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.)

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: MIT. **SR** National Bureau of Economic Research Working Paper: 2368; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 824, 831, 212. **KW** Unions. Seniority. Wages. Earnings.

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.

Adelman, Irma

PD August 1987. **TI** Life in a Mexican Village: a SAM Perspective. **AU** Adelman, Irma; Taylor, J. Edward; Vogel, Stephen. **AA** Adelman and Vogel: Department of Agricultural and Resource Economics, University of California, Berkeley. Taylor: Urban Institute and Agricultural Economics, University of California, Davis. **SR** University of California at Berkeley Department of Agricultural and Resource Economics (CUDARE) Working Paper: 443; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 48. **PR** $9.60. **JE** 121, 213, 112, 225. **KW** Social Accounting Matrix. Economic Development. Migration. Rural Economy.

AB This paper employs the Social Accounting Matrix (SAM) to analyze the economic structure of a migrant-sending rural economy. A village SAM is constructed using 1982 household data from a major migrant-sending village in Central Mexico. The village matrix multiplier and its decompositions are derived from the SAM and are utilized in policy experiments on the production, value added, income, and investment flows of the village. The results highlight the central role of both internal and international migration in the village economy, as well as importance of targeting directly anti-poverty policies toward the landless.

Adioetomo, Sri M.

TI Change in the Status of Women Across Generations in Asia. **AU** King, Elizabeth; Peterson, Jane; Adioetomo, Sri M.; Domingo, Lita; Syed, Sabiha H.

Aigner, Dennis J.

PD October 1987. **TI** Self-Selection in the Residential Electricity Time-of-Use Pricing Experiments. **AU** Aigner, Dennis J.; Ghali, Khalifa. **AA** Aigner: University of Southern California. Ghali: University of Southern California. **SR** University of Southern California Modelling Research Group Working Paper: M8737; Department of Economics, University of Southern California, University Park, Los Angeles, CA 90089-0152. **PG** 23. **PR** No Charge. **JE** 215, 723, 212. **KW** TOU Pricing. Selection Bias. Experimental Economics. Electricity Consumption.

AB In none of the existing studies that attempt to pool the results of the five best residential electricity TOU-pricing experiments is the problem of selection bias addressed. Three of the five experiments used samples of volunteers and it is well-known that this can bias results if the ultimate inference to be made applies to the population of non-volunteers (i.e., the situation of mandatory TOU-pricing). In this paper we adapt some well-used methodology for correcting for self-selection to the five experiments in question and estimate the extent to which its presence biases estimates of the elasticity of substitution between peak and off-peak electricity consumption. We find, for example, that the bias is upwards of +31 per cent in the Los Angeles experiment, resulting in a substantial overstatement of the response of customers to TOU prices. While we stop short of integrating our methodology into a full-blown pooling framework, users of the EPRI-sponsored RETOU program should nevertheless be cautioned to the potential biases inherent in forecasts of TOU response derived from it, since no account for the self-selection phenomenon and its consequences was taken in its development.

Aizenman, Joshua

PD August 1987. **TI** Market Power and Exchange Rate Adjustment in the Presence of Quotas. **AA** University of Chicago. **SR** National Bureau of Economic Research Working Paper: 2370; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 023, 422, 421. **KW** Exchange Rates. Quotas. Pass-through.

Commercial Policy. Tariffs.
AB This paper investigates the dependency of the adjustment of prices, exchange rates, and production on the nature of the trade regime. We contrast the adjustment between a quota and a tariff regime for a semi-small economy characterized by monopolistic competitive market structure and short-run nominal contracts under a floating exchange rate regime. Among other issues we focus on the factors determining the behavior of the quota rent and the 'pass-through' of exchange rate adjustment to the domestic prices of importable goods. We demonstrate that the 'pass-through ratio' (measuring the elasticity of the domestic price of importable goods with respect to the exchange rate) is determined by both the commercial policy and by the market power of the various producers. It tends to be higher in a tariff regime because the endogenous adjustment of the quota rent mitigates the 'pass-through'. We also show that the adjustment of the exchange rate tends to be larger in the quota regime than in the tariff regime. In the tariff regime we observe a larger switch of domestic demand relative to the quota regime, and a corresponding smaller exchange rate adjustment. In the quota regime we observe adjustment of the quota rent such as to keep the net domestic demand for foreign goods intact. As a result, the relative price (of the domestic good to the foreign good) facing the foreign consumer adjusts more in the quota regime than in the tariff regime. At the same time the relative price facing domestic consumers in the quota regime adjusts by less than in the tariff regime.

Akerlof, George

PD March 1988. **TI** Workers' Trust Funds and the Logic of Wage Profiles. **AU** Akerlof, George; Katz, Lawrence F. **AA** Akerlof: University of California, Berkeley. Katz: Harvard University. **SR** National Bureau of Economic Research Working Paper: 2548; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 824, 821, 825. **KW** Shirking. Trust Fund. Employment Fee. Earnings Profile.
AB This paper defines a concept, a worker's trust fund, which is useful in analyzing optimal age-earnings profiles. The trust fund represents what a worker loses if dismissed from a job for shirking. In considering whether to work or shirk, a worker weighs the potential loss due to forfeiture of the trust fund if caught shirking against the benefits from reduced effort. This concept is used to show that the implicit bonding in upward sloping age-earnings profiles is not a perfect substitute for an explicit upfront performance bond (or employment fee). It is also shown that the second-best optimal earnings profile in the absence of an upfront employment fee pays total compensation in excess of market clearing in a variety of stylized cases.

Alesina, Alberto

PD August 1987. **TI** An Overlapping Generations Model of Electoral Competition. **AU** Alesina, Alberto; Spear, Stephen. **AA** Carnegie-Mellon University. **SR** National Bureau of Economic Research Working Paper: 2354; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 025. **KW** Politics. Political Parties. Elections. Overlapping Generations. Policymakers. Candidates.
AB This paper presents a dynamic model of political competition between two "parties" with different policy preferences. A "party" is explicitly modelled as a sequence of overlapping generations of candidates, all of whom face finite decision horizons. In general, there is a conflict between the interests of the individual policymakers and those of the "party", which includes subsequent generations of candidates. We characterize this conflict and suggest a scheme of "intergenerational transfers" within the party which can resolve or mitigate this conflict. The paper shows how the "overlapping generations" model can be usefully applied to the political arena.

Alexander, Lewis S.

PD November 1987. **TI** Debt Conversions: Economic Issues for Heavily Indebted Developing Countries. **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 Paper: 315; Division of International Finance Board of Governors of the Federal Reserve System, Washington, D.C. 20551. **PG** 39. **PR** No Charge. **JE** 112, 433, 441, 442. **KW** Debt-for-Equity Swaps. Debt and Development.
AB This paper is a general discussion of debt conversions in heavily indebted developing countries. The paper first describes the three different types of transactions that are commonly called debt conversions. Next the paper discusses programs that have been established in Chile, Brazil, Mexico, Argentina, and the Philippines to facilitate these transactions. Then the different ways in which commercial banks can participate in these transactions and the volume of these transactions to date are discussed. The paper concludes with a discussion of a broad range of economic issues raised by these transactions, including: the effect of debt conversions on the structure of debtor countries' external liabilities, the incentives debt conversion programs provide for net new capital inflows, the macroeconomic effects of these transactions, and the new role for debt swaps programs in the so-called "menu-of-options" approach to restructuring developing countries' bank debts.

Allen, Linda

PD June 1987. **TI** Bank Size, Collateral and Net Purchase Behavior in the Federal Funds Market: Empirical Evidence A Note. **AU** Allen, Linda; Peristiani, Stavros; Saunders, Anthony. **AA** Allen, Peristiani: Queen's College, City University of New York. Saunders: New York University. **SR** New York University Salomon Brothers Center Working Paper: 427; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 10. **PR** $3.00. **JE** 312, 311, 314. **KW** Federal Funds Market. Interest Rates. Monetary Policy. Banks. Repurchase Agreements.
AB Banks' purchase behavior in the Federal funds (FF) market has been the subject of considerable anecdotal evidence (see, for example Lucas, Jones and Thurston, '1977. Maerowitz '1981, and Stigum '1982, who describe

the tendency of large banks, located in major banking centers, to be net purchasers of FF while smaller banks, located away from major money centers, tend to act as net sellers). Yet, despite the central importance of the FF market to the determination of interest rates and the transmission of monetary policy, no study has rigorously documented either the existence of such a dichotomy in bank net purchase behavior or the size segmentation point (if any) that differentiates bank net sellers from net purchasers. The objective of this paper is to use individual bank data on FF purchases and sales to analyze this question and to examine whether differential behavior can be linked to well defined characteristics such as size and location. In so doing we also contrast bank net purchase behavior in the uncollateralized FF market with bank activity in the collateralized market for repurchase agreements (repos).

Allen, Steven G.

TI Pension Wealth, Age-Wealth Profiles, and the Distribution of Net Worth. **AU** McDermed, Ann; Clark, Robert L.; Allen, Steven G.

Alon, N.

PD July 1987. **TI** The Maximum Size of a Convex Polygon in a Restricted Set of Points in the Plane. **AU** Alon, N.; Katchalski, M.; Pulleyblank, W. R. **AA** Alon: Tel Aviv University. Katchalski: University of Haifa. Pulleyblank: University of Waterloo. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87476-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 10. **PR** No Charge. **JE** 213. **KW** Points in a Plane. Vertices of a Convex Polygon.

AB Suppose we have k points in general position in the plane such that the ratio between the maximum distance of any pair of points to the minimum distance of any pair of points is at most alpha times the square root of K, for some positive constant alpha. We show that there exist at least (beta) times the (K to the 1/4) of these points which are the vertices of a convex polygon, for some positive constant beta = beta(alpha). On the other hand we show that for every fixed epsilon > 0, if k > k(epsilon), then there is a set of k points in the plane for which the above ratio is at most 4 times the (square root of k), which does not contain a convex polygon of more than k to the 1/3 + epsilon vertices.

Altman, Edward I.

PD March 1988. **TI** Measuring Corporate Bond Mortality and Performance. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 458; New York University Salomon Brothers Center for the Study of Financial Institutions, 90 Trinity Place, New York, NY 10006. **PG** 28. **PR** $4.00. **JE** 521, 522, 223. **KW** Bonds. Risk. Mortality. Performance. Corporate Bonds.

AB This study seeks to explore further the notion of default risk by developing an alternative way to measure that risk and to suggest an appropriate method to assess the performance of fixed-income investors over the entire spectrum of credit-quality classes. This approach, a kind of "mortality rate" concept, seeks to measure the expected mortality of bonds in a manner similar to the way actuaries assess mortality of human beings. Our term mortality refers specifically to a life expectancy or survival rate for various periods of time, not necessarily for one year. For the first time, performance of corporate bonds issued with quality ratings ranging from AAA to CCC will be assessed on a year-by-year basis after issuance. The simulation algorithm will be sufficiently robust so that we can calculate net returns for different assumptions of risk-free interest rates, yield spreads, coupon reinvestment rates, and loss of principal and interest payments after default.

Arnott, Richard

PD August 1987. **TI** Bottleneck Congestion with Elastic Demand. **AU** Arnott, Richard; de Palma, Andre; Lindsey, Robin. **AA** Arnott: Dept. of Economics, Queen's University. de Palma: Dept. of Civil Engineering, Northwestern University. Lindsey: Dept. of Economics, University of Alberta. **SR** Queen's Institute for Economic Research Discussion Paper: 690; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 48. **PR** $3.00 Canada; $3.50 United States and Foreign. **JE** 614, 615, 022. **KW** Peak-load pricing. Congestion. Vickrey's Model.

AB This paper is concerned with the modelling of congestable facilities subject to peak-load demand. It argues that a properly-specified model should explicitly treat the congestion technology and consumers' time-of-use decision. The standard model of peak-period congestion can be interpreted as the reduced form of such a model if the peak period is treated as a single interval, but not if it is divided into sub-intervals. To illustrate these points, the paper extends Vickrey's model of bottleneck congestion, treating elastic demand and solving for optimal capacity under several pricing regimes.

Ashley, Richard

PD July 1987. **TI** On the Accuracy (or Otherwise) of Recent Macroeconomic Forecasts. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E87-10-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 28. **PR** Free By Request. **JE** 132, 023. **KW** Forecasts. Rational Expectations. Macroeconomic. Expectation Formation.

AB The accuracy of recent forecasts of key macroeconomic variables by a variety of forecasters is analyzed. It is shown that most of these forecasts are so inaccurate that simple extrapolation of historical trends is superior for forecasts more than a couple of quarters ahead. The implications of these results for the appropriate modelling of macroeconomic expectations formation are discussed.

PD August 1987. **TI** Shrinkage Estimation with General Loss Functions: An Application of Stochastic Dominance Theory. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E87-09-08; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061.

PG 29. **PR** Free By Request. **JE** 211, 212, 023. **KW** Expectations Formation. Unbiased Estimators. Biased Estimators.

AB Shrinkage estimation is analyzed using stochastic dominance theory over a wide class of loss functions. (Neither symmetry nor boundedness is imposed.) A recommended shrinkage factor is calculated for gaussian, unbiased estimators based on this analysis. This factor, which depends only on the observed t statistic and on a parameter specifying the degree of asymmetry of the loss functions in the class, maximizes the probability that the resulting shrinkage estimator both dominates the original unbiased estimator and is itself undominated over the loss function class. Also, the unbiased estimator is found to be dominated by shrunken (biased) estimators over a wide class of loss functions. This implies that the unbiased linear projections used to model expectations formation in neoclassical macroeconomic models are stochastically dominated by biased expectations.

PD October 1987. **TI** Linear Versus Nonlinear Macroeconomies: A Statistical Test. **AU** Ashley, Richard A.; Patterson, Douglas M. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E87-09-07; Working Paper Coordinator, Department of Economics Sandy Hall, Blacksburg, VA 24061. **PG** 32. **PR** Free By Request. **JE** 211, 212, 023. **KW** Bispectrum. Linear Stochastic Dynamics. Chaotic Models. Nonlinear Dynamics.

AB A statistical test based on the estimated bispectrum is presented which can distinguish between the linear stochastic dynamics widely used in macroeconomic models and alternative nonlinear dynamic mechanisms, including both nonlinear stochastic models and nonlinear deterministic (chaotic) models. The test is applied to an aggregate stock market index and to an aggregate industrial production index. In both cases the test easily rejects the null hypothesis of a linear stochastic generating mechanism. This result suggests that nonlinear dynamics (deterministic or stochastic) should be an important feature of any empirically plausible macroeconomic model.

Bagnoli, Mark

PD March 1987. **TI** Can the Private Provision of Public Goods be Efficient? -- Some Experimental Evidence. **AU** Bagnoli, Mark; McKee, Michael. **AA** Bagnoli: University of Michigan. McKee: University of Colorado-Boulder. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-15; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 31. **PR** No Charge. **JE** 026, 025. **KW** Free Rider Problem. Proper Equilibrium. Social Choice.

AB We have reported on some experiments run using, as a basis, a game studied by Bagnoli and Lipman. Their analysis suggested that if people used strategies that constituted a proper equilibrium, then the equilibria of the game generated the efficient outcome. Our experiments clearly indicate that in the final 5 periods of the game, the participants always provided the public good (the efficient choice as we had chosen parameters that made the participants' valuations sum to more than the cost of the public good). Thus, it appears sensible to focus on the proper equilibria of the game under analysis. Second, we have shown that this game is likely to eliminate virtually all of the free rider problems one normally fears may cause the private provision of a public good to be inefficient. Third, we have provided evidence concerning the effects of studying games of private provision of public goods that do not have the unsavory feature of a dominant strategy.

Baker, Paul

PD January 1988. **TI** A Cohort Model of Central Heating Ownership in Great Britain. **AU** Baker, Paul; Blundell, Richard; Micklewright, John. **AA** Baker and Blundell: University College London. Micklewright: Queen Mary College, London. **SR** University College London Discussion Paper: 88-03; Department of Economics, University College London, Gower Street, London, WC1E 6BT. **PG** 33. **PR** 1.50 pounds sterling. **JE** 723, 229. **KW** Birth Cohort. Durable Ownership. Central Heating.

AB In this paper we analyse the probability of ownership of central heating using micro data on individual owner-occupier households from the Family Expenditure Survey (FES). We use data drawn from the surveys from the years 1972-1983 and attempt to explain the rise in central heating ownership over the period as well as the pattern at any one time. Pooling the data for a number of years allows us to exploit both variation in prices and the important distinction between age and cohort (date of birth) effects.

Baldwin, Richard

PD March 1988. **TI** Hysteresis in Import Prices: The Beachhead Effect. **AA** Columbia University. **SR** National Bureau of Economic Research Working Paper: 2545; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 611, 411, 422. **KW** International Trade. Sunk Investments. Exchange Rates. Trade Policy.

AB International economists typically assume that temporary real exchange rate shocks can have only temporary real effects -- and no effect at all on the underlying structure of the economy. This paper shows that even in a simple "off-the-shelf" industrial organization model, this assumption is unfounded; if market-entry costs are sunk, exchange rate shocks can alter domestic market structure and thereby have lasting real effects. In other words, a sufficiently large exchange rate shock can cause hysteresis in import prices and quantities. This simple idea has strong implications for exchange rate theory (Baldwin and Krugman 1986 shows this), for trade policy (Dixit 1987a discusses this), and for the estimation of trade equations as the present paper shows. To show that the theoretical point is not just empirically empty theorizing, we present evidence which suggests that the recent dollar overvaluation is an example of a hysteresis-inducing shock. To this end we demonstrate that the pass-through relationship shifted in a manner that is consistent with the nature and timing of the market structure changes predicted by the model. In particular, we find evidence that the structural break occurred during the rising dollar phase rather than in 1985 as is commonly asserted. A direct test of the model is not performed due to data limitations.

Ball, Laurence

PD November 1987. **TI** The Equilibrium and Optimal Timing of Price Changes. **AU** Ball, Laurence; Romer, David. **AA** Ball: New York University. Romer: Princeton University. **SR** National Bureau of Economic Research Working Paper: 2432; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 023, 131, 133, 021. **KW** Welfare Properties. Staggered Price-Setting. Efficient Equilibrium. Synchronization. Economic Fluctuations.

AB This paper studies the welfare properties of the equilibrium timing of price changes. Staggered price-setting has the advantage that it permits rapid adjustment to firm-specific shocks but the disadvantage that it causes price level inertia and therefore increases aggregate fluctuations. Because each firm ignores its contribution to inertia, staggering can be a stable equilibrium even if it is highly inefficient. In addition, there can be multiple equilibria in the timing of price changes; indeed, whenever there is an inefficient staggered equilibrium, there is also an efficient equilibrium with synchronized price-setting.

Banks, Jeffrey S.

PD June 1987. **TI** The Design of Mechanisms to Allocate Space Station Resources. **AU** Banks, Jeffrey S.; Ledyard, John O.; Porter, David P. **AA** Banks: University of Rochester. Ledyard: California Institute of Technology. Porter: Jet Propulsion Laboratory. **SR** Caltech Social Science Working Paper: 648; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 34. **PR** No Charge. **JE** 025, 022, 026, 215, 621, 511. **KW** Mechanisms. Pricing. Uncertainty. Experiments. Priority. Scheduling. Auctions. Space Station. Sealed Bid Auction.

AB This paper demonstrates the use of applied organizational design to investigate possible mechanisms to allocate the resources of Space Station. First, a specific laboratory experimental environment (testbed) and baseline policy are developed using the salient technical features of the Space Station and past Space Shuttle experiences. The use of priority contracts to assist in contingent rescheduling of resources due to supply curtailments is established. Next, generalized versions of an English auction and Vickrey-Groves type sealed bid auction are designed and developed to allocate scheduled resource use and priority. Finally, these mechanisms are tested and evaluated in the testbed. The data demonstrates that the expected efficiency increases significantly using the auction mechanisms rather than allocations from first-come-first-served processes. However, the auction mechanisms do not produce outcomes near the 100 per cent level of efficiency. Several results are dedicated to the revenue generating properties of the mechanisms and individual bidding behavior.

Barahona, Francisco

PD February 1987. **TI** Planar Multicommodity Flows, Max Cut and the Chinese Postman Problem. **AA** University of Waterloo, Ontario, CANADA. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87454-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 5. **PR** No Charge. **JE** 213. **KW** Planar Graphs. O(n) Matching Problem. Chinese Postman Problem. Max Cut Problem.

AB For planar graphs Seymour proved that there is a multicommodity flow if and only if there is no negative cut. Matsumoto et al. have shown how to find the flow by solving O(eta) matching problems in a graph with eta nodes. Our aim is to point out that the flow can be found by solving a single Chinese Postman problem in the dual graph. The dual vector is the flow. Thus the problem can be solved in O(eta sup 3/2 log eta) time. The same ideas apply to the max cut problem in planar graphs.

Barrera, Albino

PD January 1988. **TI** The Role of Maternal Schooling and Its Interaction with Public Health Programs In Child Health Production. **SR** Yale Economic Growth Center Discussion Paper: 551. **PG** 41 pp. **PR** $2.00. **JE** 912, 921. **KW** Child Health. Education. Maternal Education.

AB Three questions are addressed in this paper: (1) Does mother's schooling affect child health? (2) If so, does its impact vary across child age groups? (3) How and why does maternal schooling affect child health? Maternal education positively affects child health as measured by height-for-groups, with preschoolers showing the greatest sensitivity. The pattern of interactions between maternal education and public health programs suggests that maternal education affects child health through an efficiency effect (by affecting the productivity of health inputs) and an allocative effect (by lowering the costs of information).

Barsky, Robert

PD June 1987. **TI** The Seasonal Cycle and the Business Cycle. **AU** Barsky, Robert B.; Miron, Jeffrey A. **AA** University of Michigan and NBER. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-34; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 47. **PR** No Charge. **JE** 131, 023, 212. **KW** Seasonal Fluctuations.

AB Almost all recent research on macroeconomic fluctuations has worked with seasonally adjusted or annual data. The usual attitude toward seasonal fluctuations is typified by Sims (1974), who refers to the seasonal components of economic time series as "errors in variables" and analyses methods for treating series "contaminated by seasonal noise." Perhaps underlying this view is the notion that seasonal fluctuations are generated by a fundamentally different model than conventional business cycle fluctuations. Many economists would argue that seasonal fluctuations are entirely natural or even desirable while business cycle fluctuations are disturbing aberrations. This paper takes a different approach by treating seasonal fluctuations as worthy of study in their own right. Instead of taking it for granted that seasonal fluctuations follow a different model from business cycle fluctuations, we consider the extent to which the two types of fluctuations display similarities. Our paper represents a return to an older tradition of NBER analysis of fluctuations, exemplified by Simon Kuznets (1933), in which

fluctuations at both seasonal and business cycle frequencies were regarded as important topics of investigation.

PD July 1987. **TI** The Worldwide Change in the Behavior of Interest Rates and Prices in 1914. **AU** Barsky, Robert; Mankiw, N. Gregory; Miron, Jeffrey; Weil, David. **AA** Barsky, Miron: University of Michigan. Mankiw, Weil: Harvard University. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-37; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 28. **PR** No Charge. **JE** 311, 312, 023, 431, 212. **KW** Gold Standard. Federal Reserve. Open Economy Macroeconomics.

AB This paper evaluates the role of the destruction of the gold standard and the founding of the Federal Reserve, both of which occurred in 1914, in contributing to observed changes in the behavior of interest rates and prices after 1914. The paper presents a model of policy coordination in which the introduction of the Fed stabilizes interest rates, even if the gold standard remains intact, and it offers empirical evidence that the dismantling of the gold standard did not play a crucial role in precipitating the changes in interest rate behavior.

PD August 1987. **TI** The Worldwide Change in the Behavior of Interest Rates and Prices in 1914. **AU** Barsky, Robert B.; Mankiw, N. Gregory. **AA** Barsky: University of Michigan, Ann Arbor. Mankiw: Harvard University. **SR** National Bureau of Economic Research Working Paper: 2344; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 042, 313, 311, 134, 133. **KW** Gold Standard. Federal Reserve. Interest Rates. Stabilization. Policy Coordination.

AB This paper evaluates the role of the destruction of the gold standard and the founding of the Federal Reserve, both of which occurred in 1914, in contributing to observed changes in the behavior of interest rates and prices after 1914. The paper presents a model of policy coordination in which the introduction of the Fed stabilizes interest rates, even if the gold standard remains intact, and it offers empirical evidence that the dismantling of the gold standard did not play a crucial role in precipitating the changes in interest rate behavior.

Bartusch, M.

PD November 1986. **TI** Scheduling Project Networks with Resource Constraints and Time Windows. **AU** Bartusch, M.; Mohring, R. H.; Radermacher, F. J. **AA** Bartusch and Radermacher: University of Passau. Mohring: University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 86448-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 45. **PR** No Charge. **JE** 213. **KW** Scheduling. MPM-Networks. Order Theoretic Approach. Scheduling. Disjunctive Graph Method. Branch and Bound Algorithms.

AB Project networks with time windows are generalizations of the well-known CPM and MPM networks that allow for the introduction of arbitrary minimal and maximal time lags between the starting and completion times of any pair of activities. We consider the problem to schedule such networks subject to arbitrary (even-time dependent) resource constraints in order to minimize an arbitrary regular performance measure (i.e. a non-decreasing function of the vector of completion times). This problem arises in many standard industrial construction or production processes. The treatment is done by a structural approach that involves a generalization of both the disjunctive graph method in job shop scheduling and the order theoretic methods for precedence constrained scheduling. Besides theoretical insights into the problem structure, this approach also leads to rather powerful branch-and-bound algorithms. Computational experience with this algorithm is reported.

Baxter, Marianne

PD January 1987. **TI** Money and Market Incompleteness in Overlapping-Generations Models. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 69; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 22. **PR** No Charge. **JE** 023, 311, 026. **KW** Overlapping-Generations Model. Market Incompleteness. Money. Sequential Equilibria. Demographic Structure.

AB This paper investigates the extent to which the dynamics of stochastic overlapping generations models stem from the model's inherent market incompleteness. This incompleteness arises naturally as a result of the model's overlapping demographic structure combined with sequential resolution of uncertainty as the economy moves through time. The paper focuses on the extent to which money serves to complete markets. In contrast to results obtained by Marshall, Sonstelie, and Gilles (1987) within a deterministic framework, the addition of money in the stochastic model alters the sequential equilibrium in a way that suggests that money partially completes markets.

PD June 1987. **TI** Rational Expectations Models with Censored Variables. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 89; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 43. **PR** No Charge. **JE** 212, 431. **KW** Rational Expectations. Censored Variables. Adjustable Peg Regimes. Forward Premium. Mexico. Exchange Rates.

AB This paper develops methods for solving and estimating rational expectations models with censored variables. The novel feature of the model is that private agents' decision rules depend on expectations of the censored variables. Appropriate econometric techniques are derived and are illustrated by application to Mexico's recent adjustable-peg exchange rate regime. A striking implication of the adjustable-peg model is that the forward premium will typically be serially correlated even in the absence of a risk premium, reflecting serial correlation in expected devaluations due to serial correlation in the exogenous variables.

Beja, Avraham

PD September 1987. **TI** Value for Two-Stage Games: Another View of the Shapley Axioms. **AU** Beja, Avraham; Gilboa, Itzhak. **AA** Beja: Israel Institute of Business Research. Gilboa: Department of Economics, Tel-Aviv University. **SR** Tel Aviv Foerder Institute for

Economic Research Working Paper: 25-87; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 20. **PR** No Charge. **JE** 026. **KW** Cooperative Games. Majority Games. Shapley Value. Shapley Axioms. Two-Stage Games. Non Transferable Utility Games. Non-Transferable Utility.

AB This (short) study reports an application of the Shapley value axioms to a new context of "two-stage games". In these games, the formation of a coalition in the first stage entitles its members to play a prespecified cooperative game in the second stage. The original Shapley axioms have natural equivalents in the new framework, and we show the existence of (non-unique) "values" and "semivalues" for two-stage games, analogous to those defined by the corresponding axioms for simple (one-stage) games. However, we also prove that all semivalues (hence, perforce, all values) must give patently unacceptable solutions for some "two-stage majority games" (where the members of a majority coalition play a conventional majority game). Our analysis is closely related to an example of Roth (1980), who pointed out difficulties with Shapley's "lambda-transfer value" for non-transferable utility (NTU) games. Comparing our findings with Roth's, we argue that our results are more conclusive. Furthermore, the value axioms for two-stage games are much closer to Shapley's original axioms than are the axioms for the "NTU value". Our analysis therefore also sheds new light on the original Shapley value.

Bergstrom, Ted

PD January 1987. **TI** A Fresh Look at the Rotten Kid Theorem -- and Other Household Mysteries. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-5; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 18. **PR** No Charge. **JE** 024, 025, 921. **KW** Theory of the Family. Incentives. Free Rider. Family Welfare.

AB I have claimed that the answer to "When does the Rotten Kid Theorem apply to a household?" is essentially "When the household has transferable utility". Fortunately for the Rotten Kid Theorem, it happens that transferable utility in a household extends beyond the case of a single good and beyond the case of quasi-linear preferences to a more general and interesting class of preferences and technologies. But unfortunately for the Rotten Kid Theorem, this is still quite a restricted class. This paper has studied conditions under which the household utility possibility frontier is a simplex which is shifted inward or outward in parallel fashion by different choices of nonmarket activities. In these cases, the Rotten Kid Theorem applies if the utilities of all household members are normal goods for the household head. It is fair to ask whether, there might be other interesting cases where the Rotten Kid Theorem applies. For example, consider "curved" utility possibility frontiers that shift outward "uniformly" in response to changes in the nonmarket activities of family members. One might want to compensate for weaker assumptions about the utility possibility frontier by making stronger assumptions about the preferences of the household head. One way to do this would be to suppose that the nonmarket activities of family members resulted in homothetic shifts of the nonlinear utility possibility frontier and that the head of the household has homothetic preferences in the private utilities of family members.

PD May 1987. **TI** Systems of Benevolent Utility Interdependence. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-4; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 17. **PR** No Charge. **JE** 022, 921, 024, 025. **KW** Benevolence. Superbenevolence. Familial Altruism. Intergenerational Transfers. Interdependent Utility.

AB This paper concerns the logic of benevolently related utility functions. A paradox of 'superbenevolence' is examined and defanged. For a finite set of benevolent consumers, the theory of dominant diagonal matrices is shown to be a powerful tool for the study of normal benevolence. To treat intergenerational benevolence properly, the standard theory of dominant diagonal matrices has to be extended to denumerably infinite dominant diagonal matrices. We show that there is a nice extension that exactly serves our purposes. These results make it possible to generalize and clarify the results of Robert Barro and Miles Kimball on familial altruism. Questions of cardinality and uniqueness of representation are also resolved. Finally, some additional light is thrown on the problem of forward and backward intertemporal consistency which was discussed by Robert Pollak, John Burbridge and others.

Berliant, Marcus

PD August 1987. **TI** On Welfare Theory and Urban Economics. **AU** Berliant, Marcus; Papageorgiou, Yorgos Y.; Wang, Ping. **AA** Berliant: University of Rochester. Papageorgiou: McMaster University. Wang: The Pennsylvania State University. **SR** University of Rochester Center for Economic Research Working Paper: 95; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 26. **PR** No Charge. **JE** 024, 931, 022. **KW** Welfare. Urban Economics. Monocentric City. Land. Location. Hedonic Pricing. Spatial Models. Product Differentiation. Political Parties.

AB This paper examines the welfare theorems in the context of urban economics. The standard model of urban economics, which involves a continuum of agents located in a continuous space, is first described. Next, examples are given where both potential theorems fail for variants of the standard model in which preferences depend explicitly on location. Namely, we point out that a Pareto-optimum may not be an equilibrium even though preferences are continuous, convex and locally nonsatiated; and that an equilibrium may not be Pareto-optimal even though preferences are continuous and locally nonsatiated. A reason for this failure might be found in the heavy requirements that the model imposes on the equilibrium price of land. Firstly, it must fully capture the hedonic pricing of location while, at the same time, it must prevent the movement of consumers between locations. Secondly, at each location, it must equal the marginal rate of substitution between land and the numeraire commodity. Our examples might be relevant to other spatial models, such as differentiated product and hedonic models, location

theory models and models of political party competition.

