parents and children. The model is similar to the strategic bequest game considered by Bernheim, Schleifer and Summers (1984, 1985). We however add a first step in which parents choose their family size. The solution concept used is that of "perfect equilibrium". Third and last we consider the core of this exchange setting.

Cremer, Jacques

PD October 1987. TI Corporate Culture: Cognitive Aspects. AA Virginia Polytechnic Institute and State University. SR Virginia Polytechnic Institute and State University Working Paper in Economics: E87-10-02; Working Paper Coordinator, Department of Economics Sandy Hall, Blacksburg, VA 24061. PG 25. PR Free by request. JE 511, 026, 022. KW Organization Theory. Corporate Culture. Bounded Nationality. Common Knowledge.

AB In this paper, we propose a definition of corporate culture as "the stock of common knowledge common to the members of an organisation, but not to the general population from which they are drawn," and try to explain its efficiency inducing property. We do this in a team theoretical framework, where we neglect incentive considerations but focus on the problem of economizing on bounded rationality. This problem is studied in a set up where we stress non hierarchical communications within the organisation.

TI On the Existence of Bayesian and Non-Bayesian Revelation Mechanisms. AU dAspremont, Claude; Cremer, Jacques; Gerard, Varet Louis Andre.

Cukierman, Alex

TI The Policies of Ambiguity. AU Alesina, Alberto; Cukierman, Alex.

Daltung, Sonja

PD December 1987. TI Optimum Trade Policy Towards Imperfectly Competitive Industries: Two Norwegian Examples. AU Daltung, Sonja; Eskeland, Gunnar; Norman, Victor D. AA Norwegian School of Economics and Business Administration. SR Centre for Economic Policy Research Discussion Paper: 218; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 19. PR 1 pound (\$2) individuals; 1.50 pounds (\$3) companies, libraries, institutions. JE 422, 421, 411. KW Trade Policy. Protection. Imperfect Competition.

AB The paper studies the effects of trade and industrial policy towards two imperfectly competitive Norwegian industries - ski production and Caribbean cruise shipping. The former is an import-competing industry in which consumer prices and product selection are the key issues; the latter is a pure export industry in which the maximisation of Norwegian profits is the relevant objective. The paper sets up numerical models of the two industries and uses these to simulate the effects of policy intervention. In the ski market, it is shown that production subsidies to domestic firms will give a welfare gain, but the optimum subsidy is highly sensitive to cost and entry conditions; asymmetric information may produce perverse cost incentives. In the cruise industry, the policy question is whether or not to permit Norwegian

ships to use less expensive foreign crews. It is shown that the answer depends critically on the nature of foreign competition.

Dana, Rose Anne

PD 1987. TI Production Prices and General Equilibrium Prices: A Long Run Property of a Leontief Economy with an Unlimited Supply of Labor. AU Dana, Rose Ann; Florenzano, Monique; Le, Van Cuong; Levy, Dominique. AA CNRS-CEPREMAP.

SR CEPREMAP Discussion Paper: 8734; CEPREMAP, 142 rue du Chevaleret, 75013 Paris, FRANCE. PG 35. PR 20 FF. JE 021. KW Production Price. General Equilibrium. Perron-Frobenius Theorem. Hilbert Metric. Fixed-Point Theorem. Intertemporal Model.

AB In order to link intertemporal general equilibrium and the neo-Ricardian theory of prices of production, we consider an economy with an infinity of periods, a finite number of heterogeneous consumers and an equal number of commodities and producers. The producers have a set of simple production techniques with substitutable inputs and constant returns to scale, and the supply of labor is unlimited. Under standard assumptions, this intertemporal model has an equilibrium such that at each period the maximum profit rate is uniform (for every producer). The sequence of relative equilibrium prices converges to the vector of prices of production, if this exists. A sufficient condition of the irreducibility type in production is given for the existence of prices of production.

PD July 1987. TI Asymptotic Properties of a General Equilibrium Model with a Leontief Technology and an Unlimited Supply of Labour. AU Dana, Rose Anne; Levy, Dominique. AA Dana: Universite de Paris VI. Levy: CEPREMAP. SR CEPREMAP Discussion Paper: 8718; CEPREMAP, 142, rue du Chevaleret, 75013 Paris, FRANCE. PG 30. PR 20 FF. JE 021, 022. KW Intertemporal Equilibrium. Production Prices. Stationary Equilibria. Leontief Technology.

AB In this paper we link production prices and general equilibrium theories. We consider an economy over an infinite horizon with a stationary Leontief technology, and a finite number of consumers who discount the future. Supply of labor is assumed to be unlimited. Production prices are defined as strictly positive stationary prices such that profit rates are equal for all producers. Under specific assumptions we obtain the following results: i) Stationary equilibria exist, and production prices can be considered as prices of a stationary equilibrium. ii) There exist equilibria with uniform rates of profit for all producers. The corresponding prices and quantities converge towards those of a stationary equilibrium (turnpike property). The proof of convergence uses the linear structure of the model: we first establish the convergence of prices and then derive, by duality, the convergence of quantities.

PD August 1987. TI Optimal Growth and Pareto-Optimality. AU Dana, Rose Anne; Le, Van Cuong. AA Dana: Universite Paris VI. Le Van: CNRS - CEPREMAP. SR CEPREMAP Discussion Paper: 8723; CEPREMAP, 142 rue du Chevaleret, 75013 Paris, FRANCE. PG 31. PR 20 FF. JE 022, 213. KW McKenzie Model. Recursive Preferences. Pareto

Optimal. Value Function. Bellman's Equation. Euler's Equation. Dynamic Model.

AB The purpose of this paper is to show that in a stationary intertemporal economy where agents have recursive utilities every Pareto-optimum is solution of a generalized McKensie problem. An "abstract" state space is introduced as the space of couples of capital stock and utilities that can be reached by $n-1$ agents from that capital stock. "Generalized technological" conditions are then defined on that abstract space as well a recursive criterion on sequences of its elements. The criterion generalises the additively separable one. As Bellman's and Euler's equations still hold, many dynamic results known for the additively separable one agent case can be generalized.

Darby, Michael R.

PD February 1988. **TI** Qualitative Information, Reputation, and Monopolistic Competition. **AU** Darby, Michael R.; Lott, Jr John R. **AA** Darby: University of California, Los Angeles. Lott, Jr.: Rice University. **SR** Stanford Hoover Institute Working Paper in Economics: E-88-9; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 40. **PR** No Charge. **JE** 611, 022. **KW** Monopolistic Competition. Antitrust. Reputation. Market Structure.

AB Where qualitative characteristics are important, market structures utilising reputation arise to maximize the gains from trade net of total production and information costs. Chamberlin's branded-goods case is explained by a demand curve which is downward sloping only in the short-run in which a firm's reputation is fixed. Over time, firms invest or disinvest in reputation so as to achieve full equilibrium at the minimum point on the total average cost curve. At this equilibrium, the quantity produced may be greater or less than the quantity corresponding to the minimum point on the average production cost curve.

Darity, William Jr

PD June 1987. **TI** Theorems of International Trade Under Symmetric and Asymmetric Variable Returns to Scale. **AA** University of North Carolina Chapel Hill. **SR** University of North Carolina Working Paper Series: 87-10; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. **PG** 38. **PR** No Charge. **JE** 022. **KW** Economies of Scale. Factor Substitution. Trade. Competition.

AB In this paper economies and diseconomies of scale are treated as internal to the firms. This means that the neoclassical characterization of competitive equilibrium must be augmented or replaced by an alternative conception of equilibrium. The classical condition that posits equalization of rates of profit is the alternative equilibrium condition employed here. Under joint decreasing returns the combined assumptions of perfect competition and classical equilibrium lead to results no different from joint constant returns to scale with respect to the three standard trade theorems. When solely the classical equilibrium condition is applied with either joint decreasing returns, joint increasing returns, or asymmetric

variable returns to scale, the validity of the trade theorems depends on the prevalence of factor substitutability.

Dasgupta, Partha

PD August 1987. **TI** Potential Competition, Actual Competition, and Economic Welfare. **AU** Dasgupta, Partha; Stiglitz, Joseph E. **AA** Dasgupta: University of Cambridge. Stiglitz: Princeton University. **SR** Princeton University John M. Olin Program for the Study of Economic Organization and Public Policy: 8; Department of Economics/Woodrow Wilson School of Public and International Affairs Princeton University, Princeton, NJ. **PG** 16. **PR** No Charge. **JE** 612, 621. **KW** Technology. Anti-trust Policy. Technological Change.

AB Technological progress is central to modern industrial economies. Unfortunately, the theory of market equilibrium which has been at the center of traditional economic analysis is ill-suited for understanding modern industrial economies, for it assumes a fixed technology; accordingly, it is also ill-suited for the analysis of important policy issues, such as the appropriate role and form of anti-trust policy. This paper outlines a research program designed to enhance our understanding of the role that actual and potential competition play in economies in which technological change is important. It shows how potential and actual competition affects firms' research efforts and strategies, identifying conditions under which slight alterations in firms' research strategies enable it effectively to deter entry. The theory which is developed allows a reassessment not only of traditional neo-classical theory, but also of many of Schumpeter's conjectures concerning the nature of modern industrial economies.

dAspremont, Claude

PD October 1987. **TI** On the Existence of Bayesian and Non-Bayesian Revelation Mechanisms. **AU** dAspremont, Claude; Cremer, Jacques; Gerard, Varet Louis Andre. **AA** d'Aspremont: CORE. Cremer: Virginia Polytechnic Institute and State University. Gerard-Varet: Ecole des Hautes Etudes en Sciences Sociales. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8754; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. **PG** 25. **PR** No Charge. **JE** 026, 022. **KW** Collective Decisionmaking. Incomplete Information. Dominant Strategy. Bayesian Solution.

AB Starting from the characterizations of the "Bayesian" solution and of the "dominant strategy" solution to the problem of Pareto-efficient collective decision-making under incomplete information, we show, for two individuals having a finite number of types and quasi-linear utilities, how one can associate, to any example without dominant strategy solution, a class (forming an open set) of examples without Bayesian solution. However for any number of individuals, if they have only two types, a dominant strategy solution exists.

PD October 1987. **TI** A Note on Cooperative and Noncooperative R&D in Duopoly. **AU** dAspremont, Claude; Jacquemin, Alexis. **AA** CORE. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8742; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. **PG** 8.

PR No Charge. **JE** 621, 022, 024. **KW** Technology. R&D. Duopoly.

AB A two-stage duopoly where firms choose first R&D expenditures and then production levels is analyzed under various types of agreements. It is seen that, in terms of welfare, cooperative behavior can play a positive role when R&D activities generate spillover effects.

Dastoor, Naorayex K.

PD April 1988. **TI** The Theory and Practice of Point-Optimal Testing. **AU** Dastoor, Naorayex K.; Fisher, Gordon. **AA** Dastoor: University of Alberta. Fisher: Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 710; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 13. **PR** \$3.00 Canada; \$3.50 United States and Foreign. **JE** 211. **KW** Autocorrelation. Cox Principle. Hypothesis Testing. Linear Regression. Point-Optimal Testing. Specification Error.

AB It is argued that the general formulation of point-optimal tests, as summarized in King (1988), (i) makes use of a benchmark which is excessively stringent, (ii) fails to integrate the method with traditional methods of testing, (iii) involves using data to form a specific null hypothesis, (iv) offers no guidance as to proper procedures in the event the null is rejected, (v) eschews the use of Bayesian methods while demanding the use of prior information, and (vi) yields tests with unknown power in the presence of specification error. For these and other reasons, point-optimal testing cannot yet be wholeheartedly recommended as part of "the econometrician's repertoire".

Davies, Sally M.

PD April 1988. **TI** Dynamic Price Competition and the Theory of Contestable Markets. **AA** Board of Governors of the Federal Reserve System. **SR** Board of Governors of the Federal Reserve System Finance and Economics Discussion Series: 26; Division of Research and Statistics, Federal Reserve Board, Washington, D.C. 20551. **PG** 23. **PR** No Charge. **JE** 026, 022. **KW** Game Theory. Dynamic Game. Prices. Sunk Costs. Entry Deterrence.

AB This paper examines contestable markets theory in the context of a dynamic price game. Two identical firms engage in an infinitely-played, alternating-move game with discounting. Each firm is committed to its price for two periods. Strategies are restricted to be Markov perfect strategies. When there are no sunk costs, entry can only be deterred by charging the zero-profit price. However, the incumbent firm chooses not to deter entry, and profits are positive. When firms' costs are briefly sunk, the incumbent firm deters entry by charging the zero-profit price. This contestable equilibrium does not result if costs are more than briefly sunk.

Davis, Lance E.

PD December 1987. **TI** Productivity in American Whaling: The New Bedford Fleet in the Nineteenth Century. **AU** Davis, Lance E.; Gallman, Robert E.; Hutchins, Teresa. **AA** Davis: California Institute of Technology. Gallman, Hutchins: University of North Carolina at Chapel Hill. **SR** National Bureau of

Economic Research Working Paper: 2477; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 81. **PR** \$2.00. **JE** 042, 631. **KW** Productivity. Labor Quality. Hunting. Whale Industry.

AB From the end of the War of 1812 until the Civil War the New Bedford whaling fleet grew spectacularly; thereafter it declined, equally spectacularly. By the end of the century New Bedford's day was over. During the 88 years of this period, the technical configuration of the fleet, the hunting grounds visited, and the types of whales pursued all changed dramatically, and more than once. The literature on whaling suggests that the collapse of the industry was due, in part, to declining productivity, occasioned by the disappearance of the whales (because of over-hunting) and the deterioration of the quality of labor. The shifts in the composition of the fleet are viewed, chiefly, as the result of efforts by whalers to overcome their problems. In this paper, productivity data (superlative indexes), by voyage, are employed in multiple regression analysis to trace the relationships between the changes in the composition of the fleet and productivity. The propositions that declining labor quality and whale stocks had important consequences for productivity are subjected to test, while the impacts of technical changes on productivity are measured.

de Janvry, Alain

PD January 1988. **TI** Investment Strategies to Combat Rural Poverty: A Proposal for Latin America. **AU** de Janvry, Alain; Sadoulet, Elisabeth. **AA** Department of Agricultural and Resource Economics, University of California, Berkeley. **SR** University of California at Berkeley Department of Agricultural and Resource Economics (CUDARE) Working Paper: 459; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 43. **PR** \$8.60. **JE** 713, 712, 914, 121. **KW** Rural Poverty. Latin America. Exchange Rates. Employment. Economic Development. Debt Crisis. Agriculture.

AB The debt crisis that started in 1982 forced the Latin American countries to implement drastic stabilization policies and structural adjustment programs. The consequent depreciation of the real exchange rate has transformed agriculture into the relatively most dynamic sector of the economy. This creates the possibility of defining a forward looking rural development strategy that is consistent with this new role for agriculture and that has the potential of significantly lessening rural poverty. Starting from a social poverty map for the rural areas, we identify a five pronged approach that includes: (1) farm-oriented rural development projects for the upper subfamily and family farms; (2) household-oriented rural development projects for the lower subfamily farms; (3) access to additional assets for the landless and subfamily farmers through land reform and colonization; (4) employment creation and labor market rationalization; and (5) the promotion of backward, forward, and final demand linkages with agriculture located in the rural areas.

DeJong, Douglas V.

TI Selection Criteria in Coordination Games: Some

Experimental Results. AU Cooper, Russell; DeJong, Douglas V.; Forsythe, Robert; Ross, Thomas W.

Dekel, Eddie

PD October 1987. TI Rational Behavior with Payoff Uncertainty. AU Dekel, Eddie; Fudenberg, Drew. AA Dekel: University of California, Berkeley. Fudenberg: MIT. SR Massachusetts Institute of Technology Department of Economics Working Paper: 471; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. PG 27. PR No Charge. JE 028. KW Dominated Strategy. Nash Equilibrium. Rationality.

AB The iterated deletion of weakly dominated strategies has been advanced as a necessary requirement for 'rational' play. However, this requirement relies on the assumption that the players have no doubts about their opponents payoffs. We show that once such doubts are introduced, all that can be justified by an appeal to rationality is one round of deletion of weakly dominated strategies, followed by iterated deletion of those which are strongly dominated. This extends the Fudenberg, Kreps and Levine (1987) study of the robustness of Nash equilibrium refinements to the robustness of solution concepts based only on common knowledge of rationality. Our results also clarify the relationship between various notions of what it means for payoff uncertainty to be 'small'.

del, Greco John G.

TI Representation of Bicircular Matroids. AU Coullard, Collette; del, Greco John G.; Wagner, Donald K.

Deleau, Michel

PD July 1987. TI Le long terme des modeles macroeconomiques. AU Deleau, Michel; Le, Van Cuong; Malgrange, Pierre. AA Deleau: Banque Europeenne d'Investissement, Luxembourg. Le Van and Malgrange: CNRS - CEPREMAP. SR CEPREMAP Discussion Paper: 8729; CEPREMAP, 142 rue du Chevaleret, 75013 Paris, FRANCE. PG 33. PR 20 FF. JE 023, 213, 111. KW Macroeconomic Models. Steady State Paths. Structural Analysis. Long Run Equilibrium. Growth Paths.

AB This paper consists in a synthesis of several previous studies on the determination and the analysis of steady state growth paths implicit in a given macroeconomic model. It is especially shown that the frequent assertion that "Short Run is Keynesian and Long Run is Walrasian", is incorrect in the framework of Keynesian macroeconomic models, and that one should rather interpret their long run as a monopolistic competition equilibrium. (In French).

DeLong, Bradford J.

PD October 1987. TI Have Productivity Levels Converged? Productivity Growth, Convergence and Welfare in the Very Long Run. AA Boston University. SR National Bureau of Economic Research Working Paper: 2419; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 32. PR \$2.00. JE 226, 041, 620. KW Productivity. Technology. Public Good. Selection Bias.

AB Economists believe that because technology is a public good national productivity levels should "converge". William Baumol (1986) argues that the imprint of convergence can be seen over the past century if one focuses attention on relatively rich nations that had the social capability to take advantage of machine technology. Using Maddison's (1982) data, he finds that the productivity levels of sixteen such nations have converged since 1870. But convergence in Baumol's sample is guaranteed by construction. Maddison's (1982) study is by design of nations that have successfully developed and today have high incomes that have converged. Baumol's data are thus contaminated by sample selection bias and tell us little about whether those nations have converged that were seen a century ago as having the social capability for rapid industrialization. Considering an unbiased sample of nations that appeared ex ante likely to converge, and correcting econometrically for inevitable errors in independent variables dated 1870, reveals that rates of growth since 1870 are not strongly related to levels of 1870 income. The forces making for "convergence" have been counterbalanced by forces making for "divergence" even for those nations which should have converged most easily.

DePalma, Andre

TI Spatial Price Policies and Duopoly. AU Anderson, Simon P.; DePalma, Andre; Thisse, Jaques Francois.

Detemple, Jerome B.

PD October 1987. TI Further Results on Asset Pricing With Incomplete Information. AA Columbia University and Northwestern University. SR Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-87-23; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. PG 29. PR \$5.00 academics and non-profit institutions; \$6.00 corporations (add \$1.00 outside United States, Canada and Puerto Rico). JE 021, 521, 522. KW Incomplete Information. Gaussian Mixtures. Interest Rate. Volatility. Gaussian Model.

AB The problem of valuation under incomplete information is extended by relaxing some of the restrictive assumptions of the Gaussian model studied earlier in the literature. For the information structure considered, we show that the posterior beliefs of the investor (the conditional distribution of the current state given the past observations) are characterized by two sets of sufficient statistics implementable in the form of a filter, (i) the vector of conditional means and (ii) a set of sufficient statistics for the conditional variance-covariance matrix. A separation theorem is demonstrated and used to construct the interest rate process when the investor's utility function is logarithmic. The model is used to reconsider the informational efficiency properties of the interest rate and enables us to evidence informationally based shifts in the volatility of the interest rate process.

Dewatripont, Mathias

PD February 1988. TI The Impact of Price Rigidities: A Computable General Equilibrium Analysis. AU Dewatripont, Mathias; Robinson, Sherman. AA Dewatripont: Harvard University, Department of

Economics.

Robinson: University of California at Berkeley, Department of Agricultural and Resource Economics. SR University of California at Berkeley Department of Agricultural and Resource Economics (CUDARE) Working Paper: 375; 207 Giannini Hall, University of California, Berkeley, CA 94720. PG 44. PR \$8.80. JE 021, 023. KW CGE Model. Price Rigidities. Investments. Rigidities. Comparative Statics.

AB This paper uses a computable general equilibrium model of Turkey to explore the empirical effect on adjustment to various macroeconomic shocks of a variety of "structuralist" rigidities. Four types of rigidities are considered: exchange rate rigidity leading to premium rationing and rent seeking, wage rigidities leading to unemployment or labor scarcity, investment-savings imbalance leading to rationing of private consumption -- forced saving -- or to overall Keynesian unemployment, and sectoral price rigidity leading to consumption or supply rationing. In a series of comparative statics experiments, we explore the impact of, and interactions among, these different types of rigidities. In general, the results indicate that interaction effects are very important, especially between the macro closure rule, which specifies how investment-savings balance is achieved, and the other rigidities. Price rigidities are most damaging when a shock necessitates large relative price changes in a Walrasian world. Also, price rigidities are much more harmful when they lead to situations of excess supply rather than excess demand.

Diamond, Peter

PD October 1987. TI Rational Expectations Business Cycles in Search Equilibrium. AU Diamond, Peter; Fudenberg, Drew. AA Massachusetts Institute of Technology. SR Massachusetts Institute of Technology Department of Economics Working Paper: 465; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. PG 22. PR No Charge. JE 131, 022, 021. KW Steady State Equilibria. Traders. Agents. Externalities. Multiple Equilibria.

AB In a more positive light, we have shown how to construct rational expectations cycles on the basis of trading externalities and expectations. We do not think that actual cycles are triggered by widely perceived floors and ceilings that have no role other than expectation coordination. Nor do we believe that cycles are merely coordinated by the mathematically similar and somewhat more realistic sounding sunspots (e.g., leading indicators being good predictors because they are believed to be good predictors). Rather, we feel that these simple models which illustrate expectational feedbacks need to be combined with more complex models of the economy which incorporate additional interactions including multiplier and accelerator effects.

Dierker, Egbert

PD October 1987. TI Quantity Guided Price Setting. AU Dierker, Egbert; Neufeind, Wilhelm. AA Dierker: University of Vienna. Neufeind: Washington University in St. Louis. SR Universite Catholique-de Louvain CORE Discussion Paper: 8743; Universite Catholique de

Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. PG 14. PR No Charge. JE 024, 021, 022. KW Two Sector Model. Planning Agency. Equilibrium. Pricing Rules.

AB We consider an economy with two sectors. The first sector consists of competitively behaving consumers and producers; the second, non-competitive, sector, the P-sector, consists of firms (P-firms) producing commodities (P-goods) that are not produced in the competitive sector. The P-firms receive their gross output levels and the market prices of their inputs as decision parameters. They minimise costs and set prices for their outputs according to a specific pricing rule. There is also a planning agency that ensures that a certain net production (gross production minus the intra-consumption in the P-sector) of the P-goods is achieved. We give assumptions assuring the existence of equilibrium which requires market clearing, meeting the production aspirations of the planning agency, and setting prices for the P-goods which are compatible with market prices in the sense that the market prices cannot be higher than the prices to be charged by the P-firms, and if the target for a P-good is exceeded, the price charged by the P-firm equals the market price.

PD December 1987. TI Tax Systems and Direct Mechanisms in Large Finite Economies. AU Dierker, Egbert; Haller, Hans. AA Haller: Virginia Polytechnic Institute and State University. Dierker: University of Vienna. SR Virginia Polytechnic Institute and State University Working Paper in Economics: E-87-12-01; Working Paper Coordinator, Department of Economics Sandy Hall, Blacksburg, Virginia 24061. PG 30 + ii. PR Free by request. JE 022, 024, 025, 026. KW Incentives. Large Economies. Mechanisms. Tax Systems. Implementation.

AB The equivalence of anonymous direct mechanisms and tax systems for continuum economies, which has been demonstrated by Hammond and Guesnerie, is shown to have its counterparts in large finite economies.

PD January 1988. TI The Optimality of Boiteux-Ramsey Pricing. AA University of Vienna. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A 159; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 18. PR No Charge. JE 614, 613. KW Public Enterprise. Pricing. Boiteux-Ramsey Pricing. Second Best.

AB Consider an economy with one public enterprise that is subject to a budgetary constraint and charges prices according to the first order necessary conditions suggested by Boiteux (1956) or, in another context, by Ramsey (1927). We state (restrictive) conditions sufficient to ensure that the resulting allocation is second best.

Dominquez, Kathryn A.

PD February 1988. TI The Pricing of Foreign Exchange Risk in the Stock Market: A Test for International Economic Interdependence. AA Harvard University. SR Harvard John F. Kennedy School of Government Discussion Paper: 164D; John F. Kennedy School of Government, Harvard University, 79 John F. Kennedy Street, Cambridge, MA 02138. PG 42. PR No Charge. JE 431, 313, 421, 212.

KW Economic Interdependence. Exchange Rate. Arbitrage Pricing Theory. Risk. Asset Market.

AB This paper tests whether changes in economic conditions outside the United States are a source of significant non-diversifiable risk in United States asset markets. The tests use exchange rate changes as a measure of innovations in non-United States economic performance, examining their influence on asset pricing within a three-factor Arbitrage Pricing model. The model also includes the market portfolio and interest rate changes to control for intra-United States economic innovations. The results confirm that since 1980, exchange rate changes have been priced in the sense of the APT. Further, consistent with intuition, exchange rate risk has been higher for firms producing traded goods, and lower for firms producing nontraded goods. The results suggest that the risk/return structure in United States asset markets is determined in part by the relative performance of foreign economies.

Dooley, Michael

TI MULTIMOD: A Multi-Region Econometric Model.
AU Masson, Paul; Symansky, Steven; Haas, Richard; Dooley, Michael.

dOrey, Vasco

TI Dynamic Strategic Monetary Policies and Coordination in Interdependent Economies.
AU Turnovsky, Stephen J.; Basar, Tamer; dOrey, Vasco.

Dornbusch, Rudiger

PD December 1987. **TI** The Flexible Exchange Rate System: Experience and Alternatives. **AU** Dornbusch, Rudiger; Frankel, Jeffrey. **AA** Dornbusch: Massachusetts Institute of Technology. Frankel: University of California, Berkeley. **SR** National Bureau of Economic Research Working Paper: 2464; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 74. **PR** \$2.00. **JE** 431, 432, 321, 411, 023. **KW** Floating Exchange Rate. International Financial Market. Government Intervention. **AB** We review ten aspects of how floating exchange rates have worked in practice, contrasted with ten characteristics that the system was supposed to have in theory. We conclude that the foreign exchange market is characterized by high transactions-volume, short-term horizons, and an absence of stabilizing speculation. As a result, the exchange rate at times strays from the equilibrium level dictated by fundamentals, contrary to theory. We then look at ten proposed alternatives to the current system. Four entail decentralized policy rules: new classical macroeconomics, a gold standard, monetarism, and nominal income targetting. Four foresee enhanced international coordination: G-7 "objective indicators", Williamson target zones, McKinnon "world monetarism", and a "Hosomi Fund". Two propose enhanced independence: a "Tobin tax" on transactions, and a dual exchange rate. We conclude that one might build a case for intervention from the observed failure of international financial markets to behave as in the theoretical ideal, but that government intervention in practice is just as likely to fall short of the theoretical ideal.

PD February 1988. **TI** The Flexible Exchange Rate System: Experience and Alternatives. **AU** Dornbusch,

Rudiger; Frankel, Jeffrey. **AA** Dornbusch: MIT. Frankel: University of California at Berkeley. **SR** University of California at Berkeley Working Paper in Economics: 8868; IBER, 156 Barrows Hall, University of California Berkeley, CA 94720. **PG** 75. **PR** \$3.50. **JE** 432, 431. **KW** Speculation. Target Zones. International Monetary Reform. Exchange Rates.

AB We review ten aspects of how floating exchange rates have worked in practice, contrasted with ten characteristics that the system was supposed to have in theory. We conclude that the foreign exchange market is characterized by high transactions-volume, short-term horizons, and an absence of stabilizing speculation. As a result, the exchange rate at times strays from the equilibrium level dictated by fundamentals, contrary to theory. We then look at ten proposed alternatives to the current system. Four entail decentralized policy rules: new classical macroeconomics, a gold standard, monetarism, and nominal income targetting. Four foresee enhanced international coordination: G-7 "objective indicators", Williamson target zones, McKinnon "world monetarism", and a "Hosomi Fund". Two propose enhanced independence: a "Tobin tax" on transactions, and a dual exchange rate. We conclude that one might build a case for intervention from the observed failure of international financial markets to behave as in the theoretical ideal, but that government intervention in practice is just as likely to fall short of the theoretical ideal.

Dubey, Pradeep

TI A Note on an Optimal Garnishing Rule.
AU Shubik, Martin; Dubey, Pradeep.

Dujancourt, M.

PD July 1987. **TI** Functional Averages and Statistical Inference. **AU** Dujancourt, M.; Gourieroux, Christian. **AA** Dujancourt: Universite Lille I. Gourieroux: CEPREMAP. **SR** CEPREMAP Discussion Paper: 8724; CEPREMAP, 142 rue du Chevaleret, 75013 Paris, FRANCE. **PG** 33. **PR** 20 FF. **JE** 211. **KW** Test of Homogeneity. Asymptotic Theory. Heterogeneity. Hypothesis Testing.

AB We are interested in some abstract justifications of functional averages deduced from the link between the empirical approach and the methods of statistical inference. We first consider a statistical model with heterogeneity and we focus on the null hypothesis, pointing out the importance of functional averages for this problem. Then we discuss the estimation of the parameter under the null using averages and we see that the resulting estimators are all asymptotically equivalent under the null hypothesis. This equivalence of estimators is used for proposing different equivalent tests of the homogeneity hypothesis. In the particular case of exponential families, it is possible to derive more precise results. We show that some particular averages are associated to these families both for the estimation problem and for the test of homogeneity.

Dula, Jose H.

PD July 1987. **TI** An Upper Bound on the Expectation of Sublinear Functions of Multivariate Random Variables. **AA** CORE. **SR** Universite

Catholique de Louvain CORE Discussion Paper: 8739; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. PG 23. PR No Charge. JE 213. KW Independence Assumption. Bound. Sublinear Functions.

AB We introduce an upper bound on the expectation of a special class of sublinear functions of multivariate random variables defined over the entire Euclidean space without an independence assumption. The bound can be evaluated easily requiring only the solution of systems of linear equations thus permitting implementations on high-dimensional space. Only knowledge on the underlying distribution means and second moments is necessary. We discuss pertinent techniques on dominating general sublinear functions by using simpler sublinear and polyhedral functions and second order quadratic functions.

TI Bounding the Expectation of Convex Functions with Limited Distribution Information. AU Birge, John R.; Dula, Jose H.

Dumenil, Gerard

PD 1987. **TI** The Trends of the Economic Rate of Return in the U.S. Manufacturing Since the Depression. AU Dumenil, Gerard; Levy, Dominique. AA CNRS-CEPREMAP. SR CEPREMAP Discussion Paper: 8732; CEPREMAP, 142 rue du Chevaleret, 75013 Paris, FRANCE. PG 24. PR 20 FF. JE 221, 131, 631. KW Rate of Return. United States of America. Profit. Depreciation. Capital.

AB The purpose of this study is to determine whether the objections made by Fisher and McGowan to the traditional accounting measure of the rate of profit, applies to the downward trend in profitability which has been observed in United States Manufacturing since the Mid-sixties. An estimate of the economic rate of return on investment is provided, and compared with an estimate of the economic rate of return on the stock of capital with economic depreciation in the sense suggested by Hotelling. These two rates display a similar downward trend. Moreover, it can be shown that the movement of the economic rate of return on the stock of capital with economic depreciation is very close to that of the accounting rate of return with linear depreciation.

PD May 1987. **TI** La concurrence classique a la croisee des chemins. AU Dumenil, Gerard; Levy, Dominique. AA Dumenil: OFCE. Levy: CEPREMAP. SR CEPREMAP Discussion Paper: 8716; CEPREMAP, 142, rue du Chevaleret, 75013 Paris, FRANCE. PG 42. PR 20 FF. JE 022, 021, 023. KW Competition. Disequilibrium. Recession. Stagnation.

AB This study contrasts two fundamental paradigms in the analysis of the classics (Smith, Ricardo and Marx): The analysis of competition and of the formation of production prices, the analysis of crises. A model of the behavior of economic agents is defined, which we call "disequilibrium microeconomics", in which agents make their decisions in disequilibrium, on the basis of their observation of disequilibria. These mechanisms can lead the economy to long-term equilibrium, overheating, stagnation, or depression. Profitability is presented as the main determinant of the stability of the system. (In French).

PD May 1987. **TI** The Stability of Long-Term Equilibrium in a General Disequilibrium Model. AU Dumenil, Gerard; Levy, Dominique. AA Dumenil: OFCE. Levy: CEPREMAP. SR CEPREMAP Discussion Paper: 8717; CEPREMAP, 142, rue du Chevaleret, 75013 Paris, FRANCE. PG 46. PR 20 FF. JE 022, 021. KW Competition. Disequilibrium. Dynamic Model. Adjustment Process.

AB A dynamic model of competition is built, in which the behavior of the economic agents is based on a procedure of adjustment -- a framework which we call "disequilibrium microeconomics". Decisions are made in disequilibrium on the basis of the observation of disequilibrium: prices and levels of activity respond to deviations of inventories, capital is moved according to profitability differentials. In this framework, for any number of enterprises and capitalists, a proof of local stability of long-term equilibrium with prices of production is given (under certain conditions).

PD October 1987. **TI** Desequilibres stationnaires: exces ou defaut de flexibilite? AU Dumenil, Gerard; Levy, Dominique. AA Dumenil: OFCE. Levy: CEPREMAP. SR CEPREMAP Discussion Paper: 8728; CEPREMAP, 142 rue du Chevaleret, 75013 Paris, FRANCE. PG 30. PR 20 FF. JE 023, 022, 021. KW Disequilibrium. Dynamic. Stagnation. Nonlinear Model.

AB The purpose of this study is to present an original explanation of stationary disequilibria -- the term we have given to macroeconomic situations of Keynesian stagnating growth or situations of overheating. We show that the origin of stationary disequilibria can not be found in the excessive rigidity of economic variables, nor in the erroneous character of expectations. In order to study these phenomena, a nonlinear macroeconomic model is built, in which money is explicitly considered -- external or internal money. The behavior of agents (decisions to produce, determination of prices, issuance of money) are based on principles of adjustment, and not on optimization procedures. They react to various signals of disequilibrium. The contradictory effects of these signals can account for the existence of stationary disequilibria in a very satisfactory way. (In French).

Dunaway, Steven V.

PD March 1988. **TI** A Model of the U.S. Current Account. AA The International Monetary Fund. SR International Monetary Fund Working Paper: WP/88/27; International Monetary Fund, Washington D.C. 20431. PG 30. PR No Charge. JE 431. KW Current Account. Exchange Rates.

AB This paper presents an econometric model of United States current account transactions. The model is used to analyze the factors behind the deterioration in the United States external position during the 1980s and to examine the sensitivity of the United States current account balance to changes in factors which are its major determinants. The results suggest that the appreciation of the United States dollar and relatively faster economic growth in the United States account for most of the rise in the United States external deficit. The results also indicate that the depreciation of the dollar since March 1985 has contributed to a substantial improvement in the United

States current account balance relative to what it otherwise might have been.

Eaton, Jonathan

PD January 1988. TI Monopoly Wealth and International Debt. AA Stanford University. SR National Bureau of Economic Research Working Paper: 2485; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 38. PR \$2.00. JE 442, 411, 431. KW Rents. Government Policy. Wealth. Current Account. Monopoly. AB When rents generated by government policies are perceived as permanent, the rights to earn them may be capitalized as assets that form a component of nonhuman wealth. The existence of such assets raises international indebtedness, while shifts in policy that increase or reduce the importance of such rents can generate movements in the current account that are correlated with the real exchange rate. Because the elimination of policies that generate rents imposes a capital loss that is born entirely by generations currently alive, while the benefit of the removal of a distortion is shared between those alive and unborn generations, a possibility is that such a reform can reduce the expected lifetime welfare of everyone alive. If monopoly exists in the provision of nontraded goods then there may be several steady states that can be Pareto ranked.

PD February 1988. TI Monopoly Wealth and International Debt. AA University of Virginia, Hoover Institution. SR Stanford Hoover Institute Working Papers in Economics: E-88-6; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 51. PR No Charge. JE 441, 411, 321. KW Rent Capitalization. Monopoly Wealth. Real Exchange Rate. Debt. Rents. Government Policy. Monopoly.

AB When rents generated by government policies are perceived as permanent, the rights to earn them may be capitalized as assets that form a component of nonhuman wealth. The existence of such assets raises international indebtedness, while shifts in policy that increase or reduce the importance of such rents can generate movements in the current account that are correlated with the real exchange rate. Because the elimination of policies that generate rents imposes a capital loss that is born entirely by generations currently alive, while the benefit of the removal of a distortion is shared between those alive and unborn generations, a possibility is that such a reform can reduce the expected lifetime welfare of everyone alive. If monopoly exists in the provision of nontraded goods then there may be several steady states that can be Pareto ranked.

Ebert, Udo

PD October 1987. TI Normative Konzepte der Einkommensbesteuerung. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-126; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 17. PR No Charge. JE 321, 323. KW Income Tax. Optimality. Efficiency. Distribution.

Edwards, Sebastian

PD February 1988. TI Structural Adjustment Policies in Highly Indebted Countries. AA University of California, Los Angeles. SR National Bureau of Economic Research Working Paper: 2502; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 79. PR \$2.00. JE 431, 411, 123. KW Debt Crisis. Debtor Countries. Debtor Nations. Trade Reforms.

AB This paper deals with structural adjustment in the highly indebted countries. The origins of the debt crisis are first analyzed. Then the nature of the adjustment followed by the debt ridden countries between 1982-1987 is discussed. It is noted that for most nations the adjustment has been highly recessive. Next, the potential role of trade reforms in securing the resumption of sustained growth is analyzed.

Eichengreen, Barry

PD December 1987. TI Unemployment in Interwar Britain: Dole or Doldrums? AA University of California, Berkeley. SR Centre for Economic Policy Research Discussion Paper: 207; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 37. PR 1 pound (\$2) individuals; 1.50 pounds (\$3) companies, libraries, institutions. JE 824, 813, 822. KW Wages. Interwar Unemployment. Unemployment Benefits.

AB Several controversial recent studies seek to explain Britain's high interwar unemployment rate as a consequence of the generosity of her unemployment insurance system. All of these studies are based on macroeconomic time-series data. In contrast, this paper employs a microeconomic cross-section, a sub-sample of some 2,400 adult males drawn from the New Survey of London Life and Labour, conducted between 1928 and 1931. I use this data to analyse the relationship between unemployment benefits and unemployment status. I find a generally positive association between the incidence of unemployment and the estimated benefit/wage ratio, but this relationship is significant only in the case of secondary workers. Survey data suggest that insurance benefits made only a small contribution to interwar unemployment.

PD February 1988. TI How The Bondholders Fared: Realized Rates of Return on Foreign Dollar Bonds Floated in the 1920s. AU Eichengreen, Barry; Werley, Carolyn. AA University of California, Department of Economics. SR University of California at Berkeley Working Paper in Economics: 8869; IBER, 156 Barrows Hall University of California Berkeley, CA 94720. PG 43. PR \$3.50. JE 441, 044. KW Debt. Default. Germany. Bonds.

AB This paper has reported new estimates of realized rates of return on foreign dollar bonds issued in the 1920s, following and extending the procedures of Eichengreen and Portes (1986). Our results differ by virtue of a larger sample, our incorporation of buybacks at discounted market prices, and our greater success in tracing the fortunes of German corporations which failed or were reorganized as a result of World War II.

Einy, Ezra

PD October 1987. TI Regular Simple Games. AU Einy, Ezra; Lehrer, Ehud. AA Einy: CORE.

Lehrer: Northwestern University. SR Universite Catholique de Louvain CORE Discussion Paper: 8748; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. PG 10. PR No Charge. JE 026. KW Regular Game. Coalition.

AB Using Kelley's intersection number (and a variant of it) we define two classes of simple games, the regular and the strongly regular games. We show that the strongly regular games are those in which the set of winning coalitions and the set of losing coalitions can be strictly separated by a finitely additive probability measure. This, in particular, provides a combinatorial characterization for the class of finite weighted majority games within the simple games. We also prove that regular games have some nice properties and show that the finite regular games are exactly those simple games which are uniquely determined by their counting vector. This, in particular, generalizes a result of Chow and Lapidot.

Else, Mitchell Rae

PD November 1987. TI Achieving Financial Accountability in a Federal System. AU Else, Mitchell Rae; Robson, Kenneth J. AA Else-Mitchell: Chairman, Commonwealth Grants Commission, Canberra. Robson: Auditor-General, New South Wales. SR Australian National University Centre for Federal Financial Relations Occasional Paper: 43; Australian National University, GPO Box 4, Canberra City, ACT 2601. PG 15. PR No Charge. JE 324, 325, 221. KW Federal Finance. Intergovernmental Transfers. Conditional Grants. Government Accounting.

AB When two levels of government are involved in some fiscal operation whether one on the taxing side and the other on the spending, or one on the taxing and both on the spending side (as arguably is the case with specific purpose payments) - there is an issue as to which level of government is properly to be seen as taking responsibility for that operation or how the responsibility should be apportioned. In the narrower sense of purely financial accounting, there are also problems specific to a federal system. Both papers here argue that such problems are particularly severe in the case of specific purpose grants, and tend to argue against the use of such grants for this reason. Some might question whether the replacement of specific purpose with general revenue grants on these grounds alone might well be a case of the tail wagging the dog - but the point remains that accounting difficulties are a relevant consideration in designing appropriate forms of intergovernmental interaction and must be weighed.

Epstein, Larry G.

TI A Unifying Approach to Axiomatic Non-Expected Utility Theories. AU Chew, S. H.; Epstein, Larry G.

PD August 1987. TI Substitution, Risk Aversion and the Temporal Behaviour of Consumption and Asset Returns I: A Theoretical Framework. AU Epstein, Larry G.; Zin, Stanley E. AA Epstein: Department of Economics, University of Toronto. Zin: Department of Economics, Queen's University. SR University of Toronto Institute for Policy Analysis Working Paper: 8715; Department of Economics, University of Toronto, Toronto, Ontario, CANADA M5S 1A1. PG 54.

PR Gratis - as long as in stock. JE 023, 022, 313. KW Intertemporal Substitution. Risk Aversion. Asset Pricing. Representative Agent Model.

AB This paper investigates infinite horizon intertemporal utility functions which generalize the standard additive expected utility specification. Two classes of generalizations are considered -- the first builds upon Kreps and Porteus (1978, 1979), while the second is a further generalization which embeds the non-expected utility theory of Dekel (1986) into a multiperiod framework. Each type of generalization has the appealing feature that it permits intertemporal substitution and risk aversion to be disentangled. Moreover, in the context of a representative agent model, each specification implies testable restrictions on the temporal behaviour of consumption and asset returns.

PD August 1987. TI Risk Aversion and Asset Prices. AA Department of Economics, University of Toronto. SR University of Toronto Institute for Policy Analysis Working Paper: 8716; Department of Economics, University of Toronto, Toronto, Ontario, CANADA M5S 1A1. PG 23. PR Gratis - as long as in stock. JE 023, 313. KW Risk Aversion. Equilibrium Pricing. Intertemporal Substitution. Asset Prices.

AB This paper investigates equilibrium asset prices in a Lucas-type exchange model where preferences of the representative agent are represented by a Kreps-Porteus utility functional, rather than by an expected utility functional. Such a utility specification permits the disentangling of two critical aspects of preferences - risk aversion and intertemporal substitutability. Thus a clearer understanding of the determinants of asset prices is provided.

PD October 1987. TI Substitution, Risk Aversion and the Temporal Behavior of Consumption and Asset Returns II: An Empirical Analysis. AU Epstein, Larry G.; Zin, Stanley E. AA Epstein: Department of Economics, University of Toronto. Zin: Department of Economics, Queen's University. SR University of Toronto Institute for Policy Analysis Working Paper: 8718; Department of Economics, University of Toronto, Toronto, Ontario, CANADA M5S 1A1. PG 45. PR Gratis - as long as in stock. JE 023, 022, 212. KW Intertemporal Substitution. Risk Aversion. Asset Returns. Expected Utility Hypothesis.

AB This paper investigates the testable restrictions on the time-series behavior of consumption and asset returns implied by the consumption/portfolio choice problem of an infinitely-lived, representative agent. Intertemporal preferences are characterized by utility functions that generalize conventional, time-additive, expected utility. These generalizations of expected utility, detailed in the precursor to this paper (Epstein and Zin (1987)), allow for a clear separation of observable behaviour attributable to risk aversion and to intertemporal substitution, and also provide simple nested-tests of the expected utility hypothesis. Using monthly New York Stock Exchange returns data and consumption measured with either per capita expenditures on nondurables or nondurables and services, the expected utility model is rejected. The over-identifying restrictions implied by the non-expected utility models are tested and do not, in general, lead to rejections of the theory.

Ermisch, John

PD April 1988. TI Purchased Child Care, Optimal Family Size and Mothers Employment: Theory and Econometric Analysis. AA National Institute of Economic and Social Research. SR Centre for Economic Policy Research Discussion Paper: 238; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 33. PR 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. JE 841, 921. KW Fertility. Labor Supply. Children. Working Women.

AB The paper develops a model of family size decisions in which couples choose explicitly a combination of mother's time and purchased child care (e.g. childminders, nannies) for the care and rearing of children. The theoretical model implies that the impact of the mother's wage on her completed fertility varies with the market price of child care, and that this effect increases (becoming less negative or more positive) with the level of her wage. Econometric analysis of British micro-data confirms the main predictions of the model.

PD April 1988. TI Women's Wages in Full and Part-Time Jobs in Great Britain. AU Ermisch, John; Wright, Robert E. AA Ermisch: National Institute of Economic and Social Research. Wright: University of London. SR Centre for Economic Policy Research Discussion Paper: 234; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 24. PR 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. JE 824, 851, 921. KW Wages. Women. Labor Supply. Selection Bias. Gender Differences. Part-Time Work.

AB An analysis of hourly pay that allows for the choice of whether to work full-time, part-time or not at all (using the 1980 Women in Employment Survey) finds significant sample selection bias for women in full-time jobs. Part of the observed differential between the hourly pay of full-timers and part-timers arises because of self-selection of women who can command higher pay into full-time employment. A significant part also arises because work experience and education are found to be remunerated at a lower rate in part-time than in full-time employment. Thus, the larger proportion of women than men in part-time jobs contributes to women's lower pay separately from gender differences in human capital attributes.

Eskeland, Gunnar

TI Optimum Trade Policy Towards Imperfectly Competitive Industries: Two Norwegian Examples. AU Daltung, Sonja; Eskeland, Gunnar; Norman, Victor D.