Bernhardt, Dan

PD July 23, 1987. **TI** Menu Costs, Sticky Prices, and Strategic Firm Interaction. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 688; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 20. **PR** $3.00 Canada; $3.50 United States and Foreign. **JE** 023, 611, 022. **KW** Spatial Competition. Heterogeneity. Sticky Prices. Price Adjustment Costs. Demand Theory.

AB Sticky nominal prices represent a cornerstone of many macroeconomic models. The effects of costly price adjustment on strategic firm interaction and the resulting price series implications are less established. This paper develops a spatial economy in which these interactions can be analyzed. In the two period environment, each firm, facing menu costs, must choose (whether to adjust) the price of its spatially identified good in the Bayesian Nash competition. As heterogeneity increases or competition decreases, prices are less frequently adjusted. These findings accord with empirical work which find that markets with more heterogeneous goods which are less competitive (eg. labor) have stickier prices than others (eg. wheat). Firms tend to adjust prices in concert and to be more responsive toward shocks which lead to price increases than decreases, as has been documented empirically. The magnitude of menu costs affect the ability of firms to collude, so expected profits may increase with menu costs. Thus, the model provides a twist to the classic kinked demand theory.

Bhatia, Kul B.

PD 1986. **TI** Short Run and Long Run in the Theory of Tax Incidence. **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8626C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 30. **PR** $4.00 Canadian. **JE** 323. **KW** Tax Policy.

Bhattacharya, Sudipto

PD January 1987. **TI** Tournaments, Termination Schemes, and Forcing Contracts. **AA** Bell Communications Research, Inc. **SR** Bell Communications Research Inc. Economics Discussion Paper: 34; Bell Communications Research, Inc. 435 South Street, Morristown, NJ 07960-1961. **PG** 22. **PR** No Charge. **JE** 025, 026, 821. **KW** Tournaments. Forcing Contracts. Incentives. Moral Hazard. Collusion. Unemployment.

AB The performance of tournament incentive schemes is compared with that of schemes based on termination threats, in an environment with two-sided moral hazard for both principal and agent, and "moving support" monitoring. The disadvantages of the former scheme that arise from having to eliminate "collusive" multiple equilibria among agents are contrasted with the "involuntary unemployment" deadweight-loss of termination-based schemes. Circumstances for dominance of one scheme over the other are identified.

PD April 1987. **TI** Heterogeneity, Tournaments, and Hierarchies. **AU** Bhattacharya, Sudipto; Guasch, J. Luis. **AA** Bhattacharya: Bell Communications Research, Inc. Guasch: University of California at San Diego. **SR** Bell Communications Research Inc. Economics Discussion Paper: 33; Bell Communications Research, Inc. 435 South Street, Morristown, NJ 07960-1961. **PG** 15. **PR** No Charge. **JE** 025, 821, 026, 511. **KW** Tournaments. Hierarchies. Moral Hazard. Organization. Wages. Promotion.

AB The design of optimal multi-agent incentive contracts has been the focus of much recent research on moral hazard, i.e., contractual inducement of unobservable actions taken by agents, given contracts designed by principals. Given the rapid pace of developments in this area, particularly on results associated with a scenario of a large set of ex ante homogeneous agents, the original empirical context which perhaps motivated the pioneering work of Lazear and Rosen has tended to become somewhat overlooked. Specifically, leaving aside state lotteries and football pools, tournament contracts are largely observed in the economic context of hierarchical organizations. In particular, the empirically observed contests typically have in each a restricted set of participants that is far smaller than the size of the organization which, at the top, is thought of as the principal. It is also the case that in most observed contests, agents who are compared with each other in order to determine wages and promotions work in the same or highly contiguous levels of the hierarchy in question. Most analytical models of hierarchies (e.g., Rosen '1982) would thus suggest that the inherent ability levels of participants, is (approximately) homogeneous within contests and heterogeneous across them. We seek to explain such "within cohorts" tournaments endogenously.

PD June 1987. **TI** Sharing Productive Knowledge in Internally Financed R&D Contests. **AU** Bhattacharya, Sudipto; Glazer, Jacob; Sappington, David E. M. **AA** Bell Communications Research, Inc. **SR** Bell Communications Research Inc. Economics Discussion Paper: 32; Bell Communications Research, Inc. 435 South Street, Morristown, NJ 07960-1961. **PG** 31. **PR** No Charge. **JE** 621, 511, 025, 026. **KW** R&D. Research and Development. Innovation. Motivation. Information.

AB We examine a two-stage model of research and development (R&D) contests. A social planner designs the R&D contest in an attempt to maximize expected social surplus. At the second stage, researchers choose R&D effort levels independently in an attempt to successfully achieve an innovation of value V. In the first stage, researchers are afforded the opportunity to share with one another the productive knowledge with which they are endowed. All rewards for disclosing production knowledge and for succeeding at the second stage can only be paid when the innovation is realized successfully. Also, the sum of all payments cannot exceed V. Thus, internal financing is required. We derive necessary and sufficient conditions for the social planner to be able to motivate both full sharing of knowledge and the socially desired levels of R&D effort. We also examine the optimal incentive structure when this ideal outcome cannot be implemented. We find that full sharing of information will always be motivated at the first stage, but that inefficiently high or

low R&D effort levels will be induced to better foster information sharing.

Blackburn, Keith

PD November 1987. **TI** International Policy Games in a Simple Macroeconomic Model with Incomplete Information: Some Problems of Credibility, Secrecy and Cooperation. **AA** Department of Economics, University of Western Ontario and Department of Economics, University of Southampton. **SR** University of Western Ontario Department of Economics Research Report: 8712; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 32. **PR** $5.00 Canada; $7.00 Elsewhere. **JE** 026, 431, 023. **KW** Games. Credibility. Cooperation. Information. Equilibria.

AB A stylized analytical model of two interdependent countries is used to examine game aspects of international macroeconomic policy design. The dominant theme centers on credibility problems arising from intrinsic uncertainty and the incentive for players to conceal or misrepresent private information in order to disguise their intention to export inflation abroad. By focusing on the precise incentive structure which motivates secrecy, together with the design of enforcement mechanisms for punishing such behavior, separating and pooling equilibria are identified which explicate conditions under which private information is revealed. These equilibria describe the state of inflation, output and the exchange rate and indicate circumstances under which either or both countries may experience a recession from non-cooperative behavior. Implications are drawn for cooperative decision making, emphasizing the dual role of cooperation in terms of both policy coordination and information coordination. This framework also demonstrates how various independent research can be viewed collectively within a single general paradigm.

Blanchard, Oliver J.

PD June 1987. **TI** Why Does Money Affect Output? A Survey. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 453; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 83. **PR** No Charge. **JE** 311, 023. **KW** Money Supply. Monetary Policy. Prices. Neutrality. Price Rigidity.

AB Much of the research on economic fluctuations has focused on the effects on nominal money on output. This is not because money is the major source of movements in output: it is not. Rather, it is because economic theory does not lead us to expect such effects. Indeed it holds that, with flexible prices, money should be approximately neutral, with changes in nominal money being reflected in nominal prices rather than in output. Of course we know that, even with competitive markets, full information and flexible prices, the neutrality proposition is only an approximation. Any anticipated change in nominal money must lead to anticipated changes in the price level, and thus introduce a wedge between the opportunity cost of holding money and the cost of capital; in all cases this will affect utility and, in most cases, is likely to affect capital accumulation as well (see Fischer '1979 and Chapter 8). Even unanticipated changes, if they are the result of open market operations are likely to be non neutral: open market transactions will usually involve some but not all holders of money and have distribution effects (see Rotemberg '1984, Grossman and Weiss '1983). But, except for the effects of steady inflation which may be substantial (especially when the non neutrality of the tax system is taken into account), these effects are mere intellectual curiosities; they can account neither for the size nor for the shape of the effect of money on output which we shall review below. For that reason, most of the research has taken as a given that prices do not adjust fully and instantaneously to nominal money and focused on the reasons for and implications of imperfect price adjustment. This will also be the approach of this survey.

Blomstrom, Magnus

PD September 1987. **TI** U.S. and Swedish Direct Investment and Exports. **AU** Blomstrom, Magnus; Lipsey, Robert E.; Kulchycky, Ksenia. **AA** Blomstrom and Lipsey: National Bureau of Economic Research. Kulchycky: University of Pennsylvania. **SR** National Bureau of Economic Research Working Paper: 2390; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 442, 411. **KW** Sweden. United States. Exports. Foreign Operations.

AB Overseas production in a country by affiliates of Swedish and United States firms rarely appears to displace exports from the two home countries and in most cases either has no effect or tends to increase home country exports. The positive effect on Swedish exports is evident not only with respect to levels of exports to different countries at one time but also with respect to changes in exports over time. The positive effect on United States exports can be observed for minority-owned as well as majority-owned foreign operations.

Bloom, David E.

PD August 1987. **TI** Arbitrator Behavior in Public Sector Wage Disputes. **AA** Columbia University. **SR** National Bureau of Economic Research Working Paper: 2351; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 832, 831, 833, 026. **KW** Labor. Unions. Wages. Arbitration. Negotiation. Labor Disputes. Compromise. Bargaining.

AB This study analyzes a new set of data on the decisions of conventional arbitrators. The main goal is to draw inferences about the extent to which conventional arbitration decisions are fashioned as mechanical compromises of the parties' final offers, without reference to the exogenous facts involved in different disputes. The results of the analysis are remarkably clear: conventional arbitrators tend to split-the-difference between the parties' final offers with virtually no evidence of additional systematic reference to the facts of the cases. However, since there is a substantial amount of unexplained variance in the arbitration decisions, this evidence of mechanical compromise behavior should be viewed as characterizing the overall operation of conventional arbitration mechanisms and not the behavior of individual arbitrators in any particular case. Indeed, the results are consistent

with the view that individual arbitrators pay close attention to the facts of the cases, but that there is considerable variation in the structure of different arbitrators' preference functions.

PD November 1987. **TI** Economic Development and the Timing and Components of Population Growth. **AU** Bloom, David E.; Freeman, Richard B. **AA** Bloom: Columbia University. Freeman: Harvard University. **SR** National Bureau of Economic Research Working Paper: 2448; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 112, 121. **KW** Economic Growth. Developing Countries. Productivity. Population Growth.

AB This paper examines the relationship between population growth and economic growth in developing countries from 1965 to 1985. Our results indicate that developing countries were able to shift their labor force from low-productivity agriculture to the higher-productivity industry and service sectors, and to increase productivity within those sectors, despite the rapid growth of their populations. We also find that at given rates of population growth, income growth is related to the time path of population growth and that population growth due to high birth and death rates is associated with slower income growth than population growth due to relatively low birth and death rates. Hence, the timing and components of population growth are important elements in the process of economic development.

Blough, Stephen R.

PD November 1987. **TI** Differences of Opinion and the Information Value of Prices. **AA** Department of Political Economy, Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: #201; Department of Political Economy, Johns Hopkins University, Baltimore, Maryland 21218. **PG** 36. **PR** No Charge. **JE** 313, 024, 021. **KW** Information. Efficient Markets. Heterogeneous Opinions.

AB If traders with the same information reach different conclusions about an asset's value, the usefulness of price as a signal of private information is likely to be impaired. Traders may not be able to disentangle the differing information of others from their differing opinions. A general model of opinions and information is presented, in which opinions differ because different weights are applied to a set of unbiased signals. A simple example shows how the information value of price decreases as uncertainty about opinions increases. A slightly more complex case considers a market where a small number of traders have accurate inside information. A modified model is used to examine the effect of heterogenous opinions in the market for "lemons".

Blume, Lawrence E.

PD August 1987. **TI** Implementation of Walrasian Expectations Equilibria. **AU** Blume, Lawrence E.; Easley, David. **AA** Blume: University of Michigan. Easley: Cornell University. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-8; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 21. **PR** No Charge. **JE** 026, 021. **KW** Rational Expectations. Information Transmission. Asymmetric Information.

AB In this paper we have studied the implementation of Walrasian equilibria in economies with differentially informed traders. We have shown that unless the economy's information structure satisfies a distribution condition called nonexclusivity, no Walrasian equilibrium is implementable by any trading mechanism. Nonexclusivity in information is sufficiently stringent that we view this Theorem as a negative result. But our analysis takes the distribution of information as exogenous when in fact the acquisition of information can be determined by market forces. The validity of our negative interpretation of the results presented here depends on whether nonexclusivity is satisfied in economies with endogenous determined information structures. We have not addressed this question here because much preliminary work needs to be done addressing the technological and incentive issues concerning the production, dissemination and acquisition of information.

PD August 1987. **TI** Lexicographic Refinements of Nash Equilibrium. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-9; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 38. **PR** No Charge. **JE** 026, 022. **KW** Game Theory. Lexicographic Ordering. Choice Theory.

AB My purpose in this paper is threefold. First, I will characterize the choice theory that underlies perfect and proper equilibrium. This choice theory is a version of lexicographic expected utility. I call it expected utility with lexicographic beliefs because each component of the expected utility vector has the same utility indicator, but (perhaps) different beliefs. This choice theory is justified by a minimal weakening of the Archimedian postulates in an axiom system for subjective expected utility. It is consistent with postulates of rationality such as the sure thing principle. Second, I will define equilibrium play for these preferences, and characterize perfect and proper equilibrium in the context of this equilibrium theory. I will identify those properties of higher order beliefs such that preference maximization with respect to these beliefs gives perfect equilibria and proper equilibria. Finally, I will characterize those higher order beliefs that give rise precisely to the admissible equilibria -- Nash equilibria in which no player plays a weakly dominated strategy.

Blundell, Richard

TI A Cohort Model of Central Heating Ownership in Great Britain. **AU** Baker, Paul; Blundell, Richard; Micklewright, John.

Boadway, Robin

PD July 1987. **TI** Tax-Transfer Policies and the Voluntary Provision of Public Goods. **AU** Boadway, Robin; Pestieau, Pierre; Wildasin, David. **AA** Boadway: Queens University. Wildasin: Indiana University. Pestieau: University of Liege. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-130; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 25. **PR** No Charge. **JE** 323, 324, 025.

KW Private Funding. Public Goods. Distortionary Taxation. Lump-Sum Taxes. Information. Fiscal Federalism.

AB The purpose of this paper is twofold. First, it extends previous models of non-cooperative private funding of pure public goods by allowing both for distortionary taxation of private goods and for subsidies based on contributions to the public goods. Second, it clarifies the type of behavioral and informational assumptions which are needed to result in neutrality of both lump-sum and distortionary policies. The analysis is developed in the context of fiscal federalism.

Bohrer, Robert

TI Power and Pre-Test Risk Comparisons for Conventional and Joint One Sided Tests. **AU** Judge, George; Bohrer, Robert; Yancey, Thomas.

Boldrin, Michele

PD January 1987. **TI** Paths Of Optimal Accumulation in Two-Sector Models. **AA** The University of Chicago. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: TR502; Institute for Mathematical Studies in the Social Sciences, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 53. **PR** $4.00. **JE** 023, 021, 111. **KW** Optimal Accumulation. Chaotic Dynamics. Competitive Equilibrium. Discounting.

AB We consider the competitive equilibrium over time of an economy with many identical agents and two goods: capital and consumption, produced by different industries using capital and labor as inputs. Adapting to our case some well established arguments a characterization of the dynamic competitive equilibrium is provided, which is shown to be equivalent to the solution of a one-dimensional concave optimization problem with the economy's capital stock as state variable. We try to investigate the dependence of the resulting optimal dynamics on the value of the discount factor and on the structure of the two-sector technology. We show not only that "everything can happen" in a neoclassical competitive equilibrium, but we also supplement some reasonable economy conditions which assure regular behaviors and others, equally acceptable from the standpoint of economic theory, which implies instead chaotic optimal paths. The interplay between the level of discounting and the relative capital/labor intensity of the two sectors is proved to be the critical element.

Bonanno, Giacomo

PD August 1987. **TI** The Logic of Rational Play in Extensive Games. **AA** Department of Economics, University of California at Davis. **SR** University of California at Davis Economics Department Working Paper: 298; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 41. **PR** No Charge. **JE** 026. **KW** Nash Equilibrium. Rational Solution. Propositional Logic.

AB The logical structure of rational play in extensive games is investigated. Players are assumed to share a common method of reasoning which is represented by the language of propositional logic, applied to a set of propositions containing a definition of individual rationality and a description of the game. A definition of rational solution is suggested and it is shown that rational solutions need not be Nash equilibria. Particular attention is paid to the logical basis for "rational" plans concerning unreached parts of the game tree.

Boorstein, Randi

PD November 1987. **TI** Quality Upgrading and its Welfare Cost in U.S. Steel Imports, 1969-74. **AU** Boorstein, Randi; Feenstra, Robert C. **AA** Boorstein: Federal Trade Commission. Feenstra: University of California at Davis. **SR** University of California at Davis Economics Department Working Paper: 301; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 31. **PR** No Charge. **JE** 422, 631, 024. **KW** Quality. Quota. Index Number. Steel Imports. Welfare Costs.

AB In this paper we measure the quality change which has occurred in U.S. 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 U.S. 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.

Bordo, Michael D.

PD August 1987. **TI** The ECU--An Imaginary or Embryonic Form of Money: What Can We Learn from History? **AU** Bordo, Michael D.; Schwartz, Anna J. **AA** Bordo: Carnegie-Mellon University. Schwartz: National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2345; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 311, 432, 441. **KW** European Currency Unit. Money. Currency. Monetary Integration.

AB We present historical examples of new forms of money that can be compared with the European Currency Unit. We first define the ECU in its official role before turning to developments in the private market for ECUs. We then examine historical antecedents of three attributes of ECUs: a unit of account; a basket of currencies; a basis for monetary integration. We discuss which features if any of ECUs are unique, and the contribution of the historical analysis to assessing the future of ECUs. We then ask whether governments or markets have been dominant in the emergence of new forms of money. Whatever emerges as money in an economy becomes the general means of payment. Prices of commodities, services, and bonds are expressed in units of the money. Buyers use the money to purchase goods or bonds and sellers receive the money in exchange for goods or bonds. We conclude that, at this stage in its history, the ECU at best is an embryonic form

of money, closer to historical imaginary monies than to existing currencies that the world has known.

PD November 1987. **TI** Credible Commitment and Exchange Rate Stability: Canada's Interwar Experience. **AU** Bordo, Michael D.; Redish, Angela. **AA** Bordo: Carnegie-Mellon University. Redish: University of British Columbia. **SR** National Bureau of Economic Research Working Paper: 2431; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 023, 431, 134, 133. **KW** Monetary Policy. Canada. Gold Standard Suspension. Floating Exchange Rate Regime.

AB In January 1929 the Canadian government suspended gold exports and began a floating exchange rate regime that endured until the onset of World War II. In sharp contrast with the experience of other countries which left the gold standard, deflation and declining economic activity continued in Canada until 1933. This paper examines the determinants of the Canadian exchange rate in the 1930's and provides an answer to the question of why the Canadian dollar did not depreciate in the early 1930's despite Canada's de facto departure from the Gold Standard. We develop the answer in two stages. First, we show that the government made a clear commitment to maintain a contractionary monetary policy. It did so because it believed: that monetary expansion would increase the value of external obligations without reducing the value of domestic obligations; and that even if all contractual obligations were met, Canada would lose her reputation as a responsible debtor. Second, we argue that the government's commitment was viewed by the public as credible. The credible commitment dominated market agent's expectations of the evolution of the exchange rate.

Borsch, Supan Axel

PD August 1987. **TI** Household Dissolution and the Choice of Alternative Living Arrangements Among Elderly Americans. **AA** Harvard University. **SR** National Bureau of Economic Research Working Paper: 2338; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 918, 921, 931, 841, 932. **KW** Aged. Housing Choice. Household Formation. Multinomial Choice Model. Life Style.

AB For the elderly, housing choices are more complex than merely the choice of housing expenditure, dwelling size, and tenure. They also include the choice among alternative living arrangements such as living in one household with their adult children or sharing accomodations with other related or unrelated elderly. We first contrast living arrangements of elderly Americans with the population under age 65 and describe the changes from 1974 to 1983. We detect a growing discrepancy in household formation/dissolution patterns between the elderly and the younger population: after a steady decline in the 1970s, we observe a rapid increase in the rate of "doubled-up" young families in the beginning of the 1980s. No such development can be found among elderly Americans. Instead, the proportion of elderly living independently steadily increases from 1974 to 1983. To explain this discrepancy, we estimate a multinomial choice model among living independently and six categories of alternative living arrangements. The main finding is the predominance of demographic determinants as opposed to economic variables. The difference in income growth between the young and the elderly -- real income declined for the young but increased for the elderly -- can explain only part of the discrepancy in household dissolution decisions. The remaining discrepancy must be attributed to inertia and low mobility rates.

Boskin, Michael J.

PD August 1987. **TI** Government Saving, Capital Formation and Wealth in the United States, 1947-1985. **AU** Boskin, Michael J.; Robinson, Marc S.; Huber, Alan M. **AA** Boskin: National Bureau of Economic Research. Robinson: GM Research Laboratories. Huber: Stanford University. **SR** National Bureau of Economic Research Working Paper: 2352; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 042, 322, 324, 224, 221. **KW** National Wealth. Federal Government. State-Local Government. Government Investment. National Income Accounts. Fiscal History.

AB This paper presents new updated and improved estimates of various components of governments' contribution to national wealth and its growth in the post-war period. The primary conclusions drawn are: 1. The federal government's assets, tangible and financial, are substantial; they grew more rapidly than the national debt in the 1970s. 2. Since 1980, conventional liabilities have grown much faster than assets, causing about a $727 billion decline in federal "net worth"; 3. The state-local government sector contributes importantly to government and national wealth. 4. Total government reproducible capital was about 55 per cent of the corresponding private non-residential capital stock in 1985; 5. Government net investment has often been sufficient to turn the government sector into a net saver despite large budget deficits; 6. Extending the traditional National Income Accounts to include imputed returns to government capital and consumer durables while treating government net investment and durables purchases as saving indicate that the share of national output devoted to consumption has risen substantially, while that devoted to net saving has fallen sharply in the period 1951-85. 7. The inclusion of consumer durables and government tangible investment raises the national saving rate substantially. Thus, the data presented in this paper reveal much about the post-war fiscal history of the United States. In addition to their importance in understanding trends in national wealth, they may also prove important inputs into future studies of the long-term growth of the economy and to the short-run effects of fiscal policy.

Brams, Steven J.

PD November 1987. **TI** National Security Games. **AU** Brams, Steven J.; Kilgour, D. Marc. **AA** Brams: New York University. Kilgour: Wilfred Laurier University. **SR** New York University Economic Research Reports: RR 87-42; New York University, Faculty of Arts and Science, Department of Economics, Washington Square, New York, NY 10003. **PG** 23. **PR** No Charge. **JE** 026, 114. **KW** National Security. Conflict. Two-Person Game. Two-Stage Game. Nash Equilibrium.

AB Issues that arise in using game theory to model national security problems are discussed, including positing nation-states as players, assuming that their decision makers act rationally and possess complete information, and modeling certain conflicts as two-person games. A generic two-person game called the Conflict Game, which captures strategic features of such variable-sum games as Chicken and Prisoners' Dilemma, is then analyzed. Unlike these classical games, however, the Conflict Game is a two-stage game in which each player can threaten to retaliate -- and carry out this threat in the second stage -- if its opponent chose noncooperation in the first stage. Conditions for the existence of different pure-strategy Nash equilibria, or stable outcomes, are found, and these results are extended to situations in which the players can select mixed strategies (i.e., make probabilistic threats or choices). Although the Conflict Game sheds light on the rational foundations underlying arms races, nuclear deterrence, and other strategic situations, more detailed assumptions are required to tie this generic game to specific conflicts. ay liquidate even in circumstances when their resources are most valuable if they continue operating and they may continue to operate even when their resources can better be employed in some new use. When reorganization is added as an additional bankruptcy alternative, the analysis suggests that too many failing firms are likely to continue operating in the same line of business in which they were previously making losses. Thus the United States bankruptcy systems appears to delay the movement of resources to new and higher value uses.

Branson, William H.

PD November 1987. **TI** The Real Exchange Rate and Employment in U.S. Manufacturing: State and Regional Results. **AU** Branson, William H.; Love, James P. **AA** Princeton University. **SR** National Bureau of Economic Research Working Paper: 2435; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 631, 941, 431. **KW** Exchange Rate. Manufacturing.

AB In a series of earlier papers we have examined the impact of exchange rate movements on employment and output in the manufacturing sector, disaggregated by industry sector and by production and non-production workers. In this paper we examine the impact of exchange rate movements on manufacturing employment, disaggregated geographically, using census divisions, regions, states and SMSA's as the unit of analysis.

Brecher, Richard A.

PD 1987. **TI** Policy-Induced Inflows of Foreign Capital in the Presence of Rigid-Wage Unemployment. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8706C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PR** $4.00 Canadian. **JE** 441, 422. **KW** Capital. Trade Policy. Unemployment.

Buiter, Willem

PD November 1987. **TI** The Current Economic Situation, Outlook and Policy Options, with Special Emphasis on Fiscal Policy Issues. **AA** Yale University. **SR** Centre for Economic Policy Research Discussion Paper: 210; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 91. **PR** 1 pound ($2.00) individuals; 1.50 pounds ($3.00) companies, libraries, institutions. **JE** 133, 321, 311, 431. **KW** Interdependence. Coordination. Fiscal Policy. External Debt. Monetary Policy. Global Economic Situation.

AB The paper provides an account of the current global economic situation, outlook and policy options. Medium-term prospects are mediocre and fraught with considerable downside risk. Fiscal and monetary policy options for the main industrial countries to improve global economic performance are outlined. The worries about the United States fiscal position are shown to be exaggerated. It is also argued that while the United States economy is well on course to become a net external debtor, it has not yet reached that position. In the longer run, prosperity or depression will be determined to a large extent by policy choices.

Burgess, Simon M.

PD September 1987. **TI** Intertemporal Rules with Variable Speed of Adjustment: An Application to U.K. Manufacturing Employment. **AU** Burgess, Simon M.; Dolado, Juan J. **AA** Institute of Economics and Statistics, Oxford. **SR** Oxford Applied Economics Discussion Paper: 32; Institute of Economics and Statistics, St. Cross Building, Manor Road, Oxford OX1 3UL, ENGLAND. **PG** 32. **PR** No Charge. **JE** 023, 631, 212, 131. **KW** Euler Equation. Adjustment Costs. Employment. Manufacturing Sector. United Kingdom.

AB This paper presents a procedure to estimate intertemporal dynamic decision rules where adjustment costs are assumed to be variable. The estimation is based on the Euler equation. For purposes of illustration we concentrate on an employment function for U.K. manufacturing sector where we find very significant effects of some variables which influence adjustment costs. Finally, we point out an empirical result which has interesting implications when evaluating tests of 'efficient bargain' models.

Campbell, John Y.

PD November 1987. **TI** Permanent Income, Current Income and Consumption. **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: 2436; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 921, 023. **KW** Permanent Income Hypothesis. United States. Time Aggregation.

AB This paper reexamines the consistency of the permanent income hypothesis with aggregate, post-war, United States data. The permanent income hypothesis is nested within a more general model in which a fraction of income accrues to individuals who consume their current income rather than their permanent income. This fraction is estimated to be 40 or 50 percent, indicating a substantial departure from the permanent income hypothesis. This finding is robust to various statistical

problems that have plagued previous work, such as time aggregation, and cannot be easily explained by appealing to changes in the real interest rate or to non-separabilities in the utility function.

Canner, Glenn B.

PD October 1987. **TI** The Effects on Consumers and Creditors of Proposed Ceilings on Credit Card Interest Rates. **AU** Canner, Glenn B.; Fergus, James T. **AA** Board of Governors of the Federal Reserve System. **SR** Board of Governors of the Federal Reserve System Staff Studies Paper: 154; Staff Studies Section, Division of Research and Statistics, Board of Governors of the Federal Reserve System, Washington, DC 20551. **PG** 26. **PR** No Charge. **JE** 921, 315, 612, 311. **KW** Credit Cards. Interest Rate Regulation. Interest Rate Ceilings.

AB Most interest rates have fallen substantially since the early 1980s, but those on credit card debt have changed relatively little. This disparity has led to assertions that credit card rates are excessive in view of the decline in the funding costs of card issuers. As a result, several bills were considered in the Congress in 1986 that would have imposed a nationwide rate ceiling on credit card accounts. This study focuses on issues raised by the proposed federal limits on credit card rates, including the likely effects of such ceilings on the availability of credit card services to different groups of consumers. It also explores the consequences, for consumers, of possible creditor responses to rate ceilings, such as modifying nonrate prices of card services, altering other terms on credit card accounts, and raising prices on merchandise.

Case, Karl E.

PD October 1987. **TI** Prices of Single Family Homes Since 1970. New Indexes for Four Cities. **AU** Case, Karl E.; Shiller, Robert J. **AA** Case: Wellesley College. Shiller: Yale University. **SR** Yale Cowles Foundation Discussion Paper: 851; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 52. **PR** No Charge. **JE** 932, 131, 212. **KW** Real Estate. Pricing Index for Homes. Weighted Repeat Sales Method.

AB This paper uses data on nearly a million homes sold in four metropolitan areas -- Atlanta, Chicago, Dallas and San Francisco -- to construct quarterly indexes of existing home prices between 1970 and 1986. We propose and apply a new method of constructing such indexes which we call the weighted repeat sales method (WRS). We believe the results give an accurate picture of the actual rate of appreciation in home prices in the four cities. The paper explains the construction of the index, discusses the results and compares them with the National Association of Realtors data on the median price of existing single family homes for the period 1981 - 1986.

Cave, J. A. K.

PD March 1987. **TI** Refinements of Sequential Equilibrium in a Legal Settlements Game. **AA** The Rand Corporation. **SR** Rand Paper: P-7212-1; The Rand Corporation, 1700 Main Street, PO Box 2138, Santa Monica, CA 90406-2138. **PG** 33. **PR** No Charge. **JE** 026, 024, 916. **KW** Signaling Game. Perfect Equilibria. Proper Equilibria. Welfare Results.

AB This paper applies several refinements of sequential equilibrium to a signaling game of legal settlement, in which the informed plaintiff has a continuum of pure strategies. The principal results are that (1) such refinements can greatly reduce the scope of equilibrium behavior; (2) there is no necessary connection between divine and perfect equilibria; and (3) perfect, divine, and proper equilibria of games with continuous pure strategy spaces may use weakly dominated strategies with positive probability.

PD March 1987. **TI** Long-Term Competition in a Dynamic Game: The Cold Fish War. **AA** The Rand Corporation. **SR** Rand Paper: P-7324; The Rand Corporation, 1700 Main Street, PO Box 2138, Santa Monica, CA 90406-2138. **PG** 30. **PR** No Charge. **JE** 026, 717. **KW** Repeated Games. History-Dependent Strategies. Cooperative Games. Pareto Optimal Equilibria.

AB In repeated games, simple forms of dependence on history have been used to characterize various kinds of equilibrium behavior. This paper extends the use of history-dependent strategies to an example of a more general class of games called dynamic games. The "Great Fish War" of D. Levhari and L. Mirman provides an example of a dynamic game in which several players jointly exploit a renewable resource. This paper describes the model, the recursive equilibrium, and the Pareto optima; defines and characterizes the recursively supported equilibria and gives conditions for their Pareto optimality; and presents and analyzes an appropriate definition of "renegotiation proof equilibrium" for this example. The paper generally concludes that the use of threat strategies can result in Pareto improvements, but that repeated or severe defections limit cooperative possibilities. The methods developed for this example suggest a general approach to the analysis of cooperative institutions.

PD April 1987. **TI** Introduction to Game Theory. **AA** The Rand Corporation. **SR** Rand Paper: P-7336; The Rand Corporation, 1700 Main Street, PO Box 2138, Santa Monica, CA 90406-2138. **PG** 23. **PR** No Charge. **JE** 026, 012. **KW** Noncooperative Games. Agreements. Repeated Games.