Evans, Owen

TI Tax Policy and Business Investment in the United States: Evidence from the 1980s. AU Corker, Robert; Evans, Owen; Kenward, Lloyd.

Faigle, Ulrich

PD July 1987. TI The Clique Polytope of a Graph. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87474-OR; Sonderforschungsbereich 303 an der Universitat Bonn,

Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 9. PR No Charge. JE 213. KW Polytopes. Non-trivial Cliques.

AB The polytope P generated by the edge incidence vectors of all non-trivial cliques of a complete graph is investigated. In particular, the dimensions of the subpolytopes defined by the cliques of a given size are computed. Several classes of facet defining inequalities for P are derived and it is shown that P has diameter one. Whence the Hirsch conjecture is seen to hold for P.

PD October 1987. TI Cores of Games with Restricted Cooperation. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87478-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 16. PR No Charge. JE 026. KW Games. Core. Convex Functions. Cooperative Games.

AB Games with restricted cooperation are cooperative N-person games with sidepayments, where the collection of feasible coalitions need not comprise all subsets of players and thus is restricted. We study balanced and completely balanced games in this context and derive the corresponding core theorems from a sandwich theorem for set functions within the setting of linear programming. In particular, we discuss general convex games, which Edmonds and Giles '1977 have shown to be of particular importance also in combinatorial optimization.

PD December 1987. TI Simulated Annealing, Eine Fallstudie. AU Faigle, Ulrich; Schrader, Rainer. AA Faigle: University of Twente. Schrader: University of Bayreuth. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 86430-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 16. PR No Charge. JE 213. KW Discrete Optimization. Heuristic Algorithm. Simulated Annealing. Neighborhood Structure. Monte Carlo.

AB Several implementations of simulated annealing algorithms for the graph partitioning problem are discussed and are applied to test problems for which optimal solutions are known. The results suggest that the performance of a specific implementation depends at least as much on the neighborhood structure chosen as on the choice of the temperature parameter. In view of the strong dependence on the particular implementation selected, there appears to be reason to doubt that the method has the potential to yield an automated tool which is independent of the intuition of its user and is superior to good deterministic heuristic algorithms with comparable computing time.

Fair, Ray C.

PD January 1988. TI VAR Models as Structural Approximations. AA Yale University. SR National Bureau of Economic Research Working Paper: 2495; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 15. PR \$2.00. JE 212, 211. KW Deterministic Simulation. Monte Carlo.

AB This paper presents a way of estimating how accurate VAR models are likely to be for answering

structural questions. Data are generated from a dynamic deterministic solution of a structural model; a VAR model is estimated using a subset of these data; and the properties of the VAR model are compared to the properties of the structural model. This procedure has the advantage of eliminating the effects of error terms, since the data are generated from a deterministic simulation. The results show that the VAR models do not seem to be good structural approximations.

PD February 1988. **TI** The Informational Content of Ex Ante Forecasts. **AU** Fair, Ray C.; Shiller, Robert J. **AA** Yale University. **SR** National Bureau of Economic Research Working Paper: 2503; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 16. **PR** \$2.00. **JE** 132. **KW** VAR. Structural Model. Information Content. Forecast. Forecast Error.

AB The informational content of different forecasts can be compared by regressing the actual change in a variable to be forecasted on forecasts of the change. We use the procedure in Fair and Shiller (1987) to examine the informational content of three sets of ex ante forecasts: the American Statistical Association and National Bureau of Economic Research Survey (ASA), Data Resources Incorporated (DRI), and Wharton Economic Forecasting Associates (WEFA). We compare these forecasts to each other and to "quasi ex ante" forecasts generated from a vector autoregressive model, an autoregressive components model, and a large-scale structural model (the Fair model).

Farber, Henry S.

PD August 1987. **TI** The Evolution of Public Sector Bargaining Laws. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 459; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 41. **PR** No Charge. **JE** 822, 833, 832. **KW** Collective Bargaining. Public Employee. Causality.

AB In 1955 only a few states had laws governing collective bargaining by public employees. By 1984 only a few states were without such laws. The emergence of these policies coincides with a dramatic increase in unionization among public employees, and an important puzzle is the direction of causality between the laws and public employee unionisation. A key piece of the solution is understanding the evolution of the public policy in this area, and this is the focus of the analysis in this study.

TI Returns to Seniority in Union and Nonunion Jobs: A New Look at the Evidence. **AU** Abraham, Katherine G.; Farber, Henry S.

Fare, Rolf

TI The Effect of Unions on Productivity: U.S. Surface Mining of Coal. **AU** Byrnes, Patricia; Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K.

PD April 1987. **TI** The Economics of Content Protection: A Dual Approach. **AU** Fare, Rolf; Logan, James; Lovell, C. A. K. **AA** Fare: Southern Illinois University. Logan: Public Service Commission of Utah. Lovell: University of North Carolina Chapel Hill. **SR** University of North Carolina Working Paper Series:

87-7; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. **PG** 26. **PR** No Charge. **JE** 422, 323, 411. **KW** Tariffs. International Trade. Domestic Industries.

AB Recent theoretical analyses of the various domestic effects of domestic content protection, including Grossman (1981) and Mussa (1984), use a primal approach to modelling, and perhaps as a consequence, overlook important differences between the effects of content protection defined in terms of quantities and content protection defined in terms of values. In this paper we use a dual approach to identify these differences, which arise because in the value case, but not the quantity case, constraint parameters enter the objective function. This complicates the optimization analysis far more than previous investigators have recognized, and at the same time generates a richer set of implications.

PD April 1987. **TI** Scale Elasticity and Scale Efficiency. **AU** Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K. **AA** Fare and Grosskopf: Southern Illinois University. Lovell: University of North Carolina, Chapel Hill. **SR** University of North Carolina Working Paper Series: 87-5; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. **PG** 18. **PR** No Charge. **JE** 022, 226. **KW** Economies of Scale. Duality Theory. Scale Efficiency. Cost Elasticity.

AB The axiomatic approach to the measurement of economics of scale in production uses the structure of the production possibilities set to derive an ordinal measure of scale efficiency. The neoclassical approach uses the dual cost function to provide a cardinal measure of the cost elasticity. In this paper, we exploit duality theory and use the distance/efficiency functions of Shephard and Farrell to relate the two measures of scale economics.

PD April 1987. **TI** Some Observations on the New DEA. **AU** Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K. **AA** Fare and Grosskopf: Southern Illinois University. Lovell: University of North Carolina, Chapel Hill. **SR** University of North Carolina Working Paper Series: 87-4; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. **PG** 13. **PR** No Charge. **JE** 222, 213. **KW** Data Envelopment Analysis. Production Frontier. Productive Efficiency.

AB Nearly a decade ago Charnes, Cooper and Rhodes (1978) introduced a nonstochastic, nonparametric approach to the construction of production frontiers and the measurement of productive efficiency, which they called Data Envelopment Analysis, or DEA for short. In a recent issue of this Journal, Charnes, Cooper, Golany, Seiford and Stutz (1985), introduced what they call a new DEA, developed apparently to remedy two deficiencies of the original DEA. The purpose of this paper is to show that (i) one of the deficiencies remains in their formulation of the new DEA, (ii) the deficiency cannot be rectified in a completely satisfactory manner, and (iii) in any event the modified new DEA is just a two-step version of a long-available alternative approach to the measurement of productive efficiency.

PD April 1987. **TI** Multilateral Productivity Comparisons When Some Outputs are Undesirable: A

Nonparametric Approach. AU Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K.; Pasurka, Carl. AA Fare, Grosskopf: Southern Illinois University. Lovell: University of North Carolina, Chapel Hill. Pasurka: Loyola University. SR University of North Carolina Working Paper Series: 87-3; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. PG 25. PR No Charge. JE 222, 226, 213. KW Efficiency. Performance Measures. Productivity. Nonparametric Programming.

AB Multilateral performance (productivity, output, input) comparisons of firms producing multiple outputs, some of which are undesirable, can be achieved by making two modifications to the standard Farrell approach to efficiency measurement. First, the restriction that production technology satisfy strong disposability of outputs must be relaxed to allow for the fact that undesirable outputs may not be freely disposable. Second, the Farrell measures must be modified to allow for an asymmetric treatment of desirable and undesirable outputs. Performance measures that satisfy these requirements belong to the set of hyperbolic efficiency measures. They are calculated as solutions to programming problems which have as constraints a nonparametric piecewise linear technology satisfying only weak disposability of outputs. This methodology is contrasted to the conventional superlative index number approach for making performance comparisons. It is then applied to a sample of mills producing paper and pollutants, and the calculated performance measures depend critically on how the asymmetry between paper and pollutants is modelled.

Farrell, Joseph

PD August 1987. TI Optimal Contracts with Lock-In. AU Farrell, Joseph; Shapiro, Carl. AA Farrell: U.C. Berkeley. Shapiro: Princeton University. SR Princeton Woodrow Wilson School Discussion Paper in Economics: 130; Woodrow Wilson School, Princeton University, Princeton, NJ 08544. PG 37. PR No Charge. JE 024, 022, 025. KW Switching Costs. Lock-in. Relationships. Contracts. Opportunism. Quality.

AB We analyze long-term bilateral contracts when buyers incur relationship-specific set-up costs and sellers choose some aspect of product or service quality that is not verifiable to third parties. If set-up costs are observable, the first-best outcome can be achieved even though contracts cannot enforceably specify quality; this does not even require long-term contracts. If set-up costs are unobservable, however, then long-term price contracts can strictly outperform short-term contracts, although they are not constrained Pareto efficient. Equilibrium may involve either inefficiently low quality with no buyer switching, or efficient quality with inefficient switching. A policy of taxing switching, or the availability of "budget-breaking" third parties, can improve welfare.

PD January 1988. TI Cheap Talk Can Matter in Bargaining. AU Farrell, Joseph; Gibbons, Robert. AA Farrell: Department of Economics, University of California at Berkeley. Gibbons: Department of Economics, Massachusetts Institute of Technology. SR University of California at Berkeley Working Paper in Economics: 8863; IBER, 156 Barrows Hall University

of California Berkeley, CA 94720. PG 27. PR \$3.50. JE 026. KW Cheap Talk. Signaling. Bargaining. Negotiation.

AB This paper describes an intuitive way in which cheap talk can matter in a two-stage bargaining game in which talk may be followed by serious negotiation. The intuition that all buyers would claim to have low reservation prices is incorrect in our model. Instead, the paper emphasizes that if good-faith participation is endogenously determined, then the parties can use talk to trade off bargaining position against the probability of continued negotiation. Our cheap-talk equilibrium features bargaining behavior that could not be equilibrium behavior in the absence of talk.

PD January 1988. TI Coordination Through Committees and Markets. AU Farrell, Joseph; Saloner, Garth. AA Farrell: Department of Economics, University of California at Berkeley. Saloner: Department of Economics and Sloan School of Management, Massachusetts Institute of Technology. SR University of California at Berkeley Working Paper in Economics: 8864; IBER, 156 Barrows Hall University of California Berkeley, CA 94720. PG 37. PR \$3.50. JE 611, 511, 026. KW Compatibility. Standardization. Coordination. Cheap Talk. Communication Committee.

AB We discuss three common mechanisms for achieving coordination, with particular reference to the choice of compatibility standards. The first involves explicit communication and negotiation before irrevocable choices are made: it represents what standardization committees do. The second mechanism, by contrast, involves no explicit communication, and depends on unilateral irrevocable choices: it succeeds if one agent chooses first and the other(s) follow. This is a simple version of "market leadership." We analyze these two mechanisms in a simple model, and show that the committee is more likely to achieve coordination. Moreover, although it is slower, it outperforms the market mechanism, even when we allow for the value of speed. Third, we examine a hybrid of the first two mechanisms, in which both talk and unilateral preemptive actions are allowed. We show that, far from marring its performance, unilateral actions improve upon the committee system. This hybrid system more closely resembles the committee system the more important coordination is, relative to conflict.

PD January 1988. TI Dynamic Competition with Switching Costs. AU Farrell, Joseph; Shapiro, Carl. AA Department of Economics University of California at Berkeley. SR University of California at Berkeley Working Paper in Economics: 8865; IBER, 156 Barrows Hall University of California Berkeley, CA 94720. PG 27. PR \$3.50. JE 611, 612, 023. KW Switching Costs. Dynamic Competition. Lock-In. Long-Term Relationships. Overlapping Generations. Duopoly.

AB We analyze an overlapping-generations model of duopolistic competition in the presence of consumer switching costs. Competition for established buyers is continually intermingled with competition for new, uncommitted buyers. In equilibrium, the firm with attached customers typically specializes in serving them and concedes the new buyers to its rival. This pattern of repeated entry persists even when there are economies of

scale or network externalities. Switching costs thus can cause inefficiency in a surprising way: far from forming an entry barrier, they encourage entry to serve new customers even when such entry is inefficient.

Feenstra, Robert

TI Quality Upgrading and its Welfare Costs in United States Steel Imports, 1969-74. **AU** Boorstein, Randi; Feenstra, Robert C.

PD December 1987. **TI** Symmetric Pass-Through of Tariffs and Exchange Rates Under Imperfect Competition: An Empirical Test. **AA** University of California, Davis. **SR** National Bureau of Economic Research Working Paper: 2453; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 32. **PR** \$2.00. **JE** 422, 431, 631, 121. **KW** Tariff. Exchange Rate. Japan. Auto Industry. Pass-Through. Automobiles.

AB This paper examines the effect of tariffs and exchange rates on United States prices of Japanese cars, trucks and motorcycles. In particular, we test whether the long run pass-through of tariffs and exchange rates are identical: the symmetry hypothesis. We find that this hypothesis is easily accepted in our sample. We also find that the pass-through relation varies across products, ranging from about 0.6 for trucks to unity for motorcycles. These coefficients have very different implications for trade policy. We explain the results based on demand, cost and institutional conditions in each industry. We also find weak evidence that the pass-through of exchange rates has fallen in more recent years.

Feinstein, Jonathan

PD December 1987. **TI** The Dynamics of Housing Demand by the Elderly: Wealth, Cash Flow and Demographic Effects. **AU** Feinstein, Jonathan; McFadden, Daniel. **AA** MIT. **SR** National Bureau of Economic Research Working Paper: 2471; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 45. **PR** \$2.00. **JE** 932, 918, 920, 212. **KW** Housing. Elderly. Aged. Mobility. Liquidity Constraints. Households.

AB Using Waves one through fifteen of the PSID data set, we investigate the pattern of housing mobility amongst the elderly. We focus especially on two issues: (1) Determining which household characteristics tend to increase the probability of a move; and (2) Whether elderly households systematically move to smaller, less expensive dwellings when they do move, and, if so, which characteristics make such "downsizing" particularly likely. We find that wealthier households are less likely to move and to downsize, and that changes in family composition or retirement status significantly increase the likelihood of a move. We do not find much evidence of imperfections in the housing market, or of pervasive liquidity constraints. Finally, we develop a Lagrange Multiplier test for unobserved heterogeneity amongst elderly households, and strongly reject the null hypothesis of homogeneity.

Fershtman, Chaim

PD January 1988. **TI** Cooperation through Delegation. **AU** Fershtman, Chaim; Judd, Kenneth L.; Kalai, Ehud. **AA** Fershtman: Department of Economics,

Tel-Aviv University. Kalai and Judd: Department of Managerial Economics and Decision Sciences J.L. Kellogg Graduate School of Management, Northwestern University. **SR** Tel-Aviv Foerder Institute for Economic Research Working Paper: 5-88; Department of Economics, Tel-Aviv University, Ramat Aviv 69978, Tel-Aviv, ISRAEL. **PG** 18. **PR** No Charge. **JE** 026, 611. **KW** Delegation. Cooperation. Folk Theorem. Noncooperative Game.

AB Most economics and political games are played by agents of the real players. This paper analyzes the outcomes of general noncooperative games in which the players can strategically use agents to play on their behalf. It is shown that when players in a noncooperative game delegate strategy choices to their agents every Pareto optimal outcome of the game becomes a Nash equilibrium of the delegation game. A folk theorem using delegation game is presented. The result casts serious doubt about the properness of many models applying game theory to the analysis of economic activity.

PD January 1988. **TI** The Strategic Aspects of Privatization of Oligopolistic Firms. **AA** Department of Economics, Tel-Aviv University. **SR** Tel-Aviv Foerder Institute for Economic Research Working Paper: 3-88; Department of Economics, Tel-Aviv University, Ramat Aviv 69978, Tel-Aviv, ISRAEL. **PG** 27. **PR** No Charge. **JE** 022, 611, 614, 612. **KW** Privatization. Public Enterprise. Oligopoly. Market Structure. Natural Monopoly.

AB One of the common justifications for privatization policy is the assertion that private firms are more efficient and thus potentially more profitable. Our main claim in this paper is that the analysis of privatization policy cannot be complete without a specific attention to the market structure in which the firm operates. We deviate from the standard assumption that a firm is either private or nationalized and discuss the possibility of partial privatization. We examine a duopolistic market and demonstrate that a partly nationalized firm might realize higher profits than its private, profit maximizing, competitor. Moreover this result may hold even if we assume that there is some degree of cost inefficiency associated with nationalization. The degree of nationalization affects also the interaction between an incumbent firm and a potential entrant. Using Dixit (1980) framework we discuss the implications of privatization on the attractiveness of entry, the possibility to deter entry and the incumbent position as a natural monopoly. We show that it is possible that a firm is not a natural monopoly while being private but altering its ownership structure so it becomes partly nationalized can transform the firm to a natural monopoly.

PD January 1988. **TI** Turnpike Properties in a Finite Horizon Differential Game; Dynamic Duopoly With Sticky Prices. **AU** Fershtman, Chaim; Kamien, Morton I. **AA** Fershtman: Department of Economics, Tel-Aviv University. Kamien: Department of Managerial Economics and Decision Sciences, J.L. Kellogg Graduate School of Management, North Western University. **SR** Tel-Aviv Foerder Institute for Economic Research Working Paper: 4-88; Department of Economics, Tel-Aviv University, Ramat Aviv 69978, Tel-Aviv, ISRAEL. **PG** 22. **PR** No Charge. **JE** 026, 022, 611.

KW Feedback Nash Equilibrium. Differential Games. Dynamic Duopoly. Turnpike Properties.

AB The main purpose of this paper is a complete analysis of the feedback Nash equilibrium of a finite horizon linear quadratic differential game and the relationship between the finite horizon equilibrium and the infinite horizon equilibrium. We use a previous model (Fershtman & Kamien (1987) in which we studied an infinite horizon model of dynamic duopolistic competition under the assumption of price stickiness to investigate the relationship between the finite and infinite horizon game.

Field, Alfred J.

TI Customs Unions with a Continuum of Goods. **AU** Appleyard, Dennis R.; Conway, Patrick; Field, Alfred J.

Fischer, Stanley

PD June 1987. **TI** Monetary Policy and Performance in the U.S., Japan and Europe, 1973-86. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 462; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 53. **PR** No Charge. **JE** 311, 134, 133, 226. **KW** Oil Shocks. Monetary Targeting. Policy. Exchange Rate System. Output Growth.

AB I start with an overview of macroeconomic developments in the four countries in the period 1972 to 1986, from the collapse of the Bretton Woods system, through the two oil shocks and into the disinflationary eighties. Economic policy decisions in the four countries during the two oil shocks are examined more closely in Section II. In Section III I describe the different monetary targeting and, briefly, short-run operating procedures of policy in the four countries. The paper concludes with a discussion of the lessons of this period for monetary targeting and policy, the role of the credibility of policymakers, and the flexible exchange rate system.

PD December 1987. **TI** Monetary Policy and Performance in the U.S., Japan and Europe, 1973-86. **AA** The World Bank. **SR** National Bureau of Economic Research Working Paper: 2475; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 53. **PR** \$2.00. **JE** 311, 122. **KW** Money Targeting. Commitment. Monetary Policy. United States. Japan Germany.

AB Monetary policies in the United States, Japan, Germany and the United Kingdom over the period 1973-1986 are compared and evaluated, with the aim of drawing lessons for monetary policy from the recent historical record. All four countries shifted during this period to money targeting, though with differing degrees of commitment, seriousness and persistence. The Bundesbank and the Bank of Japan each focus on one money target, described by the Bundesbank as a target, and by the Bank of Japan as a projection. None of the countries has stuck rigorously to the targets, though the Bank of Japan has come close.

PD December 1987. **TI** Recent Developments in Macroeconomics. **AA** The World Bank. **SR** National

Bureau of Economic Research Working Paper: 2473; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 88. **PR** \$2.00. **JE** 023, 031, 131. **KW** Fluctuations. Macroeconomics. Unemployment. Business Cycle. Keynesian.

AB This paper surveys much of modern macroeconomics. The focus is on the core macroeconomic issue, of the reasons for macroeconomic fluctuations and sometimes persistent unemployment. To provide continuity and perspective on how promising research leads of the past turned out, the paper starts by summarizing developments since the Barro-Fischer (1976) survey of monetary economics. Sections III and IV develop in some detail the current representations of the two basic approaches to macroeconomics: the equilibrium business cycle approach and new Keynesianism respectively. Brief sketches of developments in several areas of research in Section V broaden the coverage. Section VI contains concluding comments.

Fishelson, G.

PD December 1987. **TI** Upward and Downward Transition Probabilities, U.S. Manufacturing Industries 1954-1982. **AA** Department of Economics, Tel Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 34-87; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 12. **PR** No Charge. **JE** 611, 212, 631. **KW** Manufacturing. FIML.

AB The study contains an empirical investigation of the upward and downward movements of manufacturing firms that at some year within the 1954-82 period reached the top 50. The study presents the estimators of the transition probabilities of moving over four size classes. The probabilities were estimated using the FIML procedure. Given these estimators one can calculate the length of time it would take a firm that is currently at class size j to reach the top 50 given that at some point in time it would eventually be at the top.

Fisher, Gordon

TI The Theory and Practice of Point-Optimal Testing. **AU** Dastoor, Naorayex K.; Fisher, Gordon.

Florenzano, Monique

PD 1987. **TI** Equilibrium in a Production Economy on an Infinite Dimensional Commodity Space, A Unifying Approach. **AA** CNRS - CEPREMAP. **SR** CEPREMAP Discussion Paper: 8740; CEPREMAP, 142, rue du Chevaleret, 75013 Paris, FRANCE. **PG** 32. **PR** 20 F. **JE** 213, 021. **KW** Locally Convex Spaces. Equilibrium. Quasi-Equilibrium. Non-ordered Preferences. Uniform Properness Condition.

AB This paper proves again and extends some existence results achieved as well from an interiority assumption in the case where the commodity space is a Hausdorff locally convex topological vector space as from uniform properness conditions in the case of a locally convex-solid topological vector lattice commodity space. Both are deduced from a unique theorem. This theorem does not make any transitivity, monotonicity or free-disposal assumption. The technical assumption made on the commodity space is

satisfied by most of the examples encountered in the literature.

TI Production Prices and General Equilibrium Prices: A Long Run Property of a Leontief Economy with an Unlimited Supply of Labor. **AU** Dana, Rose Ann; Florensano, Monique; Le, Van Cuong; Levy, Dominique.

PD 1987. **TI** On the Non-Emptiness of the Core of a Coalitional Production Economy Without Ordered Preferences. **AA** CNRS-CEPREMAP.

SR CEPREMAP Discussion Paper: 8733; CEPREMAP, 142 rue du Chevaleret, 75013 Paris, FRANCE. **PG** 10. **PR** 20 **FF**. **JE** 022, 024, 026. **KW** Coalitional Production Economy. Non-Ordered Preference. Balanced Economy. Core. Fixed-Point Theorem.

AB Sufficient conditions are given for a coalitional production economy to have a non-empty core. Preferences may not be transitive or complete and satisfy a weak continuity property. The result is stated for an economy with an infinite dimensional commodity space. It is applied to the coalitional production economy associated with a private ownership economy.

Fogel, Robert W.

PD December 1987. **TI** Some Notes on the Scientific Methods of Simon Kuznets. **AA** University of Chicago. **SR** National Bureau of Economic Research Working Paper: 2461; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 39. **PR** \$2.00. **JE** 036. **KW** Methodology. Scientific Methods. Kuznets.

AB This paper discusses the scientific methods that guided the economic research of Simon Kuznets, with particular stress on his approach to measurement and theory. The paper closes with the transcription of a brief autobiographical talk by Kuznets at a dinner in honor of his eightieth birthday.

Foot, David K.

TI The Two Economies of the Hudson's Bay Company. **AU** Rotstein, Abraham; Foot, David K.

Forges, Françoise

PD 1987. **TI** Can Sunspots Replace a Mediator? **AA** CORE. **SR** Université Catholique de Louvain CORE Discussion Paper: 8745; Université Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. **PG** 24. **PR** No Charge. **JE** 022. **KW** Principal-Agent. Informed Agent. Mediation. Signals.

AB To gather information from n informed agents, a principal can rely on a mediator. Does there exist a direct communication scheme yielding the same equilibrium payoffs? Yes, as soon as extraneous signals ("sunspots") can be observed before the beginning of the game.

Forsythe, Robert

TI Selection Criteria in Coordination Games: Some Experimental Results. **AU** Cooper, Russell; DeJong, Douglas V.; Forsythe, Robert; Ross, Thomas W.

PD January 1988. **TI** An Experimental Analysis of Bargaining and Strikes with One-sided Private

Information. **AU** Forsythe, Robert; Kennan, John; Sopher, Barry. **AA** Forsythe: University of Iowa. Kennan: University of Iowa, Hoover Institution. Sopher: Rutgers University. **SR** Stanford Hoover Institute Working Paper in Economics: E-88-2; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PR** No Charge. **JE** 215, 026, 832. **KW** Bargaining. Private Information. Experimental Economics.

AB The paper describes an experiment involving a set of pie-splitting games between two players. The pie is a sum of money, P_i , which takes the values P_i 'sub g (good) with probability p and P_i 'sub b (bad) with probability $(1-p)$. One bargainer knows the realized value of P_i while the other is uninformed. The bargainers are in separate rooms, and negotiate by sending nonbinding handwritten messages back and forth, and also by making binding proposals as to how much money the uninformed player is to receive. If agreement is not reached within 10 minutes, then neither bargainer gets anything. If the uninformed bargainer had the right to make non-negotiable demands, then he would demand P_i 'sub g ("play tough") if pP_i 'sub g > P_i 'sub b, and otherwise demand P_i 'sub b ("play soft"). We refer to this as the strike condition: if it holds the bargainers will fail to agree whenever the bad pie is drawn. In our experiment, however, no one had the right to make non-negotiable demands. The main prediction is that strikes will occur when the strike condition is on, and then only when the bad pie is drawn. Beyond this, Myerson's Neutral Bargaining Solution is used to predict the value of the game for the uninformed and informed players.

Fourgeaud, Claude

PD 1987. **TI** Short Term and Long Term in Duration Data Models. **AU** Fourgeaud, Claude; Gourieroux, Christian; Pradel, Jeanine. **AA** Fourgeaud and Gourieroux: CEPREMAP. Pradel: Paris IX University. **SR** CEPREMAP Discussion Paper: 8737; CEPREMAP, 142, rue du Chevaleret, 75013 Paris, FRANCE. **PG** 17. **PR** 20 **FF**. **JE** 212, 211, 824. **KW** Identifiability. Two-Index Model. Duration Data Model. Employment.

AB We present a model concerning the evolution of the employed and unemployed people in an homogeneous population of workers. The model can be defined by a parameter which describes the long term equilibrium and by another parameter which can be interpreted as an adjustment coefficient. We discuss the maximum likelihood estimators of the parameters from individual data which are observed in two waves. Some lack of identifiability appear when the period of time between the waves converges to zero or to infinity. We study a two-index model (individuals and time) and obtain non-classical asymptotic behavior of the estimators.

PD 1987. **TI** Heterogeneity and Hazard Dominance in Duration Data Models. **AU** Fourgeaud, Claude; Gourieroux, Christian; Pradel, Jeanine. **AA** Fourgeaud and Gourieroux: CEPREMAP. Pradel: Paris IX University. **SR** CEPREMAP Discussion Paper: 8736; CEPREMAP, 142, rue du Chevaleret, 75013 Paris, FRANCE. **PG** 34. **PR** 20 **FF**. **JE** 211. **KW** Heterogeneity. Mover-Stayer Phenomenon. Stochastic Dominance. Aggregation.

AB We present some properties concerning heterogeneity using as illustrations duration data models. We first study the links between aggregate and disaggregate concepts. This allows us to give some precise definitions of the heterogeneity biases and of the mover-stayer phenomenon. We also introduce some natural orderings on the distributions of duration variables and on the heterogeneity distributions and we examine the effect on the aggregate duration variable of a "greater heterogeneity".

Frankel, Jeffrey

TI The Flexible Exchange Rate System: Experience and Alternatives. **AU** Dornbusch, Rudiger; Frankel, Jeffrey.

PD December 1987. **TI** Political vs. Currency Premia in International Real Interest Differentials: A Study of Forward Rates for 24 Countries. **AU** Frankel, Jeffrey A.; MacArthur, Alan T. **AA** University of California Berkeley. **SR** University of California at Berkeley Working Paper in Economics: 8762; **IBER**, 156 Borrows Hall, University of California at Berkeley, Berkeley 94720. **PG** 48. **PR** No Charge. **JE** 441, 431, 411. **KW** Covered Interest Parity. Forward Exchange Rates. Capital Mobility. Risk Premium. Interest Rate.

AB Different approaches to quantifying the degree of capital mobility for a cross-section of currencies -- particularly saving-investment correlations and tests of real interest parity -- have appeared to show a surprisingly low degree of financial market integration. We use a new data set, forward rate data for 24 countries, including many small industrialized countries and 7 LCDs, to decompose the real interest differential into two parts: the covered interest differential, or political premium, and the real forward discount, or currency premium. The latter in turn can be decomposed into the exchange risk premium and expected real depreciation. We find a high degree of capital mobility across political boundaries for most of the G-11 countries, plus Hong Kong and Singapore, for our sample period of 1982 to 1987. Even for most of the other LDCs and smaller industrialized countries, for which covered interest parity clearly fails, the political premium is not as big a component of the real interest differential as the currency premium.

PD January 1988. **TI** Recent Estimates of Time-Variation in the Conditional Variance and in the Exchange Risk Premium. **AA** UC Berkeley. **SR** University of California at Berkeley Working Paper in Economics: 8866; **IBER**, 156 Barrows Hall, University of California Berkeley, CA 94720. **PG** 25. **PR** \$3.50. **JE** 431, 441, 313. **KW** Exchange Risk Premium. Conditional Variance. **ARCH**. Options. Portfolio.

AB The optimal-diversification model of investors' portfolio behavior can give a linear relationship between the exchange risk premium and the conditional exchange rate variance. This note surveys recent empirical work that allows for the conditional variance itself, and therefore the risk premium, to vary over time. In particular, it examines the implications of recent empirical estimates for earlier arguments, based on the assumption that the conditional variance was constant over time, that the exchange risk premium had to be small in magnitude and variability.

TI The Flexible Exchange Rate System: Experience and Alternatives. **AU** Dornbusch, Rudiger; Frankel, Jeffrey.

Franks, Julian

TI Means of Payment in Takeovers: Results for the U.K. and U.S. **AU** Harris, Robert S.; Franks, Julian; Mayer, Colin.

Fremling, Gertrud M.

PD March 1988. **TI** Why Short-Lagged Relationships are More Easily Identified. **AU** Fremling, Gertrud M.; Lott, Jr John R. **AA** Fremling: University of Houston. Lott: Rice University and Hoover Institution. **SR** Stanford Hoover Institute Working Paper in Economics: E-88-19; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 23. **PR** No Charge. **JE** 511, 022. **KW** Rational Expectations. Learning. Information Costs.

AB Our paper examines the role of the lag length between cause and effect in individual learning of causal relationships. Assuming a finite memory and memory loss, there is a bias towards learning relationships that have short lags. Since certain relationships are better known than others, it is possible that this "systematic ignorance" can be exploited by policy makers.

Friedman, James W.

PD February 1987. **TI** On the Strategic Importance of Prices versus Quantities. **AA** University of North Carolina, Chapel Hill. **SR** University of North Carolina Working Paper Series: 86-4; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. **PG** 36. **PR** No Charge. **JE** 022, 026. **KW** Oligopoly Theory. Differentiated Products. Decision Theory. Price. Output.

AB Whether price or output is the correct decision variable is an old question, going back to the beginnings of oligopoly theory. The historic treatment of this question in the literature is briefly reviewed in Section 1. Section 2 contains the analysis of the three static models. In brief, the results on strategic primacy are: (1) with simultaneous choice there is no pure strategy equilibrium at which all firms have positive prices and outputs, (2) with quantity choice first, equilibrium sometimes exists and, when it exists, is the same as would obtain in a quantity choice model where prices were automatically determined by the market, and (3) with price choice first, equilibrium exists and is the same as would obtain in a price choice model where outputs were automatically determined by the market. In Section 3, the relevance of the results for infinite horizon models is briefly discussed.

PD April 1987. **TI** Prices and Quantities in an Infinite Horizon Oligopoly. **AA** University of North Carolina, Chapel Hill. **SR** University of North Carolina Working Paper Series: 87-9; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. **PG** 26. **PR** No Charge. **JE** 026, 022. **KW** Super Game. Multiperiod. Trigger Strategy. Oligopoly.

AB The purpose of this paper is to extend the one-shot model of Friedman (1986b) to a multiperiod framework. In the earlier paper, an n-firm oligopoly is examined in

which the firms make both price and output decisions. Three variants of the model are presented that have different decision processes. In the first, the firms simultaneously select output and price. In the second, they select output levels, which become publicly known, and then they select prices. The third version mirrors the second with the timing of price and output choice reversed.

PD February 1988. **TI** A Modified Folk Theorem for Time-Dependent Supergames. **AA** University of North Carolina Chapel Hill. **SR** University of North Carolina Working Paper Series: 87-1; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. **PG** 35. **PR** No Charge. **JE** 026. **KW** Folk Theorem. Cooperative Games. Repeated Game. Supergames.

AB The purpose of the present paper is to extend results on folk theorems, particularly the work due to Abreu (1983) and Fudenberg and Maskin (1986), to time-dependent supergames. Two particular features of the model are that discounting is assumed and mixed strategies are not considered. The former is because discounting seems to me natural for human beings who are taking actions over time. The latter is because the applications that I envision are ones in which mixed strategies do not seem appropriate.

Froyen, Richard T.

TI Price Level Determinacy and Nominal Interest Rate Pegging. **AU** Benavie, Arthur; Froyen, Richard T.

Fudenberg, Drew

PD March 1987. **TI** Reputation in the Simultaneous Play of Multiple Opponents. **AU** Fudenberg, Drew; Kreps, David M. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 466; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 47. **PR** No Charge. **JE** 026. **KW** Sequential Play. Incumbent. Entrants.

AB Imagine that one player, the "incumbent," competes with several "entrants." Each entrant competes only with the incumbent, but observes play in all contests. Previous work shows that, as more and more entrants are added, the incumbent's reputation may dominate play of the game, if the entrants are faced in sequence. We identify conditions under which similar results obtain when the entrants are faced simultaneously, and we find specifications in which adding more simultaneous entrants has a dramatically different effect. We also show that, with either sequential or simultaneous play, incumbents need not prefer the situation in which their reputations can and do dominate play to the "informationally isolated" case in which each entrant observes only play in its own contest.

PD June 1987. **TI** Short-Term contracts and Long-Term Agency Relationships. **AU** Fudenberg, Drew; Holmstrom, Bengt; Milgrom, Paul. **AA** Fudenberg: Massachusetts Institute of Technology. Holmstrom: Yale University. Milgrom: Stanford University. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 466; Department of

Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 39. **PR** No Charge. **JE** 821, 833, 813, 022. **KW** Employment Contracts. Principal-Agent.

AB Long-term employment contracts are valuable only if the optimal contract requires commitment to a plan today that would not otherwise be adopted tomorrow. We show that such commitments are unnecessary, and hence short-term contracts are sufficient, if at any time of potential recontracting or job change, (1) the preferences (over future contracts) of the employer and the employee are common knowledge; (2) the utility possibility frontier generated by the set of incentive-efficient contracts is downward sloping; and (3) the employee has access to a bank for borrowing and saving. The three conditions are satisfied in our model of the work of laborers and salesmen, where effort today affects only today's product. For this case, incentives are improved neither by commitment to long-term contracts nor by long-term job attachments, and such short-term schemes as commissions and piece rates work well. Condition 1 is not satisfied in our model of executive compensation, because executives have superior information at the dates of contract renewal about likely future outcomes. Then, optimal compensation schemes for executives serve in each period to reward past as well as current performance and optimal assignment policies may attach executives to the same job over an extended period of time.

PD July 1987. **TI** Reputation and Equilibrium Selection in Games with a Patient Player. **AU** Fudenberg, Drew; Levine, David. **AA** Fudenberg: Massachusetts Institute of Technology. Levine: University of California at Los Angeles. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 461; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 32. **PR** No Charge. **JE** 026. **KW** Incumbent. Multiple Opponents. Stage Game. Repeated Game.

AB Our work builds on that of several previous authors, most directly that of Kreps-Wilson '1982, Milgrom-Roberts '1982, and Fudenberg-Kreps '1987 on reputation effects in the chain-store paradox. These papers considered a long-lived incumbent facing a succession of short-lived entrants, and showed that if there was a small chance that the incumbent was "tough," it could deter entry by maintaining a reputation for toughness. Our result improves on theirs in several ways, all of which stem from the fact that our results apply to all of the Nash equilibria of the repeated game. First, our results are robust to further small changes in the information structure of the game. The earlier arguments depend on the restriction to sequential equilibria, which as Fudenberg-Kreps-Levine '1987 have argued, is not robust to such changes. Second, our proof is much simpler, and provides a clearer understanding of the reputation-effects phenomenon. Third, because our proof is simpler, we are able to study a broader class of games.

PD August 1987. **TI** On the Dispensability of Public Randomization in Discounted Repeated Games. **AU** Fudenberg, Drew; Maskin, Eric. **AA** Fudenberg: Massachusetts Institute of Technology. Maskin: Harvard University. **SR** Massachusetts Institute of Technology

Department of Economics Working Paper: 467; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. PG 12. PR No Charge. JE 026. KW Folk Theorem. Games. Subgame Perfect.

AB The Folk Theorem for repeated games asserts that any feasible, individually rational payoffs for a one-shot game can arise as Nash equilibrium average payoffs when the game is infinitely repeated. In our '1986 paper, which extends this result to subgame perfect equilibrium and discounting, we assumed that the players can condition their play on the realization of a publicly observed random variable. We asserted, however, that abandoning the assumption would lead to only a slight weakening of the results; viz., any feasible, individually rational payoffs can be approximated by a perfect equilibrium where there is sufficiently little discounting. This note shows that, in fact, our extension of the Folk Theorem holds in a strong sense even without public randomization: all feasible individually rational payoffs can be exactly attained in equilibrium.

TI Rational Expectations Business Cycles in Search Equilibrium. **AU** Diamond, Peter; Fudenberg, Drew.

TI Rational Behavior with Payoff Uncertainty. **AU** Dekel, Eddie; Fudenberg, Drew.

Fuhrer, Jeffrey C.

PD April 1988. **TI** Learning About Monetary Regime Shifts in an Overlapping Wage Contract Model. **AU** Fuhrer, Jeffrey C.; Hooker, Mark A. **AA** Fuhrer: Board of Governors of the Federal Reserve System. Hooker: Stanford University. **SR** Board of Governors of the Federal Reserve System Finance and Economics Discussion Series: 25; Division of Research and Statistics, Federal Reserve Board, Washington, D.C. 20551. **PG** 19. **PR** No Charge. **JE** 821, 023, 133, 212. **KW** Simulations. Learning. Wage Contract. Rational Expectations.

AB This paper uses stochastic simulations to explore the nature of learning and its effects on an overlapping wage contract economy. The model used is a variant of the Taylor (1980) model which includes a reaction function for the monetary authority. The contracting agents in the economy do not know the true parameters of the reaction function, although they know the rest of the model structure and parameters. They update their estimate of the reaction function parameters with each observation and re-solve the model using rational expectations. We perform pseudo-Monte Carlo simulations of this model, allowing for different classes of regime shifts and different learning mechanisms, and observe the speed of convergence of learning and its effect on real and nominal variables for finite samples in the model.

Fujita, M.

PD August 1987. **TI** A Spatial Competition Approach to Central Place Theory: Some Basic Principles. **AU** Fujita, M.; Ogawa, H.; Thisse, J. F. **AA** Fujita: University of Pennsylvania. Ogawa: Gifu Technological College. Thisse: CORE. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8751; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348

Louvain-la-Nueve BELGIUM. **PG** 24. **PR** No Charge. **JE** 022. **KW** Location Equilibrium. Complements. Exhaustive Principle. Spatial Competition.

AB This paper investigates the potential offered by the model of spatial competition for the study of central place theory. We consider n firms selling m substitutable or complementary goods to a continuum of consumers evenly distributed along a linear segment. Consumers have the same income and the same utility function which is quadratic in the goods supplied by the firms and linear in the numeraire. The main results are as follows. (1) In any location equilibrium in which all goods are consumed everywhere, each good supplied by a single firm is sold at the market center. In Christaller's terminology, this means that when the exhaustive principle holds in equilibrium, highest-order goods are made available at the center. (2) When all goods (excluding the numeraire) are complements to each other and each good is sold by a single firm, there always exists an equilibrium in which all the firms locate coincidentally. (3) If the stores selling a given good are under the control of a single owner then, in any equilibrium for which the exhaustive principle holds, the stores are located in a way such that the total transport cost (borne by consumers) is minimized.

Fullerton, Don

PD December 1987. **TI** The Taxation of Income From Capital in the United States, 1980-1986. **AU** Fullerton, Don; Karayannis, Marios. **AA** University of Virginia. **SR** National Bureau of Economic Research Working Paper: 2478; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 47. **PR** \$2.00. **JE** 323. **KW** Tax Policy. Tax Rates. Tax Reform Act.

AB Tax rules have changed almost yearly in the United States since 1980. In particular, the Economic Recovery Tax Act of 1981 reduced marginal tax rates and shortened depreciation lifetimes, while the Tax Reform Act of 1986 reduced marginal tax rates, repealed the investment tax credit, and lengthened depreciation lifetimes. This paper estimates marginal effective tax rates on income from capital under each year's tax law, using the methodology of King and Fullerton (1984) to maintain comparability with earlier calculations for the United States and current calculations for other countries. The 1981 law substantially reduced effective tax rates, while subsequent changes raised them back again. A primary effect of the 1986 law was to make diverse effective tax rates more uniform.

Furstenberg, Reinhard

TI Does the SDR System Generate Permanent Resource Transfers? **AU** Coats, Warren; Furstenberg, Reinhard; Isard, Peter.

Fuss, Melvyn

PD June 1987. **TI** The Demand for Alcoholic Beverages in Canada: An Application of the Almost Ideal Demand System. **AU** Fuss, Melvyn; Waverman, Leonard. **AA** Department of Economics, University of Toronto. **SR** University of Toronto Institute for Policy Analysis Working Paper: 8714; Department of Economics, University of Toronto, Toronto, Ontario, CANADA M5S

1A1. PG 64. PR Gratis - as long as in stock. JE 921, 212. KW Alcohol. Almost Ideal Demand System. Demand Elasticities. Aggregation.

AB In this study we estimate demand elasticities for the alcoholic beverages - spirits, beer and wine, based on a systems estimation approach which incorporates the characteristics of classical demand theory. A pooled time series - cross section Canadian provincial data set is utilized. Differences in individual consumers' tastes toward alcohol are incorporated into a model estimated from aggregate provincial data by utilizing the Almost Ideal Demand System and its consistent aggregation conditions. When aggregation is taken seriously the error terms in AIDS are heteroskedastic, and a variant of the White procedure is developed to provide consistent estimates of the variance-covariance matrix of the parameter estimates. Dynamic adjustment is introduced at the total alcohol stage and it is shown that aggregating individual "habit persisting" consumers changes the specification of the estimating equation from what it would be if the aggregation issue is ignored. Spirits and wine are estimated to be approximately equally price-elastic and more price elastic than beer. Spirits appear to be more income-elastic than wine or beer.

Gallman, Robert E.

TI Productivity in American Whaling: The New Bedford Fleet in the Nineteenth Century. AU Davis, Lance E.; Gallman, Robert E.; Hutchins, Teresa.

Gamble, A. B.

PD October 1987. TI Forest Covers and a Polyhedral Intersection Theorem. AU Gamble, A. B.; Pulleyblank, W. R. AA University of Waterloo. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87467-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 11. PR No Charge. JE 213. KW Forest Cover. Convex Hull. Polyhedron. Polytope.

AB A forest cover of a graph is a spanning forest for which each component has at least two nodes. We consider the convex hull of incidence vectors of forest covers in a graph and show that this polyhedron is the intersection of the forest polytope and the cover polytope. This polytope has both the spanning tree and perfect matching polytopes as faces. Further, the forest cover polytope remains integral with the addition of the constraint requiring that, for some integer k , exactly k edges be used in the solution.

Gary, Bobo Robert J.

PD November 1987. TI Cournot-Walras and Locally Consistent Equilibria. AA Universite de Paris I Pantheon Sorbonne. SR Universite Catholique de Louvain CORE Discussion Paper: 8753; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. PG 18. PR No Charge. JE 022, 021, 026. KW General Equilibrium. Private Ownership. Existence. Demand Curves.

AB A k -th order locally consistent equilibrium (k -LCE) is an imperfectly competitive general equilibrium point at which firms only perceive a k -th order Taylor expansion of their true demand curves. It is shown that the set of k -th

order locally consistent equilibrium strategies coincides with the set of Cournot-Walras equilibria as soon as $k \geq 1$, under simple regularity conditions. In addition, a characterization of the set of Negishi equilibria (or 0-LCEs), and an existence result for 1-LCEs in private ownership economies are provided.

Gemmell, Norman

PD July 1987. TI Public Expenditure on Private Goods: A Model. AA Research School of Pacific Studies, Australian National University and University of Durham. SR Australian National University Working Paper in Economics and Econometrics: 150; Department of Economics, Australian National University, P.O. Box 4, Canberra ACT 2601, AUSTRALIA. PG 38. PR No Charge. JE 322, 226. KW Public Expenditure. Private Goods. Production.

AB This paper presents a positive model of public sector provision of such private goods as education and health care, financed by taxation, and which competes with private sector production. It is argued that a feature of supply of these private goods is likely to be rising long run marginal and average costs as output expands. It is shown that consumption by non-taxpayers can be expected to create excess demand overall for public sector output, which may be produced efficiently or inefficiently. The model also highlights interactions between the private and public sectors, and the resulting effects on individual taxpayers consumption choices.

Genberg, Hans

TI Reconciling Actual and Optimal Monetary Policy in Switzerland Under Fixed Exchange Rates and Floating. AU Camen, Ulrich; Genberg, Hans; Salemi, Michael.

Gerard, Varet Louis Andre

TI On the Existence of Bayesian and Non-Bayesian Revelation Mechanisms. AU dAspremont, Claude; Cremer, Jacques; Gerard, Varet Louis Andre.

Ghemawat, Pankaj

PD November 1987. TI Excess Capacity, Efficiency, and Industrial Policy. AU Ghemawat, Pankaj; Nalebuff, Barry. AA Ghemawat: Harvard University. Nalebuff: Princeton University. SR Princeton Woodrow Wilson School Discussion Paper in Economics: 134; Woodrow Wilson School, Princeton University, Princeton, NJ 08544. PG 25. PR No Charge. JE 612, 323, 022. KW Technical Efficiency. Allocative Efficiency. Tariffs. Excess Capacity. Industrial Policy. Oligopoly.

AB In industries with excess capacity, competitors often have very different costs. When producers' costs differ there are four interesting features of the oligopoly equilibrium. The free-market solution is technically inefficient: in general, output is not produced at the minimal possible cost. Tariffs reduce technical efficiency (and also allocative efficiency as they result in lower equilibrium consumption). Untargeted subsidies reduce technical efficiency, while subsidies targeted at the more efficient competitor improve it. Mergers improve technical efficiency even in the absence of economies of scale; they do, however, hurt allocative efficiency.

Gibbons, Robert

TI Cheap Talk Can Matter in Bargaining.
AU Farrell, Joseph; Gibbons, Robert.

Ginsburgh, Victor

PD December 1987. **TI** Price Discrimination and Product Line Rivalry. **AU** Ginsburgh, Victor; MacLeod, Bentley; Weber, Shlomo. **AA** Ginsburgh: Universite Libre de Bruxelles, CORE. MacLeod: Queen's University, Kingston, Canada. Weber: York University and the University of Haifa. **SR** Queen's Institute for Economic Research Discussion Paper: 702; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 46. **PR** Canada & U.S. \$3.00; \$3.50 foreign. **JE** 611, 022, 633. **KW** Price. Discrimination. Oligopoly. Automobile. Differentiated Product.

AB We introduce a model of oligopolistic price setting in which products are characterized by both style and quality. Producers are identified by a style, unique to their product line and a range of qualities, and are to price discriminate among consumers using quality. We study the properties of the equilibrium for this model and show, in contrast to Mussa and Rosen's work on the discriminating monopolist, that firms do not necessarily extract the most surplus from consumers of low quality products. The amount of surplus extracted as a function of quality will depend on the underlying demand parameters. The model is then used as the basis for estimating the pricing strategies of firms in the European automobile market. We find that the level of price discrimination varies greatly from country to country. More surprisingly, we find that the quality parameter that firms use to discriminate among consumers appears to be engine capacity. This may explain why engine capacity seems to be the only technical characteristic of the car that is often prominently displayed on the vehicle.

PD February 1988. **TI** Price Discrimination and Product Line Rivalry. **AU** Ginsburgh, Victor; MacLeod, Bentley; Weber, Shlomo. **AA** Ginsburgh: Universite Libre de Bruxelles. MacLeod: Queens University, Kingston. Weber: University of Haifa. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: B-92; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 38. **PR** No Charge. **JE** 611, 022, 633, 212. **KW** Oligopoly. Price Setting. Automobile. Differentiated Product. Discrimination.

AB We introduce a model of oligopolistic price setting in which products are characterized by both style and quality. Producers are identified by a style, unique to their product line and a range of qualities, and are to price discriminate among consumers using quality. We study the properties of the equilibrium for this model and show, in contrast to Mussa and Rosen's work on the discriminating monopolist, that firms do not necessarily extract the most surplus from consumers of low quality products. The amount of surplus extracted as a function of quality will depend on the underlying demand parameters. The model is then used as the basis for estimating the pricing strategies of firms in the European automobile market. We find that the level of price discrimination varies greatly from country to country.

More surprisingly, we find that the quality parameter that firms use to discriminate among consumers appears to be engine capacity. This may explain why engine capacity seems to be the only technical characteristic of the car that is often prominently displayed on the vehicle.

Giovannini, Alberto

PD August 1987. **TI** Capital Controls and Public Finance: The Experience in Italy. **AA** Columbia University and National Bureau of Economic Research. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-87-19; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 61. **PR** \$5.00 academics and non-profit institutions; \$6.00 corporations (add \$1.00 outside United States, Canada and Puerto Rico). **JE** 432, 433, 441, 321, 323. **KW** Capital Controls. Tax Evasion. Government Debt. Capital Flight. Overlapping Generations Model.

AB The paper traces out and interprets the history of regulations affecting international trade in assets between Italian residents and the rest of the world. The basic structure and philosophy of present system of capital controls is inherited from the interwar years, a time when a combination of weak public finances, an underdeveloped tax system, and political instability compelled authorities to impose controls on international asset transactions to maintain their ability to raise tax revenue. The effects of capital flight for tax evasion, and the impact of liberalizations on domestic money demand and the inflation tax, are illustrated using an overlapping-generations model of the government debt, with and without money.

PD November 1987. **TI** Uncertainty and Liquidity. **AA** Columbia University and National Bureau of Economic Research. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-87-22; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 28. **PR** \$5.00 academics and non-profit institutions; \$6.00 corporations (add \$1.00 outside United States, Canada and Puerto Rico). **JE** 311, 521, 313, 522. **KW** Liquidity. Conditional Variance. Asset Prices. Nominal Interest Rate. Risk.

AB This paper studies a model where money is valued for the liquidity services it provides in the future. These liquidity services cannot be provided by any other asset. Changes in expectations of the value of future liquidity services affect the desired proportions of money and other assets in agents' portfolios, and, as a result, they change nominal interest rates and real stock prices. The paper concentrates on the effects of stochastic fluctuations in the distribution of exogenous shocks. I find that changes in dividend risk have effects opposite to those in standard dynamic portfolio models without money. Furthermore, shifts between money and other assets that are driven by precautionary liquidity demand make nominal interest rates capture information about the uncertainty in the economy more accurately than any other prices in the asset markets.

PD November 1987. **TI** The Time-Variation of Risk and Return in the Foreign Exchange and Stock Markets.

AU Giovannini, Alberto; Jorion, Philippe.
AA Giovannini: Columbia University and National Bureau of Economic Research. Jorion: Columbia University and Northwestern University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-87-20; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 41. **PR** \$5.00 academics and non-profit institutions; \$6.00 corporations (add \$1.00 outside United States, Canada and Puerto Rico). **JE** 441, 521, 212. **KW** Conditional Heteroskedasticity. Capital Asset Pricing Model. CAPM. Risk Premia. ARCH.

AB Recent empirical work indicates that, in a variety of financial markets, both conditional expectations and conditional variances of returns are time-varying. The purpose of this paper is to determine whether these joint fluctuations of conditional first and second moments are consistent with the Sharpe-Lintner-Mossin capital-asset-pricing model. We test the mean-variance model under several different assumptions about the time-variation of conditional second moments of returns, using weekly data from July 1974 to December 1986, that include returns on a portfolio composed of dollar, Deutsche mark, Sterling, and Swiss franc assets, together with the United States stock market. The model is estimated constraining risk premia to depend on the time-varying conditional covariance matrix of the residuals of the expected returns equations. The results indicate that estimated conditional variances cannot explain the observed time-variation of risk premia. Furthermore, the constraints imposed by the static CAPM are always rejected.

PD November 1987. **TI** International Capital Mobility and Tax Evasion. **AA** Columbia University and National Bureau of Economic Research. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-87-21; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 31. **PR** \$5.00 academics and non-profit institutions; \$6.00 corporations (add \$1.00 outside United States, Canada and Puerto Rico). **JE** 411, 433, 441, 323, 024. **KW** Tax Evasion. Capital Flight. Dynamic Inconsistency. Distortionary Taxes. Welfare Effects. Intertemporal Consumption.

AB This paper studies the welfare effects of international investment to evade domestic taxes on domestic investment income. Capital mobility for tax evasion eliminates distortions in the intertemporal allocation of consumption, but introduces distortions in domestic production. Conversely, a regime where residents pay taxes on all investment income, domestic and foreign, introduces distortions in intertemporal consumption allocation, but leaves domestic production distortion-free. The relative magnitude of the interest elasticity of savings and the interest elasticity of domestic investment determines the welfare effects of capital movements for the purpose of tax evasion.

PD December 1987. **TI** International Capital Mobility and Tax Evasion. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2460; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 30. **PR** \$2.00. **JE** 441, 024. **KW** International Investment. Tax Evasion. Capital

Mobility. Intertemporal Model. Welfare Effects.

AB This paper studies the welfare effects of international investment to evade domestic taxes on domestic investment income. Capital mobility for tax evasion eliminates distortions in the intertemporal allocation of consumption, but introduces distortions in domestic production. Conversely, a regime where residents pay taxes on all investment income, domestic and foreign, introduces distortions in intertemporal consumption allocation, but leaves domestic production distortion-free. The relative magnitude of the interest elasticity of savings and the interest elasticity of domestic investment determines the welfare effects of capital movements for the purpose of tax evasion.

PD April 1988. **TI** International Capital Mobility and Tax Evasion. **AA** NBER. **SR** Centre for Economic Policy Research Discussion Paper: 231; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 30. **PR** 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. **JE** 411, 433, 441, 323. **KW** Tax Evasion. Capital Mobility. Capital Flight. Capital Controls. International Investment.

AB This paper studies the welfare effects of international investment to evade domestic taxes on domestic investment income. Capital mobility for tax evasion eliminates distortions in the intertemporal allocation of consumption, but introduces distortions in domestic production. Conversely, a regime where residents pay taxes on all investment income, domestic and foreign, introduces distortions in intertemporal consumption allocation, but leaves domestic production distortion-free. The relative magnitude of the interest elasticity of savings and the interest elasticity of domestic investment determines the welfare effects of capital movements for the purpose of tax evasion.

Glazer, Jacob

TI Motivating Exchange of Knowledge in R&D Ventures: First-Best Implementation. **AU** Bhattacharya, Sudipto; Glazer, Jacob; Sappington, David.

Goffin, J. L.

PD September 1987. **TI** Affine Methods in Nondifferentiable Optimization. **AA** McGill University. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8744; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. **PG** 24. **PR** No Charge. **JE** 213, 022. **KW** Convex Function. Nondifferentiable. Convergence. Kurmarkar's Algorithm. Ellipsoid Method.

AB The problem studied is that of minimizing a general (nondifferentiable) convex function. We wish to emphasize the difference in convergence proofs between the case of a convex polyhedral function given explicitly by a finite number of linear pieces to that of a convex function which is generated by successive calls to an oracle (subroutine) which returns cutting planes, that is the function value and one arbitrary subgradient. The methods used are either exterior ellipsoid methods (the ellipsoid method) or interior ellipsoid methods (affine variants of Karmarkar's algorithm). Computational results using a "dual affine method", implemented within the space of the graph of the

function, are given, for the case of general -- nondifferentiable -- convex functions defined by generated cutting planes.

Goldsmith, Arthur

TI A Survey of Alternative Models of the Aggregate U.S. Labor Market. AU Kniesner, Thomas J.; Goldsmith, Arthur.

Gollier, Christian

PD July 1987. TI Intergenerational Discrimination in Insider-Outsider Models with Implicit Labour Contracts. AA Universite Catholique de Louvain. SR Universite Catholique de Louvain CORE Discussion Paper: 8732; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. PG 35. PR No Charge. JE 832, 824, 821, 023. KW Risk. Generations. Implicit Contracts. Overlapping Generations. Wage. Labor Market.

AB The labour market has failed to spread risk among different generations. Unlucky generations entering the labour market during a recession bear almost all risks, whereas older workers are protected by implicit contracts offering a downward rigid wage. Using three two-period models with overlapping generations of workers, we analyze the conflict of interest between insiders with a contract and outsiders (unemployed and the young cohort entering the labour market). The wage discrimination between generations will depend upon the incentive of insiders to raise the hiring wage. An intermediary wage discrimination is shown to be efficient in order to promote employment for outsiders, although limiting the cost of layoff for insiders.

Goncalves, E.

PD August 1987. TI Agregation de processus autoregressifs d'ordre 1. AU Goncalves, E.; Gourieroux, Christian. AA Goncalves: Universite de Coimbra. Gourieroux: CEPREMAP. SR CEPREMAP Discussion Paper: 8722; CEPREMAP, 142 rue du Chevaleret, 75013 Paris, FRANCE. PG 29. PR 20 FF. JE 211. KW Time Series. Long Memory Model. Heterogeneity. Aggregation. Dynamic Models.

AB The aim of this paper is the aggregation of AR(1) processes. We determine the dynamic models satisfied by the aggregated series and we characterize all the series which may be interpreted as such an aggregate. We study more carefully the case of a beta heterogeneity distribution. In particular we propose a homogeneity test and we discuss the sign of the heterogeneity bias. (In French).

Gordon, David B.

PD April 1988. TI The Capital Flight "Problem". AU Gordon, David B.; Levine, Ross. AA Division of International Finance, Board of Governors of the Federal Reserve System. SR Board of Governors of the Federal Reserve System International Finance Discussion Papers: 320; Division of International Finance Board of Governors of the Federal Reserve System, Washington, D.C. 20551. PG 47. PR No Charge. JE 441, 133, 322, 311. KW Capital Flight. Debt Crisis. LDC-Investment. Debt. Debtor Nation.

AB This paper isolates the common themes and policy recommendations found in the capital flight literature, and evaluates their statistical, conceptual, and empirical foundations. We find that there is no basis for presuming a stable link between any measure of capital flight and a nation's growth potential or ability to meet external obligations. Thus, although popular measures of capital flight are occasionally indicative of underlying economic and political problems, "capital flight" is not generally useful as a policy target or reliable as a signal of when to intensify or mitigate efforts for policy reforms. Moreover, policies proposed to reduce capital flight and repatriate flight capital may even stymie investment, slow growth, shrink the tax-base, and lower the country's debt financing capacity.

Gordon, James P. F.

TI Unwillingness to Pay: Tax Evasion and Public Good Provision. AU Cowell, Frank A.; Gordon, James P. F.

Gordon, Robert J.

PD December 1987. TI Wage Gaps and Output Gaps: Is There a Common Story for All of Europe? AA Northwestern University. SR National Bureau of Economic Research Working Paper: 2454; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 71. PR \$2.00. JE 824, 122, 226. KW Real Wages. Unemployment. Europe. Earnings.

AB This paper studies the relationship between real wages and unemployment in Europe. It finds no evidence that high real wages are responsible for the differing behavior of unemployment in Europe as contrasted with the United States, and across European countries finds patterns of real wage behavior that are the opposite of what would be required to link high real wages and high unemployment.

Gordon, Roger

TI Takeover Bids, Defensive Stock Repurchases, and the Efficient Allocation of Corporate Control. AU Bagnoli, Mark; Gordon, Roger; Lipman, Barton.

Gourieroux, Christian

TI Short Term and Long Term in Duration Data Models. AU Fourgeaud, Claude; Gourieroux, Christian; Pradel, Jeanine.

TI Heterogeneity and Hazard Dominance in Duration Data Models. AU Fourgeaud, Claude; Gourieroux, Christian; Pradel, Jeanine.

PD May 1987. TI Consistent M-estimators in a Semi-Parametric Model. AU Gourieroux, Christian; Monfort, Alain; Renault, Eric. AA Gourieroux: CEPREMAP. Monfort: Unite de recherche de l'INSEE. Renault: Universite Paris IX and Laboratoire d'Economie Politique, Ecole Normale, Superieure. SR CEPREMAP Discussion Paper: 8720; CEPREMAP, 142, rue du Chevaleret, 75013 Paris, FRANCE. PG 54. PR 25 FF. JE 211. KW Asymptotic Inference. Robustness. Limited Dependent Variable Models. Semi-parametric Models.

AB It is well known that in a fully parametric model

maximum likelihood estimation provides asymptotically efficient estimators. However it is in general difficult to assume that the p.d.f. of the observations belongs to a given parametric family. In this paper we consider semi-parametric models with weak distributional assumptions and we consider M-estimators of the parameter of interest. We determine the form of the criteria to be optimized in order to obtain consistent M-estimators. These results are then applied to M-estimation of parameters appearing in conditional mean, conditional variance, conditional quantiles.

TI Functional Averages and Statistical Inference.
AU Dujancourt, M.; Gourieroux, Christian.

TI Agregation de processus autoregressifs d'ordre 1.
AU Goncalves, E.; Gourieroux, Christian.

PD September 1987. **TI** Contraintes lineaires mixtes.
AA CEPREMAP. **SR** CEPREMAP Discussion Paper: 8730; CEPREMAP, 142 rue du Chevaleret, 75013 Paris, FRANCE. **PG** 14. **PR** 20 **FF**. **JE** 211.
KW Linear Model. Constraints.

AB We are interested in a linear model, where the parameter may be submitted to a linear constraint written under a mixed form. We explain how to easily determine the constrained OLS estimators of the parameters and the Fisher statistic associated with the constraint. The results are based on the use of the estimated constraints. (In French).

Grandmont, Jean Michel

PD January 1988. **TI** Stability, Expectations and Predetermined Variables. **AU** Grandmont, Jean Michel; Laroque, Guy. **AA** Grandmont: CNRS and CEPREMAP. Laroque: INSEE. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economic Series) Technical Report: 522; IMSSS, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 34. **PR** \$4.00. **JE** 022, 021. **KW** Learning. Dynamics. Expectations.

AB This paper identifies, in a general deterministic framework, a set of circumstances under which stability of a stationary state in some dynamics with learning implies its unstability in the perfect foresight dynamics. In the particular case where the perfect foresight dynamics has dimension two, and where there is one predetermined variable, stability of a stationary state in the dynamics with learning, implies that it is a saddle point in the perfect foresight dynamics, provided that traders are able to extrapolate correctly trajectories that have period two. Conditions ensuring the converse are also given.

Gravelle, Jane G.

PD December 1987. **TI** The Incidence and Efficiency Costs of Corporate Taxation when Corporate and Noncorporate Firms Produce the Same Good. **AU** Gravelle, Jane G.; Kotlikoff, Laurence J. **AA** Gravelle: Congressional Research Service. Kotlikoff: National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2462; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 60. **PR** \$2.00. **JE** 611, 323, 022. **KW** Corporate Income Tax. Harberger Model. Mutual Production Model.

Deadweight Loss.

AB This paper presents a two good model with corporate and noncorporate production of both goods. The incidence of the corporate tax in our Mutual Production Model (MPM) can differ markedly from that in the Harberger model. A hallmark of Harberger's corporate tax incidence formula is its dependence on differences across sectors in elasticities of substitution between capital and labor. In contrast, the incidence of the corporate tax in the MPM may fall 100 percent on capital regardless of sector differences in substitution elasticities. The difference between the two models in the deadweight loss from corporate taxation is also striking. Using the Harberger - Shoven data and assuming unitary substitution and demand elasticities, the deadweight loss is over ten times larger in the CES version of the MPM than in the Harberger Model. Part of the explanation for this difference is that in the Harberger Model only the difference in the average corporate tax in the two sectors is distortionary, while the entire tax is distortionary in the MPM. A second reason for the larger excess burden in the MPM is that the MPM has a very large, indeed infinite, substitution elasticity in demand between corporate and noncorporate goods; in contrast, applications of the Harberger Model assume this elasticity is quite small.

PD April 1988. **TI** The Incidence and Efficiency Costs of Corporate Taxation When Corporate and Noncorporate Firms Produce the Same Good. **AU** Gravelle, Jane G.; Kotlikoff, Laurence J. **AA** Gravelle: Congressional Research Service. Kotlikoff: Boston University and National Bureau of Economic Research. **SR** International Monetary Fund Working Paper: WP/88/32; International Monetary Fund, Washington D.C. 20431. **PG** 45. **PR** No Charge. **JE** 323, 024, 022. **KW** Corporate Tax. Income Tax. Deadweight Loss.

AB One difficulty confronting Harberger's celebrated model of the corporate income tax is how to treat the noncorporate production in primarily corporate sectors and corporate production in primarily noncorporate sectors. This paper presents a two-good model with corporate and noncorporate production of both goods. The incidence of the corporate tax in our Mutual Production Model (MPM) can differ markedly from that in the Harberger Model. The difference between the two models in deadweight loss is also striking, with losses in the MPM over ten times as large as in the Harberger Model.

Green, Jerry

PD January 1988. **TI** Competition on many Fronts: A Stackelberg Signalling Equilibrium. **AU** Green, Jerry; Laffont, Jean Jacques. **AA** Green: Harvard University. Laffont: California Institute of Technology. **SR** Caltech Social Science Working Paper: 664; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 31. **PR** No Charge. **JE** 026, 024, 025. **KW** Signalling. Stackelberg. Incentives. Entry. Private Information.

AB A single economic agent controls a variety of activities. Each activity is associated with a privately observed piece of information. The information is relevant to the actions he will take in this activity, and to the vulnerability of this activity to attack by another agent. Actions should be chosen so as partially to hide the private

information, as well as to be efficient in the productive sense. This paper gives a characterization of the optimal association of actions to activities based on the private information available. Some applications are discussed.

Gregory, Allan W.

PD December 1987. TI Calibration as Estimation. AU Gregory, Allan W.; Smith, Gregor W. AA Gregory: University of Western Ontario. Smith: Queen's University. SR Queen's Institute for Economic Research Discussion Paper: 700; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. PG 46. PR \$3.00 Canada and U.S.; \$3.50 Foreign. JE 211. KW Calibration. Method of Moments. Monte Carlo.

AB One aspect of calibration in macroeconomics is the notion that the free parameters of models should be chosen by matching certain moments of the simulated models with those of actual data. We formally examine this notion by treating the process of calibration as an econometric estimator. A numerical version of the Mehra-Prescott (1985) economy is the setting for an evaluation of calibration estimators via Monte Carlo methods. While these estimators sometimes may have reasonable finite-sample properties they are not robust to mistakes in setting non-free parameters. In contrast, generalized method-of-moments (GMM) estimators have satisfactory finite-sample characteristics, quick convergence, and informational requirements less stringent than those of consistent calibration estimators. In dynamic equilibrium models in which GMM is infeasible we offer some suggestions for improving estimates based on calibration methodology.

Griffin, Charles C.

PD December 1987. TI Methods for Estimating Value of Time with an Application to the Philippines. SR Yale Economic Growth Center Discussion Paper: 549. PG 41. PR \$2.00. JE 921, 821. KW Household. Wage. Selection Bias. Instruments.

AB A theoretical and empirical innovation of the household production model is the appearance of wages in demand functions. However, creating reasonable econometric instruments for wages is difficult under any circumstances and is particularly troublesome when using data from developing countries, where the prevalence of nonmarket production means that few observations on wages are usually available. In this paper, alternative strategies for creating value-of-time instruments are discussed in detail and, using cross-sectional data from the Philippines, competing methods are implemented and compared. The major finding is that the theory and procedure of correcting for selection bias can substantially improve wage instruments.

Griliches, Zvi

TI Industry Effects and Appropriability Measures in the Stock Market's Valuation of R&D and Patents. AU Cockburn, Iain; Griliches, Zvi.

Grilli, Vittorio

PD October 1987. TI Managing Exchange Rate Crisis: Evidence from the 1890's. SR Yale Economic

Growth Center Discussion Paper: 545. PG 29. PR \$2.00. JE 431, 443, 042. KW Borrowing. Exchange Rate. Credit. Loans.

AB In this paper I investigate the effectiveness of the monetary authority's borrowing policies in resolving exchange rate crises. I show why obtaining loans or lines of credit in foreign currency may avoid, at least temporarily, the devaluation of a fixed exchange rate. I also consider the problem of the optimal size of the loan and/or the line of credit. The analysis focuses on a particular episode of foreign exchange rate pressure, during the troubled years between 1894 to 1896. My conclusion is that the borrowing policy followed by the United States Treasury in those years was effective in avoiding the collapse of the United States' gold standard. Moreover, my findings indicate that the amount of the borrowing undertaken by the Treasury might have been optimal.

PD December 1987. TI Fiscal Policies and the Dollar/Pound Exchange Rate: 1870 - 1984. SR Yale Economic Growth Center Discussion Paper: 548. PG 28. PR \$2.00. JE 321, 431. KW Fiscal Policy. Exchange Rate. Government.

AB This paper investigates the consequences of fiscal policies for the exchange rate. After developing a simple theory of how government financing policies should effect the exchange rate, we test it using data on the dollar/pound exchange rate. Previous analyses have concentrated mainly on the post-Bretton Woods flexible exchange rate system, thus ignoring potentially useful information contained in fixed exchange rate periods or in previous flexible exchange rate periods. This paper shows that it is theoretically proper and econometrically feasible to merge evidence from different nominal exchange rate systems. The gain of this procedure is that we can extend the sample period back to the 1870's. Our results suggest that permanent government expenditures are the only fiscal variables that significantly affected the dollar/pound nominal exchange rate. Budget deficits appear to be irrelevant in this respect.

PD December 1987. TI Avoiding Speculative Attacks on EMS Currencies: A Proposal. AU Grilli, Vittorio; Alesina, Alberto. SR Yale Economic Growth Center Discussion Paper: 547. PG 12. PR \$2.00. JE 431, 432. KW European Monetary System. Exchange Rate. Speculation.

AB In this paper we describe a set of changes in the management of the European Monetary System (mostly strict enforcement of mechanisms already present in the 1978 Resolution of the European Council establishing the EMS) that would enable the member Central Banks to maintain discretionary power over the timing of realignments of their exchange rate parities. We think that this is an important issue now that restrictions to capital movements, believed to have limited the amount of speculation in exchange rate markets, are progressively abolished. We do not propose a system that would, alone, remove the need for periodical readjustments of the EMS exchange rate parity. We suggest, rather, a cooperative policy which could prevent such realignments to be forced by speculators.

PD December 1987. TI United States Military Expenditure and the Dollar: A Note. AU Grilli, Vittorio;

Beltratti, Andrea. SR Yale Economic Growth Center Discussion Paper: 546. PG 14. PR \$2.00. JE 133, 431, 114, 212. KW Military Expenditure. Exchange Rate. Cointegration.

AB In this paper we study the connection between United States military expenditure and the Dollar/DMark real exchange rate. Using quarterly data for the period 1951.I-1986.III, we find that there exists a significant relationship linking real exchange rate, real military spending, and real GNP. We base our conclusion on evidence that these three variables are cointegrated.

PD January 1988. **TI** Fiscal Policies and the Dollar/Pound Exchange Rate: 1870-1984. **AA** Yale University. **SR** National Bureau of Economic Research Working Paper: 2482; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 29. PR \$2.00. JE 321, 431, 132. **KW** Fiscal Policy. Exchange Rate. Government.

AB This paper investigates the consequences of fiscal policies for the exchange rate. After developing a simple theory of how government financing policies should effect the exchange rate, we test it using data on the dollar/pound exchange rate. Previous analyses have concentrated mainly on the post-Bretton Woods flexible exchange rate system, thus ignoring potentially useful information contained in fixed exchange rate periods or in previous flexible exchange rate periods. This paper shows that it is theoretically proper and econometrically feasible to merge evidence from different nominal exchange rate systems. The gain of this procedure is that we can extend the sample period back to the 1870's. Our results suggest that permanent government expenditures are the only fiscal variables that significantly affected the dollar/pound nominal exchange rate. Budget deficits appear to be irrelevant in this respect.

Grosskopf, Shawna

TI The Effect of Unions on Productivity: U.S. Surface Mining of Coal. **AU** Byrnes, Patricia; Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K.

TI Scale Elasticity and Scale Efficiency. **AU** Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K.

TI Some Observations on the New DEA. **AU** Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K.

TI Multilateral Productivity Comparisons When Some Outputs are Undesirable: A Nonparametric Approach. **AU** Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K.; Pasurka, Carl.

Grossman, Gene M.

PD September 1987. **TI** Import Competition and the Stock Market Return to Capital. **AU** Grossman, Gene M.; Levinsohn, James A. **AA** Grossman: Princeton University. Levinsohn: University of Michigan. **SR** Princeton Woodrow Wilson School Discussion Paper in Economics: 131; Woodrow Wilson School, Princeton University, Princeton, NJ 08544. PG 52. PR No Charge. JE 313. **KW** Import Competition. Stock-Market Returns. Capital Mobility. CAPM. Import Prices.

AB We measure the responsiveness of returns to capital invested in six U.S. industries to shocks to the prices of

competing import goods. Recognizing that most capital services are not traded on spot rental markets, we treat the intersectoral mobility of capital as the outgrowth of investment behavior. Then the return to capital is realized as an asset return to equity holders. We model expected returns by CAPM, and relate "excess" returns in a period to unanticipated shocks to the variables that affect current and future profits. We find that positive shocks to import prices cause higher than normal stock market returns in all six industries. The magnitudes of the responses are consistent with the hypothesis that capital is highly sector specific in five of these industries.

PD February 1988. **TI** Product Development and International Trade. **AU** Grossman, Gene M.; Helpman, Elhanan. **AA** Grossman: Princeton University. Helpman: Tel Aviv University and MIT. **SR** Princeton Woodrow Wilson School Discussion Paper in Economics: 132; Woodrow Wilson School, Princeton University, Princeton, NJ 08544. PG 35. PR No Charge. JE 411, 621, 111, 423. **KW** Trade Dynamics. Comparative Advantage. Innovation. R&D International Trade.

AB We develop a multi-country, dynamic general equilibrium model of product innovation and international trade to study the creation of comparative advantage through research and development and the evolution of world trade over time. In our model, firms must incur resource costs to introduce new products and forward-looking potential producers conduct R&D and enter the product market whenever profit opportunities exist. Trade has both intra-industry and inter-industry components, and the different incentives that face agents in different countries for investment and savings decisions give rise to intertemporal trade. We derive results on the dynamics of trade patterns and trade volume, and on the temporal emergence of multinational corporations.

Grossman, Sanford J.

PD December 1987. **TI** Report on Protram Trading an Analysis of Interday Relationships. **AA** Princeton University. **SR** Princeton Financial Research Center Memorandum: 87; Financial Research Center, Department of Economics, Princeton University, Princeton, NJ 08544. PG 49. PR \$3.00. JE 313, 522, 022. **KW** Program Trading. Stock Price Volatility. Index Arbitrage. Stock Market.

AB I have reviewed about 10 months of daily observations on stock market volatility and program trading on the NYSE. I could find no relationship between any measure of volatility or any measure of program trading intensity. The days in which volatility was high were not, systematically, the days in which program trading intensity was high. There appears to be a positive relationship between the intensity of DOT volume (relative to NYSE volume) and volatility. There also appears to be a positive relationship between the intensity of non-program DOT volume (relative to NYSE volume) and volatility. These results probably indicate that very volatile days are also days in which the retail-customer generated DOT order flow is large (relative to institutional block trades which are, of course, not DOT delivered).

Gruen, David W. R.

PD September 1987. TI Aggregate Spending and the Terms of Trade: There is Probably a Harberger-Laursen-Metzler Effect. AA Department of Economics, Australian National University. SR Australian National University Working Paper in Economics and Econometrics: 149; Department of Economics, Australian National University, P.O. Box 4, Canberra ACT 2601, AUSTRALIA. PG 30. PR No Charge. JE 421, 431, 921, 411, 023. KW Current Account. Consumption Levels. Trade Shock.

AB This paper analyses the impact on the current account of a permanent terms of trade deterioration in a model where households maximize utility over an infinite lifetime and are assumed to be sensitive to falling consumption levels. When households are sufficiently sensitive, it is optimal for their consumption to be continuous over time and then the Harberger-Laursen-Metzler effect holds, i.e. following an adverse terms of trade shock, the current account deteriorates. It is argued that the model presented here is more realistic than earlier models which predicted a current account improvement in response to an adverse trade shock.

Guah, Danny

PD December 1987. TI What Do We Learn From Unit Roots in Macroeconomic Time Series? AA MIT. SR National Bureau of Economic Research Working Paper: 2450; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 17. PR \$2.00. JE 131, 023. KW Business Cycle. Unit Roots. Output.

AB It is often argued that the presence of a unit root in aggregate output implies that there is no "business cycle": the economy does not return to trend following a disturbance. This paper makes this notion precise, but then develops a simple aggregative model where this relation is contradicted. In the model, output both has a unit root, and displays repeated short-run fluctuations around a deterministic trend. Some summary statistical evidence is presented that suggests the phenomena described in the paper is not without empirical basis.

Gunderson, Morley

TI Does Pension Wealth Decline Before the Age of Normal Retirement? Canadian Evidence. AU Pesando, James E.; Gunderson, Morley.

Haas, Richard

TI MULTIMOD: A Multi-Region Econometric Model. AU Masson, Paul; Symansky, Steven; Haas, Richard; Dooley, Michael.

Habib, Michel

PD July 1987. TI Computing the Bump Number of Ordered Sets is Easy. AU Habib, Michel; Mohring, Rolf; Steiner, George. AA Habib: Ecole Nationale Supérieure de Bretagne. Brest. Mohring: University of Bonn. Steiner: University of Hamilton. SR Universität Bonn Sonderforschungsbereich 303 - Discussion Paper: 87475; Sonderforschungsbereich 303 an der Universität Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 28. PR No Charge. JE 213. KW Bump

Number. Jump Number. Polynomial algorithm. Min-max theorem.

AB The bump number $b(P)$ of a partial order P is the minimum number of comparable adjacent pairs in some linear extension of P . Its determination is equivalent to maximizing the number of jumps in some linear extension of P , for which the corresponding minimization problem (the jump number problem) is known to be NP-hard. We derive a polynomial algorithm for determining $b(P)$. The proof of its correctness is based on a min-max theorem involving simple-structured series-parallel partial orders contained in P . This approach also leads to a characterization of all minimal partial orders (with respect to inclusion of the ordered relations) with fixed bump number. Keywords: bump number, jump number, polynomial algorithm, linear extension, bump-critical, min-max theorem, extension lattice.

Hagen, James M.

PD November 1987. TI Development Policy under Eisenhower and Kennedy. AU Hagen, James M.; Ruttan, Vernon W. AA Department of Agricultural and Applied Economics, University of Minnesota. SR University of Minnesota Economic Development Center Bulletin: 87-10; Department of Economics, 1035 Management and Economics, University of Minnesota, Minneapolis, MN 55455. PG 54. PR No Charge. JE 113, 121, 041. KW Development. Aid. Foreign Policy. Anticommunism.

AB The Agency for International Development, Peace Corps, and Development Loan Fund were inaugurated in 1961 when the United States made its greatest financial commitment to development assistance since the Marshall Plan. This paper considers literature, interviews, and congressional testimony from 1952 to 1961 to show that the 1961 initiatives had roots going back to the mid 1950's. The development policy was driven largely by an attempt to stop communism, and it was supported by humanitarian and labor leaders and some business leaders. Economic advancement of developing countries was increasingly assumed to be in the United States interest, and the way to achieve that goal was increasingly thought to be commitments of long term financial assistance.

Haller, Hans

TI Tax Systems and Direct Mechanisms in Large Finite Economies. AU Dierker, Egbert; Haller, Hans.

Haltiwanger, John

TI Inventories and the Propagation of Sectoral Shocks. AU Cooper, Russell; Haltiwanger, John.

Haltmaier, Jane

TI The Use of High-Frequency Data in Model-Based Forecasting at the Federal Reserve Board. AU Corrado, Carol; Haltmaier, Jane.

Ham, John

TI Unemployment Female Labour Supply. AU Blundell, Richard; Ham, John; Meghir, Costas.

Hamilton, Jonathan H.

TI Information and Multi-Period Optimal Income

Taxation with Government Commitment. AU Brito, Dagobert; Hamilton, Jonathan H.; Slutsky, Steven M.; Stiglitz, Joseph E.

PD December 1987. TI Spatial Competition and the Core. AU Hamilton, Jonathan H.; MacLeod, W. Bentley; Thisse, Jacques Francois. AA Hamilton: University of Florida. MacLeod: Queen's University. Thisse: CORE, Universite Catholique de Louvain. SR Queen's Institute for Economic Research Discussion Paper: 704; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. PG 27. PR Canada and United States \$3.00; \$3.50 foreign. JE 611, 022, 021. KW Spatial. Competition. Core. Differentiated Products. Duopoly. Nash Equilibrium.

AB Models of spatial competition have proven to be very useful in describing differentiated products markets. A serious problem is that nonexistence of Nash equilibria seems endemic. This problem is resolved by modelling the price formation process using the core. The equilibrium is the outcome of a two-stage process. In the first stage, two firms choose locations simultaneously, looking ahead to the second stage. The second stage has prices determined by an allocation in the core of a cooperative subgame allowing for coalitions of buyers and sellers. The price selection is the joint profit maximum for the duopolists. This selection exists for all location pairs and coincides with the pure strategy Nash equilibrium of duopoly competition when the latter exists. Furthermore, these prices approach the competitive level as the distance between the firms goes to zero, thus capturing the essence of duopoly rivalry. For this price selection, in the location game, the two firms establish themselves at the efficient locations -- the first and third quartiles.

Hammond, Peter J.

PD November 1987. TI Subjective Probabilities with State Independent Utilities on State Dependent Consequence Domains. AA Department of Economics; Stanford University. SR Stanford Institute for Mathematical Studies in the Social Sciences (Economic Series) Technical Report: 520; IMSSS, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. PG 22. PR \$4.00. JE 026, 022. KW Expected Utility. Subjective Probability. State Dependence.

AB Karni, Schmeidler and Vind (1983) derived unique subjective probabilities for general state dependent domains of possible consequences. Preferences were assumed to satisfy standard axioms in the absence of objective utilities, and also for (at least) one hypothetical set of strictly positive objective probabilities, with an obvious consistency condition between the two sets of preferences. These same conditions are necessary for unique strictly positive subjective probabilities to exist, since the hypothetical probabilities could be subjective probabilities. Here it is also assumed that whenever the probabilities of consequences are state independent, so are preferences. State independent utilities can then be constructed, as well as unique subjective probabilities. But these utilities may only be unique up to certain state dependent positive affine transformations.

Hannan, Timothy H.

TI The Price-Concentration Relationship in Banking.

AU Berger, Allen N.; Hannan, Timothy H.

Harper, Michael

PD July 1987. TI Rates of Return and Capital Aggregation Using Alternative Rental Prices. AU Harper, Michael; Berndt, Ernst; Wood, David. AA Bureau of Labor Statistics. SR Bureau of Labor Statistics Working Paper: 170; Bureau of Labor Statistics Office of Research and Evaluation 441 G Street, N.W. Room 2126 Washington, D.C. 20212. PG 57. PR No Charge. JE 226, 631, 227. KW Capital Rental Price. Multifactor Productivity. Manufacturing Industries. Rates of Return.

AB This paper reports on empirical research on evaluating alternative capital rental price formulae in the context of multifactor productivity (MFP) measurement. It first reviews the guidance provided by economic theory in discriminating amongst alternative rental price formulae employed in the productivity literature. This results in identifying a set of five possible rental price measures that are then evaluated in the context of a non-parametric, non-econometric MFP growth accounting framework. The empirical evaluation procedure is based on comparison of the five alternative rental price estimates using a common data set covering two-digit United States manufacturing industries over the 1948-81 time period, where each industry has from ten to twenty distinct types of capital assets.

Harris, Jeffrey E.

PD September 1987. TI Social and Economic Causes of Cancer. AA Massachusetts Institute of Technology. SR Massachusetts Institute of Technology Department of Economics Working Paper: 460; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. PG 56. PR No Charge. JE 921, 913. KW Cancer. Socioeconomic Status. Carcinogens.

AB People of lower socioeconomic status are more likely to contract and die from cancer. This finding has been consistently observed no matter how "socioeconomic status" is defined -- by income, educational attainment, occupation, housing tenure, census tract of residence, race, ethnicity, or by public versus private hospital care. In Sections 2, 3 and 4, respectively, I analyze social and economic influences on three specific cancers -- the breast and uterine cervix in women, and melanoma of the skin in whites. These cancers display very different, contrasting relationships to socioeconomic status. For breast and cervical cancer, moreover, there is little current evidence to incriminate occupational carcinogens. For melanoma, white-collar workers appear to have the highest incidence; moreover, with one exception (Bahn et al. 1976), I know of no identifiable carcinogenic agents associated with the disease. Having considered some illustrative cases in detail, I turn in Section 5 to cancer in general. In particular, I examine current knowledge of human cancer as a multistep process, and begin to identify how social and economic conditions might impinge upon each step. The remaining sections analyze two specific mechanisms in detail. Section 6 considers the potential effects of social and economic stresses on the body's immune defenses to tumor development. Section 7 investigates the role of

social and economic factors in the timing and content of medical care for cancer. An agenda for future research is outlined in Section 8.

Harris, Robert S.

PD December 1987. TI Means of Payment in Takeovers: Results for the U.K. and U.S. AU Harris, Robert S.; Franks, Julian; Mayer, Colin. AA Harris: University of North Carolina at Chapel Hill. Franks: London Business School. Mayer: City University Business School. SR National Bureau of Economic Research Working Paper: 2456; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 64. PR \$2.00. JE 611, 521, 522. KW Acquisitions. Tax Effects. Information Model. Cash Bids. Equity bids. United Kingdom. United States.

AB This paper examines means of payment in over 2,500 acquisitions in the United Kingdom and United States over the period 1955 to 1985. Data on financing proportions, bid premia and postmerger performance are used to test the validity of tax and information hypotheses. It is difficult to explain many of the results in terms of tax effects. Capital gains tax does not appear to be a primary determinant of financing patterns in the United Kingdom in a period in which there were substantial variations in the tax rate. As well the tax motivated "trapped equity" model is inconsistent with several observations on financing patterns.

Hartmann, Mark

PD January 1988. TI A Topological Characterization for Closed Sets Under Polar Quality in $Q(n)$. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87465-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 4. PR No Charge. JE 213. KW Closed Sets. Polar Duality.

AB A topological characterization is given for closed sets in $Q(n)$ under the restriction of (cone) polar duality to $Q(n)$.

Hartwick, John M.

PD April 1988. TI Patent Races Optimal with Respect to Entry. AA Department of Economics, Queen's University. SR Queen's Institute for Economic Research Discussion Paper: 711; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. PG 17. PR \$3.00 Canada; \$3.50 United States and Foreign. JE 026, 621. KW Patent Races. Entry. Technological Change. Innovation.

AB We introduce a patent (prize) which induces entry at a level which satisfies the basic condition of optimality with respect to the "size" of the race (a second best patent). We observe in an example that the resulting equilibrium is very close to first best optimal. The approach of the second best patent explains why discoverers should only receive a fraction of the social value of their discovery.

PD April 1988. TI The "Duality" of Hotelling Rent and Economic Depreciation, and Growth Accounting with Exhaustible Resources. AA Queen's University, Department of Economics. SR Queen's Institute for

Economic Research Discussion Paper: 712; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. PG 27. PR \$3.00 Canada; \$3.50 United States and Foreign. JE 221, 721. KW Economic Depreciation. Growth Accounting. Natural Resources. Hotelling Rent.

AB Along dynamically efficient paths of exhaustible resource extraction Hotelling rent and economic depreciation (with a negative sign) of the stock are equal. Hotelling rent is $q(t)$ times ' $p(t) - mc(q(t))$ ' for quantity $q(t)$ extracted at output price $p(t)$ and extraction cost for the marginal ton $mc(q(t))$. Economic depreciation is $dV(t)/dt$ where $V(t)$ is the current value of stock $S(t)$. We show $-q(t)$ times ' $p(t) - mc(q(t)) = dV(t)/dt$ ' and then make use of the equality of economic depreciation and negative Hotelling rent in analyzing current practices in national income accounting. We indicate that placing Hotelling rent on the income side is not sensible. The negative entry, economic depreciation of the stocks, should be placed on the product side.

Haskel, Jonathan

PD November 1987. TI Long-Term Unemployment and Special Employment Measures in Britain. AU Haskel, Jonathan; Jackman, Richard J. AA Centre for Labour Economics, London School of Economics. SR London School of Economics Centre for Labour Economics Discussion Paper: 297; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, U.K. PG 55. PR No Charge. JE 824, 813, 822. KW Unemployment. Duration. Government Policy. Long-Term Unemployment. Displacement. Community Programme.

AB This paper investigates some aspects of the growth in long-term unemployment in Britain from 1979 to 1986. It documents the behaviour of unemployment on the basis of a consistent series and suggests that the rise in long-term unemployment can be accounted for by a decline in the outflow rate from unemployment, both short-term and long-term, which took place during the 1980-81 recession, and has not subsequently been reversed. It also argues that special employment measures, in particular the Community Programme, have had a significant impact on long-term unemployment. The expansion in the Community Programme since 1983 has been associated with an increase in the outflow from unemployment of young people - those to whom the Community Programme has been primarily directed - but, it appears, a decline in the outflow rate of older people, suggesting there may be displacement effects at work.

Hausman, Jerry A.

PD February 1988. TI Price Discrimination and Patent Policy. AU Hausman, Jerry A.; MacKie, Mason Jeff. AA Hausman: MIT. Mackie-Mason: University of Michigan. SR University of Michigan Center for Research on Economic and Social Theory Working Paper: 88-13; Department of Economics, University of Michigan, Ann Arbor, Michigan 48109. PG 33. PR No Charge. JE 621, 612, 024. KW Patent. Monopoly. Antitrust. Innovations.

AB Patent and antitrust policy are often presumed to be in conflict. As an important example, there is ongoing

controversy about whether price discrimination by a patent holder is an illegal or socially undesirable exploitation of monopoly power. The paper shows that no conflict exists in many price discrimination cases. Even ignoring the (dynamic) effects on incentives for innovation, third-degree price discrimination by patent holders can raise (static) social welfare. In fact, Pareto improvements may well occur. Welfare gains occur because price discrimination allows patent holders: (a) to open new markets; and, (b) to achieve economies of scale or learning. Further, even in cases where discrimination incurs static welfare losses, it may be efficient relative to other mechanisms, such as length of patent life, for rewarding innovators with profits.

Havenner, Arthur

TI Cointegration and Stock Prices: The Random Walk on Wall Street Revisited. **AU** Cerchi, Marlene; Havenner, Arthur.

Helpman, Elhanan

TI Product Development and International Trade. **AU** Grossman, Gene M.; Helpman, Elhanan.

PD March 1988. **TI** The Simple Analytics of Debt-Equity Swaps and Debt Forgiveness. **AA** The International Monetary Fund. **SR** International Monetary Fund Working Paper: WP/88/30; International Monetary Fund, Washington D.C. 20431. **PG** 24. **PR** No Charge. **JE** 433, 441. **KW** Debt-Equity Swaps. Debtor Country. Debt Forgiveness.

AB This paper is concerned with debt-equity swaps in which foreign residents are a party to the exchange (i.e., it does not deal with flight capital), and with debt forgiveness. The seemingly unrelated issues of debt-equity swaps and debt forgiveness are jointly treated in this study, because debt forgiveness is in fact a special case of debt-equity swaps. Namely, it is a swap in which a positive amount of debt is exchanged for zero equity. For this reason these two problems have many common features.

Hendricks, Ken

PD November 1987. **TI** Estimation of Dynamic Investment Functions in Oil Exploration. **AU** Hendricks, Ken; Novales, Alfonso. **AA** Hendricks: State University of New York at Stony Brook, Former National Fellow, Hoover Institution. Novales: Universidad Complutense de Madrid. **SR** Stanford Hoover Institute Working Papers in Economics: E-87-52; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 45. **PR** No Charge. **JE** 621, 723, 632. **KW** Dynamic Process. Rational Expectations. Uncertainty. Energy. Oil.