AB This paper, originally written as a pedagogical note for a RAND Graduate School course, introduces the concepts and tools of game theory in the context of microeconomics. The author defines normal and extensive forms of a game, and pure and mixed strategies. For games of opposed interests, the basic concepts of maxmin and equilibrium strategies are defined and illustrated. Moving to general noncooperative games, the concepts of Stackelberg equilibrium and disequilibrium are presented in a duopoly game, and two logically consistent foundations for the competitive solution are given. The credibility of threats is discussed, and perfect equilibrium defined. Finally, the author discusses agreements, defining self-enforcing agreements, discussing institutional arrangements that facilitate cooperation, and concluding with a description of cooperation in repeated games.

PD April 1987. **TI** A Median Choice Theorem. **AA** The Rand Corporation. **SR** Rand Paper: P-7333; The Rand Corporation, 1700 Main Street, PO Box 2138, Santa Monica, CA 90406-2138. **PG** 7. **PR** No Charge.

JE 022. **KW** Condorcet Winner. Median Voter. Marketing Boards. Nash Equilibrium.

AB This paper analyzes voting situations where individual preferences need not be single-peaked, but satisfy a hierarchical ordinal equivalence condition. Such preferences arise in marketing boards and models of pollution abatement. The ideal point of the median voter is the unique Condorcet winner, and it is immune to manipulation.

Cecchetti, Stephen G.

PD June 1987. **TI** The Case of the Negative Nominal Interest Rates: U.S. Government Securities During the Great Depression. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 429; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 47. **PR** $3.00. **JE** 311, 313, 042, 223. **KW** Interest Rates. Government Securities. Depression.

AB This paper describes how to value the exchange provision and correct the measurement of the yields of traded securities. These are then used to construct estimates of the term structure of nominal interest rates monthly from 1929 to 1949. These new data replace the sketchy data contained in the Federal Reserve Boards Banking and Monetary Statistics of the United States, and for the first time allow one to follow changes in the shape of the term structure. The interest rate data can be added to new data on three and six month time loans in Mankiw and Miron(1986) and the new output, production and unemployment data in Romer (1986a, 1986b, 1986c and 1987). The remainder of this paper is divided into five sections. Section II provides a discussion of the raw data that were collected and used to estimate the yield curves. This is followed by a explanation of how the exchange provision was valued and used to correct the apparent negative nominal yields. Section IV examines the tax status of various securities. The following section describes the estimation of the yield curves, which uses a technique derived by Nelson and Seigel (1985) and presents the estimates themselves.

Chaiken, Jan M.

TI Identifying High-Rate Serious Criminals from Official Records. **AU** Rolph, John E.; Chaiken, Jan M.

Chaloupka, Frank

TI Nutrition and Infant Health in Japan. **AU** Yamada, Tadashi; Yamada, Tetsuji; Chaloupka, Frank.

Cheng, Harrison H. C.

PD August 1987. **TI** The Existence of Asset-Market Equilibrium and the Set of Arbitrage in Infinite Dimensional Spaces. **AA** University of Southern California. **SR** University of Southern California Modelling Research Group Working Paper: M8731; Department of Economics, University of Southern California, University Park, Los Angeles, CA 90089-0152. **PG** 18. **PR** No Charge. **JE** 021, 024, 026. **KW** Competitive Equilibria. Short Sales. Infinitely Many Assets. Arbitrage Set.

AB A general existence result for competitive equilibrium in asset markets with short sales is obtained. The number of assets may be infinite. The commodity space can be any Hausdorff locally convex topological vector space. Two important assumptions are: (1) there exists an open convex cone of arbitrage, (2) the set of all individually rational attainable allocations is weakly compact.

Clark, Robert L.

TI Pension Wealth, Age-Wealth Profiles, and the Distribution of Net Worth. **AU** McDermed, Ann; Clark, Robert L.; Allen, Steven G.

Colbourn, Charles J.

PD March 1987. **TI** Matroid Steiner Problems, the Tutte Polynomial and Network Reliability. **AU** Colbourn, Charles J.; Pulleyblank, William R. **AA** University of Waterloo, Ontario, CANADA. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87458-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 14. **PR** No Charge. **JE** 213. **KW** Steiner Problem. Network Reliability Problem. Tutte Problem.

AB A matroid Steiner problem is obtained by selecting a suitable subfamily C of the cocircuits, and then defining a Steiner "tree" to be a minimal set having nonempty intersection with all members of C. The family of all sets whose complements contain Steiner trees forms an independence system which we call the Steiner complex. We show that this Steiner complex can be partitioned into as many intervals as there are bases in the underlying matroid. As a special case, we obtain explicit partitions of the independent sets of any matroid. It also shows that both F-complexes arriving in network reliability problems and the family of bipartite subgraphs of a graph can be partitioned into as many intervals as there are spanning trees. We also describe a generalization of the Tutte polynomial for matroids to an extended Tutte polynomial for Steiner complexes. This provides an alternative method for evaluating the independence or reliability polynomial. We also discuss applications to network reliability.

Cook, W.

PD February 1987. **TI** Chvatal Closures for Mixed Integer Programming Problems. **AU** Cook, W.; Kannan, R.; Schrijver, A. **AA** Cook: University of Bonn. Kannan: University of Pittsburgh. Schrijver: University of Tilburg. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 86444-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 19. **PR** No Charge. **JE** 213. **KW** Cutting Plane Systems. Polyhedron. Chvatal Problems. Integral Solution.

AB Chvatal introduced the idea of viewing cutting planes as a system for proving that every integral solution of a given set of linear inequalities satisfies another given linear inequality. This viewpoint has proven to be very useful in many studies of combinatorial and integer programming problems. The basic ingredient in these cutting-plane proofs is that for a polyhedron P and

integral vector w, if max'wx given x is an element of P, wx integer = t, then wx <= t is valid for all integral vectors in P. We consider the variant of this step where the requirement that wx be integer may be replaced by the requirement that w(bar)x be integer for some other integral vector w(bar). The cutting-plane proofs thus obtained may be seen either as an abstraction of Gomory's mixed integer cutting-plane technique or as a proof version of a simple class of the disjunctive cutting planes studied by Balas and Jeroslow. Our main result is that for a given polyhedron P, the set of vectors that satisfy every cutting plane for P is again a polyhedron. This allows us to obtain a finite recursive procedure for generating the mixed integer hull of a polyhedron, analogous to the process of repeatedly taking Chvatal closures in the integer programming case. These results are illustrated with a number of examples from combinatorial optimization. Our work can be seen as a continuation of that of Nemhauser and Wolsey on mixed integer cutting planes.

Cooper, Russell

PD June 1987. **TI** Dynamic Behavior of Imperfectly Competitive Economies with Multiple Equilibria. **AA** Stanford University. **SR** National Bureau of Economic Research Working Paper: 2388; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 026. **KW** Nash Equilibrium. One-Shot Games. Discrete Decision. Pareto.

AB This paper investigates the dynamic behavior of an economy with multiple Nash equilibria. The first part of the paper analyzes an abstract game exhibiting multiple equilibria. A history dependent selection criterion is proposed which induces correlated behavior in equilibrium even though agents are playing one-shot games and disturbances are not correlated over time. The second part of the paper investigates a specific model of multiple equilibria. Here the multiplicity is induced by the presence of a discrete decision on the part of firms regarding their choice of technique. The implications of the selection criterion introduced in the first part of the paper are illustrated through this example. Again correlated behavior emerges in a sequence of independent one-shot games. The model economy may also experience prolonged periods in which a low productivity technology is in use and then, as a consequence of a large real disturbance, may switch to an alternative equilibrium in which a high productivity technology is utilized. The paper also discusses the Pareto ordering of these equilibria.

PD November 1987. **TI** Inventories and the Propagation of Sectoral Shocks. **AU** Cooper, Russell; Haltiwanger, John. **AA** Cooper: Stanford University. Haltiwanger: University of Maryland. **SR** National Bureau of Economic Research Working Paper: 2425; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 131, 023. **KW** Imperfect Competition. Dynamic. Real Business Cycle. Demand Linkages. Employment Movements.

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 model 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 on 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.

Corman, Hope

PD August 1987. **TI** A Cost-Effectiveness Analysis of Strategies to Reduce Infant Mortality. **AU** Corman, Hope; Joyce, Theodore; Grossman, Michael. **AA** Corman: Manhattan College. Joyce: Baruch College, City University of New York. Grossman: City University of New York, Graduate School. **SR** National Bureau of Economic Research Working Paper: 2346; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 913, 212, 911, 851. **KW** Infant Mortality. Babies. Birth. Neonatal Mortality. Health Care. Government Health Programs. Family Planning. Abortion. Family.

AB This study compares the cost-effectiveness of various health inputs and government programs in reducing race-specific neonatal mortality or death in the first twenty-seven days of life. Approximately two-thirds of all infant deaths occur within this time period. The programs and inputs at issue are teenage family planning use, the supplemental food program for women, infants and children (WIC), use of community health centers and maternal and infant care projects, abortion, prenatal care, and neonatal intensive care. Using an economic model of the family as the analytical framework, effectiveness is determined by using ordinary least squares and two-stage least squares to estimate infant health production functions across large counties in the United States in 1977. Estimates of costs are from a number of published sources. We find the early initiation of prenatal care to be the most cost-effective means of reducing the neonatal mortality rate for black and whites. Moreover, blacks benefit more per dollar of input use than whites. Neonatal intensive care, although the most effective means of reducing neonatal mortality rates, is one of the least cost-effective strategies.

Cornwell, Christopher

PD November 1987. **TI** Models for which the MLE and the Conditional MLE Coincide. **AU** Cornwell, Christopher; Schmidt, Peter. **AA** Cornwell: Department of Economics, West Virginia University. Schmidt: Department of Economics, Michigan State University. **SR** Michigan State Econometrics and Economic Theory Workshop Paper: 8709; Department of Economics, Michigan State University, East Lansing, Michigan 48824. **PG** 25. **PR** No Charge. **JE** 211. **KW** Panel Data. Fixed Effects. Conditional Likelihood. Sufficient Statistics.

AB In panel data models with fixed effects, the maximum likelihood estimator (MLE) is generally inconsistent, because the number of parameters increases with sample size. A common solution is to condition on

sufficient statistics for the effects. The conditional maximum likelihood estimator (CMLE) maximizes the resulting conditional likelihood and is generally consistent. In the linear regression model, however, the MLE is consistent and in fact coincides with the CMLE. We extend this result to the simultaneous equations model, and we allow exogenous variables other than the intercept to have individually-varying coefficients, so long as the set of such variables is the same in each equation.

Courakis, Anthony S.

PD September 1987. **TI** Labour Skills and Human Capital in the Explanation of Trade Patterns. **AA** Brasenose College, Oxford. **SR** Oxford Applied Economics Discussion Paper: 33; Institute of Economics and Statistics, St. Cross Building, Manor Road, Oxford OX1 3UL, ENGLAND. **PG** 23. **PR** No Charge. **JE** 411, 421, 810, 851. **KW** Human Capital. International Trade. Trade Patterns. Labor Skills.

AB In the last fifteen years a considerable empirical literature has been amassed that ventures to account for the sectoral pattern of trade of various economies, in terms of a model that distinguishes between three factors of production - notably physical capital, labour, and human capital. Relative to alternative specifications that either abstract from human capital, or aggregate human capital with physical capital, or allow for the quality composition of the labour force by distinguishing between groups of different levels of skill, such a model is claimed to have both conceptual and empirical merit. The discussion in this paper questions the wisdom of relying a priori on econometric specifications that involve the constraint that the effect of human capital on trade performance is independent of the composition of human capital. It is stressed that, in a setting devoid of any precise analytical reasoning that will sustain such a premise, this type of specification comprises an inefficient modelling procedure that will often imply that information within our reach and consistent with the neo-factor proportions paradigm is not accessed and may even result in erroneous inferences about a country's pattern of comparative advantage.

Crane, Keith

PD May 1987. **TI** Military Spending in Eastern Europe. **AA** The Rand Corporation. **SR** Rand Report: R-3444; The Rand Corporation, 1700 Main Street P.O. Box 2138, Santa Monica CA 90406-2138. **PG** 104. **PR** No Charge. **JE** 114, 212. **KW** Military Spending. Forecasted Defense Spending. Defense Budgets. Europe.

AB This report provides military expenditure estimates for the Northern Tier countries of the Warsaw Pact (Czechoslovakia, the German Democratic Republic, and Poland) and Hungary, assesses the political and economic factors that determine these spending levels, and discusses the probable course of military spending in these countries over the next several years. These estimates suggest that the defense budgets reported by the East Europeans contain most major components of military spending. A statistical analysis of factors that may determine military spending levels indicates the primary determinant is available resources -- i.e., utilized national income. The prospects for large surges in military spending in the next few years are therefore low.

Cumby, Robert

PD September 1987. **TI** Financial Policy and Speculative Runs with a Crawling Peg: Argentina 1979-1981. **AU** Cumby, Robert; van, Wijnbergen Sweder. **AA** Cumby: New York University. van Wijnbergen: The World Bank. **SR** National Bureau of Economic Research Working Paper: 2376; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 441, 411, 121, 023. **KW** Balance of Payment Crisis. Balance of Payments. Credit Policy. Exchange Rate.

AB In this paper we present a model of a balance-of-payments crisis and use it to examine the Argentine experiment with a crawling peg between December 1978 and February 1981. The approach taken allows us to examine the evolution of a crisis when the collapse is not a perfectly-foreseen event. The implementation of the model yields plausible values of the one-month ahead probabilities of a collapse of the crawling peg. The probabilities exhibit a sharp increase in the middle of 1980 and indicate a significant loss of credibility throughout the remainder of the year. The results suggest that viability of an exchange rate regime depends strongly on the domestic credit policy followed by the authorities. If this policy is not consistent with the exchange rate policy pursued by the authorities, confidence in the exchange rate policy is undermined.

PD September 1987. **TI** Consumption Risk and International Asset Returns: Some Empirical Evidence. **AA** New York University. **SR** National Bureau of Economic Research Working Paper: 2383; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 441, 411. **KW** Asset Pricing. Consumption. Stock Returns.

AB The paper examines if real stock returns in four countries are consistent with consumption-based models of international asset pricing. The paper finds that ex-ante real stock returns exhibit statistically significant fluctuations over time and that these fluctuations cannot be explained by consumption-based models when the conditional covariances between real stock returns and the rate of change of consumption are assumed to be constant over time. These conditional covariances are then modeled and the paper finds that they too exhibit statistically significant fluctuations over time. However, even when conditional covariances are allowed to change over time, the paper finds that the consumption-based models do not fully explain real stock returns.

PD September 1987. **TI** Is It Risk? Explaining Deviations from Uncovered Interest Parity. **AA** New York University. **SR** National Bureau of Economic Research Working Paper: 2380; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 023. **KW** Speculation. Forward Rates. Risk Premium. Foreign Exchange.

AB This paper analyzes ex-ante returns to forward speculation and asks if these returns can be explained by models of a foreign exchange risk premium. After presenting evidence that both nominal and real expected speculative profits are non-zero, the paper examines if real returns to forward speculation are consistent with

consumption-based models of risk premia. Estimates of the conditional covariance between real speculative returns and real consumption growth are presented and, like ex-ante returns to forward speculation, they exhibit statistically significant fluctuations over time and often change sign.

Cutler, David M.

PD March 1988. **TI** What Moves Stock Prices? **AU** Cutler, David M.; Poterba, James M.; Summers, Lawrence H. **AA** Cutler and Poterba: Massachusetts Institute of Technology. Summers: Harvard. **SR** National Bureau of Economic Research Working Paper: 2538; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 313, 026. **KW** Stock Returns. Information. Political Events. Stock Market.

AB This paper estimates the fraction of the variance in aggregate stock returns that can be attributed to various kinds of news. First, we consider macroeconomic news and show that it is difficult to explain more than one third of the return variance from this source. Second, to explore the possibility that the stock market responds to information that is omitted from our specifications, we also examine market moves coincident with major political and world events. The relatively small market responses to such news, along with evidence that large market moves often occur on days without any identifiable major news releases, casts doubt on the view that stock price movements are fully explicable by news about future cash flows and discount rates.

Danchick, Roy

TI Air Force Academy Attrition: A New Perspective on the College Dropout Problem. **AU** Salant, Stephen W.; Danchick, Roy.

Davidson, Carl

PD September 1987. **TI** Optimal Labor Market Policies with Search Unemployment. **AU** Davidson, Carl; Martin, Lawrence; Matusz, Steven. **AA** Department of Economics, Michigan State University. **SR** Michigan State Econometrics and Economic Theory Workshop Paper: 8706; Department of Economics, Michigan State University, East Lansing, MI 48824. **PG** 42. **PR** No Charge. **JE** 824, 822, 021. **KW** Unemployment Compensation. General Equilibrium. Structure of Unemployment.

AB In this paper, we analyze a two sector general equilibrium model that allows for a positive level of equilibrium unemployment. Unemployment arises due to frictions in the labor market that keep firms and workers from finding each other immediately. The types of frictions encountered in the two sectors are assumed to be different so that the level and structure of unemployment varies across sectors. We demonstrate that, under certain assumptions about the search technology, the economy operates along its static production possibilities frontier. It will not, however, produce the allocation that maximizes the utility from instantaneous consumption. In fact, the economy produces too little of the good produced in the sector with high unemployment. We show that unemployment compensation is an effective way to transfer resources to the desired sector, and therefore improve static efficiency. On the other hand, we also demonstrate that due to the fact that the structure of unemployment differs across sectors, the economy produces too many jobs of low value. We discuss labor market policies that would be helpful in ameliorating this problem and explain why the durability of a job is important. In particular, we show that the durability of a job is an important element of its dynamic social value.

Davidson, Russell

PD July 1987. **TI** Double-Length Artificial Regressions. **AU** Davidson, Russell; MacKinnon, James. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 691; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 22. **PR** $3.00 Canada; $3.50 United States and Foreign. **JE** 211. **KW** Gauss-Newton Regression. Specification Tests. Maximum Likelihood. Functional Form. Nonlinear Regression.

AB Artificial linear regressions often provide a convenient way to calculate test statistics and estimated covariance matrices. This paper discusses one family of these regressions, called "double-length" because the number of "observations" in the artificial regression is twice the actual number of observations. These double-length regressions can be useful in a wide variety of situations. They are quite easy to calculate, and seem to have good properties when applied to samples of modest size. We first discuss how they are related to the more familiar Gauss-Newton and squared-residuals regressions for nonlinear regression models, then show how they may be used to test for functional form, and finally discuss several other ways in which they may be useful in applied econometric work.

TI Testing for Consistency Using Artificial Regressions. **AU** MacKinnon, James G.; Davidson, Russell.

Davies, James B.

TI Social Security, Longevity, and Moral Hazard. **AU** Kuhn, Peter; Davies, James B.

Davis, Carolyn D.

PD August 1987. **TI** Stock Market Volatility. **AU** Davis, Carolyn D.; White, Alice P. **AA** Board of Governors of the Federal Reserve. **SR** Board of Governors of the Federal Reserve System Staff Studies Paper: 153; Staff Studies Section, Division of Research and Statistics, Board of Governors of the Federal Reserve System, Washington, DC 20551. **PG** 14. **PR** No Charge. **JE** 313, 311. **KW** Stock Market. Stock Prices. New York Stock Exchange. Financial Instruments. Trading Innovations. Volatility.

AB This study reviews innovative strategies in stock trading and examines several aspects of share price volatility to determine whether there has been a measurable change in recent years. The empirical review cannot appraise the volatility associated with specific trading innovations but rather looks at changes in underlying volatility. It also does not directly address intraday volatility because transactions prices, other than those for the last transactions of each day, are not readily available. The first section reviews the institutional

factors that are believed to be affecting stock price volatility, and the second section examines the volatility itself. The concluding section surveys changing economic and financial conditions as potential sources of the observed volatility of stock prices.

Day, Richard H.

PD September 1987. **TI** Economic Development in the Very Long Run. **AA** University of Southern California. **SR** University of Southern California Modelling Research Group Working Paper: M8732; Department of Economics, University of Southern California, University Park, Los Angeles, CA 90089-0152. **PG** 46. **PR** No Charge. **JE** 023, 112, 113. **KW** Complex Dynamics. Regime Switching. Infrastructure.

AB This paper is concerned with epochal economic change. A sufficiently great population facilitates an enlarged infrastructure which in turn makes possible a new regime with improved productivity and modified mortality. Continued growth within a given regime eventually depresses productivity; as population expands internal and external pressures create the conditions for a possible transition. Irregular fluctuations with reswitching may occur prior to an escape to a new age. Development in the very long run is thus a multiple phase process involving the switching of regimes brought about by intrinsic demoeconomic forces.

de Janvry, Alain

PD June 1987. **TI** Agrarian Structure, Technological Innovations, and the State. **AU** de Janvry, Alain; Sadoulet, Elisabeth; Fafchamps, Marcel. **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: 442; 207 Giannini Hall, University of California, Berkeley, CA. **PG** 51. **PR** $10.20. **JE** 621, 711, 712. **KW** Technological Change. Innovations. Agriculture. Induced Innovations. Technological Bias.

AB A major advance was made with the theory of induced technological innovations which uses price signals to explain rate and bias. We start by reviewing the achievements of this theory to conclude that price signals are indeed a necessary but far from sufficient explanation. Using a transactions cost approach in a context of incomplete markets, we show that the structure of asset ownership is also an important determinant of the rate and bias of technological change. Finally, when technology is a public good generated in public research institutions, collective action can be used to affect the allocation of resources to alternative technological innovations. The structure of political power can thus further distort the rate and bias of technological change. We use a formal model of optimum technological choice to show in what direction structural characteristics of agriculture and collective action affect the bias of technological change. We also use cross-country data to show that structural characteristics and the size of public research budgets do indeed affect the nature of technological change beyond the effect of price signals.

PD September 1987. **TI** Agricultural Growth and Import Demand in the LDCs. **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: 451; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 13. **PR** $2.60. **JE** 711, 111, 421. **KW** Agricultural Growth. Less Developed Countries. Import Demands. Agricultural Exporters.

AB The less-developed countries (LDCs) have been the fastest growing source of demand for United States agricultural exports during the last two decades. This is particularly true for food grains in the lower income LDCs and for feed grains in the upper income LDCs. Among these countries, it is those with the highest economic growth performance which have also been the ones with the highest growth in import demand. The performance of United States agricultural exports has thus been inextricably tied to the economic performance of the LDCs, and this is even more likely to be the case in the future.

de Pablo, Juan Carlo

TI Argentina: Debt and Macroeconomic Instability. **AU** Dornbusch, Rudiger; de Pablo, Juan Carlo.

de Palma, Andre

TI Bottleneck Congestion with Elastic Demand. **AU** Arnott, Richard; de Palma, Andre; Lindsey, Robin.

DeMarzo, Peter

PD November 1986. **TI** An Extension of the Modigliani-Miller Theorem to Stochastic Economies with Incomplete Markets. **AA** Stanford University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: TR498; Institute for Mathematical Studies in the Social Sciences, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 20. **PR** $4.00. **JE** 023, 311, 021. **KW** Modigliani-Miller. Stochastic Economy. Incomplete Markets. Debt-Equity Ratio. Arbitrage. Portfolio. Corporate Finance. Financial Policy. Security Markets.

AB The Modigliani-Miller Theorem is shown to hold in a general model of a multi-period stochastic economy with incomplete markets. In the model, firms are allowed to trade available securities, including shares of other firms. Thus, share prices and dividends become fully interdependent in general. However, it is demonstrated that changes in firm financial policy in no way alters equilibrium allocations or prices. This is done by establishing that agents are able to adjust their own portfolios and neutralize corporate policy.

Dickens, William T.

PD August 1987. **TI** Employee Crime, Monitoring and the Efficiency Wage Hypothesis. **AU** Dickens, William T.; Katz, Lawrence; Lang, Kevin; Summers, Lawrence. **AA** Dickens: University of California, Berkeley. Katz and Summers: Harvard University. Lang: Boston University. **SR** National Bureau of Economic Research Working Paper: 2356; National Bureau of

Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 916, 512, 513, 821. **KW** Crime. Bonding. Efficiency Wages. Employee.
AB This paper offers some observations on employee crime, economic theories of crime, limits on bonding, and the efficiency wage hypothesis. We demonstrate that the simplest economic theories of crime predict that profit-maximizing firms should follow strategies of minimal monitoring and large penalties for employee crime. Finding overwhelming empirical evidence that firms expend considerable resources trying to detect employee malfeasance and do not impose extremely large penalties, we investigate a number of possible reasons why the simple model's predictions fail. It turns out that plausible explanations for firms large outlays on monitoring of employees also justify the payment of premium wages in some circumstances. There is no legitimate a priori argument that firms should not pay efficiency wages once it is recognized that they expend significant resources on monitoring.

PD August 1987. **TI** A Goodness of Fit Test of Dual Labor Market Theory. **AU** Dickens, William T.; Lang, Kevin. **AA** Dickens: University of California, Berkeley. Lang: Boston University. **SR** National Bureau of Economic Research Working Paper: 2350; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 821, 212, 824. **KW** Labor Market. Wage Distribution. Wages.
AB We subject our dual labor market model to a goodness of test fit and compare the results with those obtained using a single equation model with a complex error structure. The dual labor market does an excellent job of predicting the wage distribution except for failing to explain bunching at $7.50 and $10.00 per hour. The null hypothesis that the model is correct cannot be rejected at the .05 level. In contrast, the wage distribution predicted by the single labor market model differs significantly from the observed distribution.

Dierker, Egbert

PD August 1987. **TI** Quantity Guided Price Setting. **AU** Dierker, Egbert; Neuefeind, Wilhelm. **AA** Dierker: University of Vienna. Neuefeind: University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-129; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 16. **PR** No Charge. **JE** 021. **KW** Two Sector Economy. General Equilibrium. Planning Agency. Imperfect Competition.
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 minimize 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.

Dolado, Juan J.

TI Intertemporal Rules with Variable Speed of Adjustment: An Application to U.K. Manufacturing Employment. **AU** Burgess, Simon M.; Dolado, Juan J.

Domingo, Lita

TI Change in the Status of Women Across Generations in Asia. **AU** King, Elizabeth; Peterson, Jane; Adioetomo, Sri M.; Domingo, Lita; Syed, Sabiha H.

TI Change in the Status of Women Across Generations in Asia. **AU** King, Elizabeth; Peterson, Jane; Adioetomo, Sri M.; Domingo, Lita; Syed, Sabiha H.

Dornbusch, Rudiger

PD September 1987. **TI** Debt Problems and the World Macro Economy. **AA** MIT. **SR** National Bureau of Economic Research Working Paper: 2379; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 422, 431, 133, 411. **KW** Debt Crisis. Interest Rates. Commodity Prices. World Economy.
AB This paper investigates the role of interest rates, commodity prices, growth in bringing the debt crisis about and how they facilitated or made more difficult the first five years of adjustment. We also ask whether and how the world macroeconomy is likely to contribute to the solution of the debt problem in the next five years. The paper starts with a conceptual framework and a review of the behavior of key macroeconomic variables in the past quarter of a century. Next the origins of the debt crisis are discussed as well as the adjustment period, 1982-1987. The following part reviews alternative scenarios for the period 1987-90 and their bearing on debt questions. We also ask what contribution to expect from commercial policies. The paper concludes pessimistically that for many debtors there is not a sufficient improvement to be expected from good performance of the world economy.

PD September 1987. **TI** Argentina: Debt and Macroeconomic Instability. **AU** Dornbusch, Rudiger; de Pablo, Juan Carlo. **AA** Dornbusch: MIT. de Pablo: Catholic University of Argentina. **SR** National Bureau of Economic Research Working Paper: 2378; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 121, 133, 422, 431. **KW** Debt. Argentina. Fiscal Policy. Stabilization Policy.
AB The paper reviews the Argentina debt experience in the past ten years. The emphasis is on the interaction between relative prices, financial instability, budget deficits, inflation and debt accumulation. A longer run perspective shows that the continuing fiscal problems have stood in the way of investment and growth.

Dreze, J.

TI Generic Inefficiency of Stock Market Equilibrium When Markets Are Incomplete. **AU** Geanakoplos, J.;

Magill, M.; Quinzii, M.; Dreze, J.

Durlauf, Steven

PD March 1988. **TI** Compositional Effects of Government Spending in a Two-Country Two-Sector Production Model. **AU** Durlauf, Steven; Staiger, Robert W. **AA** *Stanford University*. **SR** *National Bureau of* Economic Research Working Paper: 2543; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 322, 431, 111, 321. **KW** Government Spending. Trade. Current Account.

AB This paper explores the impact of changes in the composition of government spending on the level of relative prices, interest rates and the current account in a two country, two period Heckscher-Ohlin model. We show that shifting the composition of government spending affects macroeconomic variables according to the relative factor intensities of tradeable and non-tradeable goods. Adjustments of composition towards non-tradeables will raise (lower) world interest rates if non-tradeables are capital (labor) intensive. The announcement of a future shift towards non-tradeables will induce a current account deficit (surplus) if future interest rates are expected to increase (decrease). The introduction of production thus places restrictions on the co-movements of fiscal policy and macroeconomic variables beyond those generated by preferences.

Dym, Steven

PD March 1988. **TI** Monetary Policy, Reserve Requirements, and the Federal Funds Rate. **AA** Bankers Trust New York Corporation. **SR** New York University Salomon Brothers Center Working Paper: 456; New York University Salomon Brothers Center for the Study of Financial Institutions, 90 Trinity Place, New York, NY 10006. **PG** 22. **PR** $4.00. **JE** 311. **KW** Federal Reserve. Federal Funds Rate. Money Supply. Monetary Policy.

AB The interactions between Federal Reserve activity and federal funds rate behavior is not widely understood. Their impact on and feedback from the money supply is also confusing to many. The purpose of this paper is to present, in straightforward terms, a concise model of these relationships. In so doing it clears up some misconceptions and facilitates thinking through policy issues.

Dymski, Gary A.

PD September 1987. **TI** A Keynesian Theory of Bank Behavior. **AA** University of Southern California. **SR** University of Southern California Modelling Research Group Working Paper: M8734; Department of Economics, University of Southern California, University Park, Los Angeles, CA 90089-0152. **PG** 35. **PR** No Charge. **JE** 023, 312, 315, 311. **KW** Financial Fragility. Disequilibrium. Credit. Liquidity. Keynes.

AB This paper develops a theory of the banking firm using a macrofoundation constructed from the work of Keynes, Davidson, and Minsky. This macrofoundation, which emphasizes the centrality of real time, institutional constraint, and disequilibrium adjustment, leads to a theory of banks as "two-sided" entities engaged in the dual roles of credit creation and liquidity provision. This two-sided or Keynesian model is consistent with the post Keynesian monetary framework. Further, this Keynesian banking model suggests two refinements in theory of financial fragility, a prominent part of the post Keynesian monetary framework: (1) it allows monetary contraction to be included among the causes of economic downturns; (2) it allows an explanation of why financial fragility leads to crisis in a downturn. Both suggested refinements stem directly from the special vulnerability implicit in banks' dual functions. Finally, empirical support based on data from the Terms of Lending Survey is provided for the Keynesian model developed herein.

Easley, David

TI Implementation of Walrasian Expectations Equilibria. **AU** Blume, Lawrence E.; Easley, David.

Eckstein, Z.

PD July 1987. **TI** University Policies under Varying Market Conditions: The Training of Electrical Engineers. **AU** Eckstein, Z.; Weiss, Y.; Fleising, A. **AA** Department of Economics, Tel Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Papers: 15-87 Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 24. **PR** No Charge. **JE** 812, 820, 212, 132. **KW** Occupation Choice. Dynamic Rational Decision Making. Supply of Engineers. Demand for Engineers.

AB This paper provides an analysis of a university optimization problem that attempts to control quality and quantity of engineers. This problem is embedded within an equilibrium model that considers the dynamic rational occupation choice of high school graduates and the effect of the students and the university decision on the current and future demand and supply of engineers. The explicit considerations lead to an estimable model that is capable of providing economic forecasts on the demand and supply of electrical engineers under various economic conditions. Using aggregate data from Israel the model is estimated. The estimated parameters are consistent with the economic theory and the fit to the sample is very good. In particular, the model is capable of estimating the observed cyclical movements in the number of graduating electrical engineers in Israel. Finally, we provide several predictions on the equilibrium number of electrical engineers towards the end of the century.

Edwards, Sebastian

PD August 1987. **TI** Exchange Controls, Devaluations and Real Exchange Rates: The Latin American Experience. **AA** University of California at Los Angeles. **SR** University of California at Los Angeles Department of Economics Working Paper: 450; Department of Economics - University of California at Los Angeles, Los Angeles, CA 90024. **PG** 60. **PR** $2.50. **JE** 430, 431, 023, 133. **KW** Latin America. Exchange Rate Crises. Exchange Controls. Crawling Peg Regime. Stepwise Devaluation.

AB This paper deals with the anatomy of devaluation in Latin America. In an effort to understand the economics surrounding the causes and consequences of exchange rate crises, eighteen devaluation episodes that took place between 1962 and 1982 are investigated in detail. The

paper focuses on: (1) the relation between (inconsistent) macroeconomics policies and exchange rate crises; (2) the role of real exchange rate overvaluation in the precipitation of balance of payment crises under predetermined nominal exchange rates; (3) the role of exchange controls, multiple exchange rates and black markets in the period preceding devaluations; and (4) the effectiveness of nominal devaluations as a way to restore real exchange rate equilibrium. A distinction is made between stepwise devaluations and crawling peg regime. It was found that historically most stepwise devaluations have had difficulty in sustaining a real devaluation over the medium term. Countries that adopted a crawling peg have generally been able to maintain a higher real exchange rate. In many cases, however, this has been achieved at the cost of substantial inflation.

PD August 1987. **TI** Tariffs, the Real Exchange Rate and the Terms of Trade: On Two Popular Propositions in International Economics. **AU** Edwards, Sebastian; van, Wijnbergen Sweder. **AA** Edwards: University of California, Los Angeles. van Wijnbergen: The World Bank. **SR** National Bureau of Economic Research Working Paper: 2365; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 422, 431, 411, 023. **KW** Tariff. Exchange Rates. Terms of Trade. Depreciation. Open Economy.

AB In this paper we investigate the relation between tariff changes, terms of trade changes and the equilibrium real exchange rate. For this purpose we use two models of a small open economy: (1) a three goods version of the Ricardo-Viner model; and (2) a three goods model with full intersectoral factor mobility. We show that, in general, it is not possible to know how the equilibrium real exchange rate will respond to these two disturbances. Moreover, we show that the traditional wisdom that establishes that a tariff hike will always result in a real appreciation, while a terms of trade worsening will generate an equilibrium real depreciation, is incorrect.

PD August 1987. **TI** Exchange Controls, Devaluations and Real Exchange Rates: The Latin American Experience. **AA** University of California, Los Angeles. **SR** National Bureau of Economic Research Working Paper: 2348; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 432, 134, 023, 121. **KW** Devaluation. Exchange Rates. Exchange Controls. Latin America. Balance of Payments. Black Market. Crawling Peg. Inflation.

AB This paper deals with the anatomy of devaluation in Latin America. In an effort to understand the economics surrounding the causes and consequences of exchange rate crises, eighteen devaluation episodes that took place between 1962 and 1982 are investigated in detail. The paper focuses on: (1) the relation between (inconsistent) macroeconomics policies and exchange rate crises; (2) the role of real exchange rate overvaluation in the precipitation of balance of payment crises under predetermined nominal exchange rates; (3) the role of exchange controls, multiple exchange rates and black markets in the period preceding devaluations; and (4) the effectiveness of nominal devaluations as a way to restore real exchange rate equilibrium. A distinction is made between stepwise devaluations and crawling per regime. It was found that historically most stepwise devaluations have had difficulty in sustaining a real devaluation over the medium term. Countries that adopted a crawling peg have generally been able to maintain a higher real exchange rate. In many cases, however, this has been achieved at the cost of substantial inflation.

Eichengreen, Barry

PD November 1987. **TI** Trade Deficits in the Long Run. **AA** University of California, Berkeley. **SR** National Bureau of Economic Research Working Paper: 2437; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 113, 311, 321, 133. **KW** Trade Deficit. Monetary Policy. Fiscal Policy. Market Structure.

AB This paper provides an historical perspective on the recent behavior of the United States trade deficit. Judged by United States historical experience, the trade deficit has reached what is now unprecedented levels. That unprecedented deficit has its principal source not in changes in market structure affecting the speed with which quantities respond to prices but in the policy environment, namely the monetary-fiscal policy mix. While other industrial countries have run comparable merchandise trade deficits at various points in the past, these countries either financed their deficits out of interest earnings on prior foreign investments or through the large-scale export of services, or used the debt they incurred to finance investment in infrastructure and to expand their capacity to export. Neither of these scenarios has a counterpart in current United States experience.

Eldor, R.

TI Exporting Firm and Forward Markets: The Multi-Period Case. **AU** Zilcha, I.; Eldor, R.

TI The Demand for a Risky Asset when its Returns are Stochastically Related to Prices of Consumption Goods. **AU** Schwartz, A.; Pines, D.; Eldor, R.

Elmendorf, Douglas W.

TI Taxes, Budget Deficits and Consumer Spending: Some New Evidence. **AU** Feldstein, Martin; Elmendorf, Douglas W.

Emery, Robert F.

PD November 1987. **TI** Monetary Policy in Taiwan, China. **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 Paper: 313; Division of International Finance Board of Governors of the Federal Reserve System, Washington, D.C. 20551. **PG** 32. **PR** No Charge. **JE** 311, 045, 133. **KW** Domestic Monetary Theory. Financial Policy.

AB This paper examines how Taiwan, China, has used monetary policy to deal with the impact of the two oil shocks since 1973, as well as with the recent problem of a very large rise in foreign exchange holdings. In dealing with the inflationary pressures brought on by the two oil shocks, the central bank relied primarily on changes in its rediscount rate to reduce inflationary pressures. However,

the changes were initially too small and too late to prevent a large rise in consumer prices in 1974 and 1980. Since 1985, the large gains in foreign exchange reserves, due to a rising trade surplus and capital inflows, have sharply expanded the money supply. The burden of containing this inflationary threat has fallen on monetary policy, and the government has not been able to offset the buildup in reserves by prepayment of external debt since the amount of outstanding debt is relatively small. In addition, use by the central bank of its rediscount policy or changes in reserve requirements has not been appropriate as domestic credit expansion has been low and not a basic cause of the large rise in liquidity. Instead, the central bank has relied almost exclusively on open market operations. It has engaged in a massive sterilization operation, selling primarily central bank certificates of deposit to neutralize the potentially inflationary impact from the large rise in the money supply. So far the central bank has been successful in holding the inflation rate to a low level, but it is not yet clear whether the present strategy will continue to be successful. Some suggestions of new basic measures for restoring a sustainable equilibrium between the external and domestic sectors are discussed.

Engel, Charles

PD November 1987. **TI** Trade Policy Under Endogenous Credibility. **AU** Engel, Charles; Kletzer, Kenneth. **AA** Engel: University of Virginia. Kletzer: Yale University. **SR** National Bureau of Economic Research Working Paper: 2449; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 411, 421. **KW** Trade Liberalization. Free Trade. Tariff. Credibility.

AB Because trade liberalization which is anticipated to be temporary creates a divergence between the effective domestic rate of interest and the world rate of interest, tariff reduction in the presence of international financial asset trade may reduce welfare for a small country. Calvo has argued that even though the government intends to liberalize trade permanently, if the private sector believes with some probability that a tariff will be imposed in the future, then free trade may not be optimal. This paper first formalizes this argument and discusses the optimal policy for a government which seeks to maximize representative household welfare. The government's lack of credibility is represented by a set of beliefs the private sector holds about the type of government it faces. Next, beliefs are endogenized by allowing the private sector to update them using Bayes' rule. In one approach, the true government's objective is maximize welfare for the economy, so that it does not seek to imitate another type, in contrast with other recent models of policy credibility. With learning, the government eventually adopts free trade, even though restricted trade is optimal initially.

PD February 1988. **TI** Tariffs and Saving in a Model with New Families. **AU** Engel, Charles; Kletzer, Kenneth. **SR** Yale Economic Growth Center Discussion Paper: 553. **PG** 35 pp. **PR** $2.00. **JE** 411, 431, 323, 023. **KW** Tariffs. Current Account. Overlapping Generations. Income Distribution.

AB The paper explores how a tariff may affect saving through intergenerational redistribution of income that is caused by changes in factor prices and by the distribution of tariff revenue. The model is a Blanchard-type overlapping generations model. Two types of revenue distribution schemes are examined -- lump-sum distribution of current revenues to currently living individuals, and distribution as a subsidy to holders of physical wealth. (There is no fiscal policy in this paper -the government budget is continuously balanced). We draw some general conclusions about the non-neutralities that arise in this type of model as opposed to single-generation models, or models in which perfect bequest motives exist.

Epstein, Larry G.

PD August 1987. **TI** Substitution, Risk Aversion and the Temporal Behavior 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** Queen's Institute for Economic Research Discussion Paper: 699; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 57. **PR** $3.00 Canada and United States; $3.50 Foreign. **JE** 022, 026. **KW** Intertemporal Substitution. Recursive Utility. Non-Expected Utility Theory.

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 behavior of consumption and asset returns.

PD September 1987. **TI** Substitution, Risk Aversion and the Temporal Behaviour 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** Queen's Institute for Economic Research Discussion Paper: 698; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 48. **PR** $3.00 Canada and United States; $3.50 Foreign. **JE** 023, 313, 212. **KW** Intertemporal Substitution. Recursive Utility. Generalized Method of Moments.

AB This paper investigates the testable restrictions on the time-series behaviour 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.

Evans, Martin D. D.

PD October 1987. **TI** Credibility and Commitment: Some New Methods for the Design and Evaluation of Policy in Continuous Time Rational Expectations Models. **AA** New York University. **SR** Princeton Econometric Research Program Memorandum: 332; Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 41. **PR** $2.00. **JE** 023, 213, 311, 321. **KW** Macroeconomic Policy. Rational Expectations. Dynamic Games. Incentive Compatibility.

AB The aim of the paper is to extend the techniques used for policy evaluation and design in continuous time rational expectations models. Following the recent literature, the optimal policy is designed in the context of a dynamic game, played between the government and the public. Using this we address the problem of time inconsistency that arises in the absence of a commitment by the government to follow the originally announced policy. Employing the concept of incentive compatibility it is shown that the government's commitment to its original policy can be determined endogenously. This allows a set of partially credible policies to be identified from which the optimal policy can be chosen. The technique is applied to a simple inflation model to illustrate how the range of policies available to the government are restricted by the requirement of incentive compatibility. It also allows the optimal policy to be examined in some detail.

Evans, Merran A.

PD August 1987. **TI** A Further Class of Tests for Heteroskedasticity. **AU** Evans, Merran A.; King, Maxwell L. **AA** Monash University. **SR** Monash Department of Econometrics and Operations Research Working Paper: 8/87; Department of Econometrics and Operations Research, Monash University, Clayton, Victoria 3168, AUSTRALIA. **PG** 17. **PR** No Charge. **JE** 211. **KW** Hypothesis Testing. Invariance. Linear Regression. Power. Heteroskedasticity.

AB This paper considers the problem of testing for heteroskedasticity in the linear regression model when one is willing to postulate only the ranking of the disturbance variances under the alternative hypothesis. A new class of tests is proposed and methods of finding the tests' critical values are discussed. An empirical power comparison with other tests that have found favor in the literature demonstrates the potential power advantage of these new tests and results in particular versions being recommended for practical use.

Fafchamps, Marcel

TI Agrarian Structure, Technological Innovations, and the State. **AU** de Janvry, Alain; Sadoulet, Elisabeth; Fafchamps, Marcel.

Farber, Henry S.

PD May 1987. **TI** The Decline of Unionization in the United States: What Can Be Learned From Recent Experience? **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 451; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 36. **PR** No Charge. **JE** 831, 042. **KW** Unions. Wages. Working Conditions.

AB The dramatic decline in unionization over the last decade is investigated in the context of a supply/demand model of union status determination. Data from surveys conducted in 1977 and 1984 are used to decompose the decline into components due to a drop in the demand for union representation and a drop in the supply of union jobs relative to demand. It is found that there has been a substantial drop in demand that can be accounted for by an increase in the job satisfaction of nonunion workers and a decrease in nonunion workers' beliefs that unions improve wages and working conditions. It is also found that there has been a substantial drop in the supply of union jobs relative to demand that is attributed to an increase in employer resistance to unionization. Increased foreign and increased nonunion domestic competition (particularly in deregulated industries) are cited as the likely key underlying causes of these changes.

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

PD August 1987. **TI** The Evolution of Public Sector Bargaining Laws. **AA** MIT. **SR** National Bureau of Economic Research Working Paper: 2361; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 832, 831, 916, 025, 212. **KW** Collective Bargaining. Public Employees. Unionization. Public Policy. Markov Model.

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 unionization. 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. A Markov model of the evolution of these laws is developed based on the idea that states will change their existing policy if and only if their preferences deviate from the existing policy by more than the cost of a change in policy. The key underlying constructs are 1) the intensity of state preferences for or against public sector collective bargaining and 2) the cost of changing an existing policy or enacting a new policy. The model is implemented empirically using state level data on policy for each year from 1955 to 1984. The results suggest that state preferences for a pro-bargaining policy are positively related to 1) the COPE score (a measure of pro-union congressional voting behavior on labor issues), 2) income per capita, and 3) the size of the public sector and negatively related to southern region.

Fargeix, Andre

TI The Effect of Tariffs in Markets with Vertical Restraints. **AU** Perloff, Jeffrey M.; Fargeix, Andre.

Farrell, Joseph

PD July 1987. **TI** Information and the Coase Theorem. **AA** Department of Economics, University of California, Berkeley. **SR** University of California at Berkeley Working Paper in Economics: 8747; IBER, 156 Barrows Hall, University of California, Berkeley Berkeley, CA 94720. **PG** 37. **PR** $3.50. **JE** 026, 022, 024, 051. **KW** Decentralization. Coase Theorem. Bargaining. Property Rights. Incomplete Information. Negotiation. Efficiency.

AB I discuss the credibility and relevance of the Coase Theorem, with special reference to problems of incomplete information. Using an example, I show that voluntary private negotiation may be unable to perform as well as even an uninformed and bumbling bureaucrat.

PD October 1987. **TI** Renegotiation in Repeated Games. **AU** Farrell, Joseph; Maskin, Eric. **AA** Farrell: University of California at Berkeley. Maskin: Harvard University. **SR** University of California at Berkeley Working Paper in Economics: 8759; IBER, 156 Barrows Hall University of California Berkeley, CA 94720. **PG** 58. **PR** $3.50. **JE** 026. **KW** Repeated Games. Renegotiation. Credibility. Supergame. Negotiation.

AB We analyze the possibility of renegotiation in supergame equilibrium. We show that it strictly reduces the set of equilibrium outcomes in most games, though not in the Prisoner's Dilemma. We give necessary and sufficient conditions for a payoff vector to be sustainable for large enough discount factors.

PD October 1987. **TI** Second-Sourcing as a Commitment: Monopoly Incentives to Attract Competition. **AU** Farrell, Joseph; Gallini, Nancy T. **AA** University of California at Berkeley. **SR** University of California at Berkeley Working Paper in Economics: 8760; IBER, 156 Barrows Hall, University of California Berkeley, CA 94720. **PG** 33. **PR** $3.50. **JE** 611, 621. **KW** Second-Sourcing. Opportunism. Commitment. Licensing. Dynamic Consistency.

AB We show that a new product monopolist may benefit from (delayed) competition if consumers incur set-up costs. Set-up costs create a dynamic consistency problem: The monopolist cannot guarantee low future prices once customers have incurred those costs. We show that, if customers anticipate this problem, the monopolist's profits can be improved through ex-ante commitment to competition in the post-adoption market, if set-up costs are large. If set-up costs are small, the monopolist can typically achieve the same level of profits without price commitment as with.

Feenstra, Robert C.

PD 1987. **TI** Negotiated Trade Restrictions with Private Political Pressure. **AU** Feenstra, Robert C.; Lewis, Tracy R. **AA** University of California at Davis. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8705C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PR** $4.00 Canadian. **JE** 422, 321, 411. **KW** Trade. Government.

PD September 1987. **TI** Negotiated Trade Restrictions with Private Political Pressure. **AU** Feenstra, Robert C.; Lewis, Tracy R. **AA** University of California, Davis. **SR** National Bureau of Economic Research Working Paper: 2374; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 421, 411, 023. **KW** Trade. Tariffs. Trade Barriers. Trade Policies.

AB In this paper we consider a home government with political pressure to restrict trade, at the expense of foreigners. The foreign country is compensated with an income transfer, which can be thought of as a portion of the tariff revenues or quota rents. In this setting the two countries should negotiate over the level of tariff and transfer of rents, depending on the level of political pressure at home. However, if this pressure cannot be directly observed abroad, then the home country may have an incentive to claim arbitrarily high political need and seek corresponding high trade barriers. We resolve this problem by determining incentive compatible trade policies, in which the home government has no incentive to overstate (or understate) the political pressure for protection.

PD November 1987. **TI** Symmetric Pass-Through of Tariffs and Exchange Rates Under Imperfect Competition: An Empirical Test. **AA** University of California at Davis. **SR** University of California at Davis Economics Department Working Paper: 302; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 32. **PR** No Charge. **JE** 422, 431, 631. **KW** Tariff. Exchange Rate. Pass-through. Automobile.

AB This paper examines the effect of tariffs and exchange rates on U.S. 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.

TI Quality Upgrading and its Welfare Cost in U.S. Steel Imports, 1969-74. **AU** Boorstein, Randi; Feenstra, Robert C.

Feldstein, Martin

PD August 1987. **TI** Taxes, Budget Deficits and Consumer Spending: Some New Evidence. **AU** Feldstein, Martin; Elmendorf, Douglas W. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2355; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 323, 322, 921, 321, 023. **KW** Ricardian Equivalence. Tax Receipts. Consumption. Budget Deficit.

AB Because of the restrictive assumptions required to establish the theory of Ricardian equivalence, its relevance in practice is essentially an empirical question. The strongest direct evidence in favor of Ricardian equivalence is Roger Kormendi's (1983) article in the American

Economic Review. That paper appeared to provide strong empirical support for Ricardian equivalence by showing that increases in government spending on goods and services depress consumer spending while changes in tax receipts have no effect on consumer spending. The present study shows that Kormendi's results are a misleading implication of the experience during World War II when shortages, rationing and patriotic appeals to self-restraint caused an abnormally high rate of saving at the same time that the government deficit-financed a uniquely massive increase in defense spending. When those years are excluded from the sample, Kormendi's results are reversed.

PD August 1987. **TI** Imputing Corporate Tax Liabilities to Individual Taxpayers. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2349; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 323, 541, 321, 921. **KW** Corporation Tax. Taxation. Dividends. Retained Earnings. Tax Reform. Distributional Issues. Income Taxes.

AB This paper presents a method of studying the distributional consequences of corporate tax changes by imputing to individual tax returns the net effect of changes in effective corporate tax rates. Particular attention is given to the difference between nominal and real capital income, to the problem of corporate pension funds, and to the automatic effect of corporate tax changes on dividends and retained earnings.

Fergus, James T.

TI The Effects on Consumers and Creditors of Proposed Ceilings on Credit Card Interest Rates. **AU** Canner, Glenn B.; Fergus, James T.

Fershtman, Chaim

PD November 1986. **TI** Strategic Incentive Manipulation in Rivalrous Agency. **AU** Fershtman, Chaim; Judd, Kenneth L. **AA** Fershtman: The Hebrew University. Judd: Northwestern University and Stanford University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: TR496; IMSSS, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 35. **PR** $4.00. **JE** 025, 026, 511, 514. **KW** Oligopoly. Principal-Agent Theory. Contracts. Management. Firm Ownership. Incentives. Organization.

AB This paper examines interactions between the determination of internal contracts between an owner and his managers, and the external competitive situation of the firm. We find that owners will alter internal incentives for strategic reasons, resulting in contracts that differ from those predicted by standard principal-agent theory.

Figlewski, Stephen

PD June 1987. **TI** Options Arbitrage in Imperfect Markets. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 430; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 31. **PR** $3.00. **JE** 311, 313, 026. **KW** Option Valuation Model. Options Markets. Stock Index Options. Uncertainty. Volatility. Risk. Arbitrage Mechanism. Securities Trading.

AB Option valuation models are generally derived in a frictionless market setting using an arbitrage argument. Actual options markets are subject to many imperfections that are sufficiently complex that a general theoretical treatment is infeasible. This paper adopts a simulation approach to examine some of the more important imperfections of a market similar to that for exchange traded stock index options, uncertainty about the volatility of the underlying asset: transactions costs, indivisibilities, and the impossibility of rebalancing a hedge portfolio continuously. The clear result of our analysis is that the arbitrage mechanism that is the basis for theoretical pricing models in a frictionless market is exposed to considerable risk and large transactions costs in our actual, imperfect, markets. The risk and expected cost of hedging an option with the underlying asset and carrying the position until option expiration is so great compared to typical bid-ask spreads in the market as to be not a viable strategy even for the lowest cost transactor. This has important implications for marketmaking and price determination in options markets.

Fischer, Stanley

PD September 1987. **TI** Resolving the International Debt Crisis. **AA** Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 2373; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 432, 433, 441, 431. **KW** International Debt Crisis. Debt Relief. Procedural Reform. Debtor Nations. Developing Countries.

AB Since August 1982 the international debt crisis has dominated economic policymaking in the developing countries, economic relations between the debtor and creditor countries, the attention of the multilateral institutions in their dealings with the debtor nations, and private sector decisions on lending to the developing countries. Three classes of solutions are described and evaluated. Least radical are proposals for procedural reform and changes in the nature of the claims on the existing debt. The second type of solution is the creation of a facility, or new institution to deal with the overhang of existing debt. Finally, there are proposals for debt relief, either in direct negotiation between creditors and debtors and/or in conjunction with the creation of a facility.

Fisher, Anthony C.

PD March 1987. **TI** Whither Oil Prices: The Evidence from Theory. **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: 428 Rev.; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 29. **PR** $5.80. **JE** 132, 723, 421, 632. **KW** Oil Prices. OPEC. Oil Market.

AB This paper suggests a likely course of oil prices over the next several years on the basis of theoretical models of the world oil market calibrated to pre-1973 levels of prices, production, and reserves. The current (1986) competitive environment, with price in the $10-$16 per barrel range

and increasing very gradually, should prevail until the early 1990s. At that time excess supply and excess capacity in the industry will all but disappear, making a jump to the Organization of Petroleum Exporting Countries cartel's joint wealth-maximizing price of about $25-$30 per barrel likely.

PD March 1987. **TI** Aspects of Species Extinction: Habitat Loss and Overexploitation. **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: 388 Rev.; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 17. **PR** $3.40. **JE** 722, 721. **KW** Wildland. Conservation. Environmental Problem.
AB This paper explores the uses of economic theory in understanding what many noneconomists regard as the major environmental problem of our time -- the coming mass extinction of species. In the present paper, I wish to offer a couple of models, drawing on more recent work by myself and others, to describe key aspects of the problem of species extinction: habitat loss and overexploitation.

Fisher, Franklin M.

PD April 1987. **TI** It Takes t* to Tango: Trading Coalitions in the Edgeworth Process. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 446; Department of Economics, Massachusetts Institute of Technology Cambridge, MA 02139. **PG** 8. **PR** No Charge. **JE** 021. **KW** Non-Tatonnement. Stability. Optimality. Coalitions.
AB In the Edgeworth non-tatonnement process, trade occurs if there exists some coalition of agents able to make a Pareto-improving trade among themselves at current prices. It is known that the size of such coalitions is bounded by the number of commodities and that, provided all agents always have strictly positive endowments, bilateral trade suffices. These results are generalized: Let there be h agents, k of whom have strictly positive endowments. Let there be m commodities, n of which are held by all agents. Then the Edgeworth-process requires coalitions with at most t* = Min '2, Max (h - k, m - n)members. This is a least upper bound.

Fleising, A.

TI University Policies under Varying Market Conditions: The Training of Electrical Engineers. **AU** Eckstein, Z.; Weiss, Y.; Fleising, A.

Frank, Andras

PD June 1987. **TI** Graph Connectivity and Network Flows. **AA** University of Budapest. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87473-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 72. **PR** No Charge. **JE** 213. **KW** Path Connecting. Menger's Theorem. Max-Flow Min-Cut Theorem.
AB If we are interested in various properties of graphs it is often useful to dismantle the graph into connected components and then investigate those components separately. For example, to decide whether a graph is k-colorable it suffices to deal with the connected components. A similar idea works for higher connectivity as well. In this chapter we try to provide a rather comprehensive overview of results belonging to this area. Certain (mostly easier) parts are discussed in greater details in order to give some hints on the general techniques used. Other parts are more difficult so we confine ourselves to give a general framework filled with various results but no proofs. In some cases, however, when it did not need too much space, proofs of some deep theorems (e.g. Tutte's wheel theorem, Nash-Williams theorem on covering trees) have been included.

Frank, Richard

PD November 1987. **TI** The Effect of Mental Distress on Income: Results from a Community Survey. **AU** Frank, Richard; Gertler, Paul. **AA** Frank: Johns Hopkins School of Hygiene and Public Health. Gertler: Harvard School of Public Health. **SR** National Bureau of Economic Research Working Paper: 2433; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 913, 921. **KW** Mental Health. Earnings. Measurement Error.
AB We employ a unique data set from a community based survey to assess the effect of mental distress on earnings. The main advantage of the data is that detailed measurements of mental health status were made on all subjects in the study. This means that our population-based measure of mental distress does not rely on a patient having had contact with the health care system and obtaining a diagnosis from a provider. The use of diagnosis-based measures may introduce measurement-error bias into the estimates. Our results show that the presence of mental distress reduces earnings by approximately 21 per cent to 33 per cent. To assess the magnitude of any measurement-error bias we present a "estimate" of models using measures of mental health both on a population-wide basis and on a diagnosis basis. The estimated impact of mental illness on earning is only 9 per cent lower using the diagnosis-based measure. The conclusion drawn from this is that little bias is introduced by using the diagnosis-based measure.

Franke, J.

PD June 1987. **TI** On Bootstrapping Kernel Spectral Estimates. **AU** Franke, J.; Hardle, W. **AA** Franke: University of Berlin. Hardle: University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A 121; Sonderforschungshereich 303 an der Universitat Bonn, Adenaurallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 37. **PR** No Charge. **JE** 211. **KW** Stationary Time Series. Nonparametric Estimation.
AB We consider an application of bootstrap ideas to kernel estimates of spectral densities of stationary time series. We prove that the bootstrap principle holds in the same sense as in parametric and nonparametric estimation of regression curves. The general approach is illustrated with specific applications like a bootstrap method for choosing the bandwidth of a kernel estimate. In particular, we show that this method provides a consistent and asymptotically optimal bandwidth.

Frankel, Jeffrey A.

PD July 1987. **TI** International Macroeconomic Policy Coordination When Policy-Makers Disagree on the Model. **AU** Frankel, Jeffrey A.; Rockett, Katharine E. **AA** Department of Economics, University of California at Berkeley. **SR** University of California at Berkeley Working Paper in Economics: 8744; IBER, 156 Barrows Hall, University of California, Berkeley Berkeley, CA 94720. **PG** 55. **PR** $3.50. **JE** 431, 432, 026, 311. **KW** International Policy Coordination. Macroeconomic Models. Nash Equilibrium. Bargaining. Coordination Games. Monetary Policy.

AB We relax the assumption of the literature on international coordination that policy-makers know the true model. Two countries will still be able to agree on a cooperative policy package that each believes will improve the objective function relative to the Nash non-cooperative solution. However, the bargaining solution may move the target variables in the wrong direction. These points are illustrated with monetary and fiscal multipliers taken from simulations of ten leading econometric models. Out of 1000 possible combinations of models that could represent United States beliefs, non-United States beliefs and the true model, monetary coordination improves United States welfare in only 546 cases.

PD August 1987. **TI** Recent Estimates of Time-Variation in the Conditional Variance and in the Exchange Risk Premium. **AA** University of California, Berkeley. **SR** National Bureau of Economic Research Working Paper: 2367; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 311, 313, 431. **KW** Optimal Diversification. Portfolio Behavior. Exchange Rates. Risk Premium.

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.

Freeman, Richard B.

TI Economic Development and the Timing and Components of Population Growth. **AU** Bloom, David E.; Freeman, Richard B.

PD April 1988. **TI** Evaluating the European View that the U.S. has No Unemployment Problem. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2562; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 824, 821, 122. **KW** Labor Market. Unemployment.

AB This study contrasts the labor market performance of the United States and OECD Europe in the 1980s and critically evaluates the view that the United States has generated more jobs because its labor market is more 'flexible'. The study finds that the greater employment expansion in the United States was associated with slower growth of real wages and productivity than in most of OECD Europe rather than with relatively costless flexibility. It also finds that while some aspects of relative wage flexibility, for instance in youth versus adult wages, helped limit United States unemployment, other aspects, for instance regional wage, show no greater flexibility in the United States than in the United Kingdom, where labor markets are allegedly less flexible. Finally, the study argues that the disparate experiences of the U.K., with a relatively decentralized labor market, and Sweden, with a centralized wage-setting system, show that decentralized labor markets are neither necessary nor sufficient for employment-enhancing wage settlements.

PD April 1988. **TI** Labor Market Institutions, Constraints and Performance. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2560; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 824, 831, 821, 122. **KW** OECD Countries. Market Institutions. Labor Markets. Unions.

AB This study examines the changes in labor market institutions and outcomes across OECD countries in the past two decades and relates indicators of the institutions to outcomes. It has four findings. First, there has been an increased divergence in labor market institutions, with unionization growing or remaining at high levels of density in some countries while declining in others. Second, changes in the two major outcomes on which analysts and policymakers focus -- employment and real wages -- are substantially negatively correlated across countries, conditional on growth of GDP. Third, there is a moderate nonlinear relation between labor market outcomes and institutions: countries with either relatively centralized wage-setting (as evidenced by little inter-industry dispersion of wages) such as the Scandinavian countries and countries with decentralized wage-setting (as indicated by high inter-industry dispersion of wages) had better performances in employment than countries with intermediate types of labor market structures and institutions. Fourth, even among countries with comparable institutions, there is a considerable diversity of performance.

Friedman, Benjamin

PD April 1988. **TI** Monetary Policy Without Quantity Variables. **AA** Harvard University. **SR** National Bureau of Economic Research Working Paper: 2552; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 311. **KW** Monetary Policy. Interest Rate. Federal Reserve.

AB The collapse in the 1980s of familiar relationships connecting money to either income or prices has thrown into question long-standing presumptions about the appropriate conduct of monetary policy. Once data from the 1980s are included, tests of several kinds -- including simple regression tests, vector autoregressions tests, and tests for cointegration -- all fail to show evidence of properties that would support using money as the central fulcrum of monetary policy. The Federal Reserve System,

whether in response to these developments or for independent reasons, appears to have refocused monetary policy onto movements of short-term interest rates. The experience of the 1950s and 1960s suggests that this alternative approach also suffers from potentially serious drawbacks, which little recent research has addressed.

Froot, Kenneth

PD August 1987. **TI** New Hope for the Expectations Hypothesis of the Term Structure of Interest Rates. **AA** MIT. **SR** National Bureau of Economic Research Working Paper: 2363; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 311, 313, 212. **KW** Interest Rates. Survey Data. Term Structure. Rational Expectations. Bond Rates.

AB Survey data on interest rate expectations are used to separate the forward interest rate into an expected future rate and a term premium. These components are used to test separately two competing alternative hypotheses in tests of the term structure: that the expectations hypothesis does not hold, and that expected future long rates over or underreact to changes in short rates. While the spread consistently fails to predict future interest rate changes, we find that the nature of this failure is different for short versus long maturities. For short maturities, expected future rates are rational forecasts. The poor predictions of the spread can therefore be attributed to variation in term premia. For longer-term bonds, however, we are unable to reject the expectations theory, in that a steeper yield curve reflects a one-for-one increase in expected future long rates. Here the perverse predictions of the spread reflect investors' failure to raise sufficiently their expectations of future long rates when the short rate rises. We confirm earlier findings that bond rates underreact to short rate changes, but now this result cannot be attributed to the term premium.