AB This paper studies the dynamics of the discovery process for oil and gas pools in the Alberta basin from 1950 to 1979. A costs of adjustment, rational expectations model is specified in which current and future returns from exploration are random, and the main source of the uncertainty is the amount of discoveries. The parameters are estimated from the stochastic Euler equation using the Generalized Methods of Moments estimator proposed by Hansen (1982). We find that, at the appropriate level of aggregation, there is a stable, quantifiable relationship

between exploratory investment and returns which is consistent with optimizing behavior.

PD November, 1987. **TI** Reputations in the Adoption of a New Technology. **AA** State University of New York, at Stony Brook, University of British Columbia, Former National Fellow, Hoover Institution. **SR** Stanford Hoover Institute Working Paper in Economics: E-87-51; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 50. **PR** No Charge. **JE** 026, 611, 621. **KW** Technology. Game Theory. Reputation. Rents. Incomplete Information.

AB This paper studies adoption of a new technology as the outcome of a game of incomplete information. Each firm knows its own belief about the technology, but is not sure about its rivals' beliefs. The crucial distinction is between pessimistic types, which believe that the new technology is too costly to adopt, and optimistic types, which believe that adoption is profitable. In the unique equilibrium, optimistic types exploit their ability to build reputations for pessimism to achieve an implicit agreement in which neither firm engages in preemptive adoption. This leads to a theory of adoption in which rents from delayed adoption are realized, and where ex post returns are not equalized across adoption times.

PD November 1987. **TI** The War of Attrition in Continuous Time With Complete Information. **AU** Hendricks, Ken; Weiss, Andrew; Wilson, Charles. **AA** Hendricks: State University of New York at Stony Brook, Former National Fellow, Hoover Institution. Weiss: Bell Communications Research. Wilson: New York University. **SR** Stanford Hoover Institute Working Paper in Economics: E-87-50; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 46. **PR** No Charge. **JE** 026, 611. **KW** Nash Equilibrium. Attrition. Game Theory. Complete Information.

AB The paper provides a complete characterization of the Nash equilibrium outcomes for the War of Attrition when time is continuous and information is complete. It allows for asymmetric payoffs and an arbitrary time horizon. In addition to certain (asymmetric) pure strategy equilibria which always exist, we establish the conditions under which there is also a continuum of mixed strategy equilibria. These are most likely to exist when either the horizon is infinite or the game is symmetric.

PD November 1987. **TI** An Empirical Study of an Auction with Asymmetric Information. **AU** Hendricks, Kenneth; Porter, Robert H. **AA** Bell Communications Research, Inc. **SR** Bell Communications Research Inc. Economics Discussion Paper: 37; Bell Communications Research, Inc. 435 South Street, Morristown, N.J. 07960-1961. **PG** 41. **PR** No Charge. **JE** 026, 632. **KW** Auctions. Asymmetric Information. Leases. Neighbor Firms.

AB This paper examines federal auctions for drainage leases on the Outer Continental Shelf from 1959 to 1969. These are leases which are adjacent to tracts on which a deposit has been discovered. We find that the data strongly support the hypothesis that neighbor firms are better informed about the value of a drainage lease than nonneighbor firms, that neighbor firms coordinate their

bidding decisions, and that both types of firms bid strategically in accordance with the Bayesian-Nash equilibrium model for first-price, sealed bid auctions with asymmetric information.

PD December 1987. **TI** An Empirical Study of an Auction with Asymmetric Information. **AU** Hendricks, Kenneth; Porter, Robert H. **AA** Hendricks: State University of New York at Stony Brook, University of British Columbia. Porter: Bell Communications Research, Northwestern University. **SR** Stanford Hoover Institute Working Paper in Economics: E-87-57; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 54. **PR** No Charge. **JE** 612, 621, 022. **KW** Federal Auctions. Outer Continental Shelf. Neighbor Firms. Leases. Sealed-Bid Auctions. Asymmetric Information.

AB This paper examines federal auctions for drainage leases on the Outer Continental Shelf from 1959 to 1969. These are leases which are adjacent to tracts on which a deposit has been discovered. We find that the data strongly support the hypotheses that neighbor firms are better informed about the value of a drainage lease than nonneighbor firms, that neighbor firms coordinate their bidding decisions, and that both types of firms bid strategically in accordance with the Bayesian-Nash equilibrium model for first-price, sealed bid auctions with asymmetric information.

Higgins, Matt L.

PD November 1987. **TI** A Joint Test For ARCH and Bilinearity in the Regression Model. **AU** Higgins, Matt L.; Bera, Anil K. **AA** Department of Economics, University of Illinois. **SR** University of Illinois at Urbana-Champaign Bureau of Economic and Business Research Faculty Paper: 1410; Department of Economics, University of Illinois at Urbana-Champaign, 1206 S. 6th Street, Champaign, IL 61821. **PG** 13. **PR** No Charge. **JE** 211. **KW** Regression Model. ARCH. Bilinearity. Joint Test. Time Series Models.

AB In this paper we argue that in the regression model to test for the possible nonlinearity of the error process, presence of ARCH and bilinearity should be tested simultaneously, and we suggest a joint test statistic. One example shows that the individual tests for ARCH and bilinearity may not be significant while a joint test rejects the linearity hypothesis. Obviously, our results are also applicable to pure time series models.

Hines, James R. Jr

TI Investment Tax Incentives and Frequent Tax Reforms. **AU** Auerbach, Alan J.; Hines, James R. Jr.

Holmstrom, Bengt

TI Short-Term contracts and Long-Term Agency Relationships. **AU** Fudenberg, Drew; Holmstrom, Bengt; Milgrom, Paul.

Holtz, Eakin Douglas

PD October 1987. **TI** Federal Deductibility and Local Property Tax Rates. **AU** Holtz, Eakin Douglas; Rosen, Harvey. **AA** Holtz-Eakin: Columbia University. Rosen: Princeton University. **SR** Princeton University John M.

Olin Program for the Study of Economic Organization and Public Policy: 6; Department of Economics/Woodrow Wilson School of Public and International Affairs Princeton University, Princeton, NJ. **PG** 30. **PR** No Charge. **JE** 323, 324. **KW** Tax Reform. Deductions. Tax Rate. Property Taxes.

AB In current discussions of tax reform in the United States, there is considerable controversy concerning the effects of allowing individuals to deduct state and local taxes when calculating their federal income tax liability. Recent econometric work has suggested that federal deductibility of state and local taxes has raised the proportion of these taxes -- especially property taxes -- in local budgets. This paper lends additional support to these earlier findings by showing that one channel through which deductibility leads to higher local property tax revenues is by increasing the rate of local property taxation. Specifically, we find that if deductibility were eliminated, the mean property tax rate in our sample of 82 communities would fall by 0.00715 (\$7.15 per thousand dollars of assessed property), or 21.1 percent of the mean tax rate.

Holzer, Harry J.

PD April 1988. **TI** Job Queues and Wages: New Evidence on the Minimum Wage and Inter-Industry Wage Structure. **AU** Holzer, Harry J.; Katz, Lawrence F.; Krueger, Alan B. **AA** Holzer: Michigan State University; Katz: Harvard; Krueger: Princeton. **SR** Princeton Industrial Relations Section Working Paper: 230; Industrial Relations Section, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 32. **PR** \$1.50. **JE** 824, 822, 821. **KW** Applications. Job Queues. Minimum Wage. Industry Wage Structure.

AB This paper uses job applications data to test the existence of non-competitive, ex-ante rents in the labor market. We first examine whether jobs that pay the legal minimum wage face an excessive supply of labor as measured by the number of job applications received for the most recent position filled by the firm. The results indicate that openings for jobs that pay the minimum wage attract significantly more job applications than jobs that pay either more or less than the minimum wage. This spike in the job application rate distribution indicates that ex-ante rents generated for employees by an above market-level minimum wage do not appear to be completely dissipated by employer actions. The second part of the paper uses a similar approach to examine whether jobs in high-wage industries pay above market-clearing wage rates. We find a weak, positive relationship between inter-industry application differentials and inter-industry wage differentials. In addition, our results indicate that employer size has a sizeable positive effect on the job application rate even after controlling for the wage rate. The paper considers several possible explanations for these findings.

Hooker, Mark A.

TI Learning About Monetary Regime Shifts in an Overlapping Wage Contract Model. **AU** Fuhrer, Jeffrey C.; Hooker, Mark A.

Hooper, Peter

PD November 1987. TI The U.S. External Deficit: Its Causes and Persistence. AU Hooper, Peter; Mann, Catherine L. AA Division of International Finance, Board of Governors of the Federal Reserve System; National Bureau of Economic Research. SR Board of Governors of the Federal Reserve System International Finance Discussion Paper: 316; Division of International Finance Board of Governors of the Federal Reserve System, Washington, D.C. 20551. PG 150. PR No Charge. JE 311, 321, 422, 431, 212. KW Trade Deficit. Current Account. Monetary Policy. Fiscal Policy. Trade Policy.

AB This paper presents an empirical analysis of the macroeconomic and microeconomic factors underlying the causes and persistence of the United States external deficit in the 1980s. The paper begins with a review of the extensive literature on this subject, and then outlines an analytical framework that synthesizes several different approaches taken in previous studies. The proximate causes of the deficit are assessed using a partial-equilibrium model of the United States current account. We find that the decline in United States price competitiveness associated with the appreciation of the dollar over the first half of the decade was the dominant factor, while the excess of United States growth over growth abroad also contributed significantly.

Hubbard, Glenn R.

TI Firm Heterogeneity, Internal Finance, and Credit Rationing. AU Calomiris, Charles W.; Hubbard, Glenn R.

Huizinga, Harry

TI U.S. Commercial Banks and the Developing Country Debt Crisis. AU Sachs, Jeffrey; Huizinga, Harry.

Hurd, Michael D.

PD December 1987. TI The Wealth and Poverty of Widows: Assets Before and After the Husband's Death. AU Hurd, Michael D.; Wise, David A. AA Hurd: State University of New York at Stony Brook. Wise: Harvard University, Hoover Institution. SR Stanford Hoover Institute Working Paper in Economics: E-87-59; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 52. PR No Charge. JE 914, 918, 921. KW Poverty. Widows. Elderly. Life Insurance.

AB We verify that widows are much more likely than couples to be poor and that they make up a large proportion of the poor elderly; 80 percent are widows or other single individuals. Then we seek to explain why the single elderly are poor, with emphasis on widows. We do this by tracing back over time their financial status, using the Longitudinal Retirement History Survey. The death of the husband very often induces the poverty of the surviving spouse, even though the married couple was not poor. While only about 9 percent of prior couples are poor, approximately 35 percent of the subsequent widows are. A large proportion of the wealth of the couple is lost when the husband dies. In addition we find that: (1) the prior households of poor widows earned and saved less

than the prior households of non-poor widows, (2) more of the smaller accumulated wealth was lost at the death of the husband, (3) the absence of survivorship benefits or life insurance insured that the loss in wealth would leave the widow poor thereafter.

Hutchins, Teresa

TI Productivity in American Whaling: The New Bedford Fleet in the Nineteenth Century. AU Davis, Lance E.; Gallman, Robert E.; Hutchins, Teresa.

Ichiishi, Tatsuro

PD August 1987. TI A Note on Welfare Comparison of Two Side-Payment Games. AA The Ohio State University. SR Universite Catholique de Louvain CORE Discussion Paper: 8741; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve BELGIUM. PG 14. PR No Charge. JE 026, 024. KW Exact Game. Convex Games. Sharkey.

AB Given two side-payment games v and w , both defined for the same finite player-set N , general characterizations of the following two conditions are established: (A) For every y element $C(w)$ there exists x element $C(v)$ such that $y \leq x$; and (B) There exist y element $C(w)$ and x element $C(v)$ such that $y \leq x$. (Here $C(v)$ denotes the core of v .) For certain classes of games, such characterizations are simplified. A new class of no-gap exact games is proposed; it is dual to Sharkey's concept of exact games with a large core. Given a no-gap exact game v and an exact game w , (A) holds true iff $v(S) - w(S) \leq v(N) - w(N)$ for every S subset of N . If v is not a no-gap exact game, there exists an additive game w for which the last condition is satisfied, yet (A) is not true. Given convex games v and w , (B) holds true if $w(S) + v(NS) \leq v(N)$ for every S subset of N .

Inder, Brett A.

PD October 1987. TI Bias in the Ordinary Least Squares Estimator in the Dynamic Linear Regression Model with Autocorrelated Disturbances. AA Monash University. SR Monash Department of Econometrics and Operations Research Working Paper: 10/87; Department of Econometrics and Operations Research, Monash University, Clayton, Victoria 3168, AUSTRALIA. PG 24. PR No Charge. JE 211. KW Lagged Dependent Variable. Monte Carlo Study. Finite Sample.

AB We consider the bias in the Ordinary Least Squares estimator in the linear regression model with a lagged dependent variable as regressor. Results are obtained with independent and autocorrelated disturbances. Asymptotic results are obtained analytically, and finite sample results based on a Monte Carlo study. The substantial biases found suggest the need for an alternative estimator to Ordinary Least Squares and powerful tests for autocorrelated disturbances in the dynamic model.

Innes, Robert D.

PD February 1988. TI Agricultural Policy in Economies with Uncertainty and Incomplete Markets. AU Innes, Robert D.; Rausser, Gordon C. AA Innes: University of California, Davis, Department of Agricultural Economics. Rausser: University of California at Berkeley, Department of Agricultural and Resource

Economics. SR University of California at Berkeley Department of Agricultural and Resource Economics (CUDARE) Working paper: 457; 207 Giannini Hall, University of California, Berkeley, CA 94720. PG 48. PR \$9.60. JE 713, 531, 227, 921. KW Agricultural Policies. Risk. Marketing. Consumers. Demand Elasticity. Brannan Plan.

AB A Brannan Plan policy can yield positive social benefits in an economy with stochastic production and incomplete markets under conditions which are plausible for an agricultural commodity. This paper takes these results as a point of departure, asking whether production controls, both as an isolated policy and as one employed with a Brannan Plan, can have desirable welfare properties in such an economy. In a variety of cases, these controls are found to be both socially harmful in a single-policy context and socially beneficial in the presence of a target price/deficiency payment scheme. Further, when monitoring costs prevent direct control of production, the use of an indirect control -- namely, land set-asides -- is shown to yield ambiguous welfare effects in the presence of a Brannan Plan; however, a numerical example indicates that the allocational costs of land set-asides, exacerbated by slippage, outweigh the benefits of supply cutbacks for a wide range of parameter specifications.

Ioannides, Yannis M.

PD February 1988. TI Diffusion of Technological Change and Economic Growth. AA Virginia Polytechnic Institute and State University. SR Virginia Polytechnic Institute and State University Working Paper in Economics: E88-04-01; Working Paper Coordinator, Department of Economics Sandy Hall, Blacksburg, VA 24061. PG 20. PR Free by request. JE 111, 621. KW Economic Growth. Technological Change. Growth Theory.

AB In the context of a standard neoclassical model of economic growth we investigate the consequences of assuming that technological change does not affect simultaneously the entire economy. We assume that the proportion of the firms in the economy who have adopted embodied capital-augmenting technical progress follows a given diffusion process. We then derive a second-order differential equation for aggregate capital per capita, from which we conclude that the long-run growth rate of all per capita magnitudes is independent of the economy's propensity to save. Thus, a key result of neoclassical growth theory still holds when technological change is not implemented uniformly throughout the economy.

Isard, Peter

TI Does the SDR System Generate Permanent Resource Transfers? AU Coats, Warren; Furstenberg, Reinhard; Isard, Peter.

Iwamura, Kakuzo

PD October 1987. TI Lexicographically Optimal Base of a Submodular System with Respect to a Weight Vector. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87482-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 11. PR No Charge. JE 213. KW Optimal

Base. Submodular System. Greedy Procedure. Lexicographic.

AB We show the existence of a lexicographically optimal base of a submodular system with respect to a weight vector. We also show a greedy procedure to get it through an algebraic consideration.

Jackman, Richard J.

TI Long-Term Unemployment and Special Employment Measures in Britain. AU Haskel, Jonathan; Jackman, Richard J.

Jackson, Matthew

PD February 1988. TI Stock, Options, and Deferred Compensation. AU Jackson, Matthew; Lazear, Edward. AA Jackson: Stanford University. Lazear: Hoover Institution and University of Chicago. SR Stanford Hoover Institute Working Paper in Economics: E-88-11; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 49. PR No Charge. JE 022, 522, 833, 521. KW Stock. Stock Options. Deferred Payment. Incentives. Project Choice. Compensation.

AB Stock, stock options and deferred compensation are often alleged to have desirable incentive properties. But the incentive effects of the three devices are different. When should a firm choose one method of motivation over another? How many shares should a worker be given and what is the optimal exercise price? Does the choice of one instrument imply more default risk than another? Which instruments encourage managers to be cautious and which encourage risk taking? Why are workers awarded long positions on calls rather than paid to take short positions on puts? How does public availability of the stock alter the situation? These questions and others are addressed in the analysis.

Jacobe, Ronald H. Jr

PD September 1987. TI The Demand for New York City Public Transit. AU Jacobe, Ronald H. Jr; Plant, Mark W. AA Jacobe: Princeton University. Plant: Princeton University and University of California, Los Angeles. SR Princeton University John M. Olin Program for the Study of Economic Organization and Public Policy: 3; Department of Economics/Woodrow Wilson School of Public and International Affairs Princeton University, Princeton, NJ 08544. PG 56. PR No Charge. JE 933, 615. KW Transit System. Transit Demand. Fares.

AB The key goal of current efforts by the Metropolitan Transit Authority (MTA) of New York City is to increase ridership on the transit system. This paper estimates a demand curve for ridership using aggregate, time-series data. We find that ridership is best explained by the real fare, real earnings in New York City, employment in New York City and a measure of subway reliability. The own price elasticity of demand is found to be -0.20. We discuss alternative specifications, use of other variables and the potential efficacy of efforts by the MTA to increase ridership. We concur in the MTA's opinion that moderate fare increases can generate substantial revenue without inordinate ridership decreases.

Jacquemin, Alexis

TI A Note on Cooperative and Noncooperative R&D in Duopoly. **AU** dAspremont, Claude; Jacquemin, Alexis.

Jasso, Guillermina

PD December 1987. **TI** English Language Skill Acquisition, Locational Choice and Labor Market Returns among the Major Foreign-Born Language Groups in the United States in 1900 and 1980. **AU** Jasso, Guillermina; Rosensweig, Mark R. **AA** Jasso: Department of Sociology, University of Minnesota. Rosensweig: Department of Economics, University of Minnesota. **SR** University of Minnesota Economic Development Center Bulletin: 87-12; Department of Economics, 1035 Management and Economics, University of Minnesota, Minneapolis, MN 55455. **PG** 38. **PR** No Charge. **JE** 823, 826, 824, 921, 813. **KW** Immigrants. Language. Location.

AB In this paper we have used Census data from 1900 and 1980 to examine and compare the behavior of the major common-language groups of the foreign-born with respect to their English-language investment behavior and locational choices. Our results indicated that in both 1980 and 1900, when a far larger proportion of the United States population was foreign-born and did not speak English, higher economic rewards were associated with knowledge of English, and rewards to English proficiency and location were linked such that costs of lack of English proficiency were smaller in areas with greater concentrations of persons speaking the same non-English native language. In part as a consequence, those foreign-born in 1900 and 1980 who expected to spend less time in the United States were less likely both to acquire English-language skills and to move to locations with lower proportions of individuals speaking the same language. We also found that in both time periods, the English-language proficiency of the children of immigrants appeared to be influenced in similar ways by the English skills of their parents, household resources and the community environment.

Jones, Carol Adaire

PD December 1987. **TI** The Social Cost of Uniform Regulatory Standards in a Hierarchical Government. **AU** Jones, Carol Adaire; Scotchmer, Suzanne. **AA** Jones: University of Michigan. Scotchmer: University of California at Berkeley. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 88-01; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 28. **PR** No Charge. **JE** 916, 022, 024. **KW** Social Cost. Enforcement Agency. Legislature.

AB We examine the social cost of uniform standards where there is a hierarchy of control in the enforcement process. An enforcement agency elicits compliance by firms and a two-minded legislature controls the enforcement agency. We assume the legislative appropriations committee maximizes social welfare in its choice of the inspection budget, which determines the set of feasible agency actions. However, we assume "special interests" on the legislative oversight committee induce the agency to maximize the benefits of compliance, independent of the firms' costs of compliance. We show

that, even when agency incentives are not efficient, the second-best pattern of compliance induced by legislative budgetary controls will be close to the first-best, if the signal of compliance costs available to the government is very good.

Jorion, Philippe

TI The Time-Variation of Risk and Return in the Foreign Exchange and Stock Markets. **AU** Giovannini, Alberto; Jorion, Philippe.

Joshi, Heather

PD November 1987. **TI** The Cash Opportunity Costs of Childbearing: An Approach to Estimation Using British Data. **AA** London School of Hygiene. **SR** Centre for Economic Policy Research Discussion Paper: 208; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 44. **PR** 1 pound (\$2) individuals; 1.50 pounds (\$3) companies, libraries, institutions. **JE** 813, 851, 841, 824, 821. **KW** Fertility. Child Care. Human Capital. Labor Supply. Lifetime Income. Earnings Function.

AB The opportunity costs of rearing British children, in terms of cash earnings forgone by their mother, are estimated for a typical family. Data from the 1980 Women and Employment Survey provide estimates for hourly pay as a function of work experience and current hours of work. In addition, these data are used to generate participation and hours profiles for representative women with different numbers of children. These are then combined with the earnings function to simulate lifetime income. The simulations indicate that the earnings forgone as a result of bearing and rearing two children can be decomposed into three effects, of approximately equal magnitude: on participation, hours and pay. These effects exceed the direct costs of children and do not rise proportionally with family size. In addition, forgone earnings are sensitive to the spacing of births but not (undiscounted) to the timing of the first birth. The methodology and results of these simulations contrast markedly with those of a similar study of United States women. We argue that the non-linearity of the earnings function in our study and state dependence in British labour force transitions violate the assumptions of the multi-state labour force life-table on which the United States study was based.

Judd, Kenneth L.

TI Cooperation through Delegation. **AU** Fershtman, Chaim; Judd, Kenneth L.; Kalai, Ehud.

Jump, Gregory V.

PD July 1987. **TI** Is the Demand for Money Determined by Policy Rules? **AA** Department of Economics, University of Toronto. **SR** University of Toronto Institute for Policy Analysis Working Paper: 8712; Department of Economics, University of Toronto, Toronto, Ontario, CANADA M5S 1A1. **PG** 18. **PR** Gratis - as long as stock lasts. **JE** 311, 313. **KW** Money Demand. Regimes. Asset Pricing. Equilibrium Pricing.

AB Received asset-pricing theory yields equilibrium conditions relating the expected returns on any two assets.

When the return on money is uniquely associated with a given quantity of real balances, these equilibrium conditions can be used to identify a relationship between the expected return on any asset and the optimal real balance holdings of a representative economic agent. There are as many ways of expressing the agent's demand for money as there are numbers of assets that compete with money in his portfolio. Most of these money demand functions can be expected to vary in form with the behaviour of policy makers. The function that relates real balances to the risk-free nominal rate of interest proves an exception. There are no theoretical reasons why this particular representation of the demand for money should exhibit any time-or policy-related instabilities.

PD July 1987. **TI** On the Stability of the Demand for Money: A Test of the Lucas Critique. **AA** Department of Economics, University of Toronto. **SR** University of Toronto Institute for Policy Analysis Working Paper: 8713; Department of Economics, University of Toronto, Toronto, Ontario, CANADA M5S 1A1. **PG** 46. **PR** Gratis - as long as stock lasts. **JE** 311, 212. **KW** Money Demand. Regimes.

AB Re-examination of theoretical arguments reveals nothing to preclude the existence of a stable relationship describing the demand for real money balances. The parameters of a suitably-specified money demand function may be deemed to be deep parameters not subject to change across variations in the stochastic structure of the economy; i.e., across shifts in regimes. Evidence of parameter instability in existing studies may be interpreted as resulting from statistical analysis of data unknowingly drawn from differing regimes. A model descriptive of the macroeconomy both within and across regimes is postulated and used to devise a test of the maintained hypothesis of money demand stability. The model is formulated in continuous time and time averaged to yield empirically testable hypotheses. Quarterly Canadian data are employed in the tests.

Kalai, Ehud

TI Cooperation through Delegation. **AU** Fershtman, Chaim; Judd, Kenneth L.; Kalai, Ehud.

Kalt, Joseph P.

TI How Natural is Monopoly? The Case of Bypass in Natural Gas Distribution Markets. **AU** Broadman, Harry G.; Kalt, Joseph P.

Kamecke, Ulrich

PD September 1987. **TI** Non-Cooperative Matching and Distribution Games. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-131; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 22. **PR** No Charge. **JE** 026. **KW** Marriage Problem. Non-Cooperative Game. Core Allocations.

AB Suppose there are two groups of agents facing a "marriage" problem where a continuous variety of efficient payoffs can be distributed between each two members of the opposite groups. In an allocation each player realizes a payoff either alone or with the partner he is matched to. The paper proposes a non-cooperative extension to a

simple distribution game decentralizing all stable (core) solutions to the problem as Nash-equilibria. It is argued that such a symmetric matching market can be expected to be organized asymmetrically. One group of players announces the payoff that they are willing to accept while the members of the other group address their demands to an opponent. In an extended version of the game the equilibrium selection problem can be reduced. If the passive players' announcements are fixed exogeneously and if the active players are allowed to readdress unsuccessful demands, then there is only one equilibrium payoff left. The active players prefer their equilibrium payoffs to all other core allocations.

PD November 1987. **TI** Mean-City - A Consistent Approximation of Bid Rent Equilibria. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-138; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 23. **PR** No Charge. **JE** 931, 932, 026. **KW** Bid Rent Equilibrium. Residential Location. Auction Game. Land Auctions. Residential.

AB The bid rent equilibrium is used to explain the residential location in a monocentric city for a continuum of consumers. This paper shows how the equilibrium can be approximated consistently with finite large economies. In the first part the model with finitely many consumers is described as an auction game. The set of equilibrium payoffs is homeomorphic to a high dimensional cube. In the second part a replication procedure is developed. The transportation costs shrink as the number of consumers grows and so the average endowment with land of the same quality is held constant. The equilibria of the corresponding land auctions are shown to converge to the unique bid rent equilibrium.

Kamien, Morton I.

TI Turnpike Properties in a Finite Horizon Differential Game; Dynamic Duopoly With Sticky Prices. **AU** Fershtman, Chaim; Kamien, Morton I.

Kaminsky, Graciela Laura

PD December 1987. **TI** The Real Exchange in the Short and in the Long Run. **AA** Department of Economics, University of California, San Diego. **SR** University of California at San Diego Department of Economics Discussion Paper: 88-11; Department of Economics, D-008, University of California at San Diego, La Jolla, CA 92093. **PG** 67. **PR** \$2.00; checks payable to UC Regents. **JE** 431, 212. **KW** Exchange Rates. Cointegration. Random Walks.

AB Two hypotheses are common in the international finance literature: (1) the real exchange rate is a random walk, (2) the large volatility of the real exchange rate since the breakdown of the Bretton Woods System reflects the existence of stochastic bubbles in the foreign exchange market. The first hypothesis might be used in support of flexible goods prices models since price stickiness is typically thought to be a transitory phenomenon and therefore an unlikely explanation of permanent fluctuations in the real exchange rate. The second hypothesis has been used to justify intervention in the foreign exchange market. This paper provides evidence against both hypotheses. It

is found that the real exchange rate is cointegrated with the market fundamentals. Clearly, if the exchange rate and its market fundamentals are cointegrated, then bubbles cannot be present as the equilibrium error is $I(0)$. It is also found that the stochastic process followed by the real exchange rate exhibits the presence of mean reverting components in the long run, contradicting the random hypothesis. I also present a specification test for the null hypothesis of fully flexible goods prices. This hypothesis is rejected for all the bilateral exchange rates analyzed.

PD December 1987. **TI** Risk Premium and the Foreign Exchange Market. **AU** Kaminsky, Graciela L.; Peruga, Rodrigo. **AA** University of California, San Diego. **SR** University of California at San Diego Department of Economics Discussion Paper: 88-7; Department of Economics, D-008, University of California at San Diego, La Jolla, CA 92093. **PG** 41. **PR** \$2.00; checks payable to UC Regents. **JE** 431, 432, 212. **KW** Risk Premium. Forward Market. Exchange Rates. Arch Models. Intertemporal Model.

AB We investigate the existence of a time varying risk premium in the foreign exchange market using the intertemporal asset pricing model. In this model the risk premium is due to consumption risk which is measured by the covariance between returns and the marginal utility of money. We model this conditional covariance using the ARCH model introduced by Engle (1982). Results are presented for the British pound, the German mark, the Swiss franc and the Japanese yen for the 1975-1986 period. We are able to show that for these forward contracts a time varying risk premium is an important determinant of the expected returns. Nevertheless, tests of intertemporal asset pricing model restrictions show that the explicit analysis of switching exchange regimes or a more flexible specification of the model is needed.

PD February 1988. **TI** Credibility Crises: The Dollar in the Early Eighties. **AU** Kaminsky, Graciela Laura; Peruga, Rodrigo. **AA** University of California, San Diego. **SR** University of California at San Diego Department of Economics Discussion Paper: 88-15; Department of Economics, D-008, University of California at San Diego, La Jolla, CA 92093. **PG** 61. **PR** \$2.00; checks payable to UC Regents. **JE** 431, 311. **KW** "Peso Problem". Exchange Rates. Risk Premium. Switching Regimes. Monetary Policy.

AB One of the most puzzling aspects of the floating exchange rate regime in the early eighties has been the apparently inefficient predictive performance of forward exchange rates. During this period the excess returns from a long position in the forward market was on average 12 to 18 percent per annum. In this paper we argue that a possible explanation of the substantial ex-post forward rate forecast errors is the existence of a "peso problem". We identify two "peso problem" periods. The first one is related to the change in monetary regime in October 1979 and to the private sector doubts about the FED commitment to lower money growth and inflation. The second "peso problem" period is related to the private sector anticipation of the dollar's depreciation beginning in February 1985. For both periods we obtain the probabilities of a regime change. These probabilities are related to market fundamentals.

Kamiya, Kazuya

PD August 1987. **TI** Existence and Uniqueness of Equilibria with Increasing Returns. **AA** Yale University. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8740; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. **PG** 31. **PR** No Charge. **JE** 021, 213. **KW** Profit maximization. IRS. Nonconvex Technologies. Price Setting.

AB It is well known that firms' profit maximizing behavior is inconsistent with the existence of equilibria in an economy with increasing returns to scale (or nonconvex) technologies. The main purpose of this paper is to show that if firms adopt price setting behaviors then, under certain assumptions, there exists an equilibrium even in an economy with nonconvex technologies. In addition, the method of the proof allows us to deduce a uniqueness condition.

PD August 1987. **TI** Existence of General Equilibrium in a Competitive Economy with Endogenous Credit Rationing. **AU** Kamiya, Kazuya; Wildasin, David. **AA** CORE. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8736; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. **PG** 25. **PR** No Charge. **JE** 022, 021, 621. **KW** General Equilibrium. Technology. Investment. Debt-financing. Credit Rationing. Loan Contracts.

AB An economy is analyzed in which production and consumption occur in two periods. Future production is subject to technological uncertainty. Investment for future production is debt-financed, and firms with unfavorable technologies may default. Perfectly competitive lenders offer loan contracts which specify both the lending rate (price) and the amount to be loaned (quantity). Existence of a general competitive equilibrium is established. (Certain complications arise because the loan supply correspondence is not convex-valued.) Depending on the nature of the technological uncertainty (e.g. with multiplicative uncertainty), equilibrium loan contracts may be characterized by credit rationing.

Kaneko, Mamoru

PD December 1987. **TI** Conventions, Social Prejudices and Discrimination: A Festival Game with Merrymakers. **AU** Kaneko, Mamoru; Kimura, Toshiyuki. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E87-12-02; Working Paper Coordinator, Department of Economics, Sandy Hall, Blacksburg, VA 24061. **PG** 35 + 3. **PR** Free by request. **JE** 026, 917. **KW** Discrimination. Prejudice. Noncooperative Game.

AB This paper presents a very simple noncooperative game called a festival game with merrymakers. All the players of this game are substantively identical, i.e., have the same strategies - to go to the festival or to stay home, and the same payoff functions. However the players are divided into two groups called "white" and "black", and each player is given the label "white" or "black". Black players can be distinguished from white players by having the nominally different label. To keep the good mood of the festival, a majority of the total population are needed

to participate in the festival. The population of the white players is assumed to be more than a half of the total population. We apply the theory of stable conventions to the recurrent situation of this simple game. Then we show that the outcome where every white player goes to the festival but no black player goes to the festival might appear as a stationary state sustained by some socially stable convention. In this convention, the black players are discriminated against by the white players but each white does not necessarily have prejudice against blacks - the entire convention (or situation) makes the white players discriminate against the black players. We thoroughly investigate possible conventions and consider implications of those results comparing some current sociological research in ethnic relations.

PD February 1988. **TI** Players' Deductions and Deductive Knowledge, and Common Knowledge on Theorems. **AU** Kaneko, Mamoru; Nagashima, Takashi. **AA** Kaneko: Virginia Polytechnic Institute and State University. Nagashima: Hitotsubashi University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E88-02-01; Working Paper Coordinator, Department of Economics, Sandy Hall, Blacksburg, VA 24061. **PG** 57 + 6. **PR** Free by request. **JE** 026. **KW** Deductions. Proof Trees. Completeness Theorem. Common Knowledge.

AB This paper develops a framework in which players' knowledge on the framework itself and their deductive abilities are able to be discussed, as well as the investigator's. First we prove the completeness theorem for the investigator's deductive system, which means that the formalization of the deductive system captures our informal but ideal notion of deduction. Secondly, we formulate players' deductions in two ways, and show that these two formulations of players' deductions are also complete in the same sense as the completeness theorem. Then we will consider the common knowledge problem in our framework. One result which we call the Common Theorem is that if the players' deductive abilities and the logical axioms are common knowledge, then every theorem derived from a set of nonlogical axioms which are also assumed to be common knowledge becomes common knowledge. As a concrete application of this result, it turns out that Kaneko's '1987 theorems on the structural common knowledge problem become common knowledge among the players if his axioms are assumed to be common knowledge in addition to the players' deductive abilities and the logical axioms.

PD March 1988. **TI** Conventionally Stable Sets in Noncooperative Games: von Neumann-Morgenstern Stable Sets in Small Cooperative Games. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E88-3-1; Working Paper Coordinator, Department of Economics, Sandy Hall, Blacksburg, VA 24061. **PG** 40. **PR** Free by request. **JE** 026. **KW** Bargaining. Cooperative Game. Stable Set. Extensive Game. Stable Conventions.

AB This paper considers a situation in which bargaining on imputations in a given cooperative game in characteristic function form has been and will be repeated infinitely many times. Bargaining on imputations in each period is formulated as a noncooperative extensive game.

At each period, an extensive game is characterized by a current proposer and a current imputation. As the proposer and the current imputation change between periods according to some rules, the extensive games also changes. In this repeated situation, we formulate a set of behavior patterns with certain properties, called a conventionally stable response configuration. We show a close relationship between the sets of stationary imputations of conventionally stable response configurations and von Neumann-Morgenstern stable sets. Also we suggest a strengthened stable set concept, and then show that any set of this strengthened concept is sustained as the stationary set of some conventionally stable response configuration.

Kanemoto, Yoshitsugu

PD December 1987. **TI** The Ratchet Effect, the Market for Senior Workers, and Intertemporal Commitment. **AU** Kanemoto, Yoshitsugu; MacLeod, W. Bentley. **AA** Kanemoto: Institute of Socio-Economic Planning, University of Tsukuba. MacLeod: Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 703; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 27. **PR** Canada & U.S. \$3.00; \$3.50 foreign. **JE** 813, 824, 918, 026, 022. **KW** Contract. Ratchet. Older Workers.

AB This paper studies the effect that a labor market for older workers will have on the ratchet effect. Even though we assume that the information on worker type that a firm obtains will not be transmitted to other firms, the presence of the ex post labor market eliminates the ratchet effect. We also compare the cases with and without the market for senior workers, which yields useful insights on differences between labor markets in the U.S. and Japan.

PD March 1988. **TI** The Theory of Contracts and Labor Practices in Japan and the United States. **AU** Kanemoto, Yoshitsugu; MacLeod, W. Bentley. **AA** Kanemoto: Institute of Socio-Economic Planning, University of Tsukuba. MacLeod: Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 708; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 23. **PR** \$3.00 Canada and United States; \$3.50 Foreign. **JE** 051, 833, 823, 824. **KW** Labor Contracts. Japan. Contract Theory. Labor Management.

AB Labor management practices in Japan are quite different from those in the United States. Based on recent developments in contract theory, we develop a conceptual framework to understand why the differences have been maintained for a long period of time. Our basic message will be that the American and Japanese systems are examples of two different equilibria. The distinguishing feature of these two equilibria will be the extent to which exit is used as a method of contract enforcement. In the United States, there is a greater tendency for the use of exit because active markets exist for senior workers. In contrast, there is virtually no market for mid career workers in Japan. We also discuss the implications of this fundamental difference on the structure of the internal and external labor markets.

Karayannis, Marios

TI The Taxation of Income From Capital in the United States, 1980-1986. AU Fullerton, Don; Karayannis, Marios.

Karni, Edi

PD January 1988. TI Limit Standards of Behavior. AA The Johns Hopkins University. SR Tel-Aviv Foerder Institute for Economic Research Working Paper: 2-88; Department of Economics, Tel-Aviv University, Ramat Aviv 69978, Tel-Aviv, ISRAEL. PG 8. PR No Charge. JE 026. KW Standards of Behavior. Social Situations.

AB Within the theory of social situations this paper develops the concept of limit standard of behavior. For conservative players it is shown that limit standards of behavior are conservative stable standards of behavior. For optimistic players the limit standard of behavior is optimistic stable standards of behavior.

PD January 1988. TI Ascending Bid Auctions with Behaviorally Consistent Bidders. AU Karni, Edi; Safra, Zvi. AA Karni: The Johns Hopkins University. Safra: Department of Economics, Tel-Aviv University. SR Tel-Aviv Foerder Institute for Economic Research Working Paper: 1-88; Department of Economics, Tel-Aviv University, Ramat Aviv 69978, Tel-Aviv, ISRAEL. PG 21. PR No Charge. JE 026, 022. KW Auction Theory. Non-Expected Utility. Dynamic Consistency. Decisions. Independence Axiom. Sequential Decisions.

AB Decision makers whose preferences do not satisfy the independence axiom of expected utility theory, when faced with sequential decisions will act in a dynamically inconsistent manner. In order to avoid this inconsistency and maintain unexpected utility, we suggest the idea of behavioral consistency. We implement this notion by regarding the same decision maker at different decision nodes as different agents and then taking the Bayesian-Nash equilibrium of this game. This idea is applied to a finite ascending bid auction game. We show the condition for the existence of an equilibrium of this game and we also characterize the equilibrium in those cases when it exists. In particular, when the utility functionals are both quasi-concave and quasi-convex, then there is an equilibrium in dominant strategies where each bidder continues to bid if and only if the prevailing price is smaller than his value. In the case of quasi-concavity it is shown that, at equilibrium, each bidder has a value such that he continues with positive probability up to it, and withdraws after that.

Katz, Avery

PD February 1988. TI A Note on Optimal Contract Damages When Litigation is Costly. AA University of Michigan. SR University of Michigan Center for Research on Economic and Social Theory Working Paper: 88-11; Department of Economics, University of Michigan, Ann Arbor, MI 48109. PG 25. PR No Charge. JE 916. KW Contract. Awards. Settlements. Litigation.

AB Simple economic analyses of contract damages imply that the expectation remedy, which compensates the victim of a breach of contract by restoring him to the welfare level he would have enjoyed had the contract been

performed, will provide incentives to perform a contract just when it is efficient to do so. The expectation remedy no longer has this property when enforcing the contract is costly. A fully efficient rule is achievable, but only at the cost of leaving the promisee uncompensated some of the time. If the promisee must be compensated for reasons of distributional equity or risk allocation, however, the expectation measure combined with the English rule for allocating trial costs is second-best efficient.

Katz, Lawrence F.

TI Job Queues and Wages: New Evidence on the Minimum Wage and Inter-Industry Wage Structure. AU Holzer, Harry J.; Katz, Lawrence F.; Krueger, Alan B.

Kelly, Kenneth

PD November 1987. TI The Analysis of Causality in Escape Clause Cases. AA Bureau of Economics, Federal Trade Commission. SR Federal Trade Commission Bureau of Economics Working Paper: 157; Bureau of Economics, Federal Trade Commission, 6th and Pennsylvania Avenue North West, Washington, DC 20580. PR No Charge. JE 422, 421. KW International Trade Commission. Escape Clause. Protection. Trade Act. Imports.

AB Under Section 201 of the Trade Act of 1974, the so-called escape clause, a domestic industry that is seriously injured can obtain temporary relief if imports are the substantial cause of such injury. This paper develops a methodology that can be used to determine the change in a domestic industry's production as a result of changes in import supply, demand or domestic supply and so determine whether or not an industry is entitled to relief under Section 201. This methodology is illustrated by application to two recent Section 201 investigations.

Kennan, John

TI An Experimental Analysis of Bargaining and Strikes with One-sided Private Information. AU Forsythe, Robert; Kennan, John; Sopher, Barry.

PD February 1988. TI Why Does the Information Matrix Test Reject too Often? A Diagnosis of Some Monte Carlo Symptoms. AU Kennan, John; Neumann, George R. AA Kennan: University of Iowa; National Fellow, Hoover Institution. Neumann: University of Iowa. SR Stanford Hoover Institute Working Paper in Economics: E-88-10; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 72. PR No Charge. JE 211. KW Information Matrix Test. Finite Sample. Monte Carlo. Asymptotic Theory. Likelihood Function.

AB We present Monte Carlo evidence on the performance of the Information Matrix test developed by White. We first consider a linear regression model in which the disturbance and the regressors are drawn from independent standard normal distributions. This model displays a major problem of the IM test: the size of the test is incorrect in small samples, particularly when the model includes several regressors. The problem becomes much worse when the mean and variance of a normal distribution are jointly estimated. In this context, we show that the size of the IM test can be changed

considerably by reparameterization of the likelihood function, but the two parameterizations require about the same number of observations before the asymptotic theory becomes reliable. Finally, we consider an exponential model with normally distributed regressors. In this model, White's test rejects much too often, and Lancaster's version of the test (necessarily) rejects even more often. If one has enough data to make White's test viable, Lancaster's test gives roughly the same results in a more convenient way.

Kenward, Lloyd

TI Tax Policy and Business Investment in the United States: Evidence from the 1980s. AU Corker, Robert; Evans, Owen; Kenward, Lloyd.

Khanna, Naveen

TI Why Are Buyers Represented by Seller's Agents When Buying a House? AU Bagnoli, Mark; Khanna, Naveen.

Kimura, Toshiyuki

TI Conventions, Social Prejudices and Discrimination: A Festival Game with Merrymakers. AU Kaneko, Mamoru; Kimura, Toshiyuki.

Kniesner, Thomas J.

PD March 1986. TI A Survey of Alternative Models of the Aggregate U.S. Labor Market. AU Kniesner, Thomas J.; Goldsmith, Arthur. AA University of North Carolina, Chapel Hill. SR University of North Carolina Working Paper Series: 86-2; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. PG 102. PR No Charge. JE 131, 821, 023. KW Cyclical Fluctuations. Labor Market. Auctions. Recession. Fiscal Policy.

AB The auction-market analysis of prices and quantities is the core of neoclassical economics. Interpreting the aggregate labor market as a short-term auction has not proved particularly useful when considering cyclical fluctuations in aggregate employment, unemployment, and the real wage, however. The focus of this review is on whether any of the theoretical alternatives to the simple short-term auction-market framework produces an empirically superior description of the typical United States recession. Put differently, what can economists honestly tell students and policymakers concerning how the aggregate United States labor market operates? This is an important issue because, among other things, it relates to the impact of discretionary monetary and fiscal policies on the macroeconomy.

PD July 1987. TI Family Structure, Race and the Hazards of Young Women in Poverty. AU Kniesner, Thomas J.; McElroy, Marjorie; Wilcox, Steven. AA Kniesner, Wilcox: University of North Carolina Chapel Hill. McElroy: Duke University. SR University of North Carolina Working Paper Series: 86-9; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. PG 30. PR No Charge. JE 914, 921, 841, 917. KW Single Mothers. Poverty. Race. Welfare System.

AB Single mothers are a growing fraction of the United

States population, are disproportionately black, often poor, raise an increasing fraction of United States children, and, along with their children, are the beneficiaries of the controversial United States welfare system. Our research is a first attempt to assess directly how young women become poor single mothers, determine how they leave this situation, discover what personal characteristics, family background, and environmental factors contribute both to their entry into this state and their subsequent exit, and ascertain how all of the events just mentioned differ between blacks and whites.

PD October 1987. TI Can We Make OSHA and Worker's Compensation Insurance Interact More Effectively in Promoting Workplace Safety? A Numerical Simulation Analysis of Hedonic Labor Market Equilibrium. AU Kniesner, Thomas J.; Leeth, John D. AA Kniesner: University of North Carolina, Chapel Hill. Leeth: Bentley College. SR University of North Carolina Working Paper Series: 86-3; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. PG 69. PR No Charge. JE 822, 616, 613, 913. KW Workplace. Safety. Workers' Compensation. Insurance. Occupational Safety and Health Act. Hedonic Model.

AB The level of workplace safety in the United States is crucially linked to two public policies: (1) state workers' compensation insurance (WC) and (2) the federal Occupational Safety and Health Act of 1970 (OSHA). To identify safety enhancing refinements in WC and OSHA we examine how the two programs jointly affect long-run labor market equilibrium using the computable hedonic equilibrium model. We find that WC increases slightly the number of serious work-related injuries while OSHA slightly reduces these injuries. However, increased experience rating of WC premiums or greater enforcement of OSHA safety standards can make both programs significantly improve workplace safety.

Kobayashi, Bruce H.

PD February 1988. TI Asymmetric Information, the Timing of Payment, and the Selection of Cases for Litigation. AU Kobayashi, Bruce H.; Lott, Jr John R. AA Kobayashi: Anti Trust Division, United States Department of Justice. Lott, Jr.: Rice University. SR Stanford Hoover Institute Working Paper in Economics: E-88-8; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 42. PR No Charge. JE 026, 022. KW Asymmetric Information. Damage Claims. Settlements. Litigation.

AB This paper examines the role of pre- versus post-delivery payment in the settlement of damage claims. We argue that whether payment for a good or service is made pre-delivery or post-delivery determines who assumes the role of the plaintiff and who assumes the role of the defendant in the event of a dispute. In a model where one party has private information, we show how the parties agree to a timing of payment where the uninformed party assumes the role of the plaintiff. As a result of this choice, uninformed plaintiffs will litigate with perfectly informed agents, causing the percentage of plaintiff victories to differ from the 50 per cent predicted in various litigation models.