PD August 1987. **TI** Tests of Excess Forecast Volatility in the Foreign Exchange and Stock Markets. **AA** MIT. **SR** National Bureau of Economic Research Working Paper: 2362; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 313, 311, 431, 212. **KW** Asset Prices. Volatility. Variance Bounds Techniques. Exchange Rates. Stock Prices. Risk Premium.

AB Simple regression tests that have power against the alternatives that asset prices and expected future asset returns are excessively volatile are developed and performed for the foreign exchange and stock markets. These tests have a number of advantages over alternative, variance bounds techniques. We find evidence that both exchange rates and stock prices are excessively volatile and that expected returns on foreign exchange and stocks move too much. We also investigate whether these findings can be attributed to time-varying risk premia, but in our tests the data provide little support for such an alternative hypothesis.

PD August 1987. **TI** Credibility, Real Interest Rates, and the Optimal Speed of Trade Liberalization. **AA** Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 2358; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 411, 421, 422, 441. **KW** Trade Liberalization. Credibility. International Financial Markets. Tariffs. Trade Barriers.

AB This paper investigates the effects of imperfectly credible trade liberalization programs on welfare and the allocation of real resources. We present a rational expectations model in which a government with limited access to international financial markets may be forced to abort a liberalization program if hard-currency reserves are depleted too quickly. The liberalization's lack of perfect credibility acts as a distortion which becomes (rationally) intensified under the typical first-best policy of a direct move to free trade. A gradual lowering of trade barriers turns out to be welfare-superior to an immediate liberalization, and to improve the chance that the program will ultimately succeed. We then derive the optimal speed of liberalization, the intertemporal allocation of resources, and the liberalization program's credibility.

PD March 1988. **TI** Exchange Rate Pass-Through When Market Share Matters. **AU** Froot, Kenneth; Klemperer, Paul. **AA** Froot: Massachusetts Institute of Technology. Klemperer: Oxford University. **SR** National Bureau of Economic Research Working Paper: 2542; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 441. **KW** Exchange Rate. Market Shares. Import Prices.

AB We investigate pricing to market when the exchange rate changes in cases where firms' future demands depend on their current market shares. We show that i) profit maximizing foreign firms may either raise or lower their domestic currency export prices when the domestic exchange rate appreciates temporarily (i.e. the "pass-through" from exchange rate changes to import prices may be perverse); ii) current import prices may be more sensitive to the expected future exchange rate than to the current exchange rate; iii) current import prices fall in response to an increase in uncertainty about the future exchange rate. We present evidence that suggests the behavior of expected future exchange rates may provide a clue to the puzzling behavior of United States import prices during the 1980s.

Fudenberg, Drew

PD January 1987. **TI** Finite Player Approximations to a Continuum of Players. **AU** Fudenberg, Drew; Levine, David K. **AA** Fudenberg: University of California, Berkeley. Levine: University of California, Los Angeles. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 455; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 20. **PR** No Charge. **JE** 026. **KW** Game Theory. Continuum Game. Nash Equilibrium.

AB In this paper we are interested in the lower hemi-continuity of the Nash equilibrium correspondence with respect to the number of players. Specifically, given an equilibrium in a game with a continuum of players, and a finite player game that approximates the continuum game, is there an equilibrium of the finite player game that is "close" to the equilibrium of the continuum game?

PD April 1987. **TI** Noncooperative Game Theory for Industrial Organization: An Introduction and Overview. **AU** Fudenberg, Drew; Tirole, Jean. **AA** Fudenberg: University of California, Berkeley. Tirole: Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 445; Department of Economics, Massachusetts Institute of Technology Cambridge, MA 02139. **PG** 107. **PR** No Charge. **JE** 026, 611. **KW** Oligopoly. Nash Equilibrium.

AB Non-cooperative game theory is a way of modelling and analyzing situations in which each player's optimal decisions depend on his beliefs or expectations about the play of his opponents. The distinguishing aspect of the theory is its insistence that players should not hold arbitrary beliefs about the play of their opponents. Instead, each player should try to predict his opponents' play, using his knowledge of the rules of the game and the assumption that his opponents are themselves rational, and are thus trying to make their own predictions and to maximize their own payoffs. Game-theoretic methodology has caused deep and wide-reaching changes in the way that practitioners think about key issues in oligopoly theory, much as the idea of rational expectations has revolutionized the study of macroeconomics. This essay tries to provide an overview of those aspects of the theory which are most commonly used by industrial organization economists, and to sketch a few of the most important or illuminating applications. We have omitted many interesting game-theoretic topics which have not yet been widely applied.

PD July 1987. **TI** On the Robustness of Equilibrium Refinements. **AU** Fudenberg, Drew; Kreps, David M.; Levine, David K. **AA** Fudenberg: Massachusetts Institute of Technology. Kreps: Stanford University. Levine: University of California Los Angeles and University of Minnesota. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 454; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 37. **PR** No Charge. **JE** 026, 213. **KW** Nash Equilibrium. Game Theory. Perfection. Stability.

AB The philosophy of equilibrium refinements is that the analyst, if he knows things about the structure of the game, can reject some Nash equilibria as unreasonable. The word "know" in the preceding sentence deserves special emphasis. If in a fixed game the analyst can reject a particular equilibrium outcome, but he cannot do so for games arbitrarily "close by", then he may have second thoughts about rejecting the outcome. We consider several notions of distance between games, and we characterize their implications for the robustness of equilibrium refinements.

Fullerton, Don

PD August 1987. **TI** The Marginal Excess Burden of Different Capital Tax Instruments. **AU** Fullerton, Don; Henderson, Yolanda K. **AA** Fullerton: University of Virginia. Henderson: Federal Reserve Bank of Boston. **SR** National Bureau of Economic Research Working Paper: 2353; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 323. **KW** Tax Burden. Welfare Loss. Capital Taxes. Income Tax. Taxation. General Equilibrium Model. Investment Tax Credit. Distortions.

AB Marginal excess burden, defined as the change in deadweight loss for an additional dollar of tax revenue, has been measured for labor taxes, output taxes, and capital taxes generally. This paper points out that there is no well-defined way to raise capital taxes in general, because the taxation of income from capital depends on many different policy instruments including the statutory corporate income tax rate, the investment tax credit rate, depreciation lifetimes, declining balance rates for depreciation allowances, and personal tax rates on noncorporate income, interest receipts, dividends, and capital gains. Marginal excess burden is measured for each of these different capital tax instruments, using a general equilibrium model that encompasses distortions in the allocation of real resources over time, among industries, between the corporate and noncorporate sectors, and among diverse types of equipment, structures, inventories, and land.

PD November 1987. **TI** Tax Neutrality and Intangible Capital. **AU** Fullerton, Don; Lyon, Andrew B. **AA** Fullerton: University of Virginia. Lyon: University of Maryland. **SR** National Bureau of Economic Research Working Paper: 2430; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 323, 024, 212. **KW** Tax Reform Act. Welfare Costs. Investment Tax Credit. Tangible Assets. Intangible Assets.

AB Many studies measure capital stocks and effective tax rates for different industries, but they consider only tangible assets such as equipment, structures, inventories, and land. However, firms also own intangible assets such as trademarks, copyrights, patents, a good reputation, or general production expertise. This paper provides alternative measures of the intangible capital stock, and it investigates implications for distortions caused by taxes. The existence of intangible capital markedly alters welfare cost calculations. Investments in advertising and R&D are expensed, so the effective rate of tax on these assets is less than that on equipment under prior law. With large differences between these assets and other tangible assets, we find that the welfare cost measure under prior law increases to $13 billion per year. Repeal of the investment credit taxes equipment more like other tangible assets but less like intangible assets. The welfare cost still falls, to about $7 billion per year, but it is no longer "virtually eliminated." With additional sources of intangible capital, credit repeal could actually increase welfare costs. Finally, however, the Tax Reform Act of 1986 not only repeals the investment tax credit but reduces rates as well. Efficiency always increases in this model because the taxation of tangible assets is reduced toward that of intangible assets.

Gallini, Nancy T.

TI Second-Sourcing as a Commitment: Monopoly Incentives to Attract Competition. **AU** Farrell, Joseph; Gallini, Nancy T.

Garber, Peter

PD February 1988. **TI** Bank Runs in Open Economies and International Transmission. **AU** Garber, Peter; Grilli, Vittorio. **SR** Yale Economic Growth Center

Discussion Paper: 552. **PG** 20 pp. **PR** $2.00. **JE** 411, 312. **KW** Open Economy. Financial Crisis. Banking Panic.

AB In this paper, we extend the bank run literature to an open economy model. We show that a foreign banking system, by raising deposit rates in the presence of a domestic banking panic, may generate sufficient liquid resources to acquire assets sold by the domestic banking system at bargain prices. In this case, foreign depositors will benefit from the domestic panic. We also show that our simple model is able to generate the spreading of panics. Perhaps not surprisingly, the crucial element in determining the propagation of financial crises is the effect of interest rates on savings decisions.

Geanakoplos, J.

PD October 1987. **TI** Generic Inefficiency of Stock Market Equilibrium When Markets Are Incomplete. **AU** Geanakoplos, J.; Magill, M.; Quinzii, M.; Dreze, J. **AA** Geanakoplos: Yale University. Magill: University of Southern California. Quinzii: University of Southern California. Dreze: CORE. **SR** University of Southern California Modelling Research Group Working Paper: M8735; Department of Economics, University of Southern California, University Park, Los Angeles, CA 90089-0152. **PG** 53. **PR** No Charge. **JE** 021, 024, 511. **KW** Stock Market. Incomplete Markets. Inefficiency.

AB This paper studies a general equilibrium model of a stock market economy in which the structure of markets is incomplete. We show that generically (in endowments) equilibrium allocations are constrained inefficient. Thus under a competitive price taking system decentralised decision-making does not lead to an efficient use of markets.

Gertler, Paul

TI The Effect of Mental Distress on Income: Results from a Community Survey. **AU** Frank, Richard; Gertler, Paul.

Gertner, Robert

PD May 1987. **TI** Simultaneous Signaling to the Capital and Product Markets. **AU** Gertner, Robert; Gibbons, Robert; Scharfstein, David. **AA** Gertner: University of Chicago. Gibbons: Massachusetts Institute of Technology. Scharfstein: Harvard University. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 449; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 48. **PR** No Charge. **JE** 313, 026, 521, 611. **KW** Financial Structure. Signaling Games. Capital Market.

AB This paper analyzes an informed firm's choice of financial structure using what we call a two-audience signaling model: the choice of a financing contract is observed not only by the capital market, but also by a second interested (but uninformed) party. This second party might be a competing firm or a labor union. A key feature of the model is that the informed firm's gross profit is endogenous, because the second party's action depends on the transaction it observes between the informed firm and the capital market. The main result is that the reasonable capital-market equilibria (i.e., those that satisfy a refinement) maximize the ex-ante expectation of the informed firm's endogenous gross product-market profits. In this sense, the character of capital-market equilibrium is determined by the structure of the product market. An immediate corollary is that (generically) either all the reasonable equilibria are separating or all the reasonable equilibria are pooling. Indeed, the latter is often the case. This is in distinct contrast to earlier work on the information content of financial structure and to more recent work on refinement in signaling games, both of which focus on separating equilibria.

Ghali, Khalifa

TI Self-Selection in the Residential Electricity Time-of-Use Pricing Experiments. **AU** Aigner, Dennis J.; Ghali, Khalifa.

Gibbons, Robert

TI Simultaneous Signaling to the Capital and Product Markets. **AU** Gertner, Robert; Gibbons, Robert; Scharfstein, David.

PD March 1988. **TI** Learning in Equilibrium Models of Arbitration. **AA** MIT. **SR** National Bureau of Economic Research Working Paper: 2547; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 833, 022. **KW** Arbitration. Learning. Equilibrium Models.

AB This paper analyzes strategic communication in equilibrium models of conventional and final-offer interest arbitration. Both models emphasize the role of learning by the arbitrator from the parties' offers about the state of the employment relationship, which is known to the parties but not to the arbitrator. In both models, the arbitrator's equilibrium behavior is identical to the reduced-form decision rule typically assumed in the empirical literature. The paper thereby provides a structural interpretation for the existing empirical work. The paper also represents progress towards a complete theory of arbitration because it satisfies three conditions that will be required of any such theory. First, the models' predictions match the existing empirical evidence. Second, the models describe equilibrium behavior. And third, the models are built on a common set of assumptions about preferences, information, and commitment. The paper therefore not only provides an equilibrium foundation for the intuition that the arbitrator might learn from the parties' offers, but also uses the idea of learning to develop a unified analytical treatment of the two major forms of interest arbitration.

Gilbert, Christopher

PD September 1987. **TI** The Management of Developing Country Commodity Risks: A New Role for Public Policy. **AU** Gilbert, Christopher; Powell, Andrew. **AA** Institute of Economics and Statistics, University of Oxford. **SR** Oxford Applied Economics Discussion Paper: 34; Institute of Economics and Statistics, St. Cross Building, Manor Road, Oxford OX1 3UL, ENGLAND. **PG** 47. **PR** No Charge. **JE** 121, 313, 431, 441. **KW** International Commodity Agreements. Debt. Futures. Options. Puts. Calls. Risk Management. LDCs. Commodities. Commodity Markets.

AB The management of high commodity risks remains a major problem for LDCs. Intervention in primary goods

markets through International Commodity Agreements has met with limited successes and notable failures. During the same period risk management in financial markets has undergone significant changes and there are important lessons for commodity risk management from new products created. Commodity risks and financial risks are intimately related in many LDCs; the risk in servicing debt, for example, is related to commodity export earnings. The usual risk-sharing, moral-hazard trade off applies to the use of contingent payment structures. Commodity-linked bonds might be used to "manage" the trade-off but there are strong arguments that only a limited set of long term contracts will be supported by the private markets due to serious performance risks. Public policy might then be viewed as the augmentation of private markets by underwriting some part of the default risk.

Gilboa, Itzhak

TI Value for Two-Stage Games: Another View of the Shapley Axioms. **AU** Beja, Avraham; Gilboa, Itzhak.

PD September 1987. **TI** Information Dependent Games: Can Common Sense be Common Knowledge? **AU** Gilboa, Itzhak; Schmeidler, David. **AA** Department of Economics, Tel-Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 24-87; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 9. **PR** No Charge. **JE** 026. **KW** Common Knowledge. Information Dependent Games. Rationality Surprise Test Paradox. Common Sense.

AB This paper attempts to study the consistency of several basic game-theoretic axioms. Two by-products are the introduction of information-dependent games, and a formal treatment of the framework of game theoretic axioms. In this setup a version of the Surprise Test Paradox is used to prove that Common Sense cannot be Common Knowledge.

Giovannini, Alberto

PD March 1988. **TI** The Macroeconomics of Exchange-Rate and Price Level Interactions: Empirical Evidence for West Germany. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2544; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 134. **KW** Germany. Exchange Rates. Inflation. Price Level.

AB This paper studies the evidence on the conditional covariances between the German wholesale price level and the Deutsche mark exchange rate in the short run and in the long run. I rely both on an unrestricted time-series model, and on a structural Mussa-Dornbusch model. The results from unrestricted estimates indicate that the volatility of changes in the nominal exchange rate much exceed the volatility of the inflation rate both in the short run and in the long run. This implies a very high correlation between changes in the nominal and real exchange rate, and a correlation between the inflation rate and changes in the exchange rate that never exceeds .4 -- with 95 per cent probability. The results from the structural estimates and sensitivity analysis indicate that perfect price flexibility is strongly rejected, and that the model tends to make sticky prices play a crucial role in explaining the evidence. Since the overidentifying restrictions implied by the structural model are rejected, I conclude that we still do not have a fully satisfactory explanation of observed extreme sluggishness of aggregate price levels.

Glazer, Jacob

TI Sharing Productive Knowledge in Internally Financed R&D Contests. **AU** Bhattacharya, Sudipto; Glazer, Jacob; Sappington, David E. M.

Glyn, Andrew J.

PD September 1987. **TI** A Case for Exchange Controls. **AA** Corpus Christi College, Oxford. **SR** Oxford Applied Economics Discussion Paper: 36; Institute of Economics and Statistics, St. Cross Building, Manor Road, Oxford OX1 3UL, ENGLAND. **PG** 47. **PR** No Charge. **JE** 431, 432, 441, 311, 321. **KW** United Kingdom Economy. International Finance. Influences. Employment Effects. Exchange Rates. Capital Flight. Monetary Policy.

AB The trend towards the increased international financial involvement of the United Kingdom economy is analyzed and it is argued that the potential for capital flight makes it impossible for a government to implement an expansionary program aimed at full employment. Various proposals for limiting vulnerability to capital flight are analyzed and it is concluded that only a comprehensive system of exchange controls could be adequate to the task. One outline for such a system is proposed, political and technical difficulties are considered and historical and international comparisons outlined.

Goecke, O.

PD March 1987. **TI** Examples and Algorithmic Properties of Greedoids. **AU** Goecke, O.; Korte, B.; Lovasz, L. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 87456-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 63. **PR** No Charge. **JE** 213. **KW** Greedoids. Subclasses. Structural Properties. Algorithmic Properties.

AB Many algorithmic approaches in continuous optimization as well as in discrete optimization are based on the principle of "greediness". In continuous optimization all steepest descent or gradient methods are of greedy-type. In discrete optimization certain combinatorial structures can be defined by the optimality of the greedy algorithm. Matroids may be characterized axiomatically as those independence systems for which the greedy solution is optimal for certain objective functions (e.g. linear or bottleneck functions). Greedoids can be also characterized by the optimality of the greedy algorithm for a broad class of (nonlinear) objective functions (e.g. generalized bottleneck functions). Thus, in this paper we will focus on these two aspects: We will give an extensive list of examples of greedoids which can be derived from different algorithmic and structural properties in combinatorics and other fields and we will report on certain algorithmic properties of greedoids, especially on algorithmic characterizations of greedoids and certain

subclasses of them.

Goldfeld, Stephen M.

PD August 1987. **TI** Budget Constraints, Bailouts and the Firm Under Central Planning. **AU** Goldfeld, Stephen M.; Quandt, Richard E. **AA** Princeton University. **SR** Princeton Financial Research Center Memorandum: 84; Financial Research Center, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 35. **PR** $3.00. **JE** 022, 053, 124, 614. **KW** Subsidies. Theory of Firms. Self Budget Constraint. Socialism. State Enterprises. Subsidies. Eastern Europe.

AB Motivated by the notion of the soft budget constraint, we develop two models of an enterprise that can secure bailouts from the state when its operating profit is negative. The models allow for uncertainty both in production and in the extent to which the enterprise can obtain subsidies. We derive the optimal factor inputs and show, both via theorems and illustrative calculations, how the availability of bailouts increases the demand for factor inputs. The dependence of this increase on the features of the bailout process is also characterized.

Goodfriend, Marvin

PD April 1987. **TI** Interest Rate Smoothing and Price Level Trend-Stationarity. **AA** Federal Reserve Bank of Richmond. **SR** University of Rochester Center for Economic Research Working Paper: 80; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 16. **PR** No Charge. **JE** 311, 313, 132, 133. **KW** Interest Rate Smoothing. Price Level Smoothing. Central Banking. Trends. Stationarity. Money Stock. Stabilization.

AB This paper discusses the definition and mechanics of central bank interest rate smoothing under rational expectations. A tension arising between interest rate smoothing and macroeconomic stabilization objectives induces non-trend-stationary price level and money stock behavior. The paper thereby helps explain why such nominal non-stationarities are widely observed. Further implications are drawn for base drift, the distribution of real returns on long-term fixed-rate nominal debt, and operating characteristics of interest rate pegs and policy instruments.

Goodstein, Eban

TI Committee Voting Under Alternative Procedures and Preferences: An Experimental Analysis. **AU** Salant, Stephen; Goodstein, Eban.

Gordon, Roger H.

PD June 1987. **TI** Taxation of Asset Income in the Presence of a World Securities Market. **AU** Gordon, Roger H.; Varian, Hal R. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-24; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 18. **PR** No Charge. **JE** 023, 441, 323. **KW** CAPM Model. Open Market Economy. Tax policies. Security Prices.

AB This paper shows, using a standard CAPM model of security prices in a world market, that even small countries can affect the price of domestically issued risky securities, while large countries can affect the prices of all securities. As a result, countries have the incentive to set tax rates such that in equilibrium investors tend to specialize in domestic securities, and net capital flows between countries are restricted. Each country does this to increase the utility of domestic residents, taking as given the tax policies of other governments, but the net outcome is a reduction in world efficiency and likely a reduction in the utility of all investors.

PD August 1987. **TI** Intergenerational Risk Sharing. **AU** Gordon, Roger H.; Varian, Hal R. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-27; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 18. **PR** No Charge. **JE** 022, 024, 321, 322, 915. **KW** Social Security. Government Debt. Tax-transfer Policies.

AB In this paper we examine government debt and tax-transfer policies that can improve the allocation of risk between generations. Markets cannot allocate risk efficiently between two generations whenever the two generations are not both alive prior to the occurrence of a stochastic event. This implies that government policies transferring risk between generations have the potential to create first-order welfare improvements. Our model provides a non-Keynesian justification for debt-finance of wars and recessions, as well as an added rationale for Social Security type tax-transfer schemes which aid unlucky generations, e.g., the Depression generation, at the expense of luckier generations.

Gottfries, Nils

PD June 1987. **TI** Empirical Examinations of the Information Sets of Economic Agents. **AU** Gottfries, Nils; Persson, Torsten. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 90; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 14. **PR** No Charge. **JE** 023, 026, 212, 132. **KW** Rational Expectations. Information. Buffer Stocks. Portfolio Revision.

AB We show theoretically how one can derive coefficients that measure, in a natural way, the information advantage of decision-makers with rational expectations over an information set formulated by the econometrician. We discuss econometric estimation of the information advantage coefficients, and show how to use the estimates to test the hypothesis that agents have no better information than the econometrician or the hypothesis that agents have perfect information. Finally, we present results from an empirical application of the methodology, where estimates of information advantage coefficients are used to test for significant lags in portfolio revision and associated buffer stock behavior in money demand.

Gourieroux, C.

PD September 1987. **TI** A General Framework for Testing a Null Hypothesis in a "Mixed" Form. **AU** Gourieroux, C.; Monfort, A. **AA** Gourieroux: CEPREMAP. Monfort: INSEE. **SR** Unite de Recherche Document de Travail ENSAE/INSEE: 8711; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. **PG** 23. **PR** No Charge. **JE** 211.

KW Asymptotic Tests. Semi Parametric Models. Mixed Form. Maximum Likelihood. Pseudo-Maximum Likelihood.
AB A general framework for asymptotic tests is proposed. This framework contains as particular cases tests based on various estimation techniques: maximum likelihood methods, pseudo-maximum likelihood (P.M.L.) methods and quasi-generalized P.M.L. methods, m-estimation methods, moments or generalized moments method, asymptotic least squares. Moreover the null hypothesis has a general "mixed" form, including the usual implicit and explicit form.

PD October 1987. **TI** Contraintes bilineaires: estimation et test. **AU** Gourieroux, C.; Monfort, A.; Renault, E. **AA** Gourieroux: CEPREMAP. Monfort: INSEE. Renault: Paris IX et E.N.S. **SR** Unite de Recherche Document de Travail ENSAE/INSEE: 8712; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. **PG** 46. **PR** No Charge. **JE** 211. **KW** Asymptotic Tests. Asymptotic Least Squares. Mixed Form. Bilinear Constraints.
AB In this paper we propose a Wald type test procedure for the case where the null hypothesis is in a mixed form and bilinear with respect to the parameter of interest and an auxiliary parameter. This procedure is very simple since it only requires O.L.S. and G.L.S. methods. Moreover, it provides estimators of the parameters under the null hypothesis. It is also shown that these theoretical results apply to many situations: common roots, distributed lags, instrumental variables, overidentification, rational expectation, separability and homotheticity of translog functions.

PD October 1987. **TI** Testing Price Exogeneity in the Canonical Disequilibrium Model. **AU** Gourieroux, C.; Laroque, G. **AA** Gourieroux: CEPREMAP. Laroave: INSEE. **SR** Unite de Recherche Document de Travail ENSAE/INSEE: 8713; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. **PG** 26. **PR** No Charge. **JE** 211. **KW** Asymptotic Tests. Disequilibrium Model.
AB The paper describes some tests of the exogeneity of prices in the canonical disequilibrium model supplemented with a price adjustment equation. We also develop a technique which allows to estimate consistently the demand and supply equations, using the standard us disequilibrium software, when the price variable is not exogenous.

Greenwood, J.

PD October 1987. **TI** Investment, Capacity Utilization and the Real Business Cycle. **AU** Greenwood, J.; Hercowitz, Z.; Huffman, Gregory W. **AA** Greenwood: University of Western Ontario. Huffman: University of Western Ontario. Hercowitz: Tel Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 26-87; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 39. **PR** No Charge. **JE** 112, 522, 023. **KW** Capacity Utilization. Real Business Cycle. Shocks to Marginal Efficiency of Investment.
AB This paper adopts Keynes' view that shocks to the marginal efficiency of investment are important for business fluctuations, but incorporates it in a neoclassical framework with endogenous capacity utilization. Increases in the efficiency of newly produced investment goods stimulate the formation of "new" capital and the more intensive utilization of "old" capital. Theoretical and quantitative analysis suggests that the shocks and transmission mechanism studied here may be important elements of business cycles.

Gregory, Allan W.

PD September 1987. **TI** A Nonparametric Test for Autoregressive Conditional Heteroskedasticity (ARCH): A Markov Chain Approach. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Department of Economics Research Report: #8713; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 25. **PR** $5.00 Canada; $7.00 Elsewhere. **JE** 211. **KW** Conditional Heteroskedascity. Markov Chain. Monte Carlo. Nonparametric Test.
AB In this paper we propose a nonparametric test for autoregressive conditional heteroskedasticity (ARCH) based upon finite state Markov chains. A simple Monte Carlo experiment suggests that in finite samples it performs comparably to the LM test under conditional normality and is superior for the t-, lognormal, and exponential distributions. As an illustration, we apply both tests to Canadian/United States forward foreign exchange data.

Grilli, Vittorio

TI Bank Runs in Open Economies and International Transmission. **AU** Garber, Peter; Grilli, Vittorio.

Grossman, Gene

PD March 1988. **TI** Product Development and International Trade. **AU** Grossman, Gene; Helpman, Elhanan. **AA** Grossman: Princeton University. Helpman: Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 2540; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 621, 411, 021, 423. **KW** General Equilibrium. Innovation. International Trade. Comparative Advantage. R&D.
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, Herschel

PD November 1987. **TI** Lending to an Insecure Sovereign. **AA** Brown University. **SR** National

Bureau of Economic Research Working Paper: 2443; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 443, 322, 114, 921. **KW** Sovereign Debt. Defense Spending. Debt.

AB This paper analyzes a reputational equilibrium for sovereign debt in a model in which the sovereign borrows to finance spending for defense against threats to its survival in power. In this model, the amount of sovereign debt and defense spending, the resulting survival probability, and the sovereign's implied discount rate for future consumption are determined simultaneously. The optimal amount of debt and defense spending equates the marginal cost of defense spending in reducing the level of consumption to the marginal benefit of defense spending in increasing the probability of surviving to enjoy future consumption. In the reputational equilibrium, however, the amount of debt and the associated discount rate must be small enough that the short-run gains from debt repudiation are not larger than the long-run costs from the loss of a trustworthy reputation.

Grossman, Michael

TI A Cost-Effectiveness Analysis of Strategies to Reduce Infant Mortality. **AU** Corman, Hope; Joyce, Theodore; Grossman, Michael.

Grossman, Sanford

PD June 1987. **TI** Asset Pricing and Optimal Portfolio Choice in the Presence of Illiquid Durable Consumption Goods. **AU** Grossman, S. J.; Laroque, G. **AA** Grossman: Princeton University. Laroque: INSEF. **SR** Unite de Recherche Document de Travail ENSAE/INSEE: 8710; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. **PG** 62. **PR** No Charge. **JE** 022, 213, 921. **KW** Transaction Costs. Portfolio Choice. CCAPM. CAPM.

AB We analyze a model of optimal consumption and portfolio selection in which consumption services are generated by holding a durable good. The durable good is illiquid in that a transaction cost must be paid when the good is sold. We characterize the optimal behavior of the consumer. We show the large impact of transaction costs on the consumers behavior through numerical simulations, with plausible parameters evaluated from United States data.

PD August 1987. **TI** Asset Pricing and Optimal Portfolio Choice in the Presence of Illiquid Durable Consumption Goods. **AU** Grossman, Sanford; Laroque, Guy. **AA** Grossman: Princeton University. Laroque: INSEE. **SR** National Bureau of Economic Research Working Paper: 2369; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 311, 313, 921. **KW** Consumption. Portfolio Selection. Wealth. Capital Asset Pricing Model. Stock Market.

AB We analyze a model of optimal consumption and portfolio selection in which consumption services are generated by holding a durable good. The durable good is illiquid in that a transaction cost must be paid when the good is sold. It is shown that optimal consumption is not a smooth function of wealth; it is optimal for the consumer to wait until a large change in wealth occurs before adjusting his consumption. As a consequence, the consumption based capital asset pricing model fails to hold. Nevertheless, it is shown that the standard, one factor, market portfolio based capital asset pricing model does hold in this environment. It is shown that the optimal durable level is characterized by three numbers (not random variables), say x, y, and z (where $x < y < z$). The consumer views the ratio of consumption to wealth (c/W) as his state variable. If this ratio is between x and z, then he does not sell the durable. If c/W is less than x or greater than z, then he sells his durable and buys a new durable of size S so that $S/W = y$. Thus y is his "target" level of c/W. If the stock market moves up enough so that c/W falls below x, then he sells his small durable to buy a larger durable. However, there will be many changes in the value of his wealth for which c/W stays between x and z, and thus consumption does not change. Numerical simulations show that small transactions costs can make consumption changes occur very infrequently. Further, the effect of transactions costs on the demand for risky assets is substantial.

PD August 1987. **TI** An Analysis of the Implications for Stock Futures Price Volatility of Program Trading and Dynamic Hedging Strategies. **AA** Princeton University. **SR** National Bureau of Economic Research Working Paper: 2357; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 313, 311. **KW** Financial Theory. Securities. Uncertainty. Portfolio Insurance. Put Option. Market Volatility. Stock Market.

AB Recent advances in financial theory have created an understanding of the environments in which a real security can be synthesized by a dynamic trading strategy in a risk free asset and other securities. We contend that there is a crucial distinction between a synthetic security and a real security. Portfolio insurance provides a good example of the difference between a synthetic security and a real security. One form of portfolio insurance uses a trading strategy in risk free securities ("cash") and index futures to synthesize a European put on the underlying portfolio. In the absence of a real traded put option (of the appropriate striking price and maturity), there will be less information about the future price volatility associated with current dynamic hedging strategies. There will thus be less information transmitted to those people who could make capital available to liquidity providers. It will therefore be more difficult for the market to absorb the trades implied by the dynamic hedging strategies. In effect, the stocks' future price volatility can rise because of a current lack of information about the extent to which dynamic hedging strategies are in place.

PD August 1987. **TI** One Share/One Vote and the Market for Corporate Control. **AU** Grossman, Sanford; Hart, Oliver D. **AA** Grossman: Princeton University. Hart: MIT. **SR** National Bureau of Economic Research Working Paper: 2347; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 511, 514, 521, 313. **KW** Corporate Securities. Voting Rights. Common Stock. Corporations. Security Structure. Takeovers. Shareholders.

AB A corporation's securities provide the holder with

particular claims on the firm's income stream and particular voting rights. These securities can be designed in various ways: one share of a particular class may have a claim to votes which is disproportionately larger or smaller than its claim to income. In this paper we analyze some of the forces which make it desirable to set up the corporation so that all securities have the same proportion of votes as their claim to income ("one share/one vote"). We show that security structure influences both the conditions under which a control change takes place and the terms on which it occurs. First, the allocation of voting rights to securities determines which securities a party must acquire in order to win control. Secondly, the assignment of income claims to the same securities determines the cost of acquiring these voting rights. We will show that it is in shareholders' interest to set the cost of acquiring control to be as large as possible, consistent with a control change occurring whenever this increases shareholder wealth. Under certain assumptions, one share/one vote best achieves this goal.