Kohn, Meir

PD January 1988. TI The Implications of Knowledge-Based Growth for the Optimality of Open Capital Markets. AU Kohn, Meir; Marion, Nancy. AA Dartmouth College. SR National Bureau of Economic Research Working Paper: 2487; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 29. PR \$2.00. JE 313, 111, 621. KW Technology. Growth. Capital Markets.

AB This paper reexamines the view that opening capital markets must have long-run benefits. The analysis shows that the desirability of opening a country's capital markets depends on the nature of the technology assumed. Models of knowledge-based growth predict that changes which alter the economy's level of production will also affect the economy's growth rate and hence the welfare of future generations. Standard neoclassical growth models imply no such effects on growth or welfare. If production does involve an important element of learning by doing, inference from the standard models may be seriously misleading. In particular, opening capital markets does not necessarily improve welfare for the nation or for the world as a whole.

Kokoski, Mary F.

PD April 1987. TI Consumer Price Indices by Demographic Groups. AA Bureau of Labor Statistics. SR Bureau of Labor Statistics Working Paper: 167; Bureau of Labor Statistics, Office of Research and Evaluation, 441 G Street, N.W., Room 2126, Washington, DC 20212. PG 21. PR No Charge. JE 227, 841, 225. KW Price Indices. Demographic Attributes. Substitution Bias.

AB Demographic group-specific price indices are constructed and their variance and representativeness assessed for a select set of demographic attributes. A preliminary analysis of differences in substitution bias across these indices is also provided. In addition, a comparison of the plutocratic index (of which the United States Consumer Price Index is an example) and an alternative form of social cost-of-living index, the democratic index, is made.

Kotlikoff, Laurence J.

PD November 1987. TI Social Contracts as Assets: A Possible Solution to the Time-Consistency Problem. AU Kotlikoff, Laurence J.; Persson, Torsten; Svensson, Lars E. O. AA Kotlikoff: Boston University and National Bureau of Economic Research and Rochester Center for Economic Research. Persson and Svensson: Rochester Center for Economic Research and University of Stockholm. SR University of Rochester Center for Economic Research Working Paper: 108; Department of Economics, University of Rochester, Rochester, NY 14627. PR No Charge. JE 023, 321. KW Social Contract. Time Consistency. Capital-Levy Problem.

AB This paper presents a new solution to the time-consistency problem that appears capable of enforcing ex ante policy in a variety of settings in which other enforcement mechanisms do not work. The solution involves formulating a social contract, institution, or agreement that specifies the optimal ex ante policy. The social contract is effectively sold by successive old

generations to successive young generations, who pay for the social contract through the payment of taxes. Both old and young generations have an economic incentive to fulfill the social contract. For the old generation, breaking the social contract makes the social contract valueless, and the generation suffers a capital loss by not being able to sell it. For the young generation the economic advantage of purchasing the existing social contract exceeds its price as well as the economic gain from setting up the new social contract.

TI The Incidence and Efficiency Costs of Corporate Taxation when Corporate and Noncorporate Firms Produce the Same Good. AU Gravelle, Jane G.; Kotlikoff, Laurence J.

PD December 1987. TI Pension Backloading, Wage Taxes and Work Disincentives. AU Kotlikoff, Laurence J.; Wise, David A. AA Kotlikoff: Boston University. Wise: Harvard University. SR National Bureau of Economic Research Working Paper: 2463; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 57. PR \$2.00. JE 323, 918, 915, 321, 826. KW Pensions. Employee Retirement Income Security Act. Regulation. Retirement. Tax Effects. AB The government's involvement in encouraging and regulating private pensions appears to reflect its desire that workers have a secure source of old age income which will lessen their reliance on Social Security. In recent years the government has reacted to demographic changes, and their effects on Social Security funding, and the increase in early retirement by also using its pension and Social Security tax and regulatory policies to encourage workers to delay their retirement decision. This paper examines the structure of pension plans with two questions in mind. First have government pension backloading regulations aimed at assuring future pension benefits been effective? and, second, has the structure of old age pension accrual at the end of the workspan, an implicit tax, greatly limited the effectiveness of government policy in reversing the trend to early retirement?

TI Does the Consumption of Different Age Groups Move Together? A New Nonparametric Test of Intergenerational Altruism. AU Abel, Andrew; Kotlikoff, Laurence.

TI The Incidence and Efficiency Costs of Corporate Taxation When Corporate and Noncorporate Firms Produce the Same Good. AU Gravelle, Jane G.; Kotlikoff, Laurence J.

Kravis, Irving

TI Multinational Firms and Manufactured Exports from Developing Countries. AU Blomstrom, Magnus; Kravis, Irving; Lipsey, Robert.

Kreps, David M.

TI Reputation in the Simultaneous Play of Multiple Opponents. AU Fudenberg, Drew; Kreps, David M.

Krueger, Alan B.

PD January 1988. TI The Determinants of Queues for Federal Jobs. AA Princeton University. SR National Bureau of Economic Research Working Paper: 2499;

National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 27. PR \$2.00. JE 822, 813. KW Applicants. Job Search. Recruitment. Wage Determination. Wages.

AB This paper examines the determinants of the number and quality of outside applicants for federal job openings using a variety of time-series, cross-sectional and panel data sets. The main finding is that the application rate for government jobs increases as the ratio of federal to private sector earnings increases, but does not appear to be related to the relative level of fringe benefits. Furthermore, an increase in the federal-private sector earnings differential is associated with an increase in the average quality of applicants for federal jobs. The paper discusses the implications of these findings for wage determination and recruitment in the federal government.

PD January 1988. TI Are Public Sector Workers Paid More Than Their Alternative Wage? Evidence From Longitudinal Data and Job Queues. AA Princeton University. SR National Bureau of Economic Research Working Paper: 2500; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 40. PR \$2.00. JE 824, 813, 822. KW Private Sector. Wage Gap. Government Wages.

AB This paper performs a longitudinal comparison of public and private sector pay. Although not decisive because of small sample sizes, the results tend to corroborate the conclusions of previous cross-sectional studies. Specifically, I find that on average wages of federal workers exceed those of private sector workers by 10 per cent to 25 per cent, while wages of state and local government workers are roughly equivalent to or slightly less than the wages of private sector workers. Furthermore, these conclusions hold for a sample of workers who joined the government after being involuntarily displaced from their private sector jobs. In addition, a comparative analysis of the length of job queues suggests that on average more workers apply for job openings in the federal government than in the private sector. Finally, both longitudinal and cross-sectional analyses support the conclusion that the union wage gap is substantially smaller in the public sector than in the private sector.

TI Job Queues and Wages: New Evidence on the Minimum Wage and Inter-Industry Wage Structure. AU Holzer, Harry J.; Katz, Lawrence F.; Krueger, Alan B.

Krugman, Paul R.

PD December 1987. TI Trigger Strategies and Price Dynamics in Equity and Foreign Exchange Markets. AA National Bureau of Economic Research. SR National Bureau of Economic Research Working Paper: 2459; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 29. PR \$2.00. JE 313, 431, 311. KW Asset Markets. Target Zones.

AB Trigger strategists may be defined as actors in asset markets who buy or sell when the price reaches a predetermined level; they include participants in portfolio insurance schemes in equity markets and central banks who intervene to defend an exchange rate target zone.

This paper presents an approach to modelling the effects of trigger strategists, with emphasis on how target zones affect market expectations. It is shown that commitment to defend a target zone will generate stabilizing expectations within the band, which may generate a "target zone honeymoon", an extended period in which the announcement of a target zone stabilizes exchange rates without any need for action on the part of authorities. However, an imperfectly credible target zone is vulnerable to crises in which the market tests the authorities' resolve.

PD January 1988. TI Financing vs. Forgiving A Debt Overhang. AA National Bureau of Economic Research. SR National Bureau of Economic Research Working Paper: 2486; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 32. PR \$2.00. JE 433, 432, 443. KW Creditors. Debtors. IMF. Lending.

AB This paper examines the tradeoffs facing creditors of a country whose debt is large enough that the country cannot attract voluntary new lending. If the country is unable to meet its debt service requirements out of current income, the creditors have two choices. They can finance the country, lending at an expected loss in the hope that the country will eventually be able to repay its debt after all; or they can forgive, reducing the debt level to one that the country can repay. The post-1983 debt strategy of the IMF and the United States has relied on financing, but many current calls for debt reform call for forgiveness instead. The paper shows that the choice between financing and forgiveness represents a tradeoff. Financing gives the creditors an option value: if the country turns out to do relatively well, creditors will not have written down their claims unnecessarily. However, the burden of debt distorts the country's incentives, since the benefits of good performance go largely to creditors rather than itself. The paper also shows that the tradeoff itself can be improved if both financing and forgiveness are made contingent on states of nature that the country cannot affect, such as oil prices, world interest rates, etc.

PD January 1988. TI Target Zones and Exchange Rate Dynamics. AA National Bureau of Economic Research. SR National Bureau of Economic Research Working Paper: 2481; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 16. PR \$2.00. JE 431, 321, 133. KW Exchange Rate. Target Zone. Zone Regime. Stabilization.

AB This paper develops a highly simplified model of exchange rate behavior within the band under a target zone regime. It shows that the expectation that authorities will defend the band exerts a stabilizing effect on exchange rate behavior within the band, even when the authorities are not actively intervening. The extent of stabilization can be related in a straightforward way to three factors: the sensitivity of the current exchange rate to expected depreciation, the volatility of the process driving exchange rate "fundamentals", and the credibility of the commitment by authorities to defend the target zone.

Laffont, Jean Jacques

PD September 1987. TI Repeated Auctions of Incentive Contracts, Investment and Bidding Parity With

an Application to Takeovers. AU Laffont, J. J.; Tirole, J. AA Laffont: Universite des Sciences Sociales, Toulouse. Tirole: Massachusetts Institute of Technology. SR Massachusetts Institute of Technology Department of Economics Working Paper: 463; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. PG 57. PR No Charge. JE 022. KW Franchise Bidding. Two-Period Model. Intertemporal Model. Policy. Auctions.

AB This paper considers a two-period model of repeated franchise bidding or second sourcing. The paper generalises an earlier result that the optimal policy is to regulate through contracts linear in cost overruns. It also derives conclusions concerning the intertemporal evolution of incentive schemes. Mainly, it puts emphasis on the issue of bidding parity. It shows that three basic effects guide the optimal bias in the second-period auctioning process and determines whether the incumbent should be favored depending on the nature of investments. The outcome of the analysis is a relatively pessimistic assessment of the desirability of second sourcing when sizeable investments are at stake. Last we reinterpret the second source as a raider, and the breakout as a takeover. We discuss the desirability of defensive tactics, and obtain some relationships between the size of managerial stock options, the amount of defensive tactics, the firm's performance and the probability of a takeover.

PD January 1988. TI Adverse Selection and Renegotiation in Procurement. AU Laffont, Jean Jacques; Tirole, Jean. AA Laffont: California Institute of Technology and GREMAQ, Universite de Toulouse. Tirole: Massachusetts Institute of Technology. SR Caltech Social Science Working Paper: 665; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. PG 37. PR No Charge. JE 026, 024. KW Adverse Selection. Procurement. Renegotiation. Incentives. Principal-Agent. Contract.

AB As was shown by Dewatripont, optimal long-term contracts are generally not sequentially optimal. The parties ex-post renegotiate them to their mutual advantage. This paper fully characterizes the equilibrium of a simple two-period procurement situation and studies the extent to which renegotiation reduces ex-ante welfare: i) A central result is that, like in the non-commitment case, the second period allocation is optimal for the principal conditionally on his posterior beliefs about the agent. ii) The first period allocation exhibits an increasing amount of pooling when the discount factor grows. iii) With a continuum of types, it is never optimal to induce full separation. The paper also analyzes whether renegotiated long-term contracts yield outcomes resembling those under either unrenegotiated long-term contracts or a sequence of short-term contracts and it links the analysis with the multiple unit durable good monopoly problem.

TI Competition on many Fronts: A Stackelberg Signalling Equilibrium. AU Green, Jerry; Laffont, Jean Jacques.

Landa, Janet T.

PD January 1988. TI A Theory of the Ethnically

Homogeneous Middleman Group: Beyond Markets and Hierarchies. AA York University, Toronto and Hoover Institution. SR Stanford Hoover Institute Working Paper in Economics: E-88-1; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 42. PR No Charge. JE 112, 051, 025. KW Middleman. Organization. Developing Countries. Transaction Cost.

AB The transaction cost approach to the study of organizations has identified two alternative organizational modes or governance structures in developed capitalist economies -- markets vs. hierarchies -- for coordinating the economic activities of interdependent firms. When attention is shifted to developing economies, the phenomenon of personalistic exchange networks embedded in the ethnically-homogeneous middleman group (EHMG) reveals itself to be the dominant form of economic organization for coordinating the activities of middlemen across markets. Coordinating of middlemen activities is achieved via the role of informal norms of behavior embedded in personalistic exchange networks. Thus, in addition to markets and hierarchies, personalistic exchange networks/EHMG, which as an organizational mode is neither market nor hierarchy, must be considered a third form of economic organization. The paper develops a theory of the EHMG as a club-like organization for economizing on costs of contract enforcement, drawing on various key concepts in the social sciences.

Laroque, Guy

TI Stability, Expectations and Predetermined Variables. AU Grandmont, Jean Michel; Laroque, Guy.

PD April 1988. TI Comparative Estimates of a Macroeconomic Disequilibrium Model: France, Germany, the U.K and the U.S.A. AA Unite Recherche INSEE. SR Unite de Recherche, Document de Travail ENSAE/INSEE: 8806; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. PG 42. PR No Charge. JE 131, 132, 051. KW Disequilibrium. Macroeconomics. International. Wage Gap. Unemployment.

AB The paper gives comparative estimates of a macroeconomic disequilibrium model for four countries. First a theoretical mini disequilibrium model, close to the Barro Grossman formulation, is presented. The productivity cycle is linked with the changes in regimes. A new technique allows to compute comparative estimates of the model for France, Germany, the United Kingdom and the United States of America on the sample period 65-IV to 85-IV. The results are used to assess the "wage gap doctrine", according to which the difference in the unemployment rates of Europe and the United States of America can be explained by a larger discrepancy between the real wage and the marginal productivity of labor on the east side of the Atlantic.

Lazear, Edward P.

TI Competition, Relativism, and Market Choice. AU Aron, Debra J.; Lazear, Edward P.

TI Stock, Options, and Deferred Compensation. AU Jackson, Matthew; Lazear, Edward.

PD March 1988. TI Male-Female Wage Differentials

in Job Ladders. AU Lazear, Edward P.; Rosen, Sherwin. AA Lazear: University of Chicago, Hoover Institution. Rosen: University of Chicago. SR Stanford Hoover Institute Working Paper in Economics: E-88-18; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 43. PR No Charge. JE 824, 917, 851, 812. KW Occupational Segregation. Discrimination. Jobs. Wage Differentials. Promotion. Job Ladder. Occupations. AB Much of the male-female wage differential exists because men and women are assigned to different jobs. Within narrow job categories, there is no male-female differential. Only a tortured taste theory of discrimination can reconcile these facts. Instead, we argue that differential movement along job ladders entails comparative advantage, so the ability standard for promotion is higher for women than for men. This implies that more able women will be passed over in favor of less able men. Women, assumed to have the same ability distribution as men, earn less. The differential reflects females' lower promotion probability, not a within-job discrimination.

Le, Van Cuong

TI Production Prices and General Equilibrium Prices: A Long Run Property of a Leontief Economy with an Unlimited Supply of Labor. AU Dana, Rose Ann; Florenzano, Monique; Le, Van Cuong; Levy, Dominique.

TI Le long terme des modeles macroeconomiques. AU Deleau, Michel; Le, Van Cuong; Malgrange, Pierre.

TI Optimal Growth and Pareto-Optimality. AU Dana, Rose Anne; Le, Van Cuong.

Leborgne, Daniele

PD 1987. TI New Technologies, New Modes of Regulation: Some Spatial Implications. AU Leborgne, Daniele; Lipiets, Alain. AA CEPREMAP. SR CEPREMAP Discussion Paper: 8726; CEPREMAP, 142 rue du Chevaleret, 75013 Paris, FRANCE. PG 35. PR 20 FF. JE 611, 621, 833, 941. KW Technology. Professional Relations. Industrial Organisation. Territories.

AB At the wage-relation level, the New Technologies may be implemented through more polarization in skills or through a general involvement of workers, with flexible or rigid wage-contracting, with individual or collective negotiation of the workers' involvement. These bifurcations lead to various classes of models of development, which are labelled here "Neo-Taylorist", "Californian" and "Saturnian". As far as industrial relations are concerned, new technologies induce Specialised Firms and Vertical Quasi-Integration. But this may be realised through Territorial Integration or Disintegration. As a result of these divides, territorial organisation is likely to foster different types of regional patterns: "Specialised Productive Areas", "Local Productive Systems," or "System Areas".

Leeth, John D.

TI Can We Make OSHA and Worker's Compensation Insurance Interact More Effectively in Promoting Workplace Safety? A Numerical Simulation Analysis of

Hedonic Labor Market Equilibrium. AU Kniesner, Thomas J.; Leeth, John D.

Lehmann, Bruce N.

PD January 1988. TI Fads, Martingales, and Market Efficiency. AA Columbia University, Hoover Institution. SR Stanford Hoover Institute Working Paper in Economics: E-88-5; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 47. PR No Charge. JE 313, 521, 022. KW Market Efficiency. Stock Price. Arbitrage. Profits. Efficient markets.

AB Much of the theoretical basis for current monetary and financial theory rests on the economic efficiency of financial markets. Not surprising, considerable effort has been expended to test the efficient markets hypothesis, usually by examination of the predictability of equity returns. Unfortunately, there are two competing explanations of the presence of such predictable variation: (1) market inefficiency and stock price 'overreaction' due to speculative 'fads' and (2) predictable changes in expected security returns associated with forecasted changes in market or individual security 'fundamentals.' These explanations can be distinguished by examining equity returns over short time intervals since there should be negligible changes in the fundamental valuation of individual firms over intervals like a week in an efficient market. This study finds sharp evidences of market inefficiency in the form of systematic tendencies for current winners and losers in one week to experience sizeable return reversals over the subsequent week in a way that reflect apparent arbitrage profits. These measured arbitrage profits persist after corrections for the mismeasurement of security returns because of thin trading and bid-ask spreads and for plausible levels of transactions costs.

PD January 1988. TI The Empirical Foundations of the Arbitrage Pricing Theory. AU Lehmann, Bruce N.; Modest, David M. AA Lehman: Columbia University, Hoover Institution. Modest: University of California at Berkeley. SR Stanford Hoover Institute Working Paper in Economics: E-88-4; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 59. PR No Charge. JE 313, 521, 212, 022. KW Asset Pricing. Arbitrage Pricing Theory. APT. Portfolio Choice.

AB This paper examines the validity of the APT based on maximum likelihood factor analysis of large cross-sections. Our empirical implementation proves incapable of explaining expected returns on portfolios with different market capitalizations although it provides an adequate account of the expected returns of portfolios formed on the basis of dividend yield and own variance where risk adjustment employing the usual CAPM market proxies fails. We also compare alternative versions of the APT and sharply reject the hypothesis that basis portfolios formed to mimic the factors span the mean-variance frontier of the individual assets.

Lehrer, Ehud

TI Regular Simple Games. AU Einy, Ezra; Lehrer, Ehud.

Leijonhufvud, Axel

PD September 1986. TI Whatever Happened to Keynesian Economics? AA Department of Economics, University of California, Los Angeles. SR University of California at Los Angeles Department of Economics: 419; Department of Economics - University of California at Los Angeles, Los Angeles, CA 90024. PG 25. PR \$2.50. JE 031, 023. KW Keynes. Economic Thought.

AB The loss of influence of Keynesian economics is discussed in terms of external and internal developments. On the external side, the postwar evolution of the monetary system led in the seventies to a discretionary fiat regime, which would not generate the stickiness of nominal magnitudes characteristic of much Keynesian theorizing. On the internal side, Keynesian economics suffered from a number of conceptual problems and theoretical confusions that were not adequately dealt with in the period of Keynesian predominance. Amongst these, one confusion seems particularly important, namely the shift of focus from the real intertemporal (saving-investment) disequilibrium of Keynes to the nominal (money stock-money wage rule) disequilibrium of later Keynesians.

Levine, David

TI Reputation and Equilibrium Selection in Games with a Patient Player. AU Fudenberg, Drew; Levine, David.

Levine, Phillip B.

PD January 1988. TI The Baby Boom's Legacy: Relative Wages in the 21st Century. AU Levine, Phillip B.; Mitchell, Olivia S. AA Levine: Princeton University. Mitchell: Cornell University. SR National Bureau of Economic Research Working Paper: 2501; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 21. PR \$2.00. JE 824, 826, 813, 921, 821. KW Wages. Demand for Labor. Forecasting. Wage Gap.

AB This paper assesses the impact of the post WWII baby boom on relative wages, when this baby boom cohort becomes the oldest segment of the workforce. Time series data are used to estimate a model of the demand for workers in eight age/sex groupings. Using these estimates, we simulate relative wages in the year 2020 assuming the age/sex composition of the workforce behaves according to projections. The results are used to examine the baby boom's potential impact on wages of older, prime-age, and teenage workers, as well as the anticipated wage gap between males and females.

Levine, Ross

TI The Capital Flight "Problem". AU Gordon, David B.; Levine, Ross.

Levinsohn, James A.

TI Import Competition and the Stock Market Return to Capital. AU Grossman, Gene M.; Levinsohn, James A.

Levy, Anat

PD January 1988. TI An Economic Evaluation of Lock vs. No-Lock Mortgage Plans: A Queuing Analysis. AU Levy, Anat; Levy, Hanoch. AA Levy, Anat: Department of Economics, Tel-Aviv University. Levy, Hanoch: Department of Computer Sciences, Tel-Aviv

University. SR Tel-Aviv Foerder Institute for Economic Research Working Paper: 7-88; Department of Economics, Tel-Aviv University, Ramat Aviv 69978, Tel-Aviv, ISRAEL. PG 19. PR No Charge. JE 312, 026, 022. KW Price Locking Policy. Queuing. Mortgage Plans. Optimal Pricing.

AB Mortgage prices are determined according to two major alternative plans: One is the Lock Plan (LP), in which the price is determined at time of application, and the other is the No-Lock Plan (NLP), in which the price is determined when the application process ends and mortgage commitment is issued. It is widely believed that the difference between the plans is mainly due to risk shifting between borrowers and lenders. By constructing a queueing model to represent the mortgage system and analyzing the optimal pricing policy for the two plans, we show, however, that even if risk factors are controlled, there exist inherent differences between the plans. In particular, when the optimal policy is utilized, the NLP consistently yields higher revenues than the LP. The ability of lenders to regulate the queue size by varying prices, combined with their ability to change the price spread while customers are already in the queue, generates those extra revenues. The relevance of these results to policy application is discussed.

PD January 1988. TI Who will form a Union? A Game Theoretic Approach. AA Department of Economics, Tel-Aviv University. SR Tel-Aviv Foerder Institute for Economic Research Working Paper: 6-88; Department of Economics, Tel-Aviv University, Ramat Aviv 69978, Tel-Aviv, ISRAEL. PG 30. PR No Charge. JE 831, 026, 022. KW Unions. Union Formation. Unionization. TU Game.

AB By means of n-person TU game in a characteristic function form, we explore several aspects of union formation and determinants of the extent of unionization. We provide an explanation for the variations in the percent of workers that are unionized across occupations, identify the properties of workers who are most likely to be union members and characterize the occupations that are more likely to be unionized. The role of heterogeneous outside opportunities of potential union members is explicitly considered and, via its effect on bargaining power, it is related to union membership and to union size. The convexity of the labor demand and labor supply is found to be important in determining the union size. Employer's rent and workers' rent are shown to affect the gain from (but not the extent of) unionization. Workers with the lowest rent on the job under consideration are found to be the workers most likely to unionize.

Levy, Dominique

TI Production Prices and General Equilibrium Prices: A Long Run Property of a Leontief Economy with an Unlimited Supply of Labor. AU Dana, Rose Ann; Florenzano, Monique; Le, Van Cuong; Levy, Dominique.

TI The Trends of the Economic Rate of Return in the U.S. Manufacturing Since the Depression. AU Dumenil, Gerard; Levy, Dominique.

TI La concurrence classique a la croisee des chemins. AU Dumenil, Gerard; Levy, Dominique.

TI The Stability of Long-Term Equilibrium in a General Disequilibrium Model. AU Dumenil, Gerard; Levy, Dominique.

TI Asymptotic Properties of a General Equilibrium Model with a Leontief Technology and an Unlimited Supply of Labour. AU Dana, Rose Anne; Levy, Dominique.

TI Desequilibres stationnaires: excès ou défaut de flexibilité? AU Dumenil, Gerard; Levy, Dominique.

Levy, Hanoch

TI An Economic Evaluation of Lock vs. No-Lock Mortgage Plans: A Queuing Analysis. AU Levy, Anat; Levy, Hanoch.

Lewis, Frank D.

TI Cigarette Smoking and Quitting: A Life-Cycle Approach. AU Arnott, Richard; Lewis, Frank D.; Olewiler, Nancy.

Lewis, Tracy R.

PD August 1987. **TI** Countervailing Incentives in Agency Problems. AU Lewis, Tracy; Sappington, David E. M. AA Bell Communications Research, Inc. SR Bell Communications Research Inc. Economics Discussion Paper: 38; Bell Communications Research, Inc. 435 South Street, Morristown, N.J. 07960-1961. PG 21. PR No Charge. JE 026, 613, 022. KW Regulation. Asymmetric Information. Incentives. Principal-Agent. Contract.

AB We examine the implications of countervailing incentives in agency problems. Such incentives exist when the agent has an incentive to understate his private information for some of its realizations, and to overstate it for others. Countervailing incentives alter the qualitative properties of the equilibrium contract. In particular, pooling generally arises, and efficient performance is induced at an intermediate as well as both extreme realizations of the underlying private information. Also, the agent's rents will generally increase with the realization of his private information over some ranges, and decrease over other ranges. Performance will also be distorted both above and below efficient levels.

PD November 1987. **TI** Controlling the Activities of Regulated Firms in Unregulated Markets. AU Lewis, Tracy R.; Sappington, David E. M. AA Lewis: University of California at Davis. Sappington: Bell Communications Research. SR University of California at Davis Economics Department Working Paper: 305; Department of Economics, University of California at Davis, Davis, CA 95616. PG 24. PR No Charge. JE 612, 613, 611, 026. KW Asymmetric Information. Utility Regulation. Mechanism Design. Pricing Rules. Regulation.

AB We consider the role that entry into unregulated markets can play in controlling the incentive a regulated firm may have to exaggerate production costs, c , in the regulated market. We associate entry into unregulated markets with the acquisition of critical inputs for production in those markets. When the ultimate value of these inputs is positively correlated with c , an exaggeration of c amounts to a claim that profits in the unregulated

markets are greater than they actually are. Hence, incentives to exaggerate c are mitigated. We also demonstrate the optimality of simple regulatory rules, wherein inflexible pricing rules are implemented and only limited discretion is afforded the firm.

PD December 1987. **TI** Capital Grants and Inflexible Rules in Incentive Problems. AU Lewis, Tracy R.; Sappington, David E. M. AA Lewis: University of California at Davis. Sappington: Bell Communications Research. SR University of California at Davis Economics Department Working Paper: 308; Department of Economics, University of California at Davis, Davis, CA 95616. PG 41. PR No Charge. JE 026, 611, 612, 613. KW Incentives. Regulation. Incomplete Information. Contracts.

AB In practice, contracts generally involve "standard terms" or "rules", allowing for variations only under "exceptional" circumstances. We develop a simple model in which optimal contracts display this feature, even in the absence of transactions costs and bounded rationality. Rules arise when an agent has "countervailing incentives" to misrepresent his private information. These incentives are optimally created by endowing the agent with a critical factor of production *ex ante*. The implications of our findings are examined in three different settings: (i) regulating the activities of a firm that also participates in unregulated markets; (ii) labor contracting involving mobility restrictions; and (iii) legal contracting with provisions for renegotiation.

PD December 1987. **TI** Capital Grants and Inflexible Rules in Incentive Problems. AU Lewis, Tracy R.; Sappington, David. AA Bell Communications Research, Inc. SR Bell Communications Research Inc. Economics Discussion Paper: 40; Bell Communications Research, Inc. 435 South Street, Morristown, N.J. 07960-1961. PG 41. PR No Charge. JE 026, 613, 022. KW Contracts. Regulation. Incomplete Information.

AB In practice, contracts generally involve "standard terms" or "rules", allowing for variations only under "exceptional" circumstances. We develop a simple model in which optimal contracts display this feature, even in the absence of transactions costs and bounded rationality. Rules arise when an agent has "countervailing incentives" to misrepresent his private information. These incentives are optimally created by endowing the agent with a critical factor of production *ex ante*. The implications of our findings are examined in three different settings: (i) regulating the activities of a firm that also participates in unregulated markets; (ii) labor contracting involving mobility restrictions; and (iii) legal contracting with provisions for renegotiation.

Lindsey, Lawrence

PD March 1988. **TI** Joint Crowdout: An Empirical Study of the Impact of Federal Grants on State Government Expenditures and Charitable Donations. AU Lindsey, Lawrence; Steinberg, Richard. AA Steinberg: Virginia Polytechnic Institute and State University. Lindsey: Harvard University and National Bureau of Economic Research. SR Virginia Polytechnic Institute and State University Working Paper in Economics: E88-04-08; Working Paper Coordinator,

Department of Economics, Sandy Hall, Blacksburg, VA 24061. PG 54. PR Free by request. JE 325, 636, 322. KW Crowdout. Flypaper Effect. Donations. Public Goods. Federalism. Government Expenditures. Charities. AB We estimate the effect of exogenous federal expenditure cutbacks on state social service expenditures and on charitable donations. In the process, we also estimate tax and income effects and explore the impact of community environment and "need" variables. Data consist of a unique three-year panel of aggregate itemized giving by state and income class and government expenditures by state. Our preliminary results confirm the 'flypaper effect' of federal grants on state spending and show statistically significant but partial crowdout of charitable donations. The flypaper effects appears to dominate the crowdout of donations, so that federal grants are especially productive of overall social service expenditures. Finally, we find that the state's poverty rate is a particularly strong and positive determinant of charitable giving.

Lipietz, Alain

TI New Technologies, New Modes of Regulation: Some Spatial Implications. AU Leborgne, Daniele; Lipietz, Alain.

PD 1987. TI An Alternative Design for the Twenty First Century. AA CEPREMAP. SR CEPREMAP Discussion Paper: 8738; CEPREMAP, 142, rue du Chevaleret, 75013 Paris, FRANCE. PG 36. PR 20 FF. JE 051, 421, 432, 833, 911. KW Capitalist System. Professional Relations. Welfare State. International Relations.

AB This essay is to be published in a collection of a range of answers to Professor Tobin's question: What are the "intellectually defensible compromises" that the economist may propose between efficiency, justice and freedom? It begins with the shortcomings that led to the crisis of the post-war model of development, labelled "Fordism", then criticizes the shortcomings of New Liberalism, and proposes an alternative compromise, including: new compromise on professional relations, reform of the Welfare State, reform of international monetary and trade system.

Lipman, Barton

TI Takeover Bids, Defensive Stock Repurchases, and the Efficient Allocation of Corporate Control. AU Bagnoli, Mark; Gordon, Roger; Lipman, Barton.

TI Private Provision of Public Goods can be Efficient. AU Bagnoli, Mark; Lipman, Barton.

Lipsey, Robert

TI Multinational Firms and Manufactured Exports from Developing Countries. AU Blomstrom, Magnus; Kravis, Irving; Lipsey, Robert.

Liu, Liang Yn

TI Cross-Country Comparisons of Historical Changes in Inflation-Output Relations. AU Sheffrin, Steven M.; Liu, Liang Yn.

Liu, Wei guo

TI Two Terminal Steiner Tree Polyhedra. AU Ball, Michael; Liu, Wei guo; Pulleyblank, William.

Loebl, M.

PD October 1987. TI Linearity and Unprovability of Set Union Problem Strategies. AU Loebl, M.; Nesetril, J. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87481-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 11. PR No Charge. JE 213. KW Set Union Problem. Algorithms. Growth.

AB We consider the set union problem (SU P) which consists in designing data for manipulation of a family of disjoint sets which partition a given universe of n elements. In response to a work of Tarjan we prove that the POSTORDER strategy for SU P has a linear length (thus solving a problem of Hart and Sharir). On the other side, we provide a data structure and axioms for an on line strategy-LOCAL POSTORDER-for SU P which fails to be linear but it has a very slow-indeed in the theory of finite sets unprovable-growth. This complements a result of Tarjan who showed an Ackermann type growth for a related problem. Our results may be summarized by saying that (in finite set theory) we may assume that our algorithms are linear (although we know that in fact they fail to be linear). Perhaps this is the first occurrence of unprovability in the complexity analysis of algorithms.

Logan, James

TI The Economics of Content Protection: A Dual Approach. AU Fare, Rolf; Logan, James; Lovell, C. A. K.

London School of Economics

PD October 1987. TI Review of the Year's Work, 1986/87. AA Centre for Labour Economics, London School of Economics. AA Centre for Labour Economics, London School of Economics. SR London School of Economics Centre for Labour Economics Discussion Paper: 293; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, ENGLAND. PG 26. PR No Charge. JE 011. KW Bibliography. Wages. Employment. Macroeconomics. Inflation. Unemployment.

AB Our work concentrates on the problems of unemployment and inflation, with the main emphasis on the supply side of the economy. This report summarises our findings.

Lott, Jr John R.

TI Asymmetric Information, the Timing of Payment, and the Selection of Cases for Litigation. AU Kobayashi, Bruce H.; Lott, Jr John R.

TI Qualitative Information, Reputation, and Monopolistic Competition. AU Darby, Michael R.; Lott, Jr John R.

TI Why Short-Lagged Relationships are More Easily Identified. AU Fremling, Gertrud M.; Lott, Jr John R.

Love, James P.

TI The Real Exchange Rate, Employment and Output in Manufacturing in the U.S. and Japan. **AU** Branson, William H.; Love, James P.

Lovell, C. A. K.

TI The Effect of Unions on Productivity: U.S. Surface Mining of Coal. **AU** Byrnes, Patricia; Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K.

TI The Economics of Content Protection: A Dual Approach. **AU** Fare, Rolf; Logan, James; Lovell, C. A. K.

PD April 1987. **TI** Output Aggregation and the Measurement of Productive Efficiency. **AU** Lovell, C. A. K.; Sarkar, Asani; Sickles, Robin. **AA** Lovell: University of North Carolina, Chapel Hill. Sarkar: University of Pennsylvania. Sickles: Rice University. **SR** University of North Carolina Working Paper Series: 87-6; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. **PG** 24. **PR** No Charge. **JE** 221, 023, 226, 621.

KW Aggregation. Technology. Production. Efficiency.

AB Aggregation of variables prior to estimation is the rule, in applied production analysis and elsewhere. Consequently it is of interest to know the effects of aggregation on the resulting inferences concerning the structure of production technology and the structure of the associated behavioral response functions. Moreover, since productive efficiency is calculated relative to estimated technology and estimated response functions, variable aggregation affects inferences concerning the nature of productive efficiency as well. Much work has been done on the relationship between variable aggregation and the structure of production technology, although since most of this literature has developed in a consumer context the focus has been almost exclusively on input aggregation rather than on output aggregation. Very little work has been done on the relationship between variable aggregation and efficiency measurement, all of it focused on input aggregation.

TI Scale Elasticity and Scale Efficiency. **AU** Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K.

TI Some Observations on the New DEA. **AU** Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K.

TI Multilateral Productivity Comparisons When Some Outputs are Undesirable: A Nonparametric Approach. **AU** Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K.; Pasurka, Carl.

MacArthur, Alan T.

TI Political vs. Currency Premia in International Real Interest Differentials: A Study of Forward Rates for 24 Countries. **AU** Frankel, Jeffrey A.; MacArthur, Alan T.

Macauley, Molly K.

PD June 1987. **TI** The Transition to Energy in Developing Countries: A Case Study of Households in Indian Cities. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Paper: EM87-01;

Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 25. **PR** \$5.00 (United States funds only). **JE** 723, 931, 921. **KW** Energy. Urban. Developing Countries. India.

AB This study uses new survey data to investigate the transition from traditional to commercial cooking fuels among urban households in the Indian city of Raipur. The study identifies patterns of commercial and traditional energy consumption as determined by relative prices of energy, family income, and family size. The study also contributes methodologically to the sparse survey-based literature on energy use in developing countries. Results suggest that traditional and commercial fuels are imperfectly substitutable or complementary at all income levels, and in light of existing research on urban fuel use patterns, offer evidence of marked differences in fuel use among Indian cities. These interurban differences harbor particular implications for the effectiveness of Indian energy policies that are administered nationwide.

MacKie, Mason Jeff

TI Price Discrimination and Patent Policy. **AU** Hausman, Jerry A.; MacKie, Mason Jeff.

TI Notes on Peak Load Pricing. **AU** Bergstrom, Ted; MacKie, Mason Jeff.

MacLeod, Bentley

PD December 1987. **TI** Price Discrimination and Equilibrium in Monopolistic Competition. **AU** MacLeod, W. B.; Norman, G.; Thisse, J. F. **AA** MacLeod: Queen's University and CORE. Norman: University of Leicester. Thisse: CORE, Universite Catholique de Louvain. **SR** Queen's Institute for Economic Research Discussion Paper: 701; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 32. **PR** Canada & U.S. \$3.00; \$3.50 foreign. **JE** 026, 022. **KW** Monopolistic Competition. Price. Discrimination. Nash Equilibrium. Two-stage Game.

AB Modern theories of monopolistic competition have borrowed extensively from techniques developed in location theory and the theory of spatial pricing: the monopolistically competitive firm is assumed to choose a "location" and price for its product. A subject that has been of increasing concern in this corpus of theory is that there exists no free-entry price-location equilibrium. In this paper we demonstrate that free-entry price-location equilibrium exists provided only that producers are allowed to price discriminate among customers in a reasonable manner. Equilibrium is modelled as a two-stage game using the Selten concept of subgame perfect Nash equilibrium. It is shown that the equilibrium discriminatory price system is one initially identified by Hoover. In addition, we show that equilibrium is not unique. The precise nature of equilibrium in a particular market will be dependent upon the history of that market.

TI Price Discrimination and Product Line Rivalry. **AU** Ginsburgh, Victor; MacLeod, Bentley; Weber, Shlomo.

TI The Ratchet Effect, the Market for Senior Workers, and Intertemporal Commitment. **AU** Kanemoto, Yoshitsugu; MacLeod, W. Bentley.

TI Spatial Competition and the Core. **AU** Hamilton, Jonathan H.; MacLeod, W. Bentley; Thisse, Jacques Francois.

TI Price Discrimination and Product Line Rivalry. **AU** Ginsburgh, Victor; MacLeod, Bentley; Weber, Shlomo.

TI The Theory of Contracts and Labor Practices in Japan and the United States. **AU** Kanemoto, Yoshitsugu; MacLeod, W. Bentley.

Magnus, Jan R.

PD March 1988. **TI** The Exact Multiperiod Mean-Square Forecast Error for the First-order Autoregressive Model with an Intercept. **AU** Magnus, Jan R.; Pesaran, Bahram. **AA** Magnus: London School of Economics, Pesaran: National Institute of Economic and Social Research. Bahram: Centre for Labour Economics, London School of Economics. **SR** London School of Economics, Suntory Toyota International Centre for Economics and Related Disciplines Working Paper: EM/88/169; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, ENGLAND. **PG** 31. **PR** No Charge. **JE** 211. **KW** Mean Square Forecast Error. Forecast Error. Multiperiod. Dynamic Models.

AB This paper is a further attempt to analyze the mean-square forecast error of multiperiod least-squares forecasts in dynamic models.

Mahjoub, Ali Ridha

TI Compositions of Graphs and Polyhedra II: Stable Sets. **AU** Barahona, Francisco; Mahjoub, Ali Ridha.

Malgrange, Pierre

TI Le long terme des modeles macroeconomiques. **AU** Deleau, Michel; Le, Van Cuong; Malgrange, Pierre.

Mankiw, Gregory N.

PD December 1987. **TI** Recent Developments in Macroeconomics: A Very Quick Refresher Course. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2474; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 28. **PR** \$2.00. **JE** 036, 023. **KW** New Classical. New Keynesian. Rational Expectations.

AB This paper outlines the major developments in macroeconomics over the past two decades. It examines the reasons for the breakdown in the consensus view of the 1960s and how this breakdown has guided research in macroeconomics. The introduction and importance of "rational expectations" are discussed, as are recent advances within the new classical and new Keynesian paradigms.

TI Consumption: Beyond Certainty Equivalence. **AU** Blanchard, Olivier; Mankiw, Gregory N.

TI International Evidence on the Persistence of Economic Fluctuations. **AU** Campbell, John Y.; Mankiw, Gregory N.

Mann, Catherine L.

TI The U.S. External Deficit: Its Causes and Persistence. **AU** Hooper, Peter; Mann, Catherine L.

Manser, Marilyn E.

PD December 1987. **TI** Cash-Equivalent Values from In-Kind Benefits: Estimates from a Complete Demand System Using Household Data. **AA** United States Bureau of Labor Statistics. **SR** Bureau of Labor Statistics Working Paper: 173; Bureau of Labor Statistics, Office of Research and Evaluation, 441 G Street, N.W., Room 2126, Washington, DC 20212. **PG** 39. **PR** No Charge. **JE** 914, 921, 911. **KW** In-Kind Benefits. Non-Cash Benefits. Cash-Equivalent Values. Demand Systems. Household. Food Stamp. Medicaid. Expenditures. **AB** This study utilizes household data to estimate a consumer demand system. The estimated parameters are then used to calculate the (constant-utility) cash equivalent value (CEV) of Food Stamp and Medicaid benefits. The findings are qualitatively similar to earlier results. Food stamps are found to be equivalent to cash transfers for all but extremely poor consuming units, while Medicaid transfers are found to be valued by most recipients less than equal-cost cash transfers. For almost all groups considered, the cash equivalent value estimates are substantially higher than those from the normal expenditures approach which does not hold utility constant.

Marion, Nancy

TI The Implications of Knowledge-Based Growth for the Optimality of Open Capital Markets. **AU** Kohn, Meir; Marion, Nancy.

Markandya, A.

PD 1987. **TI** Economic Policy with Fluctuating Oil Revenues. **AU** Markandya, A.; Pemberton, M. **AA** Department of Economics, University College London. **SR** University College London Discussion Paper: 86-17; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PR** No Charge. **JE** 723, 023, 431, 131, 311. **KW** Oil. Prices. Price Uncertainty. Oil Producing Countries. Exchange Rates.

AB In the last decade and a half the oil producing countries have faced fluctuations in the price of oil that have been sharper than for any corresponding period in their history. Moreover, to a considerable extent these fluctuations have been unanticipated. These two features of the oil market-massive price variability and uncertainty-have meant that macroeconomic management has been extremely difficult in the oil producing countries. In this paper we discuss these problems in some detail. We begin, in section 2, with the main features of the countries of interest, pointing out their differences as well as their similarities. In section 3 we look at what macroeconomic theory has to say about the management of an economy that is heavily dependent upon, or derives a substantial revenue from, a natural resource that is not otherwise strongly linked to the economy. In section 4 we look empirically at one particular instrument that is of relevance, the real exchange rate. Section 5 contains the tentative conclusions of this paper on the ingredients of a

medium term strategy that would be required to achieve the goals set out above.

Martin, Stephen

PD February 1988. TI Market Share as an Index of Market Power in the Presence of Product Differentiation. AA Martin: Michigan State University. SR Michigan State Econometrics and Economic Theory Workshop Paper: 8713; Department of Economics, Michigan State University, East Lansing, Michigan 48824. PG 11. PR No Charge. JE 611, 612. KW Market Power. Product Differentiation. Market Share. Antitrust. Oligopoly.

AB Using a conventional oligopoly model, it is shown that market share is biased downward as an index of market power in the presence of product differentiation. The more products are differentiated, the lower the market share at which courts should be willing to conclude that market power is present.

Maskin, Eric

TI On the Dispensability of Public Randomization in Discounted Repeated Games. AU Fudenberg, Drew; Maskin, Eric.

Masson, Paul

PD March 1988. TI MULTIMOD: A Multi-Region Econometric Model. AU Masson, Paul; Symansky, Steven; Haas, Richard; Dooley, Michael. AA The International Monetary Fund. SR International Monetary Fund Working Paper: WP/88/23; International Monetary Fund, Washington D.C. 20431. PG 87. PR No Charge. JE 431, 443, 311, 123. KW Developing Countries. Debt. Exchange Rates.

AB The paper describes a global model consisting of several industrial and developing country blocks built to analyze alternative economic policies in a medium-term context. The model, which has been used to construct medium-term scenarios for the World Economic Outlook, consists of aggregate demand and supply relationships, with endogenous determination of interest rates, prices, and exchange rates. Financing flows to developing countries depend on expectations of their ability to service debt. Expectations of interest rates, inflation, and exchange rates are modeled in a way that is consistent with the model's solution, and budget constraints are imposed on governments.

Mayer, Colin

TI Means of Payment in Takeovers: Results for the U.K. and U.S. AU Harris, Robert S.; Franks, Julian; Mayer, Colin.

Mayer, Thomas

PD January 1988. TI Interpreting Federal Reserve Behavior. AA University of California at Davis. SR University of California at Davis Research Program in Applied Macro and Macro Policy: 52; Department of Economics, University of California at Davis, Davis, CA 95616. PG 29. PR No Charge. JE 311, 025, 511. KW Federal Reserve. Monetary Policy.

AB This paper surveys the following ways of interpreting Fed behavior: the Fed as dominated by political pressures,

the Fed as a well-intentioned automation, the public choice approach, and the Fed as strongly influenced by dysfunctional factors. It brings to bear some of the literature in psychology and organization theory that bears on dysfunctional behavior.

McAleer, Michael

PD September 1987. TI How Fragile are Fragile Inferences? A Re-Evaluation of the Deterrent Effect of Capital Punishment. AU McAleer, Michael; Veall, Michael R. AA McAleer: Department of Statistics, The Faculties, Australian National University. Veall: Department of Economics, McMaster University, Canada. SR Australian National University Working Paper in Economics and Econometrics: 152; Department of Economics, Australian National University, P.O. Box 4, Canberra ACT 2601, AUSTRALIA. PG 18. PR No Charge. JE 212, 916. KW Extreme Bounds Analysis. Bootstrap Standard Errors. Focus Coefficient. Free Variables. Doubtful Variables.