PD November 1987. **TI** An Analysis of the Implications for Stock and Futures Price Volatility of Program Trading and Dynamic Hedging Strategies. **AA** Princeton University, Economics Department. **SR** Princeton Financial Research Center Memorandum: 86; Financial Research Center, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 54. **PR** $3.00. **JE** 520, 026. **KW** Trading Strategy. Synthetic Security. Real Security.

AB Recent advances in financial theory have created an understanding of the environments in which a real security can be synthesized by a dynamic trading strategy in a risk free asset and other securities. We contend that there is a crucial distinction between a synthetic security and a real security. In particular the notion that a real security is redundant when it can be synthesized by a dynamic trading strategy ignores the informational role of real securities markets. The replacement of a real security by synthetic strategies may in itself cause enough uncertainty about the price volatility of the underlying security that the real security is no longer redundant. Portfolio insurance provides a good example of the difference between a synthetic security and a real security. One form of portfolio insurance uses a trading strategy in risk free securities ("cash") and index futures to synthesize a European put on the underlying portfolio. In the absence of a real traded put option (of the appropriate striking price and maturity), there will be less information about the future price volatility associated with current dynamic hedging strategies. There will thus be less information transmitted to those people who could make capital available to liquidity providers. It will therefore be more difficult for the market to absorb the trades implied by the dynamic hedging strategies. In effect, the stocks' future price volatility can rise because of a current lack of information about the extent to which dynamic hedging strategies are in place.

Guasch, J. Luis

TI Heterogeneity, Tournaments, and Hierarchies. **AU** Bhattacharya, Sudipto; Guasch, J. Luis.

Guler, Kemal

PD August 1987. **TI** A Study of Zero-Out Auction: Experimental Analysis of a Process of Allocating Private Rights to the Use of Public Property. **AU** Guler, Kemal; Plott, Charles R.; Vuong, Quang H. **AA** California Institute of Technology. **SR** Caltech Social Science Working Paper: 650; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 70. **PR** No Charge. **JE** 022, 025, 026, 615, 212. **KW** Auction. Experiments. Dynamic Adjustment. Game Theory. Bidding. Airports. Landing Rights.

AB The study examines a proposal to auction rights to land at a major airport and return the auction revenues to the winners. Experiments with such auctions are reported. New econometric models of the process are developed and evaluated.

Gustman, Alan J.

PD November 1987. **TI** Pensions, Efficiency Wages and Job Mobility. **AU** Gustman, Alan J.; Steinmeier, Thomas L. **AA** Gustman: Dartmouth College. Steinmeier: Texas Tech University. **SR** National Bureau of Economic Research Working Paper: 2426; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 824, 823, 918. **KW** Pension. Efficiency Wages. Compensation. Job Mobility.

AB This paper finds that compensation premia and not pension backloading are responsible for the low mobility rates from jobs with pensions. Compensation premia, which may represent efficiency wages, are calculated as the difference in compensation between the current job and the best alternative job, allowing for the fact that such premia are observed only for job changers. The amount of pension backloading is calculated from data provided by employers to the Survey of Consumer Finances, greatly improving the precision of measurement over past efforts. This finding has important implications for labor market analysis and for policies concerning pension regulation.

Haltiwanger, John

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

Hamilton, Clive

PD February 1988. **TI** Shadow Prices and Income Distribution. **AU** Hamilton, Clive; LucasHenry. **AA** Hamilton: National Centre for Development Studies, Australian National University. Lucas: Institute of Development Studies, University of Sussex. **SR** Australian National University Working Paper in Economics and Econometrics: 155; Department of Economics, Australian National University, P.O. Box 4, Canberra A.C.T. 2601, AUSTRALIA. **PG** 14. **PR** No Charge. **JE** 411, 024. **KW** Shadow Prices. Shadow Wage. Income Distribution. Little-Mirrlees. Cost-Benefit Analysis. Price Formation.

AB This paper uses the Little-Mirrlees rules for shadow pricing of traded and non-traded goods to show the influence on these prices of economic structures and particularly the distribution of income. The connection between income distribution and shadow prices is made

through the specification of various alternative price formation rules for the production sectors of a simple economic model.

Hamilton, Colleen

PD 1986. **TI** Dealing with the North: Developing Countries and Global Trade Negotiations. **AU** Hamilton, Colleen; Whalley, John. **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8623C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 141. **PR** $4.00 Canadian. **JE** 421, 042, 121. **KW** Negotiations. Developing Countries.

Hammitt, James K.

PD April 1987. **TI** Timing Regulations to Prevent Stratospheric-Ozone Depletion. **AA** The Rand Corporation. **SR** Rand Report: R-3495; The Rand Corporation, 1700 Main Street P.O. Box 2138, Santa Monica CA 90406-2138. **PG** 62. **PR** No Charge. **JE** 613, 722, 022. **KW** Cost Analysis. Decision Framework. Policy Choices.

AB Decisions concerning whether to impose regulations to restrict emissions of potential ozone-depleting substances must be made in a context characterized by three important features: (1) estimates of the likely extent of future stratospheric-ozone depletion and its consequences for life on earth are highly uncertain; (2) continuing scientific research can be expected to reduce, but not eliminate, these uncertainties; and (3) the relationship between potential-ozone-depleter production and environmental consequences is characterized by lags on the order of decades or more. Using a simple decision-tree framework, this research addresses the key question of whether it is desirable to impose emission-limiting regulations now, or to wait five to ten years to develop improved scientific understanding before deciding whether to regulate. Under a wide range of assumptions, beginning regulations immediately is cost-effective if the probability that regulations will eventually be required exceeds about 0.3 to 0.5.

Hammond, Peter J.

PD December 1986. **TI** The Power of Small Coalitions in Large Economies. **AA** Stanford University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: TR501; Institute for Mathematical Studies in the Social Sciences, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 36. **PR** $4.00. **JE** 021. **KW** Core. Continuum Economy. Coalition. Limit Theorem.

AB As long as coalitions eventually become large, the Debreu-Scarf limit theorem for the core holds even if coalitions are restricted in size so that their proportion of agents shrinks to zero as the economy becomes infinitely large. Corresponding results hold for non-replica economies. In a limiting continuum economy, the core equivalence theorem holds even if there must be a "measure-consistent" partition of a coalition into self-sufficient subcoalitions each with a finite number of agents. These results help relate standard results to those presented in collaboration with Kaneko and Wooders concerning finite coalitions in continuum economies.

Han, Aaron

PD November 1986. **TI** Semiparametric Estimation of Duration and Competing Risk Models. **AU** Han, Aaron; Hausman, Jerry. **AA** Han: Harvard University. Hausman: Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 450; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 60. **PR** No Charge. **JE** 211, 212, 131. **KW** Duration Models. Unemployment. Proportional Hazards Model. Competing Risk Model.

AB Since Lancaster's (1979) paper on unemployment, duration models have become commonly used in econometrics. In this paper, we specify and estimate a semiparametric proportional hazards (duration) model. The model specification is semiparametric in the sense that the baseline hazard is nonparametric while the effect of the covariates takes a particular functional form, which is typically linear although it need not be. The underlying hazard model is based on either an ordered probit or ordered logit model where an unknown parameter is estimated for each time interval over which the model is specified. A particular advantage of the specification is that the estimates of the parameters of the covariates are invariant to the length of time intervals which are chosen. Therefore, the grid of time intervals can be made finer as the sample size increases. We also add parametric heterogeneity to the underlying hazard model specification. The heterogeneity enters in extremely convenient form since the resulting model does not require numerical integration in estimation. In the sample of unemployed individuals examined in this paper, the addition of heterogeneity has very little effect on the results. Whether this finding is general to nonparametric baseline hazard specifications or is a particular finding for our sample, awaits future research.

Hardle, W.

TI On Bootstrapping Kernel Spectral Estimates. **AU** Franke, J.; Hardle, W.

Harris, Jeffrey E.

PD May 1987. **TI** Delay in Reporting Acquired Immune Deficiency Syndrome (AIDS). **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 452; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 18. **PR** No Charge. **JE** 913, 212. **KW** Acquired Immune Deficiency Syndrome. Epidemic. Disease Control. Health Care. Public Health. EM algorithm. Non-Parametric Model. Truncation.

AB As of March 31, 1987, the United States Centers for Disease Control had reported 33,350 cases of acquired immune deficiency syndrome. Yet by that date, physicians had actually diagnosed 42,670 cases. The difference arises from significant delays in the reporting of Acquired

Immune Deficiency Syndrome cases to public health authorities. An estimated 70 per cent of cases are reported two or more months after diagnosis; about 23 per cent are reported seven or more months later; and about 5 per cent take more than three years to come in. Moreover, the probability distribution of delays has been shifting to the right, with the median delay increasing by 0.6 months since mid-1986. From the data on reported cases and the estimated probability distribution of reporting delays, I reconstruct the actual incidence of AIDS from January 1982 through March 1987. The doubling time of the epidemic fell from about 6 months in 1982 to 15-16 months in 1986.

Harrison, Glenn W.

PD 1987. **TI** Trade Wars and Trade Negotiations: A Computational Approach. **AU** Harrison, Glenn W.; Rutstrom, E. E. **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8714C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 29. **PR** $4.00 Canadian. **JE** 411, 421, 021. **KW** Trade. Negotiations. General Equilibrium.

PD 1987. **TI** How Robust is Applied General Equilibrium Analysis? **AU** Harrison, Glenn W.; Jones, Richard; Kimbell, Larry J.; Wigle, Randall. **AA** Harrison, Jones, Wigle: University of Western Ontario. Kimbell: University of California, Los Angeles. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8707C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** +40. **PR** $4.00. **JE** 021, 213. **KW** General Equilibrium. Robust Tests.

PD August 1987. **TI** Risk Attitudes in Private Value Auction Experiments. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Department of Economics Research Report: #8709; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 28. **PR** $5.00 Canada; $7.00 Elsewhere. **JE** 026, 215. **KW** Risk. Bidding. Auctions. Experiments. Nash Equilibrium.

AB Non-cooperative bidding theory for sealed-bid auctions generally implies testable predictions that are conditioned on the risk attitudes of agents. Archetypical of this result is the Nash Equilibrium prediction for first price auctions for an object that is valued by agents in an independent and private manner. Received laboratory experiments that purport to test this theory do not generally control for the risk attitudes of subjects. Those experiments exhibit behavior inconsistent with popular bidding models that assume that agents have the same aversion to risk or are all risk neutral. In this paper we construct an explicit prior distribution for the risk attitudes of experimental subjects and reconsider the experimental results. We find that observed bidding behavior is indeed consistent with the Nash predictions when explicit prior weights are attached to alternative assumptions about subject risk aversion.

PD August 1987. **TI** Search Intensity in Experiments. **AU** Harrison, Glenn W.; Morgan, Peter. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Department of Economics Research Report: #8711; Department of Economics, Social Sciences Center, University of Western Ontario, London, CANADA N6A 5C2. **PG** 38. **PR** $5.00 Canada; $7.00 Elsewhere. **JE** 026, 215. **KW** Search. Experiments. Payoff Dominance. Perception.

AB The theoretical literature on the search behaviour of workers and consumers typically considers three search strategies. These strategies are characterized by alternative assumptions about the temporal and atemporal intensity of search. The first strategy, described by Stigler '1961, 1962, is the atemporally intensive fixed-sample-size strategy (FSS) which restricts the agent to collecting exactly one sample of contemporaneous offers but allows him to choose the sample size. The second strategy, introduced by McCall '1970 and thoroughly reviewed by Lippman and McCall '1976, is the temporally intensive pure-sequential strategy (SEQ) which allows the agent to collect as many samples as he chooses but restricts the size of each to unity. The third strategy is the variable-sample-size strategy (VSS). This strategy is a generalisation of the first two since it allows the agent to sequentially choose both how many samples to take and the size of each sample. Descriptions of the VSS are given by Benhabib and Bull '1983, Gal, Landsberger and Levykson '1981, Morgan '1983 and Morgan and Maning '1985. In this paper we report an experimental comparison and evaluation of these three search strategies.

PD September 1987. **TI** Theory and Misbehavior of First-Price Auctions. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Department of Economics Research Report: #8710; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 29. **PR** $5.00 Canada; $7.00 Elsewhere. **JE** 026, 215. **KW** Bidding. Experiments. Payoff Dominance. Perception.

AB A number of recent studies have proposed, refined, extended and tested alternative noncooperative Nash Equilibrium models of the behavior of first-price sealed-bid auctions with independent and private values. All of the existing tests have concentrated on deviations of subjects from predictions in the message space of auction: bid deviations. We suggest that it is more natural to evaluate subject behavior in expected payoff space. Certainly the latter is the appropriate metric to evaluate the incentives that subjects face in any experiment. What are indeed "statistically significant" deviations in terms of bids are not "statistically (or perceptually) significant" deviations in terms of foregone expected payoff. In brief, then, our reconsideration alters the metric of evaluation of the theoretical hypotheses in terms of the experimental results. We find that the experiments were not salient in terms of the inferences one would like to draw from them. We therefore conclude that the evidence against the proposed models is not significant enough to warrant their rejection.

PD October 1987. **TI** An Experimental Evaluation of Weakest-Link/Best-Shot Models of Public Goods. **AU** Harrison, Glenn W.; Hirshleifer, Jack. **AA** Harrison: Department of Economics, University of

Western Ontario. Hirshleifer: Department of Economics, University of California - Los Angeles. **SR** University of Western Ontario Department of Economics Research Report: #8707; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 27. **PR** $5.00 Canada; $7.00 Elsewhere. **JE** 025, 024, 215. **KW** Public Goods. Free Riding. Sealed Bid. Sequential Experiments.

AB Experiments are designed to test whether voluntary private provision of public goods meets theoretical expectations under the assumption of rational self-interested behavior. We go beyond the previous experimental literature in examining individual and group choices under alternative social composition functions, making explicit use of alternative decision protocols. For the sequential experiments, our results may be regarded as strongly confirming a compound hypothesis that the subjects: (a) acted in a rational, self-interested way, (b) believed that their partners would behave similarly, and (c) could learn the correspondence between their own and their partner's payoff functions. For the experiments conducted under the sealed-bid protocol, this compound hypothesis was less adequately confirmed. Further study will be necessary to specify which portions failed, and to what degree.

Hart, Oliver

PD February 1987. **TI** Contract Renegotiation and Coasian Dynamics. **AU** Hart, Oliver; Tirole, Jean. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 442; Department of Economics, Massachusetts Institute of Technology Cambridge, MA 02139. **PG** 69. **PR** No Charge. **JE** 022, 026, 025. **KW** Contracts. Renegotiation. Moral Hasard. Principal-agent Problem.

AB Consider a seller who wishes to sell a service to a buyer. If the seller doesn't know the buyer's willingness to pay for the service, he will set a price-quantity schedule in such a way as to screen for the buyer's valuation. An optimal price-quantity schedule will generally have the property that a buyer with a low willingness to pay will consume an inefficiently low amount of the service and may be shut out of the market altogether, even in cases where it is common knowledge that there are gains from trade. This one period nonlinear pricing or principal-agent problem has been the subject of much analysis and its solution is by now well understood (see, e.g., Guesnerie-Laffont (1984) for a unified treatment and references). Much less attention, however, has been paid to dynamic extensions of the model, where trade is repeated over time. This paper is concerned with such an extension.

PD May 1987. **TI** Incomplete Contracts and the Theory of the Firm. **AA** MIT. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 448; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 33. **PR** No Charge. **JE** 022, 611. **KW** Contracts. Organization. Residual Control Rights.

AB Coase's 1937 paper has unquestionably been a key development in the theory of organizations. As a result of his work and the more recent work of Williamson and others, we now have reasonable answers to the question of what is a firm. In this paper I have argued that incomplete contracts and residual rights of control provide a useful organizing framework for thinking about the firm. Among other things, they permit the costs and benefits of integration to be examined in a unified manner; one does not require one theory to understand the benefits and another to understand the costs.

TI One Share/One Vote and the Market for Corporate Control. **AU** Grossman, Sanford; Hart, Oliver D.

Hartmann, Mark

PD January 1987. **TI** A Topological Characterization for Closed Sets Under Polar Duality 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 in Q(n). Restriction of Polar Duality.

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

Harvey, A. C.

PD 1987. **TI** Efficient Estimation of Nonstationary Time Series Regression. **AU** Harvey, A. C.; Robinson, P. M. **AA** London School of Economics. **SR** London School of Economics Econometrics Programme Discussion Paper: R.12; Department of Economics, London School of Economics and Political Science, Houghton Street, London WC2A 2AE, ENGLAND. **PG** 25. **PR** No Charge. **JE** 211, 212. **KW** Time Series. Nonstationarity. Serial Correlation. Nonparametric. Heteroskedasticity.

AB A multiple time series regression model with trending regressors has residuals that are believed to be not only serially dependent but nonstationary. Assuming the residuals can be decomposed as a stationary autoregressive process of known order multiplied by an unkown time-varying scale factor, we propose estimators of the regression coefficients and show them to be as efficient as estimators based on known scale factors. Our estimators have features in common with adaptive estimators proposed by Carroll (1982) and Hannan (1963) for different regression problems, involving respectively independent residuals with heteroskedasticity of unknown type, and stationary residuals with unknown serial dependence structure.

Hatton, T. J.

PD October 1987. **TI** Profit Sharing in British Industry, 1865-1913. **AA** University of Essex. **SR** Centre for Economic Policy Research Discussion Paper: 204; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 23. **PR** 1 pound ($2.00) individuals; 1.50 pounds ($3.00) companies, libraries, institutions. **JE** 044, 825, 824. **KW** Profit-Sharing. Industrial Relations. Labour Productivity. English Economic History.

AB Some 300 profit-sharing schemes were introduced in Britain between 1865 and 1913. These were intended both to raise labour productivity and to improve industrial relations in the firms concerned. These schemes appear to have increased significantly the wages of eligible workers

but were frequently abandoned after an initial period of experiment. Analysis of data concerning these schemes indicates that the method of payment and the size of firm played important roles in the survival of the schemes, but that the probability of abandonment increased with the duration of the scheme.

Hausman, Jerry

TI Semiparametric Estimation of Duration and Competing Risk Models. **AU** Han, Aaron; Hausman, Jerry.

Helpman, Elhanan

PD November 1987. **TI** Macroeconomic Effects of Price Control: The Role of Market Structure. **AA** Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 2434; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 321, 612, 133, 122. **KW** Israel. Price Controls. Oligopoly.

AB Price controls were part of Israel's stabilization program of July 1985. Some results of the program seem to be inconsistent with competitive macroeconomic models. It is suggested that these results are consistent with an economy that has an oligopolistic market structure. The paper explores the effects of market structure on macroeconomic performance in the presence and absence of price control.

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

Hendershott, Patric

PD September 1987. **TI** Household Formation and Home Ownership: The Impacts of Demographics and Taxes. **AA** The Ohio State University. **SR** National Bureau of Economic Research Working Paper: 2375; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 932, 921, 132. **KW** Owners. Renters. Home. Housing. Households.

AB This paper summarizes the impact of economic, social and demographic variables on household formations and home ownership in the 1960-85 period and uses this knowledge to forecast household formations, and their split between owners and renters, through the year 2000. High and low growth forecasts are reported, both with and without enactment of the Tax Reform Act of 1986. The forecasts are compared with those of others. Net household formations are expected to be robust through 1990 (above 1 1/2 million per year), but to tail off sharply in the 1990s (down to 1 million by 2000). Home ownership should rise slightly in the 1990s.

PD April 1988. **TI** The Tax Reform Act of 1968 and Economic Growth. **AA** The Ohio State University. **SR** National Bureau of Economic Research Working Paper: 2553; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 323, 522. **KW** Tax Law. Economic Growth. Tax Base. Tax Burden.

AB Early tax reform proposals listed economic growth as a major goal, and some even gave explicit estimates of the expected increase in the long run output path that would follow from enactment. The 1986 Tax Act does not mention growth, much less give estimates of the expected increase, for good reason. The 1986 Tax Act will likely reduce the long-run output path by two to four percent. A revenue-neutral tax reform that raises the standard deduction and personal exemption cannot, in general, increase the bundle of goods one can purchase with an additional hour worked. Cuts in marginal personal tax rates can be achieved by broadening the tax base and shifting the tax burden to businesses. However, while the after-tax wage will increase, so will the after-tax cost of goods consumed, both currently and in the future, and thus work effort is unlikely to rise. Similarly, a tax reform that shifts the tax burden from labor and existing capital to new investments will likely lower saving and reallocate capital away from industrial uses. While the Tax Act will increase the efficiency of business investment, the potential efficiency gains are so small that actual gains will be swamped by the direct effect of a smaller business capital stock.

Henderson, Yolanda K.

TI The Marginal Excess Burden of Different Capital Tax Instruments. **AU** Fullerton, Don; Henderson, Yolanda K.

Hercowitz, Z.

TI Investment, Capacity Utilization and the Real Business Cycle. **AU** Greenwood, J.; Hercowitz, Z.; Huffman, Gregory W.

Heyman, D. P.

PD July 1987. **TI** An Analysis of Tapered Access Charges for End Users. **AU** Heyman, D. P.; Lazorchak, J. M.; Sibley, D. S.; Taylor, W. E. **AA** Bell Communications Research, Inc. **SR** Bell Communications Research Inc. Economics Discussion Paper: 31; Bell Communications Research, Inc. 435 South Street, Morristown, NJ 07960-1961. **PG** 44. **PR** No Charge. **JE** 613, 635, 022. **KW** Nonlinear Pricing. Tariff Theory. Access Charge. FCC. Communication.

AB Recent proposals have been made which would replace the usage-sensitive carrier access charge by a charge billed directly to end users. In 1986 NYNEX proposed a tapered tariff of this sort which, it was hoped, would reduce bypass of the NYNEX local exchanges. The FCC refused to approve the tariff. In this paper we compute the efficiency effects of the NYNEX tariff and use the insights of optional tariff theory to compute optional two part tariffs which Pareto dominate the current carrier access charge. Our results suggest that NYNEX could increase profits from access substantially, relative to the level attained under the carrier access charge, without making any users worse off.

Higgins, Richard

PD September 1987. **TI** Capital Goods Market Definition. **AA** Bureau of Economics, Federal Trade Commission. **SR** Federal Trade Commission Bureau of Economics Working Paper: 156; Bureau of Economics, Federal Trade Commission, 6th and Pennsylvania Avenue, Northwest, Washington, D.C. 20580. **PG** 32. **PR** No

Charge. **JE** 612. **KW** Antitrust. Market Definition. Capital Goods' Production.

PD September 1987. **TI** Price Leadership with Incomplete Information. **AU** Higgins, Richard; Shughart, II Wm; Tollison, Robert. **AA** Higgins: Bureau of Economics, FTC. Shughart, Tollison: Center for the Study of Public Choice, George Mason University. **SR** Federal Trade Commission Bureau of Economics Working Paper: 155; Bureau of Economics, Federal Trade Commission, 6th and Pennsylvania Avenue, Northwest, Washington, D.C. 20580. **PG** 17. **PR** No Charge. **JE** 611, 026. **KW** Dominant Firm. Information.

Hildenbrand, Werner

PD July 1987. **TI** The Weak Axiom of Revealed Preference for Market Demand is Strong. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A-123; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 11. **PR** No Charge. **JE** 022, 021. **KW** Market Demand. Uniqueness of equilibria. Consumption Sectors.

AB The weak axiom of revealed preference for the market demand function is the most general condition on the consumption sector of a private ownership economy that by itself guarantees uniqueness of equilibria for a regular economy if no restriction on the production sector of the economy is imposed. Hence, as long as one does not restrict the form of the total production set, the crucial question for uniqueness of equilibria is whether one can expect the axiom to hold for a reasonably general class of consumption sectors. We shall analyze this question here for a class of consumption sectors which have a particular structure. There are some commodities (called pure factors of production) which are not consumed by any individual household but they are used as inputs in production. These pure factors of production are owned by the households and they derive income from it (see assumption 1). Many general equilibrium models in the literature are of this type. Under quite weak assumptions on the individual demand functions, we shall show that the market demand function of such consumption sectors "typically" does not satisfy the weak axiom of revealed preference.

Hirshleifer, Jack

TI An Experimental Evaluation of Weakest-Link/Best-Shot Models of Public Goods. **AU** Harrison, Glenn W.; Hirshleifer, Jack.

Hodrick, Robert J.

PD November 1987. **TI** Risk, Uncertainty and Exchange Rates. **AA** Northwestern University. **SR** National Bureau of Economic Research Working Paper: 2429; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 311, 321, 133, 212. **KW** Risk Premium. Forward Market. Spot Exchange Rates. Monetary Policy. ARCH. Rational Expectations.

AB This paper explores a new direction for empirical models of exchange rate determination. The motivation arises from two well documented facts, the failure of log-linear empirical exchange rate models of the 1970's and the variability of risk premiums in the forward market. Rational maximizing models of economic behavior imply that changes in the conditional variances of exogenous processes, such as future monetary policies, future government spending, and future rates of income growth, can have a significant effect on risk premiums in the foreign exchange market and can induce conditional volatility of spot exchange rates. I examine theoretically how changes in these exogenous conditional variances affect the level of the current exchange rate, and I attempt to quantify the extent that this channel explains exchange rate volatility using autoregressive conditional heteroskedastic models.

Holmstrom, Bengt R.

PD May 1987. **TI** The *Theory of the Firm*. **AU** Holmstrom, Bengt R.; Tirole, Jean. **AA** Holmstrom: Yale University. Tirole: Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 456; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 117. **PR** No Charge. **JE** 022, 511, 514, 512, 520. **KW** Firm Behavior. Organization. Decision Processes. Firm Finance. Capital Structure. Hierarchy.

AB The theory of the firm has long posed a problem for economists. While substantial progress has been made on the description and analysis of market performance, firm behavior and organization have remained poorly understood. Typically, the firm has been treated in no more detail than the consumer; indeed, the standard textbook analysis of production corresponds closely to the analysis of consumption. In light of scale differences, equal treatment is plainly peculiar. The volume of trade within firms is probably of the same order as market trade. Large firms are substantial subeconomies of their own with thousands of participants. This alone warrants more attention to non-market modes of transaction. The nature of decision-making within firms is of a different kind than individual choice in markets. Firm members act as agents for their superiors rather than themselves. In the aggregate, firm behavior is the result of a complex joint decision process within a network of agency relationships. One can justly ask what forces ensure that the process will maximize profits as postulated in the neoclassical theory. Thus, the question of firm organization is not an independent appendix to value theory. It could well have ramifications for market analysis.

Holtz, Eakin Douglas

PD November 1987. **TI** Federal Deductibility and Local Property Tax Rates. **AU** Holtz, Eakin Douglas; Rosen, Harvey S. **AA** Holtz-Eakin: Columbia University. Rosen: Princeton University. **SR** National Bureau of Economic Research Working Paper: 2427; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 323, 324, 212. **KW** Tax Reform. State Taxes. Local 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

PD April 1988. **TI** Job Queues and Wages: New Evidence on the Minimum Wage and Inter-Industry Wage Structure. **AU** Holzer, Harry; Katz, Lawrence; Krueger, Alan B. **AA** Holzer: Michigan State University. Katz: Harvard University. Krueger: Princeton University. **SR** National Bureau of Economic Research Working Paper: 2561; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 824, 821. **KW** Labor Market. Minimum Wage. Job Applications. Wage Differentials.

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.

Hopenhayn, Hugo A.

PD September 1987. **TI** Invariant Distributions for Monotone Markov Processes. **AU** Hopenhayn, Hugo A.; Prescott, Edward C. **AA** Prescott: University of Minnesota. Hopenhayn: Stanford Business School. **SR** University of Minnesota Center for Economic Research Discussion Paper: 242; Department of Economics, 1035 Management and Economics, University of Minnesota Minneapolis, MN 55455. **PG** 30. **PR** Free. **JE** 023, 111. **KW** Monotone Markov Process. Variant Distribution. Fixed Point. Optimal Stochastic Growth.

AB The existence of fixed points for monotone maps on spaces of measures is established. The case of monotone Markov processes is analyzed and a uniqueness and global stability condition is developed. A comparative statics result is presented and the problem of approximation to the invariant distribution is discussed. The conditions of the theorems are verified for the cases of Optimal Stochastic Growth and Industry Equilibrium.

Hoque, Asraul

PD September 1987. **TI** Size of Holding and Efficiency in Bangladesh: An Application of a Random Coefficient Model. **AA** Monash University. **SR** Monash Department of Econometrics and Operations Research Working Paper: 9/87; Department of Econometrics and Operations Research, Monash University, Clayton, Victoria 3168, AUSTRALIA. **PG** 21. **PR** No Charge. **JE** 211, 212, 717, 121. **KW** Random Coefficients. Efficiency. Piece-Wise Regression. Bangladesh. Farm Size. Agriculture. Land Redistribution.

AB In this paper we have estimated the relationship between farm size and economic efficiency by applying a random coefficient model to the production function where the operational definition of efficiency is derived from the profit maximizing behavior of the farmer. In contrast to earlier studies, piece-wise regression has been used instead of single regression to find the relationship. It has been found that a farm size between 7 and 12 acres of land could be the most efficient in the context of Bangladesh agriculture. This has an important policy implication in connection with land ceiling and land redistribution in Bangladesh.

Horstmann, Ignatius J.

PD September 1987. **TI** Recurrent Advertising. **AU** Horstmann, Ignatius J.; MacDonald, Glenn M. **AA** University of Rochester. **SR** Economics Research Center/NORC Discussion Paper: 87-11; Economics Research Center/NORC, 6030 South Ellis, Chicago, IL 60637. **PG** 55. **PR** $2.00; send requests to Librarian, NORC. **JE** 531, 026. **KW** Advertising. Imperfect Information. Sequential Equilibrium. Two-Period Game.

AB The existence of advertising beyond the date at which a new good is introduced is anomalous in the context of Nelson-type models of advertising. This paper presents a model of advertising, based on private information about product quality, that i) yields such recurrent advertising in equilibrium; ii) generates equilibrium relationships among product price, advertising and quality similar to those suggested by earlier work, and iii) offers other new testable implications. The formal structure is a two-period game of imperfect information, with the equilibrium concept being a refinement of perfect sequential equilibrium. An accessible introduction to the use and refinement of sequential equilibrium is provided; the power of such techniques for applied research is illustrated within the analysis of the advertising model.

Howard, David H.

PD November 1987. **TI** Exchange Rate Regimes and Macroeconomic Stabilization in a Developing Country. **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 Paper: 314; Division of International Finance Board of Governors of the Federal Reserve System, Washington, D.C. 20551. **PG** 42. **PR** No Charge. **JE** 133, 121, 431, 023. **KW** Macroeconomic

Stabilization. Exchange Rate. Developing Country.
AB Argentina's Austral Plan is used as a point of departure for the investigation of the role of exchange rate policy in a macroeconomic stabilization program for a developing country. A model of a country like Argentina is developed and the relationship between the exchange rate and macroeconomic policy is derived. The paper next explores the implications of alternative macroeconomic policy strategies involving exchange rates. The framework provides a rough way of quantifying and making operational what is meant by "appropriate" fiscal and monetary policy in the context of a stabilization program. Finally, some practical aspects of implementing an exchange-rate-oriented macroeconomic stabilization program are discussed.

Huber, Alan M.

TI Government Saving, Capital Formation and Wealth in the United States, 1947-1985. **AU** Boskin, Michael J.; Robinson, Marc S.; Huber, Alan M.

Huffman, Gregory W.

TI Investment, Capacity Utilization and the Real Business Cycle. **AU** Greenwood, J.; Hercowitz, Z.; Huffman, Gregory W.

Jackman, Richard A.

PD August 1987. **TI** Profit-Sharing in a Unionized Economy with Imperfect Competition. **AA** London School of Economics, Centre for Labour Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 290; Centre for Labour Economics, London School of Economics, Houghton Street, London, WC2A 2AE, U.K. **PG** 19. **PR** No Charge. **JE** 831, 824. **KW** Profit-Sharing. Trade Unions. Unemployment. Labour Market Policy.
AB This paper sets up a simple model of a unionized economy and shows that the introduction of profit-sharing unambiguously reduces the unemployment rate. The result arises because unions are assumed to care about the employment of their members but cannot bargain over employment directly. Profit-sharing reduces the perceived cost, in terms of worker income foregone, of increasing employment in the firm. In the economy as a whole, the equilibrium unemployment rate falls.

Jaffee, Dwight

TI Costs of Financial Distress, Delayed Calls of Convertible Bonds, and the Role of Investment Banks. **AU** Shleifer, Andrei; Jaffee, Dwight.

Jane, Edward J.

PD March 1988. **TI** Change in Market Assessments of Deposit-Institution Riskiness. **AU** Jane, Edward J.; Unal, Haluk. **AA** The Ohio State University. **SR** National Bureau of Economic Research Working Paper: 2530; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 312, 313. **KW** Switching Regression Model. Banking.
AB Using the Goldfeld and Quandt switching regression method, this paper investigates variability over 1975-85 in the risk components of bank and saving and loan stock. We develop evidence that the market-beta, interest-sensitivity, and residual risk of deposit-institution stock vary significantly during this period. Reassessing previous event studies in light of these findings suggests that event-study methods tend to overreach their data.

Jing, Zhuli

TI Incentive Effects of Price Rises and Payment-System Changes on Chinese Agricultural Productivity Growth. **AU** McMillan, John; Whalley, John; Jing, Zhuli.

Johnson, Paul

PD October 1987. **TI** The Structured Dependency of the Elderly: A Critical Note. **AA** London School of Economics. **SR** Centre for Economic Policy Research Discussion Paper: 202; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 20. **PR** 1 pound ($2.00) individuals; 1.50 pounds ($3.00) companies, libraries, institutions. **JE** 918, 921. **KW** Old Age. Pensions. Retirement. Britain. Structured Dependency.
AB This paper examines the viewpoint that the dependency of elderly people in modern Britain has been increased by state action and social change. It argues that ideas of "structured dependency" are based upon theoretical premises which promote a one-sided reading of the evidence. An analysis of the changing composition of the income of the elderly population shows that the fall in the labour force participation of older people and the increased importance of state pension income has not led to the marginalization of the elderly, but has instead promoted increased financial independence and consumer power.

PD October 1987. **TI** Savings Behavior, Fertility and Economic Development in Nineteenth-Century Britain and America. **AA** London School of Economics. **SR** Centre for Economic Policy Research Discussion Paper: 203; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 35. **PR** 1 pound ($2.00) individuals; 1.50 pounds ($3.00) companies, libraries, institutions. **JE** 042, 044, 841, 918, 921. **KW** Life-Cycle Saving. Britain. United States. Nineteenth Century. Liquidity Constraints. Pension Systems.
AB This paper reviews evidence that life-cycle saving became the norm in nineteenth-century America, with a consequent fall in fertility and rise in the rate of capital formation, and considers whether a similar transition to life-cycle saving can be observed in nineteenth-century Britain. Although there is extensive evidence of widespread saving by British workers, most of this saving did not fit a life-cycle pattern. Liquidity constraints forced British workers to borrow, buy on credit, save only for short-run ends, and abstain from long-run accumulation. The paper concludes that some of the apparent difference between the savings behaviour of British and American workers may be the result of a misreading of United States evidence, some may be due to differences in old-age welfare systems, but that the most plausible explanation is that the real income of British workers in this period was substantially below that of their American counterparts.

Johnson, Robert A.

TI Realignment of the Yen-Dollar Exchange Rate: Aspects of the Adjustment Process in Japan. **AU** Loopesko, Bonnie E.; Johnson, Robert A.

Jones, Rich

PD 1986. **TI** Regional Effects of Taxes in Canada: An Applied General Equilibrium Approach. **AU** Jones, Rich; Whalley, John. **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8627C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 23. **PR** $4.00 Canadian. **JE** 021, 323. **KW** Taxation. Canada. General Equilibrium.

PD 1987. **TI** Regional Balance Sheets of Gains and Losses from National Policies. **AU** Jones, Rich; Whalley, John. **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8708C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 23. **PR** $4.00 Canadian. **JE** 224, 321, 431. **KW** Government Policy. Balance Sheet. National Wealth.

TI How Robust is Applied General Equilibrium Analysis? **AU** Harrison, Glenn W.; Jones, Richard; Kimbell, Larry J.; Wigle, Randall.

Joskow, Paul L.

PD March 1987. **TI** Price Adjustment in Long Term Contracts: The Case of Coal. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 444; Department of Economics, Massachusetts Institute of Technology Cambridge, MA 02139. **PG** 44. **PR** No Charge. **JE** 723, 721, 022, 612. **KW** Electric Utilities. Energy. Contracts. Natural Resources.

AB A sample of coal contracts between electric utilities and coal suppliers is used to analyze mechanisms for determining prices in long term coal contracts. Alternative methods for determining prices in long term contracts are discussed and the actual adjustment mechanisms specified in a set of actual coal contracts presented. The vast majority of long term coal contracts use a base price plus escalation or cost-plus adjustment formula. Base price equations and subsequent transactions price equations are estimated. The analysis shows that on average long term contracts are flexible in the sense that prices adjust to major changes in the costs of supplying coal. However, some pricing rigidities are found which appear to reflect the economic conditions prevailing at the time the contracts were executed. Furthermore, some contracts track changes in market values very poorly.

PD April 1987. **TI** The Effects of Economic Regulation. **AU** Joskow, Paul L.; Rose, Nancy L. **AA** Massachusetts Institute of Technology. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 447; Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. **PG** 92. **PR** No Charge. **JE** 612, 613, 611. **KW** Regulation. Price Regulation. Entry.

AB This chapter discusses alternative approaches to measuring the effects of "economic regulation" and reviews the empirical literature employing these approaches. By "economic regulation" we refer to both direct legislation and administrative regulation of prices and entry into specific industries or markets. We follow conventional treatment in distinguishing economic regulation from a host of other forms of government intervention in markets, including "social regulation" of environmental, health and safety practices, antitrust policy, and tax and tariff policies.

Joyce, Theodore

TI A Cost-Effectiveness Analysis of Strategies to Reduce Infant Mortality. **AU** Corman, Hope; Joyce, Theodore; Grossman, Michael.

Judd, Kenneth L.

TI Strategic Incentive Manipulation in Rivalrous Agency. **AU** Fershtman, Chaim; Judd, Kenneth L.

Judge, George

PD August 1987. **TI** Power and Pre-Test Risk Comparisons for Conventional and Joint One Sided Tests. **AU** Judge, George; Bohrer, Robert; Yancey, Thomas. **AA** Department of Agricultural and Resource Economics, University of California, Berkeley; University of Illinois. **SR** University of California at Berkeley Department of Agricultural and Resource Economics (CUDARE) Working Paper: 447; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 29. **PR** $5.80. **JE** 211. **KW** Orthonormal Model. Joint One Sided Tests. Pre-Test Estimator. Power of the Test. Squared Error Loss.

AB Within the context of an orthonormal linear statistical model and multivariate coventional and joint one sided tests, this paper is concerned with the use of power and pre-test risk functions in making decisions concerning the choice between tests in practice. The informational content of these criteria, for the particular testing problem at hand is contrasted and discussed.

Kalaba, Robert

PD August 1987. **TI** A Fortran Program for Time-Varying Linear Regression Via Flexible Least Squares. **AU** Kalaba, Robert; Rasakhoo, Nima; Tesfatsion, Leigh. **AA** Kalaba: University of Southern California. Rasakhoo: Infotec Development, Inc. Tesfatsion: University of Southern California. **SR** University of Southern California Modelling Research Group Working Paper: #M8730; Department of Economics, University of Southern California, University Park, Los Angeles, CA 90089-0152. **PG** 37. **PR** No Charge. **JE** 214. **KW** Time-Varying Coefficients. FORTRAN. Simulation Experiments. Noisy Observations. Dynamic Equations.

AB Suppose an investigator obtains noisy observations on a process which he believes can be adequately described by a linear regression model with regression coefficients which evolve slowly over time. The actual dynamic equations governing the evolution of the regression coefficients are unknown, and are proxied by a smoothness

prior. Residual dynamic and measurement errors are anticipated to be small, but are otherwise unrestricted. The investigator wishes to estimate the time-varying regression coefficients. A "flexible least squares solution" is proposed for this problem. The flexible least squares solution is defined to be the collection of all coefficient sequence estimates which attain the "residual efficiency frontier" -- i.e., which yield minimal squared residual measurement error and dynamic error sums, conditional on the given observations. A FORTRAN program is presented which implements the flexible least squares solution. The program has been extensively tested, and incorporates several validation checks that users can employ. Simulation experiments involving linear, quadratic, and sinusoidal motions in the true regression coefficients are briefly described. In each experiment the flexible least squares estimates accurately reflect the qualitative time-variation displayed by the true regression coefficients, despite noisy observations.

Kaneko, Mamoru

PD December 1986. **TI** The Core of a Market with a Continuum of Players and Finite Coalitions: From Finite to Continuum Economies. **AU** Kaneko, Mamoru; Wooders, Myrna Holtz. **AA** Kaneko: Hitotsubashi University. Wooders: Toronto University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: TR500; Institute for Mathematical Studies in the Social Sciences, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 53. **PR** $4.00. **JE** 021, 026. **KW** Core Equivalence. Continuum Economy. Externalities. F-Core. Aumann Core. Walrasian Equilibrium. Game Convergence.

AB In previous papers, we defined our model of an economy with a continuum of players and finite coalitions and its core, called the f-core. The problem of this paper is the meaning of the model from the viewpoint of large finite economies. We study the problem by exploring convergence, from finite to the continuum, of solutions and of structures. The solutions are approximate cores for the finite economies and the f-core for the continuum economy. The special aspect of convergence in structure is that relative sizes of permissible coalitions converge to zero and, correspondingly, permissible coalitions are finite in the continuum economy. This convergence is obtained in the context of private goods exchange economies with widespread externalities. In answer to our problem of the meaning of the model, we interpret the continuum economy and its f-core as a large finite economy in a converging sequence and its approximate core.

Kannan, R.

TI Chvatal Closures for Mixed Integer Programming Problems. **AU** Cook, W.; Kannan, R.; Schrijver, A.

Karp, Larry S.

PD August 1987. **TI** Estimating Market Structure and Tax Incidence: The Japanese Television Market. **AU** Karp, Larry S.; Perloff, Jeffrey M. **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: 445; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 36. **PR** $7.20. **JE** 631, 921, 212, 421. **KW** Market Structure. Taxation. Television Prices. Oligopolistic Industries. Exports.

AB The tax incidence falling on consumers depends on the market structure. While the effect of market structure on tax incidence has been examined theoretically, we are unaware of any empirical research in this area. This paper estimates market structure and tax incidence in the Japanese television market. We believe there are four reasons why this research is useful. First, we demonstrate theoretically and empirically that tax incidences on consumers can and do exceed 100 per cent in oligopolistic industries. Second, that tax incidences exceed 100 per cent is of practical importance as well as academic interest, since tax incidence is important in determining whether dumping has occurred under United States law. Third, the incidence of the tax determines whether it pays for a firm to export substantial quantities. Fourth, we derive measures of market structure and test whether the Japanese television market is competitive, Nash-Cournot, or collusive.

Katchalski, M.

TI The Maximum Size of a Convex Polygon in a Restricted Set of Points in the Plane. **AU** Alon, N.; Katchalski, M.; Pulleyblank, W. R.

Katz, Avery

PD August 1987. **TI** The Effect of Frivolous Lawsuits on the Settlement of Litigation. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-39; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 36. **PR** No Charge. **JE** 026, 024, 916. **KW** Asymmetric Information. Settlement Bargaining. Free Entry. Policy Rules. Sequential Equilibrium.

AB It is commonly alleged that a substantial proportion of lawsuits are frivolous and are filed only for their nuisance value. This paper models settlement bargaining in the presence of frivolous suits as a game of asymmetric information, where the plaintiff knows the true merits of his claim, and the defendant does not, apart from any inferences he can draw from the fact of suit. When there is free entry to the opportunity to make a frivolous claim, the profit from doing so is driven to zero, and the surplus from settlement bargaining is completely dissipated. Several policies dealing with frivolous suits are examined; it turns out that requiring a losing litigant to pay the expenses of the winner (the English rule) does not alleviate the problem, but introducing a refundable deposit does.

Katz, Barbara G.

PD June 1987. **TI** An Equilibrium Model of a Second Economy Market in a Centrally Planned Economy. **AU** Katz, Barbara G.; Owen, Joel. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 428; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 32. **PR** $3.00. **JE** 022, 611, 124. **KW** Second

Economy Market. Centrally Planned Economies. Official Market. Black Market.

AB We study a Centrally Planned Economy in which an identical consumer good is sold under different price and availability conditions on the official market (OM) and a "second economy" market (SEM). The model contains planners, managers and consumers. Planners set input allocations, output targets, number of enterprises and the bonus function. They also fix the price and the rate at which output is sold on the OM. Managers divide inputs between production for the OM and SEM to maximize expected utility of wealth, balancing incentives from the bonus function with the stochastic revenue of sales to the SEM. Consumers are expected utility maximizers who purchase the goods on the OM or the SEM. On the OM, excess demand exists at the non-Walrasian fixed price; delivery date is stochastic. The SEM offers immediate availability at a market-clearing price. Our solution concept involves the rational expectations of managers concerning the equilibrium price, the consistency of the ex ante probability of waiting time with the ex post decisions of consumers, and a market-clearing SEM. Under a set of assumptions we derive a closed form solution for price and supply on the SEM in terms of the other parameters. We investigate the comparative statics of our solution and find that the response of price and supply on the SEM to an increase in inputs, for instance, is not always of one sign and depends on policy parameters. Sufficient conditions for the existence of the SEM to increase the sum of the aggregate utility of consumers and the aggregate utility of managers are also established.

PD July 1987. **TI** Product Availability as a Strategic Variable: The Case of Retailer Stockouts. **AU** Katz, Barbara G.; Nelson, Julianne. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 431; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 22. **PR** $3.00. **JE** 022, 611. **KW** Shortages. Strategic Stockouts. Grocery Stores.

AB We derive conditions under which retailers find it profitable to use special purchase merchandise to implement strategic stockouts. In particular, consumer surplus must be sufficiently sensitive to price changes and bargain-hunting must be costly. We argue that these conditions are likely to be satisfied when retailers set relatively low gross margins on regularly-stocked items. Thus, it is not surprising that supermarkets, with their traditionally low gross margins, feel constrained by the unavailability rule that prohibits grocery store stockouts and are seeking its repeal. We also show that any retailer with the incentive to adopt a special purchase program would prefer to bypass the restriction of a fixed price on the regularly-stocked item. In the absence of the general legal restrictions against bait advertising, the special purchase regime would degenerate as prices are raised in search of higher profits. All consumers who enter the market for X under these conditions, i.e., Theta < Theta (g^*), run the risk of being worse off ex post in this regime than they would be in either the special purchase or the single brand regime.

PD July 1987. **TI** Rationed and Walrasian Markets for the Same Good: A Rational Expectations Determination of the Relative Prices. **AU** Katz, Barbara G.; Owen, Joel. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 432; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 7. **PR** $3.00. **JE** 022, 611, 124. **KW** Price Determination. Rational Expectations. Rationing. Second Economy Markets. Official Markets. Centrally Planned Economy.

AB Consumers purchase a good on either a rationed or an equilibrating market. On the former for price p1 the good is obtained instantly or with delay with probabilities II and (1-II) respectively. On the latter the good is obtained instantly for p2. We define and derive the conditions for a rational expectations equilibrium for this problem.

Katz, Lawrence

TI Employee Crime, Monitoring and the Efficiency Wage Hypothesis. **AU** Dickens, William T.; Katz, Lawrence; Lang, Kevin; Summers, Lawrence.

TI Workers' Trust Funds and the Logic of Wage Profiles. **AU** Akerlof, George; Katz, Lawrence F.

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

Kennan, John

PD 1987. **TI** Optimal Tariff Equilibria with Customs Unions. **AU** Kennan, John; Riezman, Raymond. **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8704C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PR** $4.00 Canadian. **JE** 422, 323, 831. **KW** Tariff. Customs. Unions.

Kilgour, D. Marc

TI National Security Games. **AU** Brams, Steven J.; Kilgour, D. Marc.

Kimbell, Larry J.

TI How Robust is Applied General Equilibrium Analysis? **AU** Harrison, Glenn W.; Jones, Richard; Kimbell, Larry J.; Wigle, Randall.

King, Elizabeth

PD December 1986. **TI** Change in the Status of Women Across Generations in Asia. **AU** King, Elizabeth; Peterson, Jane; Adioetomo, Sri M.; Domingo, Lita; Syed, Sabiha H. **AA** The Rand Corporation. **SR** Rand Report: R-3399; The Rand Corporation, 1700 Main Street P.O. Box 2138, Santa Monica CA 90406-2138. **PG** 92. **PR** No Charge. **JE** 121, 851, 917, 212, 023. **KW** Developing Countries. Discrimination. Intergenerational Model.

AB This report addresses several questions about changes in the activities and status of women in Pakistan, Indonesia, and the Philippines. It discusses differences in patterns and trends in these changes across the three countries, and the ways the status of women has improved

across generations of families. It examines the factors that explain the patterns in education levels, age at marriage, and the distribution of occupations in these countries. The analysis is based on family and individual data from the Asian Marriage Surveys, which were fielded in 1979-1980.

King, Maxwell L.

TI A Further Class of Tests for Heteroskedasticity. **AU** Evans, Merran A.; King, Maxwell L.

Klemperer, Paul

TI Exchange Rate Pass-Through When Market Share Matters. **AU** Froot, Kenneth; Klemperer, Paul.

Kletzer, Kenneth

TI Trade Policy Under Endogenous Credibility. **AU** Engel, Charles; Kletzer, Kenneth.

TI Tariffs and Saving in a Model with New Families. **AU** Engel, Charles; Kletzer, Kenneth.

Kling, Arnold

PD August 1987. **TI** Interest-Only/Principal-Only Mortgage-Backed Strips: A Valuation and Risk Analysis. **AU** Kling, Arnold; Marcus, Alan J. **AA** Kling: Federal Home Loan Bank Board. Marcus: Boston University. **SR** National Bureau of Economic Research Working Paper: 2340; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 313, 311, 315. **KW** Valuation Model. Securities. Mortgages. Interest Rates. Interest-Only/Principal-Only Mortgage Strips.

AB We examine the risk characteristics of each portion of Interest-Only/Principal-Only mortgage strips, present results of a valuation model of these securities, and examine market prices of both the interest-only and principal-only portions of mortgage pools. We show that IO/PO securities are highly sensitive to the prepayment behavior of the underlying mortgage pool. Because that behavior varies systematically with the interest rate, and because prepayments affect the values of IO and PO components in opposite ways, the interest-rate risk of strip securities can differ substantially from that of the underlying mortgage pool. The PO component has much longer duration than the underlying mortgage pool. In contrast, the IO component typically will have a negative duration, at least in ranges for which interest-rate movements induce meaningful changes in mortgage prepayment behavior. We also show how market prices of partially-stripped Mortgage-Backed Strips that are actively traded on secondary markets can be used to infer market values of pure IO/PO strips. Recent market data is fully consistent with the theoretical insights offered by our valuation model. When interest rates spiked last April, PO values fell far more dramatically than those of the underlying mortgage pool while IO values actually rose.

Knight, J. B.

PD September 1987. **TI** The Erosion of Apartheid in the South African Labor Market: Measures and Mechanisms. **AU** Knight, J. B.; McGrath, M. D. **AA** Unit for the Study of African Economics, Institute of Economics and Statistics, University of Oxford. **SR** Oxford Applied Economics Discussion Paper: 35; Institute of Economics and Statistics, St. Cross Building, Manor Road, Oxford OX1 3UL, ENGLAND. **PG** 63. **PR** No Charge. **JE** 917, 824, 841, 121, 812. **KW** Apartheid. South Africa. Racial Discrimination. Occupational Attainment. Wage Functions.

AB The South African labour market has traditionally been characterized by huge racial inequality, mainly the result of racial discrimination both 'prior to' and 'within' the market. However, there are reasons to expect the labour market to have become more integrated over the last decade. This study exploits cross-section data sets for 1976 and 1985 which contain information on race, sex and job-evaluated skill. Mean earnings differences among races and over time are decomposed to examine the causes of inequality and its reduction via integration of the wage determination process and via job advancement. Both mechanisms are found to have operated, although considerable inequality still remains.

Koford, Kenneth

PD August 1987. **TI** *Testing Theories of Legislative* Voting: Dimensions, Ideology and Structure. **AA** California Institute of Technology and University of Delaware. **SR** Caltech Social Science Working Paper: 635; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PR** No Charge. **JE** 025. **KW** Legislatures. Dimensions. Ideology. Structure. Transactions Costs. Politics. Constituency. Coalitions. Logrolling.

AB While dimensional studies of legislative voting find a single ideological dimension (Schneider 1979, Poole and Rosenthal 1985b), regression estimates find constituency and party dominant (Kau and Rubin 1979, Peltzman 1984), and ideology secondary (Kalt and Zupan 1984). This paper rescales the dimensional findings to show their improved classification success over the null hypothesis that votes are not unidimensional. With the rescaling, most votes are not explained by one dimension, and several dimensions are important. Nevertheless, fewer dimensions are found than constituents' preferences suggest. Thus a model is developed where transactions costs of building coalitions reduce the number of dimensions. When legislative parties build internal coalitions to pass and defeat bills, voting on randomly drawn bills has a single party-oriented dimension. And natural ideological dimensions are reinforced if parties write bills and logroll along natural lines of cohesion.

Korte, B.

TI Examples and Algorithmic Properties of Greedoids. **AU** Goecke, O.; Korte, B.; Lovasz, L.

Kotlikoff, Laurence

PD September 1987. **TI** How Much Care Do the Aged Receive from their Children? A Bimodal Picture of Contact and Assistance. **AU** Kotlikoff, Laurence; Morris, John. **AA** Kotlikoff: National Bureau of Economic Research. Morris: Hebrew Rehabilitation Center for the Aged. **SR** National Bureau of Economic Research Working Paper: 2391; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 918, 921. **KW** Elderly.

Children.
AB This paper presents some preliminary findings about contact between the aged and their children based on a new survey of the aged and their children, entitled The Hebrew Rehabilitation Center for the Aged-National Bureau of Economic Research (HRC-NBER) Child Survey. Data on extended families is quite limited. The HRC-NBER Child Survey represents one of the few attempts to collect economic and demographic data on the elderly and their children. While these data will be used in future research to test structural models of the living arrangements, the purposes of the current paper are to describe the survey and to examine contact between the elderly and their children.

Kreps, David M.

TI On the Robustness of Equilibrium Refinements. **AU** Fudenberg, Drew; Kreps, David M.; Levine, David K.

Krueger, Alan B.

PD April 1987. **TI** Are Public Sector Workers Paid More Than Their Alternative Wage? Evidence from Longitudinal Data and Job Queues. **AA** Department of Economics & Woodrow Wilson School, Princeton University. **SR** Princeton Industrial Relations Section Working Paper: 225; Industrial Relations Section, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 26. **PR** $1.50 plus postage. **JE** 824, 822, 212. **KW** Wage Differentials. Union Wage Gap.
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.

PD September 1987. **TI** Ownership, Agency and Wages: An Examination of the Fast Food Industry. **AA** Department of Economics and Woodrow Wilson School, Princeton University. **SR** Princeton Industrial Relations Section Working Paper: 226; Industrial Relations Section, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 15. **PR** $1.00 plus postage. **JE** 824, 212. **KW** Agency. Efficiency Wages. Wage Differentials.
AB This paper examines the determinants of wages and fringe benefits in the fast food industry. The focus of the paper is on exploring differences between company-owned and franchised restaurants because agency problems are likely to affect the management and operation of company-owned restaurants. Empirical analysis of two data sets finds that total labor compensation for non-management employees is slightly greater at company-owned outlets than franchisee-owned outlets, all else held constant. Furthermore, workers' wages grow more rapidly over time at company-owned restaurants than franchisee-owned restaurants. In addition, the results suggest that wage differentials for race, sex, and marital status are small in the fast food industry relative to other industries.

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

Krugman, Paul

PD October 1987. **TI** Adjustment in the World Economy. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2424; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 421, 411. **KW** World Economy. Exchange Rate. Balance of Payments. Deficit Countries.
AB There is a widespread view that world payments imbalances can be remedied through increased demand in surplus countries and reduced demand in deficit countries, without any need for real exchange rate changes. In fact shifts in demand and real exchange rate adjustment are necessary complements, not substitutes. The essential reason for this complementarity is that a much higher fraction of a marginal dollar of United States than of foreign spending falls on United States output. As a result, a redistribution of world spending away from the United States leads to an excess supply of United States goods unless accompanied by a decline in their relative price. Although some economists believe that the integration of world capital markets somehow eliminates this problem, this is a fallacy that confuses accounting identities with behavior. The paper also addresses a number of related issues, such as the role of budget deficits in determining domestic demand and the effectiveness of nominal exchange rates changes in producing real depreciation.

Kuhn, Peter

PD April 1987. **TI** Social Security, Longevity, and Moral Hazard. **AU** Kuhn, Peter; Davies, James B. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Department of Economics Research Report: 8706; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 42. **PR** $5.00 Canada; $7.00 Elsewhere. **JE** 915, 918, 913. **KW** Life Expectancy. Health. Annuities. Pensions.
AB Analysis of the impact of government policy on longevity is illustrated for the social security system, using a simple theoretical model. Recent literature has considered how adverse selection in annuity markets provides a rationale for social security, but has ignored the moral hazard involved, that is induced changes in behavior tending to increase longevity. Here individuals consume a health-related good which may either increase or reduce longevity. A competitive annuity market in the absence of government is characterized, and then actuarially fair

social security is introduced. In this setting social security is never welfare-improving. In most cases it tends to encourage longevity, whereas it is shown that there is an optimal Pigouvian subsidy on products, like cigarettes, which reduce longevity in this model. Private agents ignore the external effect of their health investments in raising premia in competitive annuity markets. A subsidy to cigarettes, or taxes on healthful commodities may correct this distortion.

Kulchycky, Ksenia

TI U.S. and Swedish Direct Investment and Exports. **AU** Blomstrom, Magnus; Lipsey, Robert E.; Kulchycky, Ksenia.

Kwan, Yum Keung

PD September 1987. **TI** On Nash Implementation of the Walrasian or Lindahl Correspondence in the Two-Agent Economy. **AU** Kwan, Yum Keung; Nakamura, Shinsuke. **AA** University of Minnesota. **SR** University of Minnesota Center for Economic Research Discussion Paper: 243; Department of Economics, 1035 Management and Economics, University of Minnesota, Minneapolis, MN 55455. **PG** 20. **PR** Free. **JE** 024, 022, 021. **KW** Nash Implementation. Walrasian Correspondence. Lindahl Correspondence.

AB Various possibility and impossibility theorems are obtained concerning Nash implementation of the Walrasian or Lindahl correspondence in two-agent economies. The result is drastically different from the case with more than two agents. There is neither a continuous and balanced, nor a smooth and weakly balanced mechanism which implements either of these two correspondences. For both the Walrasian and Lindahl cases, however, there are mechanisms which implement the correspondence with properties which are either continuous and weakly balanced, or smooth but not weakly balanced.

Kyle, Albert

PD March 1988. **TI** Noise Trading and Takeovers. **AU** Kyle, Albert; Vila, Jean Luc. **AA** Kyle: University of California, Berkeley. Vila: New York University. **SR** New York University Salomon Brothers Center Working Paper: 455; New York University Salomon Brothers Center for the Study of Financial Institutions 90 Trinity Place, New York, NY 10006. **PG** 32. **PR** $4.00. **JE** 611, 522. **KW** Takeover. Trading. Stock Prices.

AB A model of takeovers is investigated where "noise trading" provides camouflage which makes it possible for a large corporate outsider to purchase enough shares at favorable prices so that takeovers can become profitable. Although the model accommodates the possibility of dilution (as discussed by Grossman and Hart) and a large incumbent shareholder (as discussed by Shleifer and Vishny), neither dilution nor a large incumbent shareholder is necessary for costly takeovers to be profitable. Noise trading tends to encourage costly takeovers which otherwise would not occur and to discourage beneficial takeovers which otherwise would occur.

Lach, Saul

PD September 1987. **TI** The Interaction Between Capital Investment and R&D in Science-Based Firms. **AU** Lach, Saul; Schankerman, Mark. **AA** Lach: Columbia University. Schankerman: London School of Economics. **SR** National Bureau of Economic Research Working Paper: 2377; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 621, 631, 212. **KW** Investment. Science Industries. Dynamic Factor Analysis.

AB This paper analyzes the interaction among R&D, capital investment, and the stock market rate of return for 191 firms in science-based industries for the period 1973-1981. Using a framework based on dynamic factor analysis, we show how several prominent hypotheses about the determination of R&D and investment generate testable parameter restrictions. The data indicate that R&D Granger-causes investment, but that investment does not Granger-cause R&D. We use this finding to examine the validity of those hypotheses, to characterize the movements over time of R&D and investment, and to measure the stock market valuation of these movements.

Laffont, Jean Jacques

PD March 1988. **TI** Moral Hazard, Financial Constraints and Sharecropping in El Oulja. **AU** Laffont, Jean Jacques; Matoussi, Mohamed Salah. **AA** Laffont: California Institute of Technology and GREMAQ, Universite de Toulouse. Matoussi: University of Tunis. **SR** Caltech Social Science Working Paper: 667; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 15. **PR** No Charge. **JE** 716, 026, 024. **KW** Sharecropping. Moral Hazard. Credit Constraints. Tunisia. Constraints.

AB This paper develops a theory of sharecropping which emphasizes the dual role of moral hazard in the provision of effort and financial constraints. The model is compatible with a large variety of contracts as observed in the region of El Ouljia in Tunisia. Using an original set of data including financial data, various tests of the theory are realized. The role of financial constraints in the explanation of which type of contract is selected (as well as its implications that financial constraints affect effort and therefore output) are strongly supported by the data.

Laidler, David E. W.

PD July 1987. **TI** The Austrians and the Stockholm School - Two Failures in the Development of Modern Macroeconomics? **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Department of Economics Research Report: #8708; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 49. **PR** $5.00 Canada; $7.00 Elsewhere. **JE** 031, 131. **KW** Business Cycle. Capital. Expectations. Cumulative Process.

AB This paper compares two bodies of business cycle theory that built upon the work of Kunt Wicksell, considers the reasons for the differences between them, and assesses their influence on the development of macroeconomics.

Lal, Deepak K.

PD 1987. **TI** After the Debt Crisis: Modes of Development for the Longer Run in Latin America. **AA** University College London. **SR** University College London Discussion Paper: 88-04; Department of Economics, University College London, Gower Street, London, WC1E 6BT. **PG** 46. **PR** 1.50 pounds sterling. **JE** 443, 431. **KW** Debt Crisis. Latin America.

PD October 1987. **TI** The Political Economy of Industrialization in Primary Product Exporting Economies: Some Cautionary Tales. **AA** University College London. **SR** University College London Discussion Paper: 88-02; Department of Economics, University College London, Gower Street, London, WC1E 6BT. **PG** 55. **PR** 1.50 pounds sterling. **JE** 411. **KW** Political Economy. Industrialization. Primary Product Exporting.

PD January 1988. **TI** Economic Growth in India. **AA** University College London. **SR** University College London Discussion Paper: 88-07; Department of Economics, University College London, Gower Street, LONDON, WC1E 6BT. **PG** 84. **PR** 1.50 pounds sterling. **JE** 121, 111. **KW** Economic Growth. India.
AB No abstract.

Lam, David

PD August 1987. **TI** Does a Uniform Age Distribution Minimize Lifetime Wages? **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-19; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 17. **PR** No Charge. **JE** 824, 826, 841. **KW** Life Cycle Wages. Overlapping Generations. Intergenerational Transfers.
AB Motivated by empirical evidence that age structure fluctuations affect relative wages across age groups, this paper asks whether there is a steady-state age distribution that maximizes the lifetime wages of a representative worker. The paper proves the surprising result that in a pure labor economy with any constant returns technology, a uniform age distribution (zero population growth) minimizes lifetime wages. The presence of other factors complicates, but does not necessarily reverse, this result. Effects of age structure on age-specific productivity are incorporated into overlapping generations models developed to analyze the economic effects of changes in population growth rates. Analogies of the effects of age structure on life-cycle wages with intergenerational transfer effects in consumption loan models are explored.

Lang, Kevin

TI Employee Crime, Monitoring and the Efficiency Wage Hypothesis. **AU** Dickens, William T.; Katz, Lawrence; Lang, Kevin; Summers, Lawrence.

TI A Goodness of Fit Test of Dual Labor Market Theory. **AU** Dickens, William T.; Lang, Kevin.

Laroque, G.

TI Asset Pricing and Optimal Portfolio Choice in the Presence of Illiquid Durable Consumption Goods. **AU** Grossman, S. J.; Laroque, G.

PD July 1987. **TI** Recent Theories of the Business Cycle the Role of Speculative Inventories. **AA** INSEE. **SR** Unite de Recherche Document de Travail ENSAE/INSEE: 8709; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. **PG** 34. **PR** No Charge. **JE** 023, 131, 133, 134. **KW** Inventories. Stabilization Policies. Deterministic Framework. Stochastic Framework.
AB This paper reviews the recent work on the theory of the business cycle, focussing on the behavior of inventories during the cycle. The paper is organized as follows. First some of the basic stylized facts, i.e. the relationship between the growth rate of GNP and the second difference in the levels of inventories, are recalled. Second, the role of inventories in rational expectations competitive models of the cycle is discussed, both in deterministic and stochastic setups. Finally, the third section describes some recent work in the Keynesian tradition, in a deterministic framework. In particular, a perfect foresight version of a Keynesian model is suggested, where speculative inventory behavior is destabilizing.

TI Asset Pricing and Optimal Portfolio Choice in the Presence of Illiquid Durable Consumption Goods. **AU** Grossman, Sanford; Laroque, Guy.

TI Testing Price Exogeneity in the Canonical Disequilibrium Model. **AU** Gourieroux, C.; Laroque, G.

Lazear, Edward P.

PD August 1987. **TI** Time Preference, Reinforcement, and the Pattern of Payments. **AA** University of Chicago; Senior Fellow, Hoover Institution. **SR** Stanford Hoover Institute Working Paper in Economics: E-87-39; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 50. **PR** No Charge. **JE** 022, 921, 315, 025. **KW** Time Preference. Installment Loans. Zero-Coupon Loans. Raises. Loan Repayment. Incentives.
AB The payoff structure of Las Vegas slot machines, the timing of evaluations and raises in the labor market, and the repayment structure of loans have many common elements. It is argued that frequent payments provide additional information to gamblers, workers, and lenders. These agents are willing to pay for the information. That rather obvious point yields a number of implications about the structure of labor and financial markets. The theory is essentially one of endogenous time preference and is akin to the psychologist's notions of reinforcement.

PD October, 1987. **TI** Job Security and Unemployment. **AA** Hoover Institution, University of Chicago. **SR** Stanford Hoover Institute Working Paper in Economics: E-87-47; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 43. **PR** No Charge. **JE** 822, 824, 212, 023. **KW** Unemployment. Severance Pay. Notice Requirements. Job Security Provisions.
AB European countries have enacted various job security provisions over the last thirty years. Employers are required to pay workers on separation and/or to give advance notice of termination. In anything less than a perfectly functioning market, there are effects of the provisions on employment. Incumbents are more likely to

retain their jobs, but new workers are less likely to be hired. An examination of the European data reveals that severance pay requirements reduce employment substantially. The main effect of notice provisions appear to be a reduction in hours worked, as firms switch from covered full-time, permanent workers to exempted part-time, temporary workers.

Lazorchak, J. M.

TI An Analysis of Tapered Access Charges for End Users. **AU** Heyman, D. P.; Lazorchak, J. M.; Sibley, D. S.; Taylor, W. E.

Ledyard, John O.

TI The Design of Mechanisms to Allocate Space Station Resources. **AU** Banks, Jeffrey S.; Ledyard, John O.; Porter, David P.

Levine, David K.

TI Finite Player Approximations to a Continuum of Players. **AU** Fudenberg, Drew; Levine, David K.

TI On the Robustness of Equilibrium Refinements. **AU** Fudenberg, Drew; Kreps, David M.; Levine, David K.

Lewis, Alain A.

PD May 1987. **TI** On Turing Degrees of Walrasian Models and a General Impossibility Result in the Theory of Decision Making. **AA** Stanford University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics: Series) Technical Report: TR512; IMSSS, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 57. **PR** $4.00. **JE** 213, 026, 511. **KW** Recursive Functions. Turing Degrees. Walrasian Models. Impossibility Results. Decision Theory.

AB We use recursive metric spaces and the Kleene-Mostowski arithmetic hierarchy to assess the degree of complexity of recursively presented Walrasian models of general equilibrium. A lower bound of complexity for such structures is achieved at $0''$, and from this bound, we generalize an impossibility result in decision making due to G. Kramer.

Lewis, Tracy R.

TI Negotiated Trade Restrictions with Private Political Pressure. **AU** Feenstra, Robert C.; Lewis, Tracy R.

PD April 1987. **TI** Regulating a Monopolist with Unknown Demand and Cost Functions. **AU** Lewis, Tracy R.; Sappington, David E. M. **AA** Bell Communications Research, Inc. **SR** Bell Communications Research Inc Economics Discussion Paper: 36; Bell Communications Research, Incorporated 435 South Street, Morristown, NJ 07960-1961. **PG** 33. **PR** No Charge. **JE** 612, 613, 026. **KW** Regulation. Asymmetric Information. Monopoly.

AB We consider the design of regulatory policy when the regulator is imperfectly informed about both the firm's cost function and the demand function it faces. To some extent, the optimal policy is the natural "combination" of the policies when there is uncertainty about demand alone or cost alone. But important qualitative differences also exist. For example, prices may optimally be set below marginal cost when there is uncertainty about both cost and demand, although prices will never fall below marginal cost when there is only a single source of uncertainty, whether it pertains to cost or demand.

PD June 1987. **TI** Regulating a Monopolist with Unknown Demand. **AU** Lewis, Tracy R.; Sappington, David E. M. **AA** Bell Communications Research, Inc. **SR** Bell Communications Research Inc Economics Discussion Paper: 35; Bell Communications Research, Incorporated 435 South Street, Morristown, NJ 07960-1961. **PG** 45. **PR** No Charge. **JE** 612, 613, 026. **KW** Regulation. Asymmetric Information. Monopoly.

AB We analyze the design of regulatory policy when the firm has better information about demand than the regulator from the outset of their relationship. Such a situation is likely to arise, for example, when demand is determined by the quality or reliability of the good or service being offered, and the regulator cannot measure these characteristics at the time production takes place. We assume that the firm's cost structure is common knowledge and that monitoring of output is prohibitively costly. We find that when marginal costs of production increase with output, the firm can command no rents from its private information, and the first-best policy is feasible. In contrast, with declining marginal costs, a single price is always optimal under plausible assumptions about the relevant information asymmetry. Thus, major qualitative differences in the optimal regulatory policy arise when the firm's private information concerns demand rather than costs.

TI Negotiated Trade Restrictions with Private Political Pressure. **AU** Feenstra, Robert C.; Lewis, Tracy R.

Lindsey, Robin

TI Bottleneck Congestion with Elastic Demand. **AU** Arnott, Richard; de Palma, Andre; Lindsey, Robin.

Lipsey, Robert E.

TI U.S. and Swedish Direct Investment and Exports. **AU** Blomstrom, Magnus; Lipsey, Robert E.; Kulchycky, Ksenia.

Loopesko, Bonnie E.

PD August 1987. **TI** Realignment of the Yen-Dollar Exchange Rate: Aspects of the Adjustment Process in Japan. **AU** Loopesko, Bonnie E.; Johnson, Robert A. **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 Paper: 311; Division of International Finance Board of Governors of the Federal Reserve System, Washington, DC 20551. **PG** 75. **PR** No Charge. **JE** 431, 420, 320, 311. **KW** Exchange Rates. Adjustment Mechanism. Pass-Through. Fiscal Policy. Strategic Pricing. Exchange Rates. Trade Balance. Terms of Trade.

AB The paper first surveys recent estimates of the appropriate yen-dollar exchange rate that have been proposed in the literature. Most of the more careful estimates suggest that the yen was substantially undervalued against the dollar in early 1985 when it began

its steep ascent and some of the estimates suggest that further appreciation from today's strong level is warranted. We then turn to the adjustment process. First, we present evidence that a narrowing of Japan's record trade surplus has already started to occur, particularly in real terms. Next, we show that external adjustment has been slower than would have been predicted by a simple econometric model of Japanese trade. We then explore several possible explanations for this predictive failure in the recent period, including the slower pass-through of exchange rate changes to Japanese export prices than in the past, and the slow pass-through of terms-of-trade gains to consumer prices. Evidence is also presented that Japanese exporters adjust prices asymmetrically in response to yen depreciations and appreciations. Next, we use a simple model to analyze the oft-stated claim that too much yen appreciation in a short period of time may actually be counter-productive. The model shows that this outcome is possible, but we argue that for an economy with Japan's structure it is unlikely. Finally, we analyze what role fiscal policy can play in the adjustment process.

Lovasz, L.

TI Examples and Algorithmic Properties of Greedoids. **AU** Goecke, O.; Korte, B.; Lovasz, L.

Love, James P.

TI The Real Exchange Rate and Employment in U.S. Manufacturing: State and Regional Results. **AU** Branson, William H.; Love, James P.

LucasHenry

TI Shadow Prices and Income Distribution. **AU** Hamilton, Clive; LucasHenry.

Lyon, Andrew

TI Tax Neutrality and Intangible Capital. **AU** Fullerton, Don; Lyon, Andrew B.

PD March 1988. **TI** The Effect of the Investment Tax Credit on the Value of the Firm. **AA** University of Maryland. **SR** National Bureau of Economic Research Working Paper: 2537; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 323, 522. **KW** Tax Law. Investment. Incentives. Firm Value.

AB A change in the tax law that increases investment incentives for new assets may result in excess returns on new investment, causing firm value to increase. Alternatively, because the investment incentives apply only to new investments, the value of existing assets that compete with these investments may decline. A model is developed in this paper which shows that in general investment incentives have a theoretically ambiguous effect on firm value. Models proposed by Abel (1982), Auerbach and Kotlikoff (1983), and Feldstein (1981) are shown to be special cases of this more general model. Empirical tests examine the changes in firm value to repeated changes of the investment tax credit. Cross-sectional tests find the changes in firm value are positively related to the expected receipt of investment tax credits. No evidence is found to support a relationship between expected changes in the value of a firm's existing assets and changes in firm value.

MacDonald, Glenn M.

TI Recurrent Advertising. **AU** Horstmann, Ignatius J.; MacDonald, Glenn M.

MacKie, Mason Jeffrey K.

PD March 1987. **TI** Sequential Decision Problems and Asymmetric Information. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-2; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 43. **PR** No Charge. **JE** 511. **KW** Sequential Decisions. Principal Agent. Dynamic Contracts. Investment.

AB The study of sequential decision processes has been important for theories of statistical decisionmaking, dynamic programming, optimal stopping, search, and investment decisions. These literatures have emphasized the benefits of incrementalism and the resulting value of information. However, the costs arising from asymmetries in access to newly-arriving information have been uniformly ignored. This paper presents a preliminary inquiry into the costs of information in sequential economic decisionmaking problems. An investment project with several stages is modeled, in which the project manager and the investors have differential access to new information about project value. An optimal contract is derived specifying financing terms and project management rules. Two general conclusions are developed: first, asymmetric information in sequential decision problems can be quite costly; second, modeling investment decisions as sequential problems with asymmetric information can lead to optimal contracts that are simple, robust and realistic. Applications to a broad range of economic questions are suggested.

PD June 1987. **TI** Nonlinear Taxation of Risky Assets and Investment, With Application to Mining. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-1; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 31. **PR** No Charge. **JE** 323, 632, 721. **KW** Taxes. Uncertainty. Investment. Natural Resources. Capital Asset Valuation. Corporate Income Tax.

AB An intertemporal capital asset valuation approach is applied to analyzing the effects of nonlinear taxes on asset values and optimal investment decisions. The method is quite general, and is illustrated both analytically and numerically. The paper studies the effects of nonlinearities in the corporate income tax, including the percentage depletion allowance, on mine values and investment decisions. Although the tax policies are found to have the expected effects on asset values, the effects on investment decisions are sometimes perverse. An increase in the income tax rate may encourage investment; an increase in the depletion allowance subsidy may discourage investment.

Mackie, Mason Jeffrey K.

PD August 1987. **TI** Taxes, Information and Corporate Financing Choices. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-38; Department of Economics, University of Michigan,

Ann Arbor, MI 48109. **PG** 46. **PR** No Charge. **JE** 522, 511, 212, 022. **KW** Capital Structure. Corporate Taxes. Financing Choices.
AB The paper uses a different approach from most capital structure studies, and a large new data set to study many hypotheses of the determinants of financial decisions. We focus on incremental financing choices by firms (new public issues) rather than the debt/assets ratio. We resolve some questions about the role of taxes, by obtaining strong and plausible results after controlling for confounding effects which have been ignored in previous studies. We also find strong support for several predictions of moral hazard and financial distress theories of optimal leverage ratios. Some evidence of signaling costs for equity issues emerges, but the extreme "pecking order" hypothesis (that firms have hierarchical preferences with no optimal debt ratio) is rejected.

MacKinnon, James

TI Double-Length Artificial Regressions. **AU** Davidson, Russell; MacKinnon, James.

PD July 1987. **TI** Testing for Consistency Using Artificial Regressions. **AU** MacKinnon, James G.; Davidson, Russell. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 687; Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 39. **PR** $3.00 Canada; $3.50 U.S. and Foreign. **JE** 211. **KW** Durbin-Hausman Tests. Information Matrix Tests. Binary Choice Models. Outer-Product-of-the-Gradient Regression. Lagrange Multiplier Tests. Binary Choice Models.
AB We consider several issues related to what Hausman '1978 called "specification tests", namely tests designed to verify the consistency of parameter estimates. We first review a number of results about these tests in linear regression models, and present some new material on their distribution when the model being tested is false, and on a simple way to improve their power in certain cases. We then show how in a general nonlinear setting they may be computed as "score" tests by means of slightly modified versions of any artificial linear regression that can be used to calculate Lagrange Multiplier tests, and explore some of the implications of this result. In particular, we show how to create a variant of the information matrix test that tests for parameter consistency. We examine both the conventional information matrix test and our new version in the context of binary choice models, and provide a simple way to compute both tests based on artificial regressions. Some Monte Carlo evidence is also presented; it suggests that the most common form of the information matrix test can be extremely badly behaved in samples of even quite large size.

MacLeod, W. Bentley

PD September 1987. **TI** Labour Turnover and the Natural Rate of Unemployment: An Incomplete Contracts Approach. **AU** MacLeod, W. Bentley; Malcomson, James M. **AA** MacLeod: Queen's University. Malcomson: University of Southampton. **SR** Queen's Institute for Economic Research Discussion Paper: 697; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 32. **PR** Canada & U.S.
$3.00; $3.50 foreign. **JE** 821, 023. **KW** Incomplete Contracts. Unemployment. Turnover. Dynamic Model.
AB The purpose of this paper is to study the effect of incomplete contracts on the level of unemployment in a dynamic model with endogenous turnover. First it is shown that if effort is non-contractable, then this will lead to wages above the market clearing level. Secondly, as the level of uncertainty in the economy increases, this will lead to greater turnover, higher wages, and lower output.

Magill, M.

TI Generic Inefficiency of Stock Market Equilibrium When Markets Are Incomplete. **AU** Geanakoplos, J.; Magill, M.; Quinzii, M.; Dreze, J.

Malcomson, James M.

TI Labour Turnover and the Natural Rate of Unemployment: An Incomplete Contracts Approach. **AU** MacLeod, W. Bentley; Malcomson, James M.

Mankiw, N. Gregory

TI The Worldwide Change in the Behavior of Interest Rates and Prices in 1914. **AU** Barsky, Robert; Mankiw, N. Gregory; Miron, Jeffrey; Weil, David.

TI The Worldwide Change in the Behavior of Interest Rates and Prices in 1914. **AU** Barsky, Robert B.; Mankiw, N. Gregory.

PD September 1987. **TI** Imperfect Competition and the Keynesian Cross. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2386; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 023, 133, 021, 321. **KW** General Equilibrium. Fiscal Policy. Multipliers. Walrasian Models. Keynesian Models.
AB This paper presents a simple general equilibrium model in which the only non-Walrasian feature is imperfect competition in the goods market. The model is shown to exhibit various Keynesian characteristics. In particular, as competition in the goods market becomes less perfect, the fiscal policy multipliers approach the values implied by the textbook Keynesian cross.

TI Permanent Income, Current Income and Consumption. **AU** Campbell, John Y.; Mankiw, Gregory N.

Marcus, Alan J.

TI Interest-Only/Principal-Only Mortgage-Backed Strips: A Valuation and Risk Analysis. **AU** Kling, Arnold; Marcus, Alan J.

Margaritis, Dimitris

PD May 1987. **TI** Learning and Convergence to a Noisy Rational Expectations Equilibrium in an Asset Market Model. **AA** University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 87-13; #997 - 1873 East Mall, Vancouver, B.C. CANADA V6T 1W5. **PG** 28. **PR** $0.20 per page Canadian to other than educational institutions. **JE** 023, 311, 313, 026. **KW** Learning

Process. Rational Expectations. Asset Markets. Time Varying Parameter Model.

AB The question as to whether economic agents can learn how to form rational expectations has been the focus of extensive research. The conventional rational expectations framework is frequently criticized for imposing excessive informational requirements on agents. The use of rational expectations models can now be justified if these models can appear as limits of some learning procedures. Various learning rules have been proposed in the literature. Basically, these rules fall into two frameworks. The first framework is concerned with 'rational learning' in which agents are learning about the parameters of a distribution using a correctly specified likelihood function. Rational learning guarantees convergence to rational expectations equilibrium under quite mild assumptions. This framework is, however, "extraordinarily demanding in terms of the information, understanding, and calculating ability of agents". The second framework, into which this paper falls, includes models which assume some degree of 'bounded rationality'. In this framework the likelihood functions used are not a correct specification of the actual process generating the data that agents receive while they are learning; but in most cases the model specifications used by agents are appropriate enough in rational expectations equilibrium. This framework is obviously much less informationally demanding than the first, yet not completely free of criticisms.

PD May 1987. **TI** Convergence Analysis of Learning Procedures to Rational Expectations. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 87-14; #997 - 1873 East Mall, Vancouver, B.C. CANADA V6T 1W5. **PG** 30. **PR** $0.20 per page Canadian to other than educational institutions. **JE** 023, 026. **KW** Rational Expectations. Learning Process. Time Varying Parameters.

AB In a recent paper in Econometrica, Bray and Savin (1986) studied the convergence of least squares and Bayesian learning procedures to the rational expectations equilibrium (REE) in the case of a linear stochastic supply and demand model with a production lag. They used martingale convergence arguments and the strong law of large numbers to prove convergence with probability one of the parameters of the agents' forecasting rule and forecasts to their REE values under economically plausible conditions. In this paper we take a fresh look at this issue. The convergence analysis of the learning procedure (modelled by a stochastic time-varying difference equation) is reduced to the stability analysis of an associated deterministic, ordinary differential equation (ODE). The use of such an approach provides a powerful tool of analysis with wide applicability. In addition, it enables us to gain more insight in analyzing situations and establishing formal results for conjectures that previously were supported by intuitive arguments alone.

Markusen, James R.

PD 1987. **TI** Intra-Firm Service Trade by the Multinational Enterprise. **AA** University of Western Ontario University of New South Wales (1987-88). **SR** University of Western Ontario Center for the Study of International Economic Relations Working Paper: 8711C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 31. **PR** $4.00 Canadian. **JE** 421, 423. **KW** Economic Integration. Service Sector. International Trade.

PD 1987. **TI** Production, Trade and Migration with Differentiated, Skilled Workers. **AA** University of Western Ontario University of New South Wales (1987-88). **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8710C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 27. **PR** $4.00 Canadian. **JE** 823, 421. **KW** Migration. International Trade. Production.

PD 1987. **TI** Trade in Producer Services and in Other Specialized Intermediate Inputs. **AA** University of Western Ontario and University of New South Wales (1987-88). **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8709C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 37. **PR** $4.00 Canadian. **JE** 411. **KW** International Trade. Producer. Services.

Martin, Christopher

PD November 1987. **TI** Using Equilibrium Models on Disequilibrium Data: Some Monte-Carlo Evidence on Estimation and Testing. **AU** Martin, Christopher; Weber, Guglielmo. **AA** Martin: Queen Mary College. Weber: University College London. **SR** University College London Discussion Paper: 88-01; Department of Economics, University College London, Gower Street, London, WC1E 6BT. **PG** 30. **PR** 1.50 pounds sterling. **JE** 211, 212, 227. **KW** Disequilibrium. Misspecification Tests. Monte-Carlo. Price Formation.

AB This paper considers the consequences of estimating a market-clearing model when the data are generated by a disequilibrium process. We also derive a simple misspecification test of the LM type for the market-clearing model against the alternative of disequilibrium. A Monte-Carlo simulation is carried out to establish the size and direction of biases and the power of the test using several different hypotheses about price formation. We find that disequilibrium can induce substantial biases, becoming more severe as the sluggishness of price adjustment increases. The power of the test statistic appears reasonable for plausible assumptions on the stochastic nature of the model.

Martin, Lawrence

TI Optimal Labor Market Policies with Search Unemployment. **AU** Davidson, Carl; Martin, Lawrence; Matusz, Steven.

Maschler, Michael

PD October 1987. **TI** Paths Leadings to the Nash set. **AU** Maschler, Michael; Owen, Guillermo; Peleg, Bezalel. **AA** Maschler, Peleg: University of Jerusalem. Owen: University of Monterey. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A 135;

Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 7. **PR** No Charge. **JE** 026. **KW** Bargaining Game. Negotiation Process. Critical Points. Nash Product.
AB A dynamic system is constructed to model a possible negotiation process for players facing a (not necessarily convex) pure bargaining game. The critical points of this system are the points where the "Nash product" is stationary. All accumulation points of the solutions of this system are critical points. It turns out that the asymptotically stable critical points of the system are precisely the isolated critical points where the Nash product has a local maximum.

Maskin, Eric

TI Renegotiation in Repeated Games. **AU** Farrell, Joseph; Maskin, Eric.

Matoussi, Mohamed Salah

TI Moral Hazard, Financial Constraints and Sharecropping in El Oulja. **AU** Laffont, Jean Jacques; Matoussi, Mohamed Salah.

Matusz, Steven

TI Optimal Labor Market Policies with Search Unemployment. **AU** Davidson, Carl; Martin, Lawrence; Matusz, Steven.

Matzkin, Rosa L.

PD July 1987. **TI** Testing Strictly Concave Rationality. **AU** Matzkin, Rosa L.; Richter, Marcel K. **AA** Matzkin: Yale University. Richter: University of Minnesota. **SR** Yale Cowles Foundation Discussion Paper: 844; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 20. **PR** No Charge. **JE** 022, 213. **KW** Nonparametric Tests. Revealed Preference. Rational Choice. Concave Utility. Strong Axiom of Revealed Preference.
AB We prove that the Strong Axiom of Revealed Preference tests the existence of a strictly quasiconcave (in fact, continuous, generically C(infinity) strictly concave, and strictly monotone) utility function generating finitely many demand observations. This sharpens earlier results of Afriat, Diewert, and Varian that tested ("nonparametrically") the existence of a piecewise linear utility function that could only weakly generate those demand observations. When observed demand is also invertible, we show that the rationalizing can be done in a C(infinity) way, thus extending a result of Chiappori and Rochet from compact sets to all of R(n). For finite data sets, one implication of our result is that even some weak types of rational behavior -- maximization of pseudotransitive or semitransitive preferences -- are observationally equivalent to maximization of continuous, strictly concave, and strictly monotone utility functions.

Mayer, Thomas

PD November 1987. **TI** Minimizing Regret as an Explanation of Fed Policy: An Application of Cognitive Dissonance Theory. **AA** University of California at Davis. **SR** University of California at Davis Research Program in Applied Macro and Macro Policy: 49; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 23. **PR** No Charge. **JE** 311. **KW** Monetary Policy. FOMC. Cognitive Dissonance.
AB The policy-maker is assumed here to minimize regret by avoiding policies where errors will become apparant. This is based on a Thaler-Sheffrin type utility function and on cognitive dissonance theory. It helps to explain certain characteristics of Fed behavior, such as the Fed's tendency to stick with its policies, its relative neglect of the problem of lags in monetary policy, and its preference for an interest-rate target over a money target.

McCulloch, J. Huston

TI The Term Structure of Interest Rates. **AU** Shiller, Robert J.; McCulloch, J. Huston.

McDermed, Ann

PD November 1987. **TI** Pension Wealth, Age-Wealth Profiles, and the Distribution of Net Worth. **AU** McDermed, Ann; Clark, Robert L.; Allen, Steven G. **AA** North Carolina State University. **SR** National Bureau of Economic Research Working Paper: 2439; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 918, 921. **KW** Households. Pensions. Pension Assets. Wealth.
AB This study estimates the magnitude of pension wealth and compares pension wealth to net worth for households in the 1983 Survey of Consumer Finance (SCF). The SCF is the first data set to provide detailed information on both household finances and pension characteristics. The pension information is provided by the employer, so that it is much more detailed and likely to be more accurate than the pension data used in previous studies. Pension wealth was estimated under two sets of assumptions. Under the projected earnings approach, mean pension wealth is $98,291, which represents 43 percent of mean net worth for households with pensions. Under the legal method of calculating pension wealth, mean pension wealth is $47,541, which represents 26 percent of mean net worth for households with pensions. Both estimates are much larger than those obtained in earlier studies. The study also examines how estimates of inequality in the wealth distribution change when pension wealth is added to household balance sheets. Using a variety of methods and assumptions, the distribution becomes more equal when the definition of wealth is expanded to include pension assets.

McGrath, M. D.

TI The Erosion of Apartheid in the South African Labor Market: Measures and Mechanisms. **AU** Knight, J. B.; McGrath, M. D.

McKee, Michael

TI Can the Private Provision of Public Goods be Efficient? -- Some Experimental Evidence. **AU** Bagnoli, Mark; McKee, Michael.

McKelvey, Richard

PD October 1987. **TI** A Decade of Experimental Research on Spatial Models of Elections and Committees.

AU McKelvey, Richard; Ordeshook, Peter. **AA** Division of Humanities and Social Sciences, California Institute of Technology. **SR** Caltech Social Science Working Paper: 657; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 34. **PR** No Charge. **JE** 215, 026, 024. **KW** Elections. Bargaining. Experiments. Spatial Models. Political Processes.

AB The Euclidean representation of political issues and alternative outcomes, and the associated representation of preferences as quasi-concave utility functions is by now a staple of formal models of committees and elections. This theoretical development, moreover, is accompanied by a considerable body of experimental research. We can view that research in two ways: as a test of the basic propositions about equilibria in specific institutional settings, and as an attempt to gain insights into those aspects of political processes that are poorly understood or imperfectly modeled, such as the robustness of theoretical results with respect to procedural details and bargaining environments. This essay reviews that research so that we can gain some sense of its overall import.

McMillan, John

PD 1987. **TI** Incentive Effects of Price Rises and Payment-System Changes on Chinese Agricultural Productivity Growth. **AU** McMillan, John; Whalley, John; Jing, Zhuli. **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8701C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 22. **PR** $4.00 Canadian. **JE** 712, 024, 713, 226. **KW** China. Agriculture. Incentives.

PD February 1987. **TI** Inflation and the Timing of Price Changes. **AU** McMillan, John; Zinde, Walsh Victoria. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Centre for Decision Sciences and Econometrics Technical Report: No. 15; The Centre for Decision Sciences and Econometrics, Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 39. **PR** Not For Sale. **JE** 026, 024. **KW** Inflation. Oligopolistic Competition. Dynamic Games.

AB Consider an oligopolistic industry in which the firms produce perfect substitutes and incur transaction costs of changing price. Under constant inflation, there is an equilibrium in which the firms change their nominal prices at equally spaced time-points. Increasing the inflation rate increases the size of price changes, increases the frequency of price changes, and increases the average real price paid by buyers. The analysis derives its significance from its implications for the welfare costs of inflation: the inflation-induced distortions in relative prices are larger the more sticky nominal prices are; and are larger the greater the tendency for firms to stagger (rather than synchronise) their price changes.

Mehta, J. S.

PD October 1987. **TI** Finite Sample Properties of Theil's Measure of Multicollinearity Effect. **AU** Mehta, J. S.; Swamy, P. A. V. B. **AA** Mehta: Temple University, Philadelphia, Pennsylvania. Swamy: Board of Governors of the Federal Reserve System. **SR** Board of Governors of the Federal Reserve System Special Studies Section Discussion Paper: 225; C/O Francis X. Diebold, Mail Stop 180, Federal Reserve Board, Washington, DC 20551. **PG** 18. **PR** No Charge. **JE** 211. **KW** Real Multicollinearity Effect. Nonorthogonal Vectors. Linear Relations.

AB Multicollinearity presents a real problem if the population values of insignificant coefficients are, in fact, not zero and the reason that these coefficients turn out to be insignificant is that approximate linear relations hold among the observed values of the regressors. The appearance of these approximate linear relations points to only apparent multicollinearity if the population values of the coefficients corresponding to the nonorthogonal observation vectors of regressors are all zero. Any diagnostic measure that depends on the matrix of observations on the regressors alone cannot take into account the value of coefficients and, therefore, cannot enable us to distinguish real multicollinearity from apparent multicollinearity. While there is no completely reliable way of detecting real multicollinearity, the measure of multicollinearity employed by Theil, unlike other measures suggested by numerical analysts and statisticians, does not ignore the sample information about coefficients. In this paper, we give numerical tables of the exact cumulative distribution function of Theil's measure in the normal case to show that the distribution is tighter and centered at correct values when there is a high degree of real multicollinearity.

Micklewright, John

TI A Cohort Model of Central Heating Ownership in Great Britain. **AU** Baker, Paul; Blundell, Richard; Micklewright, John.

Mintz, Jack M.

PD September 1987. **TI** Taxation and Business Activity: A Survey. **AU** Mintz, Jack M.; Purvis, Douglas D. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 696; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 57. **PR** $3.00 Canada and United States; $3.50 Foreign. **JE** 520, 323, 023. **KW** Tax Policy. Business Investment. Risk-Taking.

AB In the Fall of 1985 the John Deutsch Institute for the Study of Economic Policy, in cooperation with the Department of Finance (Canada), mounted a conference on Taxation and Business Activity. This survey was written as an introduction to the conference volume which will be published in November 1987 by the JDI. Focus is on the behavioral analysis of business decisions -- in particular on production, investment, and financing decisions -- and on the available evidence concerning the importance of various determinants of these activities. The four surveys written for the volume provide a detailed description of the current state of knowledge for specialists in the area of tax policy. Each survey outlines theoretical and empirical issues that arise in the study of the effects of taxes on business activity. Since the subject matters of the

four surveys are closely related, there are a number of important themes common to them. In this introductory essay we develop some of these common themes.

Miron, Jeffrey

PD June 1987. **TI** Production, Sales, and the Change in Inventories: An Identity that Doesn't Add Up. **AU** Miron, Jeffrey A.; Zeldes, Stephen P. **AA** Miron: University of Michigan. Zeldes: University of Pennsylvania. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-21; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 28. **PR** No Charge. **JE** 220, 131. **KW** Index of Industrial Production. Industry Production. Sales. Inventories.

AB In this paper we examine two different measures of monthly production that have been used by economists. The first measure, which we refer to as IP, is the index of industrial production constructed by the Board of Governors of the Federal Reserve. This measure is used extensively in empirical work on the business cycle, as well as by policymakers and others to assess the current state of the economy. The second measure, which we refer to as Y4, is constructed from the accounting identity that output equals sales plus the change in inventories. Sales and inventory data are reported by the Department of Commerce. This measure of output is frequently used to estimate models of inventory accumulation. Theoretically, these two series measure the same underlying economic variable