AB Extreme bounds analysis (EBA) attempts to measure the effects of the uncertainty in the specification of the explanatory variables in a regression model on the estimated coefficients of interest. Standard errors for the stochastic extreme bounds are computed using the bootstrap technique. State-by-state cross section data are used to study the deterrent effect of capital punishment in the United States in 1950. The bootstrap standard errors are sufficiently large for some bounds to suggest caution in the interpretation of the empirical results regarding the fragility of inferences for the deterrent effect of capital punishment.

McCallum, Bennett T.

PD January 1988. TI Real Business Cycle Models. AA Carnegie Mellon University. SR National Bureau of Economic Research Working Paper: 2480; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 55. PR \$2.00. JE 131, 023, 621. KW Real Business Cycle. Fluctuations.

AB This paper attempts to provide an evaluation of both strengths and weaknesses of the real business cycle (RBC) approach to the analysis of macroeconomic fluctuations. It begins with a description of the basic analytical structure typically employed, one in which individual households make consumption and labor supply decisions while producing output from capital and labor inputs, hired on competitive markets, according to a technology that is subject to stochastic shocks. It then explores conditions on parameter values that are needed for a model of this type to yield fluctuations that provide a good quantitative match to those observed in the postwar United States quarterly data. The plausibility of the hypothesis that (unobservable) aggregate technology shocks have the requisite variability is considered and problems with certain cross correlations are noted. Relevant evidence obtained by formal econometric methods is summarized and a few tentative conclusions regarding business cycle research are suggested.

McConnell, Sheena

PD October 1987. TI Strikes, Wages and Private

Information: An Empirical Study. AA Industrial Relations Section, Princeton University. SR Princeton Industrial Relations Section Working Paper: 229; Industrial Relations Section, Department of Economics, Princeton University, Princeton, NJ 08544. PG 42. PR \$1.50 plus postage. JE 832, 831, 824, 821. KW Strikes. Wages. Private Information. Fixed Effects. Asymmetric Information.

AB Private information models of strikes suggest that the strike is used as an information revealing device by the union in the presence of asymmetrical information. A testable prediction of these models is that there is a concession schedule which maps out a negative relationship between wages and strikes. In this paper a concession schedule is estimated using a unique micro data set of about 3000 contracts over the period 1970-1981. Unlike previous wage determination studies, which use the percentage change in nominal wages as the dependent variable, this study uses the average expected real wage over the length of the contract as the dependent variable as this is the wage that is of interest to the negotiating parties. In order to estimate the concession schedule it is necessary to control for all observable variables which effect the level of wages and strike activity. The most important determinants of the real wage are found to be bargaining pair specific fixed effects and a general time trend. Wage settlements at other firms in the same industry prior to the negotiations were also important. The estimated concession schedule has a negative slope as predicted by the private information models. The concession schedule is fairly flat -- the real wage decreases by only 3 per cent after a strike lasting 100 days.

PD February 1988. TI Strikes, Wages and Private Information. AA Centre for Labour Economics, London School of Economics. SR London School of Economics Centre for Labour Economics Discussion Paper: 302; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. PG 49. PR No Charge. JE 832, 831, 833. KW Wages. Strikes. Private Information. Unions.

AB Private information models of strikes suggest that the strike is used as an information revealing device by the union in the presence of asymmetrical information. A testable prediction of these models is that there is a concession schedule which maps out a negative relationship between wages and strikes. In this paper a concession schedule is estimated using a unique micro data set of about 3000 contracts over the period 1970-1981. Unlike previous wage determination studies, which use the percentage change in nominal wages as the dependent variable, this study uses the average expected real wage over the length of the contract as the dependent variable as this is the wage that is of interest to the negotiating parties. In order to estimate the concession schedule it is necessary to control for all observable variables which effect the level of wages and strike activity.

McCuaig, William

PD August 1987. TI Domination in Graphs with Minimum Degree Two. AU McCuaig, William; Shepherd, Bruce. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 -

Discussion Paper: 87472-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 16. PR No Charge. JE 213. KW Domination Number. Minimum Cardinality.

AB The domination number $\gamma(G)$ of a graph $G = (V, E)$ is the minimum cardinality of a subset of V such that every vertex is either in the set or is adjacent to some vertex in the set. We show that if a connected graph, G , has minimum degree two and is not one of seven exceptional graphs, then $\gamma(G) < 2/5$ (absolute value of V). We also characterize both the edge-maximal and edge-minimal such graphs with $\gamma(G) = 2/5$ (absolute value of V).

McElroy, Marjorie

TI Family Structure, Race and the Hazards of Young Women in Poverty. AU Kniesner, Thomas J.; McElroy, Marjorie; Wilcox, Steven.

McFadden, Daniel

PD August 1987. TI Method of Simulated Moments for Estimation of Discrete Response Models Without Numerical Integration. AA Massachusetts Institute of Technology. SR Massachusetts Institute of Technology Department of Economics Working Paper: 464; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. PG 47. PR No Charge. JE 211. KW Method of Moments. Law of Large Numbers. Simulation. Multinomial Probit.

AB This paper proposes a simple modification of a conventional method of moments estimator for a discrete response model, replacing response probabilities that require numerical integration with estimators obtained by Monte Carlo simulation. This method of simulated moments (MSM) does not require precise estimates of these probabilities for consistency and asymptotic normality, relying instead on the law of large numbers operating across observations to control simulation error, and hence can use simulations of practical size. The method is useful for models such as high-dimensional multinomial probit (MNP), where computation has restricted applications.

TI The Dynamics of Housing Demand by the Elderly: Wealth, Cash Flow and Demographic Effects. AU Feinstein, Jonathan; McFadden, Daniel.

McKell, S.

TI The Real Wage - Employment Relationship In the U.S. AU Symons, J.; McKell, S.

McLaren, Keith R.

TI Approaches to the Solution of Intertemporal Consumer Demand Models. AU Cooper, Russel J.; McLaren, Keith R.

McLure, Jr Charles E.

PD March 1988. TI Fiscal Policy and Equity in Developing Countries. AA Hoover Institution. SR Stanford Hoover Institute Working Paper in Economics: E-88-13; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 66. PR No Charge.

JE 323, 322, 024. KW Tax Policy. Equity. Income Tax. Public Spending. Government Policy. Developing Countries. Income Distribution.

AB The tax and expenditure policies followed by governments of developing countries can significantly change the distribution of income. The primary contribution tax policy can make in this area is not to make the poor worse off. Moreover, much public spending in developing countries probably worsens the distribution of income, rather than improving it. This paper is devoted to elaborating and defending the above propositions. It examines both how tax and expenditure policy can help in the achievement of equity objectives and the extent to which they actually do serve that purpose.

PD March 1988. TI Lessons for LDCs of U.S. Income Tax Reform. AA Hoover Institution. SR Stanford Hoover Institute Working Paper in Economics: E-88-14; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 77. PR No Charge. JE 323. KW Tax Reform. Income Tax. Developing Countries. Tax Shelters. Inflation Adjustment. Indexing. Tax Base.

AB The Tax Reform Act of 1986 enacted in the United States represents one of the most ambitious income tax reforms ever undertaken by any country. This paper examines the relevance for less developed countries (LDCs) of income tax reforms recently enacted or considered in the United States. It begins with a brief exposition of the reasonable objectives of tax reform and then proceeds to an examination of particular issues. While roughly the same objectives should motivate tax reform in both developed and developing countries, the weight attached to various objectives will differ, depending on economic and administrative realities.

PD March 1988. TI Analysis and Reform of the Colombian Tax System. AA Hoover Institution. SR Stanford Hoover Institute Working Paper in Economics: E-88-15; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 81. PR No Charge. JE 323, 121. KW Tax Reform. Income Tax. Sales Tax. Wealth Tax. Musgrave Commission. Colombia.

AB The tax system of Colombia has been under constant study and revision during the past 25 years and has been improved markedly, if not steadily, by these efforts. This paper examines both the recent history of tax reform in Colombia and the major tax reform studies that have influenced such reforms, focusing on the proposals of the Taylor and Musgrave missions and upon the tax reform efforts of 1974 and 1986. Primary attention is focussed on structural features of the income and complementary taxes. Only secondary attention is given to domestic indirect taxes levied by the national government, including the national sales tax. Among the important threads of income tax reform traced through the period under study are exemptions and incentives, the taxation of housing, simplification, rate reduction, unification and integration of the taxation of companies and their owners, depreciation allowances, inflation adjustment, presumptive income taxation, and tax administration.

McMahon, Walter W.

PD October 1987. TI Education and Industrialization. AA Department of Economics, University of Illinois at Urbana-Champaign. SR University of Illinois at Urbana-Champaign Bureau of Economic and Business Research Faculty Paper: 1400; Department of Economics, University of Illinois at Urbana-Champaign, 1206 S. 6th Street, Champaign, IL 61821. PG 51. PR No Charge. JE 912, 811, 111, 851. KW Education and Development. Growth. Industrialization. Education Income Distribution. Developing Countries.

AB This is a survey of the current state of knowledge on the relation of education to per capita economic growth, income distribution, and industrialization. The analysis finds a highly significant 25% contribution by education to growth. This is increased another 20% or so in developing countries when the effects on per capita growth of reduced population growth as women receive education and as the absorption of otherwise illiterate underemployed into industry are considered. An analysis of investment strategies finds that nations that invest heavily only in physical capital, or in human capital alone, do less well. The eight with the fastest sustained per capita growth invest heavily in both, and also exhibit far less income inequality than the slow growing nations. Rate of return evidence suggests that investment in primary and lower secondary contributes the most, that narrow, severely tracked vocational schools are less cost effective, and that modern advanced technology transfer through education can be effective but with longer lags.

PD December 1987. TI The Economics of Vocational and Technical Education: Do the Benefits Outweigh the Costs? AA Department of Economics, University of Illinois at Urbana-Champaign. SR University of Illinois at Urbana-Champaign Bureau of Economic and Business Research Faculty Paper: 1416; Department of Economics, University of Illinois at Urbana-Champaign, 1206 S. 6th Street, Champaign, IL 61821. PG 32. PR No Charge. JE 912, 851, 811. KW Vocational Education. Cost/Benefit. Technical Education. Firm-Specific Training. Training.

AB This is an economic analysis of education that is specific to a particular profession or vocation, but not specific to a particular firm. It therefore is new in relation to Becker's analysis, which distinguishes only between firm-specific training and general training without addressing this in-between case. The basic issue is the optimum degree of vocationalization of the curriculum. The evidence is that a proper balance between vocational and general curricula is efficient. But there are growth-related criteria for different rates of expansion for each. Criteria for the most efficient vocational-schooling/OJT mix are also considered, as are the political and equity implications (and evidence) of overexpanding separately tracked schools.

Meese, Richard

PD November 1987. TI Was it Real? The Exchange Rate-Interest Differential Relation Over the Modern Floating Rate Period. AU Meese, Richard; Rogoff, Kenneth. AA Meese: University of California, Berkeley. Rogoff: University of Wisconsin, Former National Fellow,

Hoover Institution. SR Stanford Hoover Institute Working Paper in Economics: E-87-49; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 46. PR No Charge. JE 431, 432, 433. KW Exchange Rates. Interest Rate. Volatility.

AB In this paper we explore the relationship between real exchange rates and real interest rate differential for the United States, Germany, Japan and the United Kingdom. Contrary to theories based on the joint hypothesis that domestic prices are sticky and monetary disturbances are predominant, we find little evidence of a stable relationship between real interest rates and real exchange rates. We consider both in-sample and out-of-sample tests. One hypothesis which is consistent with our findings is that real disturbances (such as productivity shocks) may be a major source of exchange rate volatility.

Meghir, Costas

TI Unemployment Female Labour Supply. AU Blundell, Richard; Ham, John; Meghir, Costas.

Mertens, Jean Francois

PD 1987. TI Non Differentiable T.U. Markets - The Value. AA CORE. SR Universite Catholique de Louvain CORE Discussion Paper: 8735; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. PG 32. PR No Charge. JE 022, 213. KW Equilibrium. Net Trade. T.U. Economies.

AB T.U. economies with private production are shown to have a value - as defined in Mertens '1983 - without any differentiability or interiority or other restriction. An explicit formula is given, describing the value as a barycenter of the Core, for a probability distribution depending only on the set of net trades at equilibrium.

PD November 1987. TI A Measurable "Measurable Choice" Theorem. AA CORE. SR Universite Catholique de Louvain CORE Discussion Paper: 8749; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. PG 28. PR No Charge. JE 021, 026, 213. KW Lyapunov's Theorem. Measure. Measurable Choice.

AB We prove here a measurable version of the measurable choice theorem (a.o., basically of Lyapunov's theorem), in the sense that the measurable selection (the set) can be chosen in a measurable way as a function of the underlying probability measure, of the integral (measure) desired, and of the correspondence itself.

PD November 1987. TI Equilibria for Discounted Stochastic Games. AU Mertens, J. F.; Parthasarathy, T. AA CORE. SR Universite Catholique de Louvain CORE Discussion Paper: 8750; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. PG 45. PR No Charge. JE 026, 021, 213. KW Stochastic Games. Discounted Games. Subgame Perfect.

AB We prove the existence of subgame perfect equilibria for discounted stochastic games with general state and action sets, using minimal assumptions (measurability as a function of states, and for each fixed state, compactness of action sets and continuity on those) - except for the rather

strong assumption that the transition probabilities are norm-continuous functions of the actions.

Michel, Philippe

PD December 1987. TI A Notion of Tangent Cone Which is Useful in Simple Optimization Problems. AU Michel, Philippe; Penot, Jean Paul. AA Michel: Universite of Paris I. Penot: University of Pau. SR Universite Catholique de Louvain CORE Discussion Paper: 8755; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. PG 5. PR No Charge. JE 213, 022. KW Inequality Constraints. Restriction. Normal Cone. Tangent Cone.

AB It is often the case in Economics that optimization problems involve inequality constraints. For a problem in which there is an additional restriction imposing that the admissible points must lie in a given closed set, the nice general results of F. H. Clarke (1983) applies (see for instance, Cornet (1982), Bonnissieu and Cornet (1986)). However, Clarke's normal cone may be very large (or the tangent cone very small, see Jouini (1987)). In such a case, one would like a more precise result, and this motivates the present note. We define a convex tangent cone which has the following property: it coincides with the differential tangent cone when the latter is convex. We use this definition for studying a simple optimization problem.

Middendorf, M.

PD November 1987. TI Symmetric Matroids and Connectivity Properties of Graphs. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87485-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 9. PR No Charge. JE 213. KW Symmetric Matroids. Graphisomorphism. Circuits.

AB A symmetric matroid is a matroid defined on the edge set of some countable infinite complete graph in a way that the rank of subgraphs is invariant under graphisomorphism. We study connectivity properties of circuits and generalized trees of symmetric matroids.

Milgrom, Paul

TI Short-Term contracts and Long-Term Agency Relationships. AU Fudenberg, Drew; Holmstrom, Bengt; Milgrom, Paul.

Mishkin, Frederic S.

PD September 1987. TI Can Futures Market Data Be Used to Understand the Behavior of Real Interest Rates? AA Columbia University, Graduate School of Business and National Bureau of Economic Research. SR Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-87-18; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. PR \$5.00 academics and non-profit institutions; \$6.00 corporations (add \$1.00 outside United States, Canada and Puerto Rico). JE 311, 313, 212. KW Futures. Real Interest Rates. Own-commodity Real Rates. Monetary Policy.

AB This paper examines whether futures market data

can be used to understand the behavior of real interest rates. The conclusion is a negative one: Futures market data do not appear to be particularly informative about real interest rates. In coming to this conclusion, the paper examines the data in several ways. First, the ex-ante relative price movement embedded in the own-commodity real rates (the noise) is calculated to be on the order of over one hundred times more variable than the aggregate real interest rate (the signal). Own-commodity real rates are thus unlikely to contain much information about the aggregate real interest rate. Second, several widely accepted facts about the behavior of aggregate real interest rates in the 1980s are not at all evident in the own-commodity real rate data. Thus, analysis of own-commodity real rates provides a misleading impression of aggregate real rate movements for a period which displays the most striking movements of real interest rates in the postwar period. Finally, an econometric analysis of own-commodity real rate behavior fails to find evidence of a shift in the behavior of real interest rates when the monetary policy regime changes in October 1979, a finding that is at odds with previous strong findings in the literature.

Mitchell, Olivia S.

TI The Baby Boom's Legacy: Relative Wages in the 21st Century. AU Levine, Phillip B.; Mitchell, Olivia S.

Modest, David M.

TI The Empirical Foundations of the Arbitrage Pricing Theory. AU Lehmann, Bruce N.; Modest, David M.

Mohring, Rolf

TI Computing the Bump Number of Ordered Sets is Easy. AU Habib, Michel; Mohring, Rolf; Steiner, George.

PD September 1987. TI Computationally Tractable Classes of Ordered Sets. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87468-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 90. PR No Charge. JE 213. KW Ordered Sets. NP-Hard. Computationally Tractable. Partial Orders.

AB Ordered sets have recently gained much importance in many applied and theoretical problems in computer science and operations research ranging from project planning via processor scheduling to sorting and retrieval problems. These problems involve partial orders as their basic structure, e.g. as precedence constraints in scheduling problems, or as comparability relation among the objects to be sorted or retrieved. Since many of the involved problems are NP-hard in general, much attention has recently been given to special classes of partial orders with "nice" structural properties that lend themselves the design of efficient methods, and for obtaining bounds by structural relaxation in more general situations. Typical such classes are: series parallel partial orders, N-free partial orders, interval orders, two-dimensional partial orders, and partial orders with special decomposition properties. This area of "computationally tractable" classes of partial orders shows many similarities and interactions with algorithmic graph theory and certain

classes of perfect graphs. We will present the structural properties of the mentioned classes, discuss their mutual relationship, and the algorithmic complexity of their recognition. In addition, we present the tractability of these different classes on several applications dealing with scheduling and sorting.

Monfort, Alain

TI Consistent M-estimators in a Semi-Parametric Model. AU Gourieroux, Christian; Monfort, Alain; Renault, Eric.

Moulin, Herve J.

PD January 1988. TI Three Solutions for the Tragedy of the Commons. AA Virginia Polytechnic Institute and State University. SR Virginia Polytechnic Institute and State University Working Paper in Economics: E88-01-01; Working Paper Coordinator, Department of Economics Sandy Hall, Blacksburg, VA 24061. PG 44. PR Free by request. JE 024, 025, 022. KW Equal Benefits. Equal Returns. Constant Returns. Principal-Agent. Social Choice.

AB A given set of agents jointly operate a decreasing returns to scale technology (with a single input and a single output). They all contribute some input and receive some of the output. What first best allocation is equitable? We discuss axiomatically three allocation mechanisms. The Equal Benefits solution gives to every agent the same benefit, computed at the supporting price. The Equal Returns solution equalizes returns (output shares/input contributions) across agents. The Constant Returns Equivalent solution gives to every agent his indirect utility level at some common price of output relative to input. All three solutions receive an axiomatic characterisation. Most axioms are borrowed from social choice and/or implementation theories.

Moulton, Brent

PD July 1987. TI Alternative Test of the Error Components Model. AU Moulton, Brent; Randolph, William C. AA Bureau of Labor Statistics. SR Bureau of Labor Statistics Working Paper: 169; Bureau of Labor Statistics Office of Research and Evaluation 441 G Street, N.W. Room 2126 Washington, D.C. 20212. PG 24. PR No Charge. JE 211, 212. KW Lagrange Multiplier. Asymptotic Distribution. Likelihood Test. F-Test. Mixed Linear Models. Variance Components. Error Component.

AB We analyze alternative tests of the error components specification in a regression model for data having a grouped structure. Several recent empirical studies have tested the specification using the Lagrange Multiplier (LM) test, relying on the asymptotic distribution to provide approximate critical values. We find that the asymptotic approximation can be very poor even in relatively large data sets. A large sample restricted likelihood LM test is suggested as an alternative and we find that it produces acceptable critical value approximations. The ANOVA-type F test is also examined, and we find that its power is reasonably high relative to locally best invariant exact LM test.

Muller, Brockhausen Gerd

TI A Factor Demand Model With Quasi-Fixed Factors and Rational Expectations. AU Weissenberger, Edgar; Muller, Brockhausen Gerd; Welsch, Heinz.

Murphy, Robert G.

PD April 1988. TI Stock Prices, Real Exchange Rates, and Optimal Capital Accumulation. AA Boston College. SR International Monetary Fund Working Paper: WP/88/31; International Monetary Fund, Washington D.C. 20431. PG 22. PR No Charge. JE 431, 411, 023. KW Exchange Rate. Open Economy. Adjustment Costs. Capital Accumulation.

AB This paper analyzes the dynamics of the real exchange rate and the price of equity for a small open economy using an optimising model in which the process of capital accumulation entails adjustment costs. The analysis demonstrates that along an adjustment path toward long-run equilibrium, appreciation of the real exchange rate will accompany a decline in the market price of equity, whereas depreciation of the real exchange rate will accompany a rise in the price of equity. This relationship results from the requirement that non-traded inputs are used in the investment process. In the short-run, though, the effects on these variables depend critically on whether disturbances originate in the non-traded sector and on whether disturbances are perceived as temporary or permanent. The disturbances considered include changes in fiscal policies as well as changes in the world interest rate.

Nagashima, Takashi

TI Players' Deductions and Deductive Knowledge, and Common Knowledge on Theorems. AU Kaneko, Mamoru; Nagashima, Takashi.

Nalebuff, Barry

TI Excess Capacity, Efficiency, and Industrial Policy. AU Ghemawat, Pankaj; Nalebuff, Barry.

Neary, Peter

PD December 1987. TI Determinants of the Equilibrium Real Exchange Rate. AA Queen's University. SR Centre for Economic Policy Research Discussion Paper: 209; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 10. PR 1 pound (\$2) individuals; 1.50 pounds (\$3) companies, libraries, institutions. JE 431, 411. KW Real Exchange Rate. Dutch Disease. Purchasing Power Parity. Open Economy. Foreign Aid.

AB This paper presents a compact derivation of the determinants of changes in the equilibrium real exchange rate (the price index of non-traded goods relative to traded goods) in a small open economy with any number of goods and factors. It is shown that the change in the real exchange rate equals a simple weighted sum of the differences between the marginal propensities to consume and the marginal propensity to produce individual non-traded goods. Implications of the result are noted for a variety of applied questions, including the effects of foreign aid, the "Dutch Disease", and cross-country comparisons of purchasing power parity.

Nelson, Judy A.

PD September 1987. TI Household Economies of Scale in Consumption: Theory and Evidence. AA Office of Prices and Living Conditions, Bureau of Labor Statistics. SR Bureau of Labor Statistics Working Paper: 171; Bureau of Labor Statistics Office of Research and Evaluation 441 G Street, N.W. Room 2126 Washington, D.C. 20212. PR No Charge. JE 921. KW Economies of Scale. Utility-Theoretic Model. Household. Discounts. Bulk Purchases.

AB Household economies of scale in consumption are incorporated into a utility-theoretic model of household demands. Economies of scale may arise through (possibly congestible) household public goods as well as through increasing returns in household production or discounts for bulk purchases. The effects of economies of scale are isolated from other influences on demands by the assumption that individuals are identical and are symmetrically treated within households. Economies of scale parameters for food, shelter, clothing, household furnishings and operations, and transportation are estimated using a theoretically plausible demand system specification and data on expenditures by all-adult households. Results suggest the existence of significant economies of scale in consumption of all of the five goods, with economies being especially pronounced in the consumption of shelter.

Nelson, Julie

PD July 1987. TI Quantity Aggregation and Price Variation in U.S. Consumer Demand for Food. AA Bureau of Labor Statistics. SR Bureau of Labor Statistics Working Paper: 168; Bureau of Labor Statistics, Office of Research and Evaluation, 441 G Street, N.W., Room 2126, Washington, DC 20212. PG 27 + append. PR No Charge. JE 921. KW Hicks Composite Commodity Theorem. Aggregation. Elasticity. Consumer Expenditure Survey. Demand. Expenditures. Purchases.

AB The simple sum of physical quantities of food purchased by a household is an invalid measure of food "quantity demanded" from the perspective of economic aggregation theory. While some conditions for consistent aggregation lead to degenerate models of item choice, aggregation over elementary goods using the Hicks composite commodity theorem gives a quality-adjusted quantity measure that may be useful in analysis. Income and price elasticities of demand as defined in this model, and of the physical quantity and quality components of demand, are estimated for eleven food groups using an extension of a method devised by Deaton (1986). The method makes use of spatial variation in price and includes adjustments for quality effects and measurement error. Data is from the 1985, second quarter United States Consumer Expenditure Survey.

Nesetril, Jaroslav

TI Linearity and Unprovability of Set Union Problem Strategies. AU Loebel, M.; Nesetril, J.

PD December 1987. TI On a Problem of Pisier. AA Charles University, Prague. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87488-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND.

PG 6. PR No Charge. JE 213. KW Sidon Sequences. Pisiser Problem.

AB We provide a negative answer to a local version of a problem due to Pisiser on the characterization of Sidon sequences in a very strong sense.

Neufeind, Wilhelm

TI Quantity Guided Price Setting. **AU** Dierker, Egbert; Neufeind, Wilhelm.

Neumann, George R.

TI Why Does the Information Matrix Test Reject too Often? A Diagnosis of Some Monte Carlo Symptoms. **AU** Kennan, John; Neumann, George R.

Neumann, M. J. M.

PD January 1988. **TI** Properties of the Phillips-Curve in a Two-Signals World. **AU** Neumann, M. J. M.; von, Hagen J. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-149; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 17. **PR** No Charge. **JE** 131, 134, 023. **KW** Short-Run Phillips-Curve. Rational Expectations. Shift Properties.

AB The famous variable-slope property of the short-run Phillips-curve is not a generally valid implication of rational expectations. Instead it results from assuming that agents are restricted to observing a local market price as the only source of contemporaneous information. We show that in a more general case of a two-signals world, where agents observe a local goods price and a global asset price, changes in the variances of aggregate nominal and real stocks affect the effective output-inflation trade-off by changing the shift properties of the Phillips-curve instead of its slope. This has implications for empirical tests.

Newell, A.

PD 1987. **TI** The Phillips Curve is a Real Wage Equation. **AU** Newell, A.; Symons, J. **AA** Department of Economics, University College London. **SR** University College London Discussion Paper: 86-16; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PR** No Charge. **JE** 023, 824. **KW** Phillips Curve. Wage Bargaining. OECD Countries. Wage Rigidity.

AB This paper examines the interpretation of the Phillips curve as a wage-bargaining equation. This interpretation implies roles for the tax and import price wedge, and relative bargaining strength in the determination of wages, but suggests that wages should not display nominal rigidity. These issues are examined for a sample of 16 OECD countries: we find for the bargaining interpretation and against naive formulations of the Phillips curve.

TI Corporation, the Laissez-Faire and the Rise in Unemployment. **AU** Symons, J.; Newell, A.

TI Wages and Employment- Between The Wars. **AU** Symons, J.; Newell, A.

PD January 1988. **TI** The Macroeconomics of the Inter-War Years. **AU** Newell, Andrew; Symons, James S.

V. AA London School of Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 299; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 61. **PR** No Charge. **JE** 042, 131. **KW** Inter-war. Employment. Wages. Supply-side Factors. Great Depression.

AB The primary objective of the work reported here is to analyze the supply-side factors which operated to sustain the Great Depression through the nineteen-thirties. In Sections 2 through 4 of the paper an essentially Keynesian macroeconomic model is developed and then estimated using data from 14 countries. A secondary objective is to see if world average data can shed light on the 'spending versus money' debate of the causes of the downturn in aggregate demand. This work is reported in Section 5.

Nickell, Stephen J.

PD November 1987. **TI** Financial Factors, Efficiency Wages and Employment: Investigations Using UK Micro-Data. **AU** Nickell, Stephen J.; Wadhvani, Sushil B. **AA** Nickell: University of Oxford. Wadhvani: Centre for Labour Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 295; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, United Kingdom. **PG** 40. **PR** No Charge. **JE** 824, 832, 821, 831, 813. **KW** Efficiency Wages. Efficient Bargains. Employment. Labor Demand.

AB This paper reports an attempt to discriminate between three alternative models of employment determination - labour demand, efficient bargains, and efficiency wages. Further, the importance of financial factors in employment determination is explicitly recognised. Our basic empirical result is that the firm's employment is negatively related to its own wage, and to the change in its relative wage. This is hard to rationalise within any of the three models, though it may be explicable in terms of an efficiency wage model modified to allow for the adaptation of aspirations. Our results also suggest that financial factors like income and capital gearing exert a significant effect on employment, and may be a channel through which higher inflation depresses employment.

Noll, Roger G.

PD December 1987. **TI** Economics, Politics, and Government Research and Development. **AU** Noll, Roger G.; Cohen, Linda R. **AA** Noll: Stanford University. Cohen: University of Washington. **SR** Stanford Hoover Institute Working Paper in Economics: E-87-55; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 39. **PR** No Charge. **JE** 513, 616, 621, 322, 511. **KW** Industrial Policy. Research and Development Policies. Technological Innovation. Research and Development. Government Policy. Government Programs.

AB Government programs to develop new commercial technologies have led to a number of economic disasters during the past two decades, notably the SST, Clinch River Reactor, Synthetic Fuels, and the Space Shuttle. Yet the economics literature contains numerous arguments

that, left to its own devices, the private sector will do too little Research and Development. The purpose of this paper is to provide analysis and information as to why both points could be true. It analyzes the political and bureaucratic processes through which decisions are made to propose these programs, and the subsequent decisions to continue, modify or kill them. The key findings are that on the basis of *ex ante* analysis, most programs are not clearly a waste of money, especially in early exploratory research. The problems arise because mid-project managerial decisions are deflected from matters of economic efficiency by a host of political factors: impatience to show commercial progress, distributive politics, the inability to commit to long-term, stable programs, and a mismatch between the types of industries that are most likely to underinvest in research and those that are most attractive politically to subsidize.

Norman, G.

TI Price Discrimination and Equilibrium in Monopolistic Competition. AU MacLeod, W. B.; Norman, G.; Thisse, J. F.

Norman, Victor D.

TI Optimum Trade Policy Towards Imperfectly Competitive Industries: Two Norwegian Examples. AU Daltung, Sonja; Eskeland, Gunnar; Norman, Victor D.

Novalés, Alfonso

TI Estimation of Dynamic Investment Functions in Oil Exploration. AU Hendricks, Ken; Novalés, Alfonso.

Ogawa, H.

TI A Spatial Competition Approach to Central Place Theory: Some Basic Principles. AU Fujita, M.; Ogawa, H.; Thisse, J. F.

Olewiler, Nancy

TI Cigarette Smoking and Quitting: A Life-Cycle Approach. AU Arnott, Richard; Lewis, Frank D.; Olewiler, Nancy.

O'Neill, Richard P.

TI Making a Market: A New Approach to Gas Pipeline Regulation. AU Alger, Dan; O'Neill, Richard P.; Toman, Michael A.

Parthasarathy, T.

TI Equilibria for Discounted Stochastic Games. AU Mertens, J. F.; Parthasarathy, T.

Pasurka, Carl

TI Multilateral Productivity Comparisons When Some Outputs are Undesirable: A Nonparametric Approach. AU Fare, Rolf; Grosskopf, Shawna; Lovell, C. A. K.; Pasurka, Carl.

Pemberton, M.

TI Economic Policy with Fluctuating Oil Revenues. AU Markandya, A.; Pemberton, M.

Penot, Jean Paul

TI A Notion of Tangent Cone Which is Useful in Simple Optimization Problems. AU Michel, Philippe; Penot, Jean Paul.

Pergamit, Michael R.

PD April 1987. TI Earnings and Different Types of Training. AU Pergamit, Michael R.; Shack, Marquez Janice. AA Bureau of Labor Statistics. SR Bureau of Labor Statistics Working Paper: 165; Bureau of Labor Statistics, Office of Research and Evaluation, 441 G Street, N.W., Room 2126, Washington, DC 20212. PG 30. PR No Charge. JE 811, 824, 826. KW Training. Wages. Current Population Survey. Earning-Tenure Profile. Union Workers.

AB This paper focuses on two main issues: who chooses to acquire training and what effect the training has on wages and wage growth. Unlike other studies, we differentiate among types of training. Three dichotomies are examined in particular. A distinction is made between (1) training acquired to obtain a new job and training acquired to improve skills on the current job; (2) training that is provided by an employer and training that is self provided; and (3) training acquired in school and training acquired elsewhere. We use a supplement to the Current Population Survey to show that the shape of the earning-tenure profile differs substantially for workers who have received specific types of training. Returns to training are sharply different across demographic groups, occupational groups, and between union and nonunion workers.

PD June 1987. TI Regulation and Labor Earnings: Comment and Extension. AA Bureau of Labor Statistics. SR Bureau of Labor Statistics Working Paper: 164; Bureau of Labor Statistics, Office of Research and Evaluation, 441 G Street, N.W., Room 2126, Washington, DC 20212. PG 12. PR No Charge. JE 821, 822, 824, 611. KW Regulation. Labor Earnings. Concentration Ratio. Collinearity. Industry Structure.

AB Prior estimates of the effect of regulation on labor earnings have been imprecise. Inclusion of both a dummy variable for regulated industries and a "corrected" concentration ratio introduces collinearity into an earnings regression. An alternative specification which removes the problem of collinearity is estimated using data similar to those used in previous studies. In the presence of collinearity, workers appear to earn the same average earnings, *ceteris paribus*, as workers in manufacturing industries. By changing the specification to remove the collinearity, it is shown that workers in regulated industries earn more, on average, than workers in all manufacturing industries but comparable earnings to workers in highly concentrated manufacturing industries. These tests demonstrate that the effect of regulation on earnings might occur through the effect of regulation on industry structure.

Persson, Torsten

PD November 1987. TI Exchange Rate Variability and Asset Trade. AU Persson, Torsten; Svensson, Lars E. O. AA University of Stockholm. SR University of Rochester Center for Economic Research Working Paper: 109; Department of Economics, University of Rochester,

Rochester, NY 14627. **PR** No Charge. **JE** 431, 441, 311. **KW** Exchange Rate Risk. Asset Trade. Portfolio Diversification. Monetary Policy. Foreign Investment.

AB In popular discussions about the merits of different international monetary arrangements it is often maintained that increased exchange rate variability has a negative influence on international trade and foreign investment. This paper addresses a specific, but also a very basic, aspect of this general issue, namely the effect of exchange rate variability on capital flows and international portfolio diversification. More precisely, we examine how different monetary policies -- and among those, policies that aim at stabilizing exchange rates -- determine the risk characteristics of nominal assets, and how these risk characteristics in turn affect international portfolio composition and trade in assets, when international asset markets are incomplete.

TI Social Contracts as Assets: A Possible Solution to the Time-Consistency Problem. **AU** Kotlikoff, Laurence J.; Persson, Torsten; Svensson, Lars E. O.

Peruga, Rodrigo

TI Risk Premium and the Foreign Exchange Market. **AU** Kaminsky, Graciela L.; Peruga, Rodrigo.

TI Credibility Crises: The Dollar in the Early Eighties. **AU** Kaminsky, Graciela Laura; Peruga, Rodrigo.

Pesando, James E.

PD October 1987. **TI** Does Pension Wealth Decline Before the Age of Normal Retirement? Canadian Evidence. **AU** Pesando, James E.; Gunderson, Morley. **AA** Pesando: Institute for Policy Analysis, University of Toronto. Gunderson: Centre for Industrial Relations. **SR** University of Toronto Institute for Policy Analysis Working Paper: 8719; Department of Economics, University of Toronto, Toronto, Ontario, CANADA M5S 1A1. **PG** 43. **PR** Gratis - as long as in stock. **JE** 824, 813, 918, 821. **KW** Pension Wealth. Early Retirement. Work Incentives. Implicit Tax.

AB Once an employee has qualified for early retirement, the employee who elects to continue to work pays an implicit tax in the form of forgone pension payments. Is this implicit tax sufficient to cause pension wealth to decline with the age of retirement, for those who have qualified for early retirement? This question has important implications for the work incentives created by pension plans, and related issues such as retirement trends, total compensation comparisons, age-total compensation profiles, and the extent of deferred compensation. Based on Canadian pension plans, we find there is no general relationship between pension wealth and age of retirement, for employees who have qualified for early retirement. In final earnings plans, which predominate in the non-union sector, the relationship between pension wealth and age is likely to be negative only if the plan provides for special retirement (i.e., retirement before age 65 with an unreduced pension). In flat benefit plans, which predominate in the union sector, the existence of special retirement and a bridging supplement, together with the prospects for future enrichment of the benefit formula, determine the sign of the relationship.

Pesaran, Bahram

TI The Exact Multiperiod Mean-Square Forecast Error for the First-order Autoregressive Model with an Intercept. **AU** Magnus, Jan R.; Pesaran, Bahram.

Pestieau, P.

TI Bequests, Filial Attention and Fertility. **AU** Cremer, H.; Pestieau, P.

Peters, Michael

TI Repeated Search. **AU** Bagwell, Kyle; Peters, Michael.

Peters, Wolfgang

PD December 1987. **TI** A Pension Insurance System in an Overlapping Generations Model. **AA** University of Bonn. **SR** Universität Bonn Sonderforschungsbereich 303 - Discussion Paper: A-122; Sonderforschungsbereich 303 an der Universität Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 17. **PR** No Charge. **JE** 321, 915, 918, 821. **KW** Pension Insurance. Overlapping Generations Model. Retirement. Elderly.

AB In the last decade there has been a rapidly growing interest in analyzing the problems of the state pension insurance from the viewpoint of economic theory. State pension insurance increasingly has become a public issue because the usual pay-as-you-go system required excessive adjustments in both the premium and the pension structure. If such necessary adjustments were considered as politically unfeasible, financing the pension scheme could be ensured by state subsidies. Considering the far-reaching effects that any change to the pension system can have, it is clear that one of the central goals of the theoretical analysis consists in showing the relationship between the changes in the insurance system and the individual behavior of the policy-holder. For it is precisely the changing labor-leisure choice and with it the changing retirement age that substantially effect the financing of a pension system.

Phillips, Peter C. B.

PD November 1987. **TI** Multiple Regression with Integrated Time Series. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 852; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 41. **PR** No Charge. **JE** 211. **KW** LAMN. LAN Asymptotics. Stochastic Integral. Unit Roots. Weak Convergence. Weak Dependence.

AB Recent work on the theory of regression with integrated processes is reviewed. This work is particularly relevant in economics where many financial series and macroeconomic time series exhibit nonstationary characteristics and are often well modeled individually as simple ARIMA processes. The theory makes extensive use of weak convergence methods and allows for integrated processes that are driven by quite general weakly dependent and possibly heterogeneously distributed innovations. The theory also includes near integrated time series, which have roots near unity, and cointegrated series, which move together over time but are individually nonstationary. A general framework for asymptotic analysis is given which involves limiting Gaussian

functionals and extends the LAN and LAMN families of conventional asymptotic theory. An application to the Gaussian AR(1) is reported.

Picard, Pierre

PD 1987. TI Incentives in Cooperative Research and Development. AU Picard, Pierre; Rey, Patrick. AA Picard: CEPREMAP. Rey: Rouen. SR CEPREMAP Discussion Paper: 8739; CEPREMAP, 142, rue du Chevaleret, 75013 Paris, FRANCE. PG 36. PR 20 FF. JE 022, 024, 026. KW Research. Development. Adverse Selection. Moral Hazard. Contract. Welfare.

AB This paper provides an analysis of optimal contracts for a cooperative research and development program. We first characterize the optimal decision rule, when the regulator has incomplete information about the firms' profitability and individual contributions are verifiable. We then turn to the case where the contractors' contributions cannot be publicly observed. It is shown that reward schemes can be chosen so that imperfect observability of the contractors' actions entails no additional welfare loss.

Pintz, Janos

PD October 1987. TI Two Infinite Sets of Primes with Fast Primality Tests. AU Pintz, Janos; Steiger, William; Szemerédi, Endre. AA Rutgers University, Hungary. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87484-OR; Sonderforschungsbereich 303 an der Universität Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 9. PR No Charge. JE 213. KW Infinite Sets. Running Time. Primes.

AB Infinite sets P and Q of primes are described, P subset or equal to Q . For any natural number n it can be decided if n element of P in (deterministic) time $O((\log n)$ to the ninth power). This answers affirmatively the question of whether there exists an infinite set of primes whose membership can be tested in polynomial time, and is the main result of the paper. Also, for every n element of Q , we show how to produce at random, in expected time $O((\log n)$ cubed), a certificate of length $O(\log \log n)$ which can be verified in (deterministic) time $O((\log n)$ cubed). The expected running time of this procedure is much faster than that of existing methods. Finally it is important that P is relatively dense (at least $c(n$ to the $2/3)/\log n$ elements less than n). Elements of Q in a given range may be generated quickly, but it would be costly for an adversary to search Q in this range; this could be useful in cryptography.

Pissarides, Christopher A.

PD November 1987. TI Unemployment and the Inter-Regional Mobility of Labour. AU Pissarides, Christopher A.; Wadsworth, Jonathan. AA London School of Economics, Centre for Labour Economics. SR London School of Economics Centre for Labour Economics Discussion Paper: 296; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, U.K. PG 44. PR No Charge. JE 813, 823, 941. KW Unemployment. Housing. Great Britain. Migration. Mobility. Households.

AB We investigate the effect of unemployment on interregional mobility in Great Britain by estimating household migration probabilities with data from the 1977 and 1984 Labour Force Surveys. We find that unemployed households are much more likely to move than employed households but regional unemployment differentials do not play an independent explanatory role in migration regressions. We also find that at higher overall unemployment rates migration probabilities are reduced everywhere both on average and at the margin.

Plant, Mark W.

TI The Demand for New York City Public Transit. AU Jacobe, Ronald H. Jr; Plant, Mark W.

Porter, Robert H.

TI An Empirical Study of an Auction with Asymmetric Information. AU Hendricks, Kenneth; Porter, Robert H.

TI An Empirical Study of an Auction with Asymmetric Information. AU Hendricks, Kenneth; Porter, Robert H.

Poterba, James M.

PD October 1987. TI Tax Policy and Corporate Saving. AA Massachusetts Institute of Technology. SR Massachusetts Institute of Technology Department of Economics Working Paper: 470; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. PG 54. PR No Charge. JE 522, 521, 323. KW Taxation. Tax Reform Act. Savings.

AB This paper is an empirical study of two aspects of corporate saving. The first part estimates how changes in dividend taxation, and the average tax burden on corporations, affect the level of dividend payments. Time series evidence for the United States suggests substantial tax effects. The second part of the paper presents new empirical evidence on whether households "pierce the corporate veil" and consider corporate saving in making personal saving decisions. Although some offset does occur, the estimates suggest that a one dollar change in corporate saving leads to between a twenty-five and fifty cent change in private saving. This implies that policies similar to the Tax Reform Act of 1986, which depress corporate saving by lowering dividend taxes and raising the tax burden on the corporate sector, may adversely affect total private saving.

Pradel, Jeanine

TI Short Term and Long Term in Duration Data Models. AU Fourgeaud, Claude; Gourieroux, Christian; Pradel, Jeanine.

TI Heterogeneity and Hazard Dominance in Duration Data Models. AU Fourgeaud, Claude; Gourieroux, Christian; Pradel, Jeanine.

Preston, Esme

PD December 1987. TI On Choosing a Technical Wordprocessor. AA Monash University. Department of Econometrics and Operations Research, Monash University. SR Monash Department of Econometrics and Operations Research Working Paper: 12/87; Department of Econometrics and Operations Research,

Faculty of Economics and Politics, Monash University, Clayton, Victoria 3168, AUSTRALIA. PG 10. PR No Charge. JE 011. KW Text Processing. Processing. Word Processors.

AB Technical wordprocessors are developing too rapidly for individual prospective purchasers to evaluate them. Learned journals encouraging an exchange of views on the subject help to ensure that their own profession's requirements are met. Leading in this respect at present is the American Mathematical Society which has a long-standing association with text processing and has, more recently, in conjunction with the Boston PC User Group, and under the editorship of Palais, turned its searchlight onto PC text processing software. It is encouraging to see the Australian Mathematical Society also taking a professional interest in the subject. This paper is intended as a further contribution to the exchange.

Pulleyblank, W.

TI Two Terminal Steiner Tree Polyhedra. AU Ball, Michael; Liu, Wei guo; Pulleyblank, William.

TI The Perfectly Matchable Subgraph Polytope of an Arbitrary Graph. AU Balas, E.; Pulleyblank, W. R.

TI Forest Covers and a Polyhedral Intersection Theorem. AU Gamble, A. B.; Pulleyblank, W. R.

TI On Cycle Cones and Polyhedra. AU Coullard, Colette; Pulleyblank, William.

Qian, Yingyi

PD March 1988. TI Urban and Rural Household Savings in China. AA The International Monetary Fund. SR International Monetary Fund Working Paper: WP/88/25; International Monetary Fund, Washington D.C. 20431. PG 36. PR No Charge. JE 124, 921. KW Households. Saving. China.

AB Household savings behavior in China during the past 30 years has been studied by using econometric models with the time-varying-parameter technique. The rural sector and the urban sector are investigated separately. In comparison to previous studies on the same subject, the estimated models of the current study are more robust, and the results of the models are much more in line with results of similar studies of other countries.

Quah, Danny

PD October 1987. TI What Do We Learn from Unit Roots in Macroeconomic Time Series? AA Massachusetts Institute of Technology. SR Massachusetts Institute of Technology Department of Economics Working Paper: 469; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. PG 17. PR No Charge. JE 131, 023. KW Aggregate Output. Business Cycle.

AB It is often argued that the presence of a unit root in aggregate output implies that there is no "business cycle": the economy does not return to trend following a disturbance. This paper makes this notion precise, but then develops a simple aggregative model where this relation is contradicted. In the model, output both has a unit root, and displays repeated short-run fluctuations around a deterministic trend. Some summary statistical evidence is presented that suggests the phenomena

described in the paper is not without empirical basis.

Quint, Thomas

PD December 1987. TI Elongation of the Core in an Assignment Game. AA Department of Mathematics, University of Los Angeles. SR Stanford Institute for Mathematical Studies in the Social Sciences (Economic Series) Technical Report: 521; IMSSS, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. PG 56. PR \$4.00. JE 022, 026, 932, 213. KW Core. Competition. Linear Programming. Polytope. Housing.

AB In this paper, the housing model of Shapley and Shubik (1972) is considered. The aim is to measure the "elongation" of the core in this game. To do this, a natural geometric concept called the volume ratio (VR) is defined. VR is the ratio of the volume of the core to that of the smallest "rectangle" containing it. However, VR is difficult to compute and also has no intuitive meaning in terms of the data of the original economic market. So, we define the competition ratio (CR). CR is an intuitive measure of the amount of competition in the market. Also, it can be calculated merely by solving four linear programs. We then explore the inverse relationship between VR and CR. First, if a problem datum is perturbed, VR and CR react in opposite directions. Finally, we provide upper and lower bounds for VR which are inversely related to CR. This analysis also gives a method for finding bounds for the volume of polytopes of a certain class--and this method involves only solving four linear programs.

Randolph, William C.

PD April 1987. TI Housing Depreciation and Aging Bias in the Consumer Price Index. AA Bureau of Labor Statistics. SR Bureau of Labor Statistics Working Paper: 166; Bureau of Labor Statistics, Office of Research and Evaluation, 441 G Street, N.W., Room 2126, Washington, DC 20212. PG 45. PR No Charge. JE 932, 931, 227, 134. KW Random Coefficients. Variance Components. Composite Estimation. Hedonic Regressions. Price Indexes. Rent Control. Housing.

AB I use hedonic regression methods to estimate average rental housing depreciation for areas of the United States with the purpose of estimating a downward quality bias of the United States Consumer Price Index caused by aging of rental housing. I then develop and evaluate methods for correcting the Consumer Price Index for aging bias. My depreciation estimates indicate that recent percentage changes in the United States Consumer Price Index shelter cost indexes are downward biased by .3 to .4 annually. Such bias is non-negligible because recent annual changes in the CPI shelter cost indexes have ranged between 3.5% and 6.8% for various regions. My results also imply that rent controlled housing has depreciated faster than other rental housing.

PD April 1987. TI Consistent Least Squares Estimation of Error Covariance Parameters for Regression Models with Linear Covariance Structure. AA Bureau of Labor Statistics. SR Bureau of Labor Statistics Working Paper: 161; Bureau of Labor Statistics Office of Research and Evaluation 441 G Street, N.W. Room 2126 Washington, D.C. 20212. PG 35. PR No Charge. JE 211, 212. KW GLS. Covariance Matrix.

AB If linear regression residuals are heteroskedastic or correlated with each other, it is well known that least squares coefficient estimates will generally be inefficient. Both unbiased efficient estimation, i.e., GLS, and unbiased inferences based upon least squares or GLS coefficient estimates require either prior knowledge or reliable estimates of the residual covariance matrix. Numerous popular and useful econometric regression models have an error covariance matrix that can be expressed as a linear combination of relatively few unknown scalar parameters multiplied by known symmetric non-negative definite matrices. In this paper, in a unified and uncomplicated fashion, I propose and analyze two general covariance matrix parameter estimators that are applicable to almost any regression model with a linear covariance structure.

TI Alternative Test of the Error Components Model.
AU Moulton, Brent; Randolph, William C.

Ransom, Roger L.

PD February 1988. **TI** Capitalists Without Capital: The Burden of Slavery and the Impact of Emancipation. **AU** Ransom, Roger L.; Sutch, Richard. **AA** Ransom: UC Riverside. Sutch: UC Berkeley. **SR** University of California at Berkeley Working Paper in Economics: 8867; IBER, 156 Barrows Hall University of California Berkeley, CA 94720. **PG** 54. **PR** \$3.50. **JE** 042, 051, 941, 716, 917. **KW** Slavery. Capitalism. Growth. Capital Asset Pricing Model.

AB Karl Marx recognized the capitalist nature of American slavery long before American historians. The historians, of course, had always known that the essential economic feature of American slavery was that human labor had been capitalized. Black men and women were owned. They could be bought and sold, moved anywhere within the south at their owner's will, and put to any work their owner commanded. But, what Marx also understood was that the slave holding existed to make a profit for the owner. The entire labor product of the slave family, above whatever provision for food and other necessities the owner cared to make, was expropriated. That residual was the owner's profit and the expectation of a continued flow of such returns made slave property an earning asset.

Rauch, James E.

PD 1988. **TI** Increasing Returns to Scale and the Pattern of Trade. **AA** Department of Economics, University of California, San Diego. **SR** University of California at San Diego Department of Economics Discussion Paper: 88-4; Department of Economics, D-008, University of California at San Diego, La Jolla, CA 92093. **PG** 15. **PR** \$2.00; checks payable to UC Regents. **JE** 411, 731, 112. **KW** Increasing Returns. Pattern of Trade. Geographic Concentration. Country Size.

AB It is argued that when geographic concentration is required to obtain increasing returns to scale in production (as opposed to the case of internationally increasing returns to scale introduced by Ethier (1979)) then one should explicitly introduce considerations of spatial equilibrium into one's model. In particular, the presence of increasing returns to scale leads to the formation of cities whose optimal size is limited by commutation costs. If this size is small relative to the population of a country then there is no reason to believe that country will be at a

comparative disadvantage vis-a-vis a larger country with respect to goods whose production displays increasing returns to scale. Indeed, it is shown in a "Ricardian" model with cities that ratios of labor requirement coefficients alone rank goods in comparative advantage order. Country size and the degree of increasing returns displayed by any good are irrelevant to the pattern of trade.

PD 1988. **TI** Comparative Advantage, Geographic Advantage, and the Volume of Trade. **AA** Department of Economics, University of California, San Diego. **SR** University of California at San Diego Department of Economics Discussion Paper: 88-3; Department of Economics, D-008, University of California at San Diego, La Jolla, CA 92093. **PG** 21. **PR** \$2.00; checks payable to UC Regents. **JE** 411, 731, 941, 111, 112. **KW** Comparative Advantage. Volume of Trade. Exports. Transportation Costs.

AB A functional relationship between the degree of a country's comparative advantage and the volume of its net exports to its trading partner is established using a model with per-unit-distance transportation costs between countries' coasts and their interiors. The greater a country's comparative advantage, the greater the transportation cost it can overcome and hence the deeper its exports can penetrate geographically into its trading partner. The internal spatial structure of a country is modelled using cities as the basic spatial units. It is shown that the port city will be the largest and have the highest real wages and residential rents, and that city sizes, real wages, and rents all fall as one moves inland.

PD 1988. **TI** Terms of Trade Between the Temperate and Tropical Worlds: The Lewis Open Economy Model Once Again. **AA** Department of Economics, University of California, San Diego. **SR** University of California at San Diego Department of Economics Discussion Paper: 88-2; Department of Economics, D-008, University of California at San Diego, La Jolla, CA 92093. **PG** 22. **PR** \$2.00; checks payable to UC Regents. **JE** 411, 112, 421. **KW** Terms of Trade. Lewis Model. Comparative Statics. Technological Progress.

AB Arthur Lewis's (1954) celebrated Ricardian model determining the factoral and commodity terms of trade between the temperate and tropical worlds is extended to allow for 1) neoclassical technology, 2) perfectly competitive determination of all factor prices, and 3) optimal savings behavior. The most important results of this extension are confirmations, in a comparative dynamic context, of the comparative static theorems of Lewis concerning the effects of technological progress on the factoral and commodity terms of trade. These results contrast with those of other recent extensions of the Lewis model that are surveyed in this paper.

PD 1988. **TI** Optimal Programs of Import-Substituting Industrialization. **AA** Department of Economics, University of California, San Diego. **SR** University of California at San Diego Department of Economics Discussion Paper: 88-1; Department of Economics, D-008, University of California at San Diego, La Jolla, CA 92093. **PG** 30. **PR** \$2.00; checks payable to UC Regents. **JE** 112, 422, 421, 411. **KW** Import-Substituting. Industrialization.

AB A Ricardo-Viner model expanded to allow for economic growth through capital accumulation and learning by doing is used to derive optimal policies for a country that is initially exporting agricultural goods and importing manufactured goods. In section 2 of the paper a new result is demonstrated concerning the level of the optimal production subsidies to the learning industries. It is then shown in section 3 that the optimal development strategy may be to promote import-substituting industrialization in stages: a first stage where production of manufactured consumer goods is subsidized and all capital goods are imported, followed by a second stage where subsidized production of capital goods is initiated. It is also shown that a second stage of import-substituting industrialization is likely to lead to increasing inequality in the distribution of income over time.

Rausser, Gordon C.

TI Agricultural Policy in Economies with Uncertainty and Incomplete Markets. **AU** Innes, Robert D.; Rausser, Gordon C.

PD February 1988. **TI** Stability Issues in Policy Analysis. **AA** University of California at Berkeley, Department of Agricultural and Resource Economics. **SR** University of California at Berkeley Department of Agricultural and Resource Economics (CUDARE) Working paper: 458; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 40p. **PR** \$8.00. **JE** 713, 227, 421. **KW** Risk. Stability. Agricultural Policies. Trade Negotiations. Prices. Agriculture.

AB Focussing on issues of stability in terms of what is rather than what ought to be, the themes of this paper are basically three. Each theme relates to a different source of instability within the agricultural sector; all of these sources beg for additional conceptual and empirical work. The first source of instability will be defined as internal, the second source as external or multimarket, and the third and final source of instability as public policies. It is argued that a comprehensive view of instability and uncertainty within the agricultural sector of the United States or other countries cannot be achieved without acknowledging the contribution of all three major sources of instability.

Recski, Andras

PD December 1987. **TI** Some Algorithmic Problems of Linear Network Solvability. **AA** University of Budapest. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87496-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 4. **PR** No Charge. **JE** 213. **KW** Normal Tree. Efficient Algorithm. Network Solvability. Polymatroid Matching.

AB The existence of a normal tree (which intersects ideal transformers by one, gyrators by two or no edges) is known to be a necessary condition for the unique solvability of a network, by a deep theorem of Milic. However, really efficient algorithms to find such a tree were given only more recently, using the theory of polymatroid matching. This tool can be used for more general algorithms as well, taking every "pathological" 2-ports into consideration. As a byproduct, a short new proof to

Milic's theorem has also been obtained.

Rees, Ray

TI Taxation and the Household. **AU** Apps, Patricia F.; Rees, Ray.

Reinganum, Jennifer

PD March 1988. **TI** Tax Practitioners and Tax Compliance. **AU** Reinganum, Jennifer; Wilde, Louis L. **AA** Reinganum: University of Iowa. Wilde: California Institute of Technology. **SR** Caltech Social Science Working Paper: 666; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 15. **PR** No Charge. **JE** 026, 022, 323. **KW** Tax Compliance. Tax Practitioners. Tax Agency. Coordination.

AB We develop a model in which taxpayers, tax practitioners and a tax agency all interact to determine the extent of tax compliance. Assuming a quadratic enforcement cost function, in the case where practitioners control the reporting decision we show that either one or two equilibria exist. In the former case, more income is reported than would be if taxpayers did not use the practitioner, and the tax agency devotes less enforcement effort to practitioner-filed returns than to taxpayer-filed returns. Furthermore, in this case the tax agency prefers that taxpayers use practitioners. When two equilibria exist, the tax agency's preferred equilibrium has these same properties and is always weakly Pareto optimal, so, in principle, the problem of attaining the "right" equilibrium reduces to one of coordination. However, if taxpayers and the practitioner jointly control the reporting decision, less income is reported than would be if the taxpayers did not use the practitioner.

Reinsdorf, Marshall B.

PD June 1987. **TI** Implication of Structural Retirement Models. **AA** Bureau of Labor Statistics, Office of Economic Research. **SR** Bureau of Labor Statistics Working Paper: 162; Bureau of Labor Statistics, 441 G Street NW, Room 2126, Washington D.C. 20212. **PG** 44. **PR** No Charge. **JE** 918, 824, 921. **KW** Retirement. Partial Retirement. Life-Cycle. Job Search Costs.

AB The first structural retirement study, that of Gustman and Steinmeier (1986), found much greater responsiveness of retirement timing to changes in real net wages than have most retirement studies using simpler approaches. Thus an important question is whether failing to specify a structural retirement model induces serious bias by omitting important elements of the retirement decision problem. In this paper I estimate a rigorously specified structural model of retirement and partial retirement, yet I find the very modest sensitivity of retirement timing that is generally indicated by the simpler models. It also appears that there are substantially fewer partial retirements than smoothly changing leisure preferences would imply in the absence of substantial job search costs or fixed costs of working.

Renault, Eric

TI Consistent M-estimators in a Semi-Parametric Model. **AU** Gourieroux, Christian; Monfort, Alain;

Renault, Eric.

Rey, Patrick

TI Incentives in Cooperative Research and Development. AU Picard, Pierre; Rey, Patrick.

PD September 1987. TI Long Term, Short Term and Renegotiation. AU Rey, Patrick; Salanie, Bernard. AA Unite Recherche INSEE. SR Unite de Recherche Document de Travail ENSAE/INSEE: 8715; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. PG 41. PR No Charge. JE 022, 026. KW Contracts. Incentives. Principal-agent. Moral Hazard.

AB Long-term relationships are often governed by short-term contracts. We study here in a principal-agent framework the possibility of achieving the long-term optimum when only renegotiable short-term contracts are available. When information is symmetric, it is shown that renegotiated short-term contracts allow us to achieve long-run efficiency if the objectives are conflicting and transfers are not too limited. This result is then extended to pure moral hazard models under further assumptions that exclude any adverse selection feature.

Richardson, Martin

PD January 1988. TI Incremental R and D subsidies. AU Richardson, Martin; Wilkie, Simon. AA Richardson: Princeton University. Wilkie: University of Rochester. SR Princeton Woodrow Wilson School Discussion Paper in Economics: 133; Woodrow Wilson School, Princeton University, Princeton, NJ 08544. PG 133. PR No Charge. JE 323, 621. KW Subsidies. Research and Development. R&D. Technology.

AB This paper considers the effect of an incremental subsidy of R and D expenditures on a firm's behavior. We look at a single firm choosing how to allocate R and D expenditures over time and show that an incremental subsidy scheme may cause cyclical deviations from the no-subsidy path that substantially reduce the subsidy's effectiveness. In certain cases no cycle is induced but the effect of the subsidy on R and D expenditures is still less than that of a regular subsidy at the same rate. We consider both an explicit model of the firm's R and D problem and a more general specification, and derive conditions in each under which each possible pattern of behavior will occur.

Richelle, Yves

TI Roy-Consistent Expectations. AU Allard, Marie; Bronsard, Camille; Richelle, Yves.

Riezman, Raymond

TI Uncertainty and the Choice of Trade Policy in Oligopolistic Industries. AU Cooper, Russell; Riezman, Raymond.

Roberts, Judy

TI A Test For Efficiency in the Supply of Public Education. AU Bergstrom, Ted; Roberts, Judy; Rubinfeld, Dan; Shapiro, Perry.

Robinson, Sherman

TI The Impact of Price Rigidities: A Computable General Equilibrium Analysis. AU Dewatripont, Mathias; Robinson, Sherman.

Robson, Kenneth J.

TI Achieving Financial Accountability in a Federal System. AU Else, Mitchell Rae; Robson, Kenneth J.

Rodrik, Dani

PD October 1987. TI Promises, Promises: Credible Policy Reform Via Signaling. AA John F. Kennedy School of Government. SR Harvard John F. Kennedy School of Government Discussion Paper: 162D; 79 John F. Kennedy Street, Cambridge, MA 02138. PG 30. PR No Charge. JE 422, 521, 212. KW Trade Reform. Credibility. Signaling Trade Policy.

AB Empirical experience and theory both suggest that policy reforms can be aborted or reversed if they lack sufficient credibility. One reason for such credibility problems is the legitimate doubt regarding how serious the government really is about the reform process. This paper considers a framework in which the private sector is unable to distinguish between a genuinely reformist government and its nemesis, a government which simply feigns interest in reform because it is a precondition for foreign assistance. The general conclusion is that the rate at which reforms are introduced may serve to convey the government's future intentions, and hence act as a signal of its "type". More specifically, credible policy reform may require going overboard: the government will have to go much farther than it would have chosen to in the absence of the credibility problem.

Roemer, John E.

PD December 1987. TI Informational Complexity in Axiomatic Models: Benefits and Costs. AA University of California at Davis. SR University of California at Davis Economics Department Working Paper: 306; Department of Economics, University of California at Davis, Davis, CA 95616. PG 19. PR No Charge. JE 036, 026. KW Axiomatic Bargaining Theory. Methodology. Axiomatic Modelling.

AB Consider the problem of how to divide n resources among r agents, each of whom has specified preferences over the resources. The problem can be studied with models specifying different degrees of information. Axiomatic bargaining theory chooses to represent only the utility possibilities set and the threat point. For some purposes, this specification is too thin, and we may represent the problem by specifying the economic environment fully, that is, by postulating a domain of objects that include the preferences of the agents and the vector of goods to be divided among them. For other purposes, still more information may be requested: we might wish to include in the description of objects to be studied not only economic information but the names of the goods or the names of the agents. As the domain of objects (utility possibility sets, economic environments, environments with names) changes to include a thicker description of the problem, the theory changes in two ways: the axiomatic representation of the modeler's intuitions becomes more precise, but the domain axiom

required to prove characterization theorems becomes increasingly strong. The conclusion is that what the modeler gains in precision is lost in credibility. This is the inherent weakness in axiomatic modelling.

PD December 1987. **TI** Public Ownership: Three Proposals for Resource Allocation. **AU** Roemer, John E.; Silvestre, Joaquim. **AA** University of California at Davis. **SR** University of California at Davis Economics Department Working Paper: 307; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 53. **PR** No Charge. **JE** 614, 022, 027, 021. **KW** Public ownership. Public Firms. Cooperatives. Common Pool Resources. Profit Distribution. General Equilibrium.

AB While there is a quite clear picture of the rights that private ownership bestows upon the owner, it is not clear what property rights the public have by virtue of their owning a thing collectively. We ask: how should a planner, whose job is to respect public ownership of some productive assets, in conjunction with private ownership of some inputs, wish to allocate resources? We insist throughout on the desideratum that: (1) the final allocation be Pareto efficient. We propose three additional desiderata. (2) equal division of benefits derived from public ownership; (3) equal returns to the use of privately owned inputs; (4) universal gain from improvements in the publicly owned asset. No more than one of (2), (3) and (4) is in general compatible with (1). Each of the three compatible pairs of desiderata characterizes a proposal for public ownership. We call the equal benefit solution the one characterized by (1)-(2), the proportional solution the one characterized by (1)-(3) and the constant return equivalent mechanism the one characterized by (1)-(4).

Rogoff, Kenneth

TI Was it Real? The Exchange Rate-Interest Differential Relation Over the Modern Floating Rate Period. **AU** Meese, Richard; Rogoff, Kenneth.

PD November 1987. **TI** Equilibrium Political Budget Cycles. **AA** University of Wisconsin, Former National Fellow, Hoover Institution. **SR** Stanford Hoover Institute Working Paper in Economics: E-87-48; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 49. **PR** No Charge. **JE** 321, 322, 131, 023. **KW** Political Business Cycles. Fluctuations. Signalling. Elections.

AB Prior to election, governments (at all levels) frequently undertake a consumption binge. Taxes are cut, transfers are raised, and government spending is distorted towards highly visible items. The "political business cycle" (better be thought of as "the political budget cycle") has been intensively examined, at least for the case of national elections. A number of proposals have been advanced for mitigating electoral cycles in fiscal policy. The present paper is the first effort to provide a fully-specified equilibrium framework for analyzing such proposals. A political budget cycle arises here via a multidimensional signalling process, in which incumbent leaders try to convince voters that they have recently been doing an excellent job in administering the government. Efforts to mitigate the cycle can easily prove

counterproductive, either by impeding the transmission of information or by inducing politicians to select more costly ways of signalling. The model also indicates new directions for empirical research.

TI Multilateral Developing-Country Debt Rescheduling Negotiations: A Bargaining-Theoretic Framework. **AU** Bulow, Jeremy; Rogoff, Kenneth.

Romer, David

TI Real Rigidities and the Non-Neutrality of Money. **AU** Ball, Laurence; Romer, David.

Rosen, Harvey

PD April 1987. **TI** The Marriage Tax is Down But Not Out. **AA** Department of Economics, Princeton University. **SR** Princeton University John M. Olin Program for the Study of Economic Organization and Public Policy: 2; Department of Economics/Woodrow Wilson School of Public and International Affairs Princeton University, Princeton, NJ 08544. **PG** 19. **PR** No Charge. **JE** 323, 921. **KW** Tax Reform Act. Subsidies. Tax Rates.

AB The public debate surrounding the Tax Reform Act of 1986 has paid little attention to the "marriage tax" -- the increase in the joint income tax liability of a man and woman when they marry. This lack of concern appears to be due to the perception that the new law has lowered marginal tax rates to such an extent that the magnitudes of marriage taxes (and subsidies) are inconsequential. This paper shows that to the contrary, the new law creates large taxes on being married for some couples, and large subsidies for others.

TI Federal Deductibility and Local Property Tax Rates. **AU** Holtz, Eakin Douglas; Rosen, Harvey.

Rosen, Sherwin

PD August 1987. **TI** Easy Animal Economics. **AA** University of Chicago, Senior Research Fellow, Hoover Institution. **SR** Stanford Hoover Institute Working Paper in Economics: E-87-37; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 44. **PR** No Charge. **JE** 711. **KW** Backward-Bending Supply. Cattle Cycles. Cobwebs. Rational Expectations Equilibrium.

AB The market equilibrium consequences of optimal herd-inventory management are worked out for farm animal populations. A permanent change in demand implies backward-bending short-run and elastic long-run supply responses, but transitory changes imply the usual rising supply price response. Furthermore, increasing inventories are associated with high and falling prices and conversely for decreasing inventories, but there is no market instability in this. These unusual intertemporal substitution effects follow from both rational expectations and appropriately formulated cobweb theories and go part way toward explaining the market cyclical patterns observed in hog and cattle inventories. Forthcoming in the *American Journal of Agricultural Economics*.

TI Male-Female Wage Differentials in Job Ladders. **AU** Lasear, Edward P.; Rosen, Sherwin.

Rosenzweig, Mark R.

PD November 1987. **TI** Consumption Smoothing, Migration and Marriage: Evidence from Rural India. **AU** Rosenzweig, Mark R.; Stark, Oded. **AA** Rosenzweig: Department of Economics, University of Minnesota. Stark: Harvard University. **SR** University of Minnesota Economic Development Center Bulletin: 87-11; Department of Economics, 1035 Management and Economics, University of Minnesota, Minneapolis, MN 55455. **PG** 33. **PR** No Charge. **JE** 823, 841, 921, 914. **KW** Consumption. Migration. Marriage. India.

AB Migration in India, particularly in rural areas, is dominated by the movements of women for the purpose of marriage. We seek to explain these mobility patterns by examining marital arrangements among Indian households. In particular, we hypothesize that the marrying out of daughters to locationally distant, dispersed yet kinship-related households, are manifestations of implicit inter-household contractual arrangements aimed at mitigating income risks and facilitating consumption smoothing in an environment characterized by information costs and spatially covariant risks. Analysis of longitudinal South Indian village data lends support to the hypothesis. Marriage cum migration contributes significantly to a reduction in the variability of household food consumption. Farm households afflicted with more variable profits tend to engage in longer distance marriage cum migration. The hypothesized and observed marriage cum migration patterns are in dissonance with standard models of marriage or migration which are concerned primarily with search costs and static income gains.

TI English Language Skill Acquisition, Locational Choice and Labor Market Returns among the Major Foreign-Born Language Groups in the United States in 1900 and 1980. **AU** Jasso, Guillermina; Rosenzweig, Mark R.

Ross, Thomas W.

TI Selection Criteria in Coordination Games: Some Experimental Results. **AU** Cooper, Russell; DeJong, Douglas V.; Forsythe, Robert; Ross, Thomas W.

TI Warranties Without Commitment to Market Participation. **AU** Bigelow, John; Cooper, Russell; Ross, Thomas W.

Rotstein, Abraham

PD July 1987. **TI** The Two Economies of the Hudson's Bay Company. **AU** Rotstein, Abraham; Foot, David K. **AA** Department of Economics, University of Toronto. **SR** University of Toronto Institute for Policy Analysis Working Paper: 8710; Department of Economics, University of Toronto, Toronto, Ontario, CANADA M5S 1A1. **PG** 35. **PR** Gratis - as long as stock lasts. **JE** 042, 053. **KW** North American Economic History. Comparative Systems. Barter.

AB The Hudson's Bay Company during the eighteenth century operated in two discrete economies. In London, market forces produced volatile price changes for furs. At the Bay, fixed ratios of European goods for furs prevailed in the barter trade. There, Indian tribal customs imposed a form of administered trade on the Europeans. Regression analysis is employed to establish that

coincident relative price structures for both furs and trade goods at the two locations cannot be confirmed (the "one-economy" hypothesis). Instead, the "two-economies" hypothesis provides a better explanation of the observed data.

Rubinfeld, Dan

TI A Test For Efficiency in the Supply of Public Education. **AU** Bergstrom, Ted; Roberts, Judy; Rubinfeld, Dan; Shapiro, Perry.

Ruser, John W.

PD November 1985. **TI** The Effect of OSHA Records Check Inspections on Reported Occupational Injuries in Manufacturing Establishments. **AU** Ruser, John W.; Smith, Robert S. **AA** Ruser: United States Bureau of Labor Statistics. Smith: Cornell University. **SR** Bureau of Labor Statistics Working Paper: 172; Bureau of Labor Statistics, 441 G Street NW Rm 2126 Washington DC 20212. **PG** 35. **PR** No Charge. **JE** 822, 913, 911. **KW** OSHA. Occupational Safety and Health. Occupational Injuries. Records Check Inspections. Safety. High-Hazard Industries.

AB In late 1981 the Federal Occupational Safety and Health Administration, and several states with their own workplace safety programs, adopted a records check procedure for targeting safety inspections in manufacturing. Under this procedure, which applies only to high-hazard industries, a wall to wall inspection of an establishment is conducted only if its injury rate -- as calculated from its injury log -- is above a certain threshold. Using a panel of injury microdata for 3,059 establishments, covering the years 1979-1985, we test the hypothesis that the records check policy has induced establishments to underreport injuries so as to avoid future inspections. We find that reported injury rates were lower after 1981 in those states that adopted the procedure. Some of this might represent real induced safety improvements, but we believe that most is reflective of underreporting. Importantly, the reduced reporting occurred only in those establishments in which the payoffs were the largest: those in the high-hazard sector. Estimates of the maximum amount of underreporting in that sector were five to six percent from our more sophisticated and preferred methodologies and 11 to 14 percent from our less sophisticated methodologies. None of our estimates suggested underreporting was a problem in the low-hazard sector.

Rust, John

PD December 1987. **TI** A Dynamic Programming Model of Retirement Behavior. **AA** University of Wisconsin. **SR** National Bureau of Economic Research Working Paper: 2470; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 64. **PR** \$2.00. **JE** 918, 824, 921, 214. **KW** Retirement. Elderly. Dynamic Model. Utility Maximisation.

AB This paper formulates a model of retirement behavior based on the solution to a stochastic dynamic programming problem. The worker's objective is to maximize expected discounted utility over his remaining lifetime. At each time period the worker chooses how

much to consume and whether to work full-time, part-time, or exit the labor force. The model accounts for the sequential nature of the retirement decision problem, and the role of expectations of uncertain future variables such as the worker's future lifespan, health status, marital and family status, employment status, as well as earnings from employment, assets, and social security retirement, disability and medicare payments. This paper applies a "nested fixed point" algorithm that converts the dynamic programming problem into the problem of repeatedly recomputing the fixed point to a contraction mapping operator as a subroutine of a standard nonlinear maximum likelihood program. The goal of the paper is to demonstrate that a fairly complex and realistic formulation of the retirement problem can be estimated using this algorithm and a current generation supercomputer, the Cray-2.

Ruttan, Vernon W.

TI Development Policy under Eisenhower and Kennedy. **AU** Hagen, James M.; Ruttan, Vernon W.

Sabau, Hernando C. L.

PD October 1987. **TI** The Structure of GMM and ML Estimators in Conditionally Heteroskedastic Models. **AA** Department of Statistics, Faculty of Economics and Commerce Australian National University. **SR** Australian National University Working Paper in Economics and Econometrics: 153; Department of Economics, Australian National University, P.O. Box 4, Canberra A.C.T. 2601, AUSTRALIA. **PG** 37 (including abstract). **PR** No Charge. **JE** 211. **KW** Heteroskedasticity. Generalized Method of Moments. Maximum Likelihood. Matrix Weighted Average. Specification Testing.

AB Parameter estimation in conditionally heteroskedastic models uses information on both the conditional mean and the conditional variance of the distribution. The information from each of these conditional moments may be extracted by using separate orthogonality conditions, and so it is possible to identify the contribution of each moment to overall efficiency. If the distribution is symmetric, the full-information estimator obtained from both sets of orthogonality conditions is asymptotically equivalent to a matrix weighted average of the separate 'mean estimator' and 'variance estimator'. Further if conditional normality is maintained, the likelihood function can be locally factorized and each factor corresponds to one moment. Contrasting the information in these two sources about common parameters constitutes a simple test of the specification of the model.

Sachs, Jeffrey

PD December 1987. **TI** U.S. Commercial Banks and the Developing Country Debt Crisis. **AU** Sachs, Jeffrey; Huisinga, Harry. **AA** Harvard University. **SR** National Bureau of Economic Research Working Paper: 2455; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 58. **PR** \$2.00. **JE** 312, 433, 121. **KW** Debtor Country. LDC's. Debtor.

AB The major theme of this paper is that the

commercial banks have weathered the debt crisis, while many debtor countries remain in economic paralysis or worse. There is a growing consensus that much of the LDC debt will not be fully serviced in the future, and that consensus is reflected in at least two ways: in the discounts observed in the secondary market prices for LDC debt, and in the discounts in the stock market pricing of banks with exposure in the LDCs.

Sadoulet, Elisabeth

TI Investment Strategies to Combat Rural Poverty: A Proposal for Latin America. **AU** de Janvry, Alain; Sadoulet, Elisabeth.

Safra, Zvi

TI Ascending Bid Auctions with Behaviorally Consistent Bidders. **AU** Karni, Edi; Safra, Zvi.

Sah, Raaj Kumar

PD September 1987. **TI** Committees, Hierarchies and Polyarchies. **AU** Sah, Raaj Kumar; Stiglitz, Joseph E. **AA** Sah: Yale University. Stiglitz: Princeton University. **SR** Princeton University John M. Olin Program for the Study of Economic Organization and Public Policy: 5; Department of Economics/Woodrow Wilson School of Public and International Affairs Princeton University, Princeton NJ 08544. **PG** 40. **PR** No Charge. **JE** 511, 611. **KW** Decision Making. Organizations. Decision Theory.

AB This paper examines optimal decision making under three different organizational forms: committees, hierarchies and polyarchies. Our focus is on the trade-off between errors of rejecting good projects versus errors of accepting bad projects, and on the trade-off between gains from more extensive evaluations of projects versus costs of evaluation. We characterize the optimal sizes of these organizations (as well as the optimal level of consensus in committees), and then analyze how these optima change under different organizational environments. We also analyze the influence of organizational environment on the relative performance of these alternative organizational forms.

Salanie, Bernard

TI Long Term, Short Term and Renegotiation. **AU** Rey, Patrick; Salanie, Bernard.

Salant, Stephen

TI A Median Choice Theorem. **AU** Cave, Jonathan; Salant, Stephen.

TI Pacman Refutes the Coase Conjecture: Durable-Goods Monopoly with Discrete Demand. **AU** Bagnoli, Mark; Salant, Stephen; Swierzbinski, Joseph.

Salemi, Michael

TI Reconciling Actual and Optimal Monetary Policy in Switzerland Under Fixed Exchange Rates and Floating. **AU** Camen, Ulrich; Genberg, Hans; Salemi, Michael.

Saloner, Garth

TI Coordination Through Committees and Markets. **AU** Farrell, Joseph; Saloner, Garth.

Sappington, David

TI Countervailing Incentives in Agency Problems. **AU** Lewis, Tracy; Sappington, David E. M.

TI Controlling the Activities of Regulated Firms in Unregulated Markets. **AU** Lewis, Tracy R.; Sappington, David E. M.

TI Motivating Exchange of Knowledge in R&D Ventures: First-Best Implementation. **AU** Bhattacharya, Sudipto; Glazer, Jacob; Sappington, David.

TI Capital Grants and Inflexible Rules in Incentive Problems. **AU** Lewis, Tracy R.; Sappington, David E. M.

TI Capital Grants and Inflexible Rules in Incentive Problems. **AU** Lewis, Tracy R.; Sappington, David.

Sarkar, Asani

TI Output Aggregation and the Measurement of Productive Efficiency. **AU** Lovell, C. A. K.; Sarkar, Asani; Sickles, Robin.

Satchell, S. E.

TI Asymptotic Properties of the Maximum Likelihood and Non-Linear Least Squares Estimators for Noninvertible Moving Average Models. **AU** Tanaka, Katsuto; Satchell, S. E.

Sato, Ryuzo

PD January 1988. **TI** The U.S. Japan Trade Imbalance from the Japanese Perspective. **AA** New York University. **SR** National Bureau of Economic Research Working Paper: 2479; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 50. **PR** \$2.00. **JE** 431, 121. **KW** Balance of Payment. Growth. Exchange Rate. Japan.

AB By 1981, Japan achieved both internal and external equilibrium; exports and imports roughly balanced at sixteen percent of the gross national product. However, within the country, there was concern that the growth in the government, accompanied by raising budget deficits, would make it impossible for the economy to cope with a future crisis similar to the oil price shocks of the seventies. The Chairman of Keidaren, Mr. Doko, called for a 'philosophy of preservice' requiring government austerity and individual sacrifice. The expected crises never occurred but the policies followed led to a balance of payment surplus. Scientific studies to determine the exact sources of these imbalances are few but indications are that forty percent of the gap was due to differences in growth in demand at home and abroad, thirty percent due to differences in the elasticity of import and export functions and thirty percent due to movement in the exchange rate. It is argued that political and economic frictions arise when it attempted to treat the symptom without reforming the fundamental structure. Proper strategies can convert the 'Zero-sum game' to a positive-sum game.

Sayers, Chera

TI Is the Business Cycle Characterized by Deterministic Chaos? **AU** Brock, William; Sayers, Chera.

PD February 1988. **TI** Diagnostic Tests for Nonlinearity in Time Series Data: An Application to the Work Stoppages Series. **AA** University of North Carolina, Chapel Hill. **SR** University of North Carolina Working Paper Series: NO #; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. **PG** 36. **PR** No Charge. **JE** 211, 212, 831. **KW** Nonlinear. Deterministic. Random. Work Stoppages. Forecasting.

AB This paper presents methods to aid in distinguishing nonlinearities from apparent randomness. This distinction may serve as an aid to improved model specification, and increased quality of forecasting. The theoretical framework involved in correlation dimension calculations is presented. These ideas are then tested empirically by application to an observed time series for man-days idle due to work stoppages. Evidence of structure, in addition to linear structure, is found in the work stoppages series, as demonstrated by the autocorrelation function of the squared residuals, the shuffle and wing diagnostics, and tests for ARCH effects.

Scheffman, David T.

PD September 1987. **TI** Buyers and Entry Barriers. **AU** Scheffman, David T.; Spiller, Pablo T. **AA** Scheffman: Federal Trade Commission. Spiller: University of Illinois. **SR** Stanford: Hoover Institute Working Paper in Economics: E-87-40; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 46. **PR** No Charge. **JE** 811, 521, 022. **KW** Entry Barriers. Limit Pricing. Sunk Investments. Market Power.

AB This paper develops an analysis of markets in which sellers have significant sunk investments; it takes considerable time to enter; and buyers can make credible commitments to obtain alternative sources of supply. We show that in markets with these characteristics the market power of sellers is more attenuated than models with unsophisticated buyers would predict. In particular, current prices are critical to the decision whether or not to "enter," so that limit pricing is a likely form of equilibrium pricing, even in the presence of full information. The limit price is predicted to increase with the amount of time it takes to enter, the number of buyers, and with the level of buyers' switching costs, but to fall with the level of sunk investments. Thus, in such markets, sunk costs restrain, rather than increase, the ability of sellers to exert market power, and hence do not constitute entry barriers. Entry lags and switching costs, however, do enhance the ability of sellers to exert market power. This paper, then, questions the standard prediction of an inverse relationship between market performance and sunk investments.

Schiller, Christian

PD March 1988. **TI** The Fiscal Role of Price Stabilization Funds: The Case of Cote d'Ivoire. **AA** The International Monetary Fund. **SR** International Monetary Fund Working Paper: WP/88/26; International Monetary Fund, Washington D.C. 20431. **PG** 22. **PR** No Charge. **JE** 713, 422, 321, 121. **KW** Agriculture. Prices. Agricultural Trade.

AB This paper aims to illustrate the important fiscal aspects of an agricultural price stabilization fund by

examining the operations and experience of the CSSPPA in Cote d'Ivoire. After considering some of the issues that determine whether a price stabilization fund should be in the private or public sector and investigating the fund's resource mobilization role through explicit and implicit export taxation, the paper discusses issues related to the adequate insulation of producer prices from changing world market prices, and provides a macroeconomic perspective of the fund's role in the transmission of export stimuli to the domestic economy.

Schrader, Rainer

TI Simulated Annealing, Eine Fallstudie. AU Faigle, Ulrich; Schrader, Rainer.

Schweizer, Urs

PD November 1987. TI Litigation and Settlement Under Two-Sided Incomplete Information. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-141; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 31. PR No Charge. JE 026. KW Sequential Equilibria. Incomplete Information. Litigation Settlement. AB This paper deals with a simple game of litigation and settlement with incomplete information. Parties are assumed to have the choice between settling their dispute out of court and resorting to costly litigation. The set of sequential equilibria is characterized and conditions are given under which an efficient equilibrium does exist. Efficient equilibria, however, will be ruled out by various tests of refinement. A comparative statics analysis is carried out with respect to the quality of private information which parties are assumed to receive before any moves have to be made.

Scotchmer, Suzanne

TI The Social Cost of Uniform Regulatory Standards in a Hierarchical Government. AU Jones, Carol Adaire; Scotchmer, Suzanne.

Segal, Uzi

PD May 1987. TI Two-Stage Lotteries without the Reduction Axiom. AA University of Toronto. SR University of Toronto Institute for Policy Analysis Working Paper: 8708; Department of Economics, University of Toronto, Toronto, Ontario, CANADA M5S 1A1. PG 55. PR No Charge. JE 026, 022. KW Expected Utility. Independence Axiom. Reduction Axiom. Superiority Axiom. Lotteries.

AB This paper discusses preference relations over two-stage lotteries that do not satisfy the reduction of compound lotteries axiom. Instead, I assume that decision makers satisfy an intertemporal independence axiom (also known as the certainty equivalent mechanism). To this, I suggest to add several possible superiority axioms. The main theoretical results of this paper are an axiomatic basis for expected utility theory that does not require the reduction axiom, and an axiomatic basis for anticipated utility theory (also known as expected utility with rank-dependent probabilities). Both sets of axioms involve the superiority axioms. Finally, I show that some paradoxes in expected utility theory can be explained, provided one is

willing to use the intertemporal independence axiom rather than the reduction axiom.

Sen, Partha

PD September 1987. TI Creditor Country, Debtor Country and Stability Under Rational Expectations. AA Department of Economics, University of Illinois, Urbana-Champaign. SR University of Illinois at Urbana-Champaign Bureau of Economic and Business Research Faculty Paper: 1391; Department of Economics, University of Illinois at Urbana-Champaign, 1206 South 6th Street, Champaign, IL 61821. PG 18. PR No Charge. JE 431, 411. KW Debtor Country. Creditor Country. Valuation Effects. Rational Expectations. Saddle-Point.

AB This paper provides two counter-examples to the widely-held view that valuation effects do not add to instability under rational expectations. It is shown first that given certain parameter values, the creditor country's equilibrium is stable with static expectations and is a saddle-point with rational expectations, the debtor country's equilibrium could be completely unstable with static and rational expectations. Second a creditor country could be stable under static expectations but completely unstable under rational expectations while the opposite is true for a debtor country.

PD September 1987. TI Fiscal Policy, The Exchange Rate and the Current Account: A Re-Examination. AA Department of Economics, University of Illinois, Urbana-Champaign. SR University of Illinois at Urbana-Champaign Bureau of Economic and Business Research Faculty Paper: 1392; Department of Economics, University of Illinois at Urbana-Champaign, 1206 South 6th Street, Champaign, IL 61821. PG 23. PR No Charge. JE 431, 321. KW Fiscal Policy. Exchange Rate. Current Account. Mundell-Fleming Model.

AB The effect of a tax-financed increase in government expenditure on a small open economy is analyzed. It is shown that with perfectly flexible prices four cases are possible. One of them predicts that for a debtor-country, current account surpluses and an exchange depreciation occurs when the policy is put into effect. This case is also examined under sluggish price adjustment.

Shack, Marquez Janice

TI Earnings and Different Types of Training. AU Pergamit, Michael R.; Shack, Marquez Janice.

Shapiro, Carl

TI Optimal Contracts with Lock-In. AU Farrell, Joseph; Shapiro, Carl.

TI Dynamic Competition with Switching Costs. AU Farrell, Joseph; Shapiro, Carl.

Shapiro, Matthew

PD April 1988. TI Sources of Business Cycle Fluctuations. AU Shapiro, Matthew; Watson, Mark W. AA Shapiro: Yale University and NBER. Watson: Northwestern University. SR Yale Cowles Foundation Discussion Paper: 870; Yale University, Cowles Foundation, Box 2125, Yale Station, New Haven, CT 06520. PG 52. PR \$2.00. JE 131, 133, 134, 023.

KW Business Cycle. Supply Shocks. Inflation. Output. Demand Shocks.

AB What shocks account for the business cycle frequency and long run movements of output and prices? This paper addresses this question using the identifying assumption that only supply shocks, such as shocks to technology, oil prices, and labor supply affect output in the long run. Real and monetary aggregate demand shocks can affect output, but only in the short run. This assumption sufficiently restricts the reduced form of key macroeconomic variables to allow estimation of the shocks and their effect on output and price at all frequencies. Aggregate demand shocks account for about twenty to thirty percent of output fluctuations at business cycle frequencies. Technological shocks account for about one-quarter of cyclical fluctuations, and about one-third of output's variance at low frequencies. Shocks to oil prices are important in explaining episodes in the 1970's and 1980's. Shocks that permanently affect labor input account for the balance of fluctuations in output, namely, about half of its variance at all frequencies.

Shapiro, Perry

TI A Test For Efficiency in the Supply of Public Education. **AU** Bergstrom, Ted; Roberts, Judy; Rubinfeld, Dan; Shapiro, Perry.

Sheffrin, Steven M.

PD November 1987. **TI** Testing An Optimizing Model Of The Current Account Via The Consumption Function. **AU** Sheffrin, Steven M.; Woo, Wing T. **AA** University of California at Davis. **SR** University of California at Davis Research Program in Applied Macro and Macro Policy: 50; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 24. **PR** No Charge. **JE** 411, 432, 431, 441, 023. **KW** Intertemporal Current Account. Open Economy Consumption. Ricardo Equivalence. Capital Mobility.

AB As the intertemporal allocation of consumption lies at the heart of the optimizing approach to current account determination, we assess the validity of this new view by testing an open economy consumption function. This method avoids some interpretation difficulties in previous studies. For three of the four countries, we could not reject the overidentifying restrictions imposed by the specification of our model. We extend the model to test if there were substitution between private consumption and provision of government services, and find the evidence to be weak. All our results are robust to two different measures of the external asset stock.

PD February 1988. **TI** Cross-Country Comparisons of Historical Changes in Inflation-Output Relations. **AU** Sheffrin, Steven M.; Liu, Liang Yn. **AA** University of California at Davis. **SR** University of California at Davis Research Program in Applied Macro and Macro Policy: 53; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 31. **PR** No Charge. **JE** 131, 134, 122. **KW** Inflation. Economic History. Economic Fluctuations.

AB This paper explores the stylized facts concerning output-inflation interactions over time. Data for seven countries from the pre World War I period and the post World War II period are examined using alternative

detrending methods. Three findings appear to be robust across the variety of country experience. First, the volatility of inflation and output shocks appear to diminish over time. Second, inflation has become more persistent in the postwar era. Finally, output shocks consistently lead to hump shaped inflation responses in the postwar era.

PD March 1988. **TI** Testing for Rational Partisan Business Cycles. **AA** University of California at Davis. **SR** University of California at Davis Research Program in Applied Macro and Macro Policy: 54; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 19. **PR** No Charge. **JE** 131, 133, 321. **KW** Business Cycles. Political Business Cycles. Democrat. Republican. Recessions.

AB Recent research has indicated that there are distinct differences in the macroeconomic policies of Democratic and Republican administrations in the United States. Because of the uncertainty caused by elections, these partisan policy differences can cause booms or recessions even with rationally informed agents. This paper uses evidence from financial markets to provide a more precise evaluation of these theories. Financial market data is consistent with some but not all the postwar recessions predicted by the theory.

Shepherd, Bruce

TI Domination in Graphs with Minimum Degree Two. **AU** McCuaig, William; Shepherd, Bruce.

Sheshinski, Eytan

PD September 1987. **TI** A Simple Model of Optimum Life-Cycle Consumption with Earnings Uncertainty. **AA** The Hebrew University, Visiting Scholar, Hoover Institution. **SR** Stanford Hoover Institute Working Paper in Economics: E-87-41; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 28. **PR** No Charge. **JE** 022, 921. **KW** Consumption. Life Cycle. Markov Process. Earnings Volatility.

AB We analyze the optimum consumption path of an individual who maximizes expected discounted utility over an infinite horizon, when savings earn a fixed return and wage earnings follows a two-state random process. It is assumed that no insurance is available against earnings uncertainty. We show that optimum consumption always changes discontinuously with the level of earnings. The optimum consumption path is characterized for the case where the subjective discount rate is equal to the interest rate. While under certainty consumption is constant in this case, it is shown that here consumption strictly increases or decreases over time. Specifically, when the 'Hazard-Rate' non-decreases with time, consumption approaches infinity or zero, respectively. The discontinuity in consumption, however, is always smaller than the difference in earnings across states. Comparison to the full insurance case when earnings can be annuitized is also provided.

Shibata, Aiko

TI The Relative Impact of Income and Consumption Taxes. **AU** Shibata, Hirofumi; Shibata, Aiko.

Shibata, Hirofumi

PD March 1988. **TI** The Relative Impact of Income and Consumption Taxes. **AU** Shibata, Hirofumi; Shibata, Aiko. **AA** Shibata, H.: Osaka University. Shibata, A.: Tezukayama University. **SR** International Monetary Fund Working Paper: WP/88/24; International Monetary Fund, Washington D.C. 20431. **PG** 16. **PR** No Charge. **JE** 921, 024, 323. **KW** Consumption Tax. Income Tax. Welfare Effects.

AB This paper examines the possibility of ascertaining the welfare changes that occur when a consumption tax replaces an equal-yield income tax. It finds that those with saving/income ratios greater than the social saving/income ratio under the income tax will surely benefit and those with ratios smaller than the social rate under the consumption tax will surely be harmed. These conditions are in each case sufficient to guarantee these results -- but not necessary. Some can be better off and others worse off without these conditions holding. It is thus theoretically impossible to predict the welfare effects on many taxpayers of the tax shift from the observable data.

Shiller, Robert J.

PD November 1987. **TI** Investor Behavior in the October 1987 Stock Market Crash: Survey Evidence. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 853; Cowles Foundation for Research in Economics, 30 Hillhouse Ave., Box 2125 Yale Station, New Haven, CT 06520. **PG** 41. **PR** No Charge. **JE** 313. **KW** Stock Market. Survey. Crash. Investor. Panic. Volume.

AB Questionnaires were sent out at the time of the October 19, 1987 stock market crash to both individual and institutional investors inquiring about their behavior during the crash. Nearly 1000 responses were received. The survey results show that: 1. No news story or rumor appearing on the 19th or over the preceding weekend was responsible for investor behavior, 2. Investors' importance rating of news appearing over the preceding week showed only a slight relation to decisions to buy or sell, 3. There was a great deal of investor talk and anxiety around October 19, much more than suggested by the volume of trade, 4. Many investors thought that they could predict the market, 5. Both buyers and sellers generally thought before the crash that the market was overvalued, 6. Most investors interpreted the crash as due to the psychology of other investors, 7. Many investors were influenced by technical analysis considerations, 8. Portfolio insurance is only a small part of predetermined stop-loss behavior, and 9. Some investors changed their investment strategy before the crash.

TI Stock Prices, Earnings and Expected Dividends. **AU** Campbell, John Y.; Shiller, Robert J.

TI The Informational Content of Ex Ante Forecasts. **AU** Fair, Ray C.; Shiller, Robert J.

TI The Efficiency of the Market for Single Family Homes. **AU** Case, Karl E.; Shiller, Robert J.

Shubik, Martin

PD November 1987. **TI** A Note on an Optimal Garnishing Rule. **AU** Shubik, Martin; Dubey, Pradeep.

AA Shubik: Yale University. Dubey: SUNY at Stony Brook. **SR** Yale Cowles Foundation Discussion Paper: 854; Cowles Foundation for Research in Economics, 30 Hillhouse Ave., Box 2125 Yale Station, New Haven, CT 06520. **PG** 3. **PR** No Charge. **JE** 021, 026, 611. **KW** Garnishing. Bankruptcy.

AB A simple optimal garnishing rule to discourage strategic bankruptcy is derived.

Sickles, Robin

TI Output Aggregation and the Measurement of Productive Efficiency. **AU** Lovell, C. A. K.; Sarkar, Asani; Sickles, Robin.

Silvestre, Joaquim

TI Public Ownership: Three Proposals for Resource Allocation. **AU** Roemer, John E.; Silvestre, Joaquim.

Simon, Leo K.

PD October 1987. **TI** A Multistage Duel in Continuous Time. **AA** University of California, Berkeley. **SR** University of California at Berkeley Working Paper in Economics: 8757; IBER, 156 Barrows Hall, University of California at Berkeley, Berkeley 94720. **PG** 54. **PR** No Charge. **JE** 026, 611. **KW** Duel. Continuous Time. Timing Games. Subgame Perfect Equilibrium. Preemption. Innovation.

AB Two protagonists face an intertemporal allocation problem. Each has limited, indivisible resources and must decide how best to "spend" them over time. We formulate this problem as a continuous-time game, using techniques recently developed by Simon and Stinchcombe. For the class of parameters that we consider in this paper, the problem has a unique solution, with surprising properties.

PD October 1987. **TI** Discontinuous Games and Endogenous Sharing Rules. **AU** Simon, Leo K.; Zame, William R. **AA** Simon: University of California, Berkeley. Zame: State University of New York at Buffalo. **SR** University of California at Berkeley Working Paper in Economics: 8756; IBER, 156 Barrows Hall, University of California at Berkeley, Berkeley 94720. **PG** 26. **PR** No Charge. **JE** 026. **KW** Discontinuous Games. Nash Equilibrium. Hotelling. Bertrand. Sharing Rule. Rationing.

AB We propose a different approach to the kinds of economic problems that lead to discontinuous games. We take the view that the underlying payoffs for these problems are only partially determined, rather than discontinuous. At points where ties occur, we propose that the sharing rule should be determined endogenously, i.e., as part of the solution to the model rather than as part of the description of the model. This leads us to define a game with an endogenous sharing rule. It consists of a strategy space for each of a finite number of players, together with a payoff correspondence, interpreted as the union of all possible sharing rules. A solution for such a game is a selection from the payoff correspondence together with a strategy profile satisfying the usual (Nash) best response criterion. Our principal result is that such a solution always exists.

Slemrod, Joel

TI Welfare Dominance: An Application to Commodity Taxation. AU Yitzhaki, Shlomo; Slemrod, Joel.

Slutsky, Steven M.

TI Information and Multi-Period Optimal Income Taxation with Government Commitment. AU Brito, Dagobert; Hamilton, Jonathan H.; Slutsky, Steven M.; Stiglitz, Joseph E.

TI Information and Multi-Period Optimal Income Taxation with Government Commitment. AU Brito, Dagobert; Hamilton, Jonathan H.; Slutsky, Steven M.; Stiglitz, Joseph E.

Smith, Alasdair

PD March 1988. TI Completing the Internal Market in the European Community: Some Industry Simulations. AU Smith, Alasdair; Venables, Anthony. AA Smith: University of Sussex. Venables: University of Southampton. SR Centre for Economic Policy Research Discussion Paper: 233; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 29. PR 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. JE 423, 323, 422, 421, 321. KW Imperfect Competition. Non-Tariff Barriers. Economic Integration. European Community.

AB This paper studies the effects of changes in the internal market of the European Community in a partial equilibrium model of imperfect competition with economies of scale. The model is numerically calibrated to data on ten industries and the effects of two types of policy change are simulated. The first is a reduction in intra-EC trade barriers equivalent to a reduction in implicit tariffs by 2.5 percentage points; the second is the elimination of firms' ability to price-discriminate between different national markets. Sensitivity analysis of alternative ways of modelling firms' behavior suggests that the results are reasonably robust. The simple reduction in intra-EC trade barriers generates modest welfare gains, but much more substantial gains are associated with integration of national markets into a single European market.

Smith, Gregor W.

TI Calibration as Estimation. AU Gregory, Allan W.; Smith, Gregor W.

Smith, Robert S.

TI The Effect of OSHA Records Check Inspections on Reported Occupational Injuries in Manufacturing Establishments. AU Ruser, John W.; Smith, Robert S.

Smith, William T.

PD December 1987. TI A Stochastic, Optimizing Model of Growth in a Monetary Economy with Non-linear Technology. AA Virginia Polytechnic Institute and State University. SR Virginia Polytechnic Institute and State University Working Paper in Economics: E87-10-04; Working Paper Coordinator, Department of Economics Sandy Hall, Blacksburg, VA 24061. PG 40. PR Free by request. JE 111, 023. KW Stochastic Growth. Monetary Growth. General Equilibrium Pricing.

Technology.

AB This paper develops a stochastic, optimizing model of growth in a monetary economy with non-linear technology. Its contributions are threefold. First, it links the optimizing class of macroeconomic models to the general equilibrium pricing models of finance, such as Cox, Ingersoll and Ross '1985a,b. Second, it integrates the nonstochastic, optimizing literature on monetary growth and the real, stochastic growth models of the 1970s. Finally, it extends Eaton's '1981 analysis of debt, inflation and capital accumulation to an economy with a nonlinear technology and nominal as well as real shocks.

Sonstelie, Jon

TI Inflation and Stock Returns with Complete Markets. AU Cooley, Thomas F.; Sonstelie, Jon.

Sopher, Barry

TI An Experimental Analysis of Bargaining and Strikes with One-sided Private Information. AU Forsythe, Robert; Kennan, John; Sopher, Barry.

Spiller, Pablo T.

TI Buyers and Entry Barriers. AU Scheffman, David T.; Spiller, Pablo T.

PD March 1988. TI Politicians, Interest Groups, and Regulators: A Multiple-Principals Agency Theory of Regulation (or "Let them be Bribeed"). AA University of Illinois at Urbana-Champaign. SR Stanford Hoover Institute Working Paper in Economics: E-88-12; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 57. PR No Charge. JE 613. KW Regulation. Agency. Politicians.

AB This paper expands the self interest theory of regulation as proposed by Stigler and Peltzman to account for agency problems between politicians and their regulations. The paper shows that the "agency" part of a self-interest theory of regulation provides, by itself, many of the empirical implications traditionally associated with the Stigler-Peltzman approach. The "agency" part, however, has empirically testable implications that differentiate it from the "political" approach. A preliminary test of those implications is performed.

Stark, Oded

TI Consumption Smoothing, Migration and Marriage: Evidence from Rural India. AU Rosensweig, Mark R.; Stark, Oded.

Steiger, William

TI Two Infinite Sets of Primes with Fast Primality Tests. AU Pints, Janos; Steiger, William; Szemerédi, Endre.

Steinberg, Richard

PD February 1988. TI Fairness and Efficiency in the Competition Between For-Profit and Nonprofit Firms. AA Virginia Polytechnic Institute and State University. SR Virginia Polytechnic Institute and State University Working Paper in Economics: E88-04-07; Working Paper Coordinator, Department of Economics, Sandy Hall,

Blacksburg, VA 24061. PG 20. PR Free by request. JE 612, 636, 323. KW Income Tax. Fair Competition. Nonprofit Firms. Efficiency.

AB Many recent proposals seek to restrict the commercial activities of nonprofit firms. I examine some neglected fairness and efficiency aspects of these proposals. Specifically, I propound a new symmetry-type standard for the fairness of the competitive process per se, and note efficiency tradeoffs in a second best world.

TI Joint Crowdout: An Empirical Study of the Impact of Federal Grants on State Government Expenditures and Charitable Donations. AU Lindsey, Lawrence; Steinberg, Richard.

Steiner, David D.

PD February 1986. TI The Power of Direct Tests of the Rational Expectations Hypothesis when the Alternative is Learning. AA University of North Carolina, Chapel Hill. SR University of North Carolina Working Paper Series: 86-1; Department of Economics, CB #3305, Gardner Hall, University of North Carolina, Chapel Hill, NC 27599-3305. PG 33. PR No Charge. JE 023, 211. KW Monte Carlo Simulation. Rational Expectations. Learning.

AB Macroeconomic modelers have been mostly silent on the nature of the likely alternatives to the Rational Expectations Hypothesis (REH) should it be too strong: for instance, if agents process information rationally but lack the depth of knowledge about the economic system required by the REH. In this paper we suggest a simple model of dynamic and rational learning as an alternative to the REH, and examine the consequences for some of the traditional hypothesis tests. For the sake of clarity we concentrate on the direct tests, both because their econometric structure is simpler and because they do not depend on the correct specification of the economic model. In future research we plan to repeat these analyses with a simple structural model and indirect testing methods.

Steiner, George

TI Computing the Bump Number of Ordered Sets is Easy. AU Habib, Michel; Mohring, Rolf; Steiner, George.

Stiglitz, Joseph E.

TI Potential Competition, Actual Competition, and Economic Welfare. AU Dasgupta, Partha; Stiglitz, Joseph E.

TI The Basic Analytics of Moral Hazard. AU Arnott, Richard J.; Stiglitz, Joseph E.

TI Committees, Hierarchies and Polyarchies. AU Sah, Raaj Kumar; Stiglitz, Joseph E.

TI Equilibrium in Competitive Insurance Markets with Moral Hazard. AU Arnott, Richard; Stiglitz, Joseph E.

TI Randomization with Asymmetric Information. AU Arnott, Richard; Stiglitz, Joseph E.

TI Information and Multi-Period Optimal Income Taxation with Government Commitment. AU Brito, Dagobert; Hamilton, Jonathan H.; Slutsky, Steven M.; Stiglitz, Joseph E.

Stiglitz, Joseph E.

TI The Basic Analytics of Moral Hazard. AU Arnott, Richard J.; Stiglitz, Joseph E.

Stock, James

PD July 1986. TI Variable Trends in Economic Time Series. AU Stock, James; Watson, Mark W. AA Harvard University. SR Harvard John F. Kennedy School of Government Discussion Paper: 160D; John F. Kennedy School of Government, Harvard University, 79 John F. Kennedy Street, Cambridge, MA 02138. PG 52. PR No Charge. JE 133, 131, 212. KW Business Cycles. Nonstationary Time Series. Unit Roots. Trend. Long Run Growth.

AB Casual inspection of macroeconomic data shows that most aggregate time series are dominated by their long run growth, or trend. Until recently, however, the econometrics literature has contained little more than warnings about the "problem of nonstationarity" as reflected in the growth trends in these series. This paper examines recent methodological and empirical developments in the econometric analysis of time series exhibiting variable, or stochastic, trends. We conclude that some of the important movements in real GNP in the postwar United States are closely associated with permanent changes in potential output rather than with purely transient fluctuations.

PD February 1988. TI What do the Leading Indicators Lead? A New Approach to Forecasting Swings in Aggregate Economic Activity. AA Harvard University. SR Harvard John F. Kennedy School of Government Discussion Paper: 165D; John F. Kennedy School of Government, Harvard University, 79 John F. Kennedy Street, Cambridge, MA 02138. PG 30. PR No Charge. JE 132, 133, 212. KW Coincident Indicators. DYMIMIC Models. Unobserved Components. Forecasts.

AB The Indexes of Coincident and Leading Economic Indicators, developed in 1938, have been one of the most lasting macroeconomic forecasting tools. This paper takes a fresh look at the construction and applications of this index in light of recent methodological developments in the forecasting of economic time series. We posit that the index of coincident indicators is best thought of as an unobserved variable that summarizes all the comovements of key macroeconomic aggregates such as industrial production and personal income. Leading variables can be used to forecast this common unobserved variable. We discuss how to construct formal forecasts of events such as several consecutive declines of the unobserved index. We then apply these techniques to small empirical model with four coincident and seven leading variables.

Sukachevin, Padej

PD March 1988. TI Statistical Issues of Debt Conversions. AA The International Monetary Fund. SR International Monetary Fund Working Paper: WP/88/28; International Monetary Fund, Washington D.C. 20431. PG 23. PR No Charge. JE 322, 433, 441, 443, 431. KW Debt Conversions. Developing Countries. Debtor Nations. Balance of Payments.

AB This paper examines two aspects of debt conversions. First, it examines general aspects of secondary markets of

developing countries' bank debt, and the debt conversions that have taken place in a number of developing countries experiencing debt servicing difficulties. Second, by using common characteristics of debt conversion transactions, the paper analyzes the effects of debt conversions on monetary, balance of payments, and fiscal accounts in the debtor countries. It concludes with discussions on implications of debt conversions for reports of external debt statistics.

Summers, Lawrence H.

PD October 1987. TI Some International Evidence on Labour Cost Flexibility and Output Variability. AU Summers, Lawrence H.; Wadhvani, Sushil B. AA Summers: Harvard University and National Bureau of Economic Research. Wadhvani: Centre for Labour Economics, London School of Economics. SR London School of Economics Centre for Labour Economics Discussion Paper: 292; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, U.K. PG 36. PR No Charge. JE 131, 123, 133. KW Business Cycles. Wage Flexibility. Wage Rigidity. Labor Costs.

AB The view that increases in the flexibility of labour costs are likely to be associated with reduction in the cyclical variability of output is enshrined in standard macroeconomics textbooks. This paper presents some empirical evidence bearing on the validity of the prevailing conventional wisdom. Using measures of cyclical output variability and wage flexibility for a number of countries, we find no support for the view that greater rigidity in labour markets increases economic instability. However, policy conclusions are premature since our results leave entirely open the critical question of how flexibility affects secular growth in employment and output.

Suslow, Valerie Y.

PD February 1988. TI Stability in International Cartels: An Empirical Survey. AA University of Michigan, Hoover Institution. SR Stanford Hoover Institute Working Paper in Economics: E-88-7; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. PG 54. PR No Charge. JE 611, 131, 112. KW Cartels. Cooperative Agreements. Industrial Organisation. Survival Analysis. Business Cycles.

AB The stability of cooperative agreements among firms in the face of random demand fluctuations has been an area of interest in industrial organization for several decades. This paper sheds additional light on the subject by using survival analysis on a cross-section of international cartels over 1920-1939 to test for the influence of business cycles on the probability of cartel survival. Preliminary empirical results show that the probability of cartel survival is negatively correlated with downturns in the economy, measured using several different indicators of economic activity. In addition, the data on recurring cartels within an industry provide some interesting illustrations of cartel development and organisation over time.

Sutch, Richard

TI Capitalists Without Capital: The Burden of Slavery

and the Impact of Emancipation. AU Ransom, Roger L.; Sutch, Richard.

Svensson, Lars E. O.

TI Exchange Rate Variability and Asset Trade. AU Persson, Torsten; Svensson, Lars E. O.

TI Social Contracts as Assets: A Possible Solution to the Time-Consistency Problem. AU Kotlikoff, Laurence J.; Persson, Torsten; Svensson, Lars E. O.

Swierzbinski, Joseph

TI Pacman Refutes the Coase Conjecture: Durable-Goods Monopoly with Discrete Demand. AU Bagnoli, Mark; Salant, Stephen; Swierzbinski, Joseph.

Symansky, Steven

TI MULTIMOD: A Multi-Region Econometric Model. AU Masson, Paul; Symansky, Steven; Haas, Richard; Dooley, Michael.

Symons, J.

TI The Phillips Curve is a Real Wage Equation. AU Newell, A.; Symons, J.

PD 1987. TI Corporation, the Laissez-Faire and the Rise in Unemployment. AU Symons, J.; Newell, A. AA Department of Economics, University College London. SR University College London Discussion Paper: 87-05; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. PR No Charge. JE 824, 611. KW Unemployment. Labor Market. Regulation. Corporations.

AB The paper argues that long spells of high unemployment are an essential property of the unregulated labour market. We present evidence that this unemployment is essentially classical. Corporation is interpreted as a device for controlling the wage to achieve a lower level of unemployment than produced by the laissez-faire. We show in a number of case studies that corporation has sometimes achieved this, but is always at risk from internal destructive forces.

PD 1987. TI The Real Wage - Employment Relationship In the U.S. AU Symons, J.; McKell, S. AA Department of Economics, University College London. SR University College London Discussion Paper: 87-03; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. PR No Charge. JE 824. KW Real Wage. Employment. Manufacturing. Time Series.

AB This paper demonstrates that, contrary to much received wisdom, it is straightforward to detect a negative time series relationship between real wages and employment in the United States, both in manufacturing and at the aggregate level. It is also demonstrated that if an incorrect specification of the real wage is used, then no relationship will be found. Since nearly all past empirical analyses of this question specified the real wage incorrectly, the plethora of negative findings is quite simply explained.

PD 1987. TI Wages and Employment- Between The Wars. AU Symons, J.; Newell, A. AA Department of

Economics, University College London. SR University College London Discussion Paper: 87-02; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. PR No Charge. JE 041. KW Labor Market. Great Depression. Real Wage. Interest Rate.

AB A neo-classical model is developed for the aggregate labour markets of 14 individual countries between the wars. The model gives an account of the great depression which emphasizes adverse changes in the real wage and the real interest rate. Events in the United States precipitated a fall in the price of goods in world trade, increasing the real interest rate, and, given nominal wage rigidity, increasing the real wage.

TI The Macroeconomics of the Inter-War Years. AU Newell, Andrew; Symons, James S. V.

Szemerédi, Endre

TI Two Infinite Sets of Primes with Fast Primality Tests. AU Pintz, Janos; Steiger, William; Szemerédi, Endre.

Tanaka, Katsuto

PD September 1987. TI Asymptotic Properties of the Maximum Likelihood and Non-Linear Least Squares Estimators for Noninvertible Moving Average Models. AU Tanaka, Katsuto; Satchell, S. E. AA Tanaka: Hitotsubashi University. Satchell: Cambridge. SR Australian National University Working Paper in Economics and Econometrics: 151; Department of Economics, Australian National University, P.O. Box 4, Canberra ACT 2601, AUSTRALIA. PG 38. PR No Charge. JE 211. KW Maximum Likelihood. Moving Average Models. Non Linear Least Squares. Estimators. Asymptotic Properties.

AB Asymptotic properties of the maximum likelihood and non-linear least squares estimators are studied for noninvertible moving average models. Allowing for two cases on the initial values of the error process we first prove the existence of a consistent local maximum of the likelihood function. We then discuss the limiting behaviour of the local maximum as well as the finite sample behaviour. Misspecification analysis when the true model is an infinite order moving average model with one unit root is also given. Some approximations are suggested to the limiting distribution of the normalised estimator.

Tarr, David G.

PD December 1987. TI Costs of the Voluntary Restraint Agreements on Steel: Reply. AA Bureau of Economics, United States Federal Trade Commission. SR Federal Trade Commission Bureau of Economics Working Paper: 158; Bureau of Economics, Federal Trade Commission, 6th and Pennsylvania Avenue North West, Washington, DC 20580. PG 11. PR No Charge. JE 422, 631. KW Voluntary Restraint Agreements. Steel. Export Restraints.

AB In 1984, Morris Morkre and I estimated the costs to the United States of its voluntary export restraints (VRAs) on steel. David Cantor has criticized these estimates, because he believes the domestic industry's supply curve is perfectly elastic, and that therefore the price of steel should

not increase as a result of the VRAs. Cantor's conclusion is based on a failure to distinguish between domestic steel prices and imported steel prices. I show that even if I make the assumption that Cantor regards as critical to the calculations (an assumption which is contrary to that of the domestic steelmakers own expert witnesses), and domestic steel prices do not rise as a result of the VRAs, the costs to the economy and consumers remain quite high, and the costs per job protected in steel remain excessive. The paper also explains that, contrary to what some have suggested, we did not forecast an increase in steel prices. (We do not have a forecasting model; we have a comparative statistics simulation model.) Although other factors could intervene to cause steel prices to decline, our research in 1984 contended that steel prices would be even lower without the VRAs.

Thisse, J. F.

TI Spatial Price Policies and Duopoly. AU Anderson, Simon P.; DePalma, Andre; Thisse, Jacques Francois.

TI A Spatial Competition Approach to Central Place Theory: Some Basic Principles. AU Fujita, M.; Ogawa, H.; Thisse, J. F.

TI Price Discrimination and Equilibrium in Monopolistic Competition. AU MacLeod, W. B.; Norman, G.; Thisse, J. F.

TI Spatial Competition and the Core. AU Hamilton, Jonathan H.; MacLeod, W. Bentley; Thisse, Jacques Francois.

Tideman, T. Nicolaus

PD October 1986. TI Lasting Peace and the Justification of Territorial Claims: A Neo-Lockean Perspective. AA Virginia Polytechnic Institute and State University. SR Virginia Polytechnic Institute and State University Working Paper in Economics: E88-04-10; Working Paper Coordinator, Department of Economics Sandy Hall, Blacksburg, VA 24061. PG 23. PR Free by request. JE 717, 941. KW Land Reform. Territorial claims.

AB The territorial claims of nations are customarily justified by an inconsistent combination of history and might makes right. As long as this pattern persists, lasting peace will be impossible. To achieve lasting peace, the world must acknowledge that the territorial claims of nations deserve respect only if and to the extent that the value of land and natural resources being claimed is proportionate to the proportion of the world's population who choose to live in the nation.

PD March 1987. TI A Principled Approach to Proportional Representation. AA Virginia Polytechnic Institute and State University. SR Virginia Polytechnic Institute and State University Working Paper in Economics: E88-01-03; Working Paper Coordinator, Department of Economics Sandy Hall, Blacksburg, VA 24061. PG 49. PR Free by request. JE 025. KW Voting. Proportional Representation.

AB This paper examines systems of proportional representation that are based on complete rankings of candidates by voters. A new criterion of proportionality that such systems might reasonably be expected to satisfy

is developed. It is shown that a number of previous suggestions for proportional representation do not satisfy this criterion. A new, more sophisticated rule that appears likely to satisfy the criterion is presented. The new rule makes global rather than sequential decisions, comparing pairs of outcomes (sets of elected candidates) in a tournament, using a function that discounts support from voters whose highest ranked candidates in the outcomes under consideration would be elected under either of the two outcomes.

TI Complete Independence of Clones in the Ranked Pairs Rule. **AU** Zavist, Thomas M.; Tideman, T. Nicolaus.

PD February 1988. **TI** The Evolution of a Takings Doctrine. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E88-02-02; Working Paper Coordinator, Department of Economics, Sandy Hall, Blacksburg, VA 24061. **PG** 26. **PR** Free by request. **JE** 918, 717, 721. **KW** Just Compensation. Law and Economics. Property. Common Property. Supreme Court.

AB If the distribution of property were flawless, it would be attractive to have a "takings" rule in which governments were required to compensate for all disproportionate consequences of their actions, other than trivial ones that were not worth their administrative cost. However, from time to time we become aware that the distribution of property is flawed, and the political process is what we must use to recognize these flaws and correct them. Even though the political process is an exceedingly crude instrument, with severe losses to rent-seeking, the task of achieving a just distribution of property is so important that we tolerate these losses, and courts understandably interpret the "just compensation" clause in such a way as to permit attempted improvements in the distribution of property. Some recent apparent anomalies in Supreme Court opinions originate in deference to the not-yet-acknowledged idea that land and natural resources are inherently common property.

PD April 1988. **TI** Power and Justice in the Renunciation of a Nation's Debts. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E88-04-11; Working Paper Coordinator, Department of Economics, Sandy Hall, Blacksburg, VA 24061. **PG** 22. **PR** Free by request. **JE** 433, 311. **KW** Sovereign Debt. Unilateral Renunciation. Debtor Nation. Monetary Policy.

AB The power of unilateral renunciation is of negative value to a perfectly rational individual, or to a nation of identical perfectly rational individuals, when lenders are also rational. However, the possibility of irrational behavior or of conflicts of interest within a nation can give the power of unilateral renunciation a positive value. The power of unilateral renunciation is least detrimental when lenders expect it to be used only for good reasons. To achieve such expectations, it behooves a borrower, when contemplating renunciation, to take its case before an impartial tribunal for adjudication. This paper explores the arguments that a nation might make before such a tribunal.

Tillmann, Georg

TI Equitability and Income Taxation. **AU** Bos, Dieter; Tillmann, Georg.

Tirole, J.

TI Repeated Auctions of Incentive Contracts, Investment and Bidding Parity With an Application to Takeovers. **AU** Laffont, J. J.; Tirole, J.

TI Adverse Selection and Renegotiation in Procurement. **AU** Laffont, Jean Jacques; Tirole, Jean.

Toman, Michael A.

TI Making a Market: A New Approach to Gas Pipeline Regulation. **AU** Alger, Dan; O'Neill, Richard P.; Toman, Michael A.

Trajtenberg, Manuel

PD December 1987. **TI** Patents, Citations and Innovations: Tracing the Links. **AA** Tel Aviv University. **SR** National Bureau of Economic Research Working Paper: 2457; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PG** 42. **PR** \$2.00. **JE** 621, 214. **KW** Patents. Citations. R&D. Technology. Computer Search.

AB The goal is to tackle anew the main problems encountered in using patent data in economic research, namely, the large variance in the value of patents, and the difficulties in matching patents with economic categories. The first is addressed with the aid of patent citations, the second with computerized search techniques for large databases. The proposed solutions are applied to the case of Computer Tomography (CT) Scanners, a pathbreaking innovation in medical technology. The main findings are that patents weighted by citations are highly correlated with the value of innovations, and that important innovations generate further innovative activity (R&D), and hence bring about down-the-line patents.

Tuma, Elias H.

PD November 1987. **TI** Economics of War and Peace: Egypt, Israel, and Syria Compared. **AA** University of California at Davis. **SR** University of California at Davis Economics Department Working Paper: 300; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 300. **PR** No Charge. **JE** 114, 121. **KW** War. Middle East. Comparative. Expenditure. Resource Utilization. Military. Defense Spending.

AB Several hypotheses have been formulated and a conceptual framework has been developed regarding the relationship between war, and expenditure and resource utilization in Egypt, Israel, and Syria. Analysis of the available data suggests a few preliminary conclusions, as follows: 1) A war economy has characterized all three countries, including Egypt in the period following the conclusion of a peace agreement with Israel. 2) As may be expected, the levels of expenditure on defense in all three countries are highly correlated, as if to maintain a balance of security between them. 3) The expenditure level is sustained regardless of aid from the outside; when aid is not available, dependence on domestic resources has

sufficed, as illustrated by Syria. 4) Foreign aid, however, is most significant in facilitating credit and allowing the sale of arms to the three countries. 5) Military expenditure has had no positive effect on the economic structure in any of the three countries, as shown by the prevailing economic structure and the composition of the foreign trade basket. Where some impact may have taken place it is where the technology has been advanced enough to absorb and domesticate the techniques brought in by military expenditure.

Turnovsky, S. J.

PD December 1987. TI The Gains from Fiscal Cooperation in the Two Commodity Real Trade Model. AA University of Washington. SR National Bureau of Economic Research Working Paper: 2466; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 20. PR \$2.00. JE 421, 431, 321, 411, 023. KW Terms of Trade. Cooperative Equilibrium. Fiscal Policy.

AB This paper analyzes the gains from fiscal cooperation within the context of the standard two commodity real trade model. It shows how the adjustment in terms of trade is the critical factor in determining the effects of moving from a noncooperative equilibrium. In general, a noncooperative equilibrium leads to an overexpansion of government expenditure on the export good and an underexpansion on the import good, relative to a cooperative equilibrium. The specific example of a logarithmic economy is also considered. The paper discusses further the welfare effects resulting from the formation of a coalition among two countries.

PD December 1987. TI Dynamic Strategic Monetary Policies and Coordination in Interdependent Economies. AU Turnovsky, Stephen J.; Basar, Tamer; d'Orey, Vasco. AA Turnovsky: University of Washington. Basar: University of Illinois. d'Orey: Universidade Nova de Lisbon. SR National Bureau of Economic Research Working Paper: 2467; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 40. PR \$2.00. JE 311, 431, 411. KW Monetary Policy. Flexible Exchange Rate. Nash Equilibria. Cooperative Equilibrium. Optimal Policy.

AB This paper develops strategic monetary policies using a standard two-country macro model under flexible exchange rates. The equilibria considered include feedback Nash and feedback Stackelberg, both of which are compared to the Pareto optimal cooperative equilibrium. The optimal policies are obtained as feedback rules in which real money supplies are adjusted to movements in the real exchange rate. The properties of these policies and their welfare implications are analyzed using numerical simulations. The contrast in the present results with those obtained previously for a short-run horizon suggest the importance of both intertemporal and intratemporal tradeoffs in the determination of optimal strategic policies.

van der, Ploeg Frederick

PD November 1987. TI International Interdependence and Policy Coordination in Economies with Real and Nominal Wage Rigidity. AA Centre for Labour Economics, London School of Economics. SR London School of Economics Centre for Labour Economics

Discussion Paper: 294; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, United Kingdom. PG 70. PR No Charge. JE 431, 311, 321, 411. KW International Interdependence. Locomotive Policy. Beggar-thy-neighbor Policy. OECD Economies. Monetary Policy. Fiscal Policy. AB The development of the seven main OECD economies during the seventies and eighties is discussed. Subsequently, wage equations of the error-correction type for the seven largest OECD economies are estimated. The hypothesis of real wage rigidity cannot be rejected for the French, German, Italian and Japanese economies, but the Canadian, United Kingdom and United States economies display a significant degree of nominal wage rigidity. An analytical two-country model with floating exchange rates, uncovered interest parity, imperfect substitution between home and foreign goods, and sluggish labour markets is then formulated.

Van Dijk, Herman

TI Bayesian Specification Analysis and Estimation of Simultaneous Equation Models Using Monte Carlo Methods. AU Zellner, Arnold; Bauwens, Luc; Van Dijk, Herman.

Van Hoose, David S.

PD April 1988. TI Price Smoothing, Intermediate Monetary Targeting, and Price Level Non-Trend-Stationarity. AA Indiana University. SR Board of Governors of the Federal Reserve System Finance and Economics Discussion Series: 22; Division of Research and Statistics, Federal Reserve Board, Washington, D.C. 20551. PG 24. PR No Charge. JE 311, 133, 131. KW Monetary Policy. Non-Trend Stationarity. Prices. Time Paths. Instrument Target.

AB This paper provides a rationale for the observed tendency for money and prices to follow non-trend-stationary time paths. In the context of a model in which monetary policy is conducted via use of a reserve instrument or an interest rate instrument in order to achieve a target quantity of money, the optimal path of this money stock target with respect to a purely price smoothing objective is demonstrated to be non-trend-stationary. This result is shown to hold under both contemporaneous and lagged reserve requirements. The implication of this result is that non-trend-stationarity of the price level is a natural outcome of a two-stage intermediate targeting procedure.

Veall, Michael R.

TI How Fragile are Fragile Inferences? A Re-Evaluation of the Deterrent Effect of Capital Punishment. AU McAleer, Michael; Veall, Michael R.

Venables, Anthony

TI Completing the Internal Market in the European Community: Some Industry Simulations. AU Smith, Alasdair; Venables, Anthony.

Venti, Steven F.

PD December 1987. TI Aging, Moving, and Housing Wealth. AU Venti, Steven F.; Wise, David A. AA Venti: Dartmouth College. Wise: Harvard

University, Hoover Institution. **SR** Stanford Hoover Institute Working Paper in Economics: E-87-58; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 75. **PR** No Charge. **JE** 932, 918, 921. **KW** Aging. Housing. Moving. Housing Wealth. Elderly. **AB** We have described the relationship between family attributes and moving, and between moving and change in housing wealth. Moving is often associated with retirement and with precipitating shocks like the death of a spouse or by other changes in marital status. Median housing wealth increases as the elderly age. Even when the elderly move, housing equity is as likely to increase as to decrease. Thus the typical mover is not liquidity constrained, although some are. High transaction cost associated with moving is apparently not the cause of the lack of reduction in housing wealth as the elderly age. The absence of a well developed market for reverse mortgages may be explained by limited demand for these financial instruments. The evidence suggests that the typical elderly family does not wish to reduce housing wealth to increase current consumption. For whatever reason, there is apparently a considerable attachment among homeowners to past housing.

Vial, Jean Philippe

PD September 1987. **TI** A Unified Approach to Projective Algorithms for Linear Programming. **AA** Universite de Geneve. **SR** Universite Catholique de Louvain CORE Discussion Paper: 8747; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. **PG** 52. **PR** No Charge. **JE** 213. **KW** Karmarkar's Algorithm. Projective Algorithm. Interior Point Methods. Linear Programming. **AB** In this paper it is shown that a projective algorithm based on the minimization of a potential function by a constrained Newton method is general enough to include other known projective methods for linear programming and fractional linear programming. It also provides a framework to analyze affine interior point methods and to relate them to projective methods.

von, Hagen J.

TI Properties of the Philipps-Curve in a Two-Signals World. **AU** Neumann, M. J. M.; von, Hagen J.

Wadhvani, Sushil B.

TI Some International Evidence on Labour Cost Flexibility and Output Variability. **AU** Summers, Lawrence H.; Wadhvani, Sushil B.

TI Financial Factors, Efficiency Wages and Employment: Investigations Using UK Micro-Data. **AU** Nickell, Stephen J.; Wadhvani, Sushil B.

Wadsworth, Jonathan

TI Unemployment and the Inter-Regional Mobility of Labour. **AU** Pissarides, Christopher A.; Wadsworth, Jonathan.

Wagner, Donald K.

TI Representation of Bicircular Matroids. **AU** Coullard, Collette; del, Greco John G.; Wagner,

Donald K.

Walls, Margaret A.

PD December 1987. **TI** Petroleum Supply Modeling in a Dynamic Optimization Framework: Forecasting the Effects of the 1986 Oil Price Decline. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Paper: EM87-03; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, United States of America. **PG** 63. **PR** \$5.00 (United States funds only). **JE** 723, 212. **KW** Oil Exploration. Rational Expectations. Forecasting. Oil. Energy.

AB This paper presents a rational expectations model of the United States oil market in which a representative competitive firm chooses an exploratory drilling plan so as to maximize the expected discounted net present value of oil discoveries. The quadratic objective function and linear laws of motion for exogenous variables lead to a linear exploratory drilling decision rule. This decision rule is then estimated by full-information maximum likelihood using United States monthly data from 1973 through 1985. The 1986 oil price collapse is incorporated into the model by changing the way that the firm forms price expectations. Future domestic exploratory drilling and oil discoveries are then forecasted.

Watson, Mark W.

TI Variable Trends in Economic Time Series. **AU** Stock, James; Watson, Mark W.

TI Sources of Business Cycle Fluctuations. **AU** Shapiro, Matthew; Watson, Mark W.

Waverman, Leonard

TI The Demand for Alcoholic Beverages in Canada: An Application of the Almost Ideal Demand System. **AU** Fuss, Melvyn; Waverman, Leonard.

Weber, Guglielmo

TI Intertemporal Substitution, Risk Aversion and the Euler Equation for Consumption: Evidence from Aggregate and Average Cohort Data. **AU** Attanasio, Orazio P.; Weber, Guglielmo.

TI Intertemporal Substitution, Risk Aversion and the Euler Equation for Consumption: Evidence from Aggregate and Average Cohort Data. **AU** Attanasio, Orazio P.; Weber, Guglielmo.

Weber, Shlomo

TI Price Discrimination and Product Line Rivalry. **AU** Ginsburgh, Victor; MacLeod, Bentley; Weber, Shlomo.

TI Price Discrimination and Product Line Rivalry. **AU** Ginsburgh, Victor; MacLeod, Bentley; Weber, Shlomo.

Weiss, Andrew

TI The War of Attrition in Continuous Time With Complete Information. **AU** Hendricks, Ken; Weiss, Andrew; Wilson, Charles.

Weissenberger, Edgar

PD February 1986. TI A Factor Demand Model With Quasi-Fixed Factors and Rational Expectations. AU Weissenberger, Edgar; Muller, Brockhausen Gerd; Welsch, Heinz. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: B-66; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 27. PR No Charge. JE 023, 212, 621. KW Quasi-fixed Factors. Rational Expectations. Dynamic. Factor Demand.

AB In this paper we present a model that embodies rational expectations and dynamic optimisation with respect to two quasi-fixed factors (capital and labour) and a variable factor (materials). The Euler equations are explicitly solved to obtain the optimal contingency plans. As is well known, in this framework the optimal input of the quasi-fixed factor is dependent on the entire anticipated future paths of output and relative prices. Given specific processes of output and relative prices, we specify the restrictions implied under rational expectations and test them.

Welsch, Heinz

TI A Factor Demand Model With Quasi-Fixed Factors and Rational Expectations. AU Weissenberger, Edgar; Muller, Brockhausen Gerd; Welsch, Heinz.

Werley, Carolyn

TI How The Bondholders Fared: Realized Rates of Return on Foreign Dollar Bonds Floated in the 1920s. AU Eichengreen, Barry; Werley, Carolyn.

Whitbread, Chris

TI Fixed Investment and the Technology Gap in the UK. AU Beenstock, Michael; Whitbread, Chris.

White, Michelle

PD February 1988. TI Urban Commuting Journeys are Not "Wasteful". AA University of Michigan. SR University of Michigan Center for Research on Economic and Social Theory Working Paper: 88-10; Department of Economics, University of Michigan, Ann Arbor, MI 48109. PG 16. PR No Charge. JE 933, 921. KW Commuters. Suburbs. Urbanization.

AB Hamilton (1982) first argued that urban workers' commuting journeys are so long that the monocentric urban models literature has little predictive value concerning commuting. In this paper I re-interpret the definition of "wasteful commuting" to include only the amount of commuting that could be eliminated if workers traded jobs or houses, holding fixed the existing spatial patterns of jobs and housing and the actual urban transportation network in the urban area. Using an assignment model to calculate new estimates of the amount of wasteful commuting, I find that "waste" constitutes only a minor fraction, -- 11 per cent -- of the total amount of commuting by workers in United States cities, rather than the extremely high 87 per cent figure found by Hamilton.

Wilcox, Steven

TI Family Structure, Race and the Hazards of Young

Women in Poverty. AU Kniesner, Thomas J.; McElroy, Marjorie; Wilcox, Steven.

Wildasin, David

TI Ex Post Versus Ex Ante Optimal Policies for Risky Activities. AU Boadway, Robin W.; Wildasin, David E.

TI Existence of General Equilibrium in a Competitive Economy with Endogenous Credit Rationing. AU Kamiya, Kazuya; Wildasin, David.

Wilde, Louis L.

TI Tax Practitioners and Tax Compliance. AU Reinganum, Jennifer; Wilde, Louis L.

Wilkie, Simon

TI Incremental R and D subsidies. AU Richardson, Martin; Wilkie, Simon.

Wilson, Charles

TI The War of Attrition in Continuous Time With Complete Information. AU Hendricks, Ken; Weiss, Andrew; Wilson, Charles.

Wise, David A.

TI The Wealth and Poverty of Widows: Assets Before and After the Husband's Death. AU Hurd, Michael D.; Wise, David A.

TI Pension Backloading, Wage Taxes and Work Disincentives. AU Kotlikoff, Laurence J.; Wise, David A.

TI Aging, Moving, and Housing Wealth. AU Venti, Steven F.; Wise, David A.

Woo, Wing T.

TI Testing An Optimising Model Of The Current Account Via The Consumption Function. AU Sheffrin, Steven M.; Woo, Wing T.

Wood, David

TI Rates of Return and Capital Aggregation Using Alternative Rental Prices. AU Harper, Michael; Berndt, Ernst; Wood, David.

Wright, Robert E.

TI Women's Wages in Full and Part-Time Jobs in Great Britain. AU Ermisch, John; Wright, Robert E.

Yitzhaki, Shlomo

PD December 1987. TI Welfare Dominance: An Application to Commodity Taxation. AU Yitzhaki, Shlomo; Slemrod, Joel. AA Yitzhaki: The World Bank. Slemrod: University of Michigan. SR National Bureau of Economic Research Working Paper: 2451; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 34. PR \$2.00. JE 024, 323. KW Commodity. Social Welfare Function. Subsidy. Tax. Israel.

AB In this paper, we suggest a method which enables the user to identify commodities that all individuals who can agree on certain weak assumptions with regard to the social welfare function will agree upon as worth subsidizing

or taxing in the absence of efficiency considerations. The method is based on an extension of the stochastic dominance criteria and is illustrated using data from Israel.

Younes, Yves

PD March 1987. TI On the Theory of Incomplete Markets. AA CEPREMAP. SR CEPREMAP Discussion Paper: 8721; CEPREMAP, 142 rue du Chevaleret, 75013 Paris, FRANCE. PG 57. PR 25 FF. JE 022, 024. KW Market Coordination Failures. Incomplete Markets. Rationing. Overlapping Generations Models.

AB Market coordination failures can be formulated in terms of the three theories of incomplete markets, of equilibria with possible rationing and of models with overlapping generations. It is shown that the two first approaches can be conceived as the reduced form of a (paradigmatic) extensive form for which there are many agents (and not one) for each type, many submarkets (and not one) for each market. It is then required that two agents cannot meet on more than one submarket. One can then conclude that what is important in these three fields is the pattern of meetings of agents and that the integration of these three theories can be made complete. We must not be trapped by the differences of formulation of equilibrium concepts which prevail in these three fields.

Zachau, Ulrich

PD November 1987. TI Mergers in the Model of an R&D-Race. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-139; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 25. PR No Charge. JE 611, 621, 024, 022. KW Innovations. Cournot Model. R & D. Mergers. Patents.

AB In this paper I analyze a model of a patent race in which mergers increase the R&D-efficiency of the merging firms. Mergers increase the R&D-effort and the profits of the merging firms and decrease those of the outside firms. By increasing the aggregate R&D-effort in the industry, they shorten the time period needed for the innovation. Typically, a merger of all firms does not maximize the profits of the merged firm per constituent firm, which makes it possible to explain mergers other than those into monopoly. The model can also be interpreted as a non-linear Cournot model; it can then be used as an explanation of mergers in a product market that lower the marginal costs of the merging firms.

PD December 1987. TI Non-Market Information Exchanges and Efficient Allocations of Information. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-140; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 34. PR No Charge. JE 026. KW Repeated Game. Perfect equilibrium. Cooperative Game. Information. Barter.

AB In this paper, I study two models of non-market exchanges of information among a group of people who all have some valuable private information. The first model is an infinitely repeated game, in which the players exchange

information through noncooperative collusion. I completely characterize the Pareto efficient allocations of information in this game. The requirement of Pareto efficiency is then used as a refinement of perfect equilibrium. The second model is a one-period cooperative game with side payments, in which the players exchange information using binding and enforceable contracts. In this case, there exists a unique optimal degree of diffusion for the information of all players and a unique distribution of profits in the core.

Zame, William R.

TI Discontinuous Games and Endogenous Sharing Rules. AU Simon, Leo K.; Zame, William R.

Zavist, Thomas M.

PD September 1987. TI Complete Independence of Clones in the Ranked Pairs Rule. AU Zavist, Thomas M.; Tideman, T. Nicolaus. AA Virginia Polytechnic Institute and State University. SR Virginia Polytechnic Institute and State University Working Paper in Economics: E88-01-02; Working Paper Coordinator, Department of Economics Sandy Hall, Blacksburg, VA 24061. PG 9. PR Free by request. JE 025. KW Voting. Clones. Candidates.

AB The "ranked pairs" voting rule introduced in Tideman is independent of clones (not materially affected by the replication of a candidate) in most but not all cases. Appending a particular tie-breaking rule to the ranked pairs rule generates a rule that is completely independent of clones.

Zax, Jeffrey S.

PD December 1987. TI Quits, Moves, Spatial Equilibrium and Workplace Relocation. AA National Bureau of Economic Research. SR National Bureau of Economic Research Working Paper: 2469; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PG 31. PR \$2.00. JE 823, 813, 824. KW Commuting. Probit Model. Relocation. Mobility.

AB When worker commutes are suboptimal, quits and moves are related. Either a quit, a move, or both can achieve an optimal commute. However, with fixed costs to quitting and moving, a quit or move alone is more likely than both together. Payroll records of a firm which relocated from the central business district to a suburb of a major metropolitan area confirm this. They demonstrate that white employees rarely quit and move at the same time. Simultaneous bivariate probit estimates of move and quit behavior demonstrate that uncontrolled shocks to quits and moves are negatively correlated. Furthermore, during the spatial relocation caused by the firm's relocation, quits and moves were direct substitutes. Employees who quit were approximately 29 per cent less likely to move. Those who moved were approximately 40 per cent less likely to quit.

Zellner, Arnold

PD December 1987. TI Bayesian Specification Analysis and Estimation of Simultaneous Equation Models Using Monte Carlo Methods. AU Zellner, Arnold; Bauwens, Luc; Van Dijk, Herman. AA Zellner:

University of Chicago. Bauwens: Ecole des Hautes Etudes en Sciences Sociales. Van Dijk: Erasmus Universiteit Rotterdam. SR Universite Catholique de Louvain CORE Discussion Paper: 8756; Universite Catholique de Louvain Voie du Roman Pays, 34, B-1348 Louvain-la-Nueve BELGIUM. PG 45. PR No Charge. JE 211, 212. KW Reduced Form. Bayesian. Overidentifying Restrictions. Exogeneity.

AB In this paper a distinction is made between unrestricted reduced form analysis (URFA) and restricted reduced form analysis (RRFA). Bayesian limited information posterior moments are derived for both cases and several algorithms for the computation of these moments are introduced. Further, Bayesian diagnostics with respect to overidentifying restrictions and exogeneity are treated in detail. The methods are applied to some classic econometric models.

Zin, Stanley E.

TI Substitution, Risk Aversion and the Temporal Behaviour of Consumption and Asset Returns I: A Theoretical Framework. AU Epstein, Larry G.; Zin, Stanley E.

TI Substitution, Risk Aversion and the Temporal Behavior of Consumption and Asset Returns II: An Empirical Analysis. AU Epstein, Larry G.; Zin, Stanley E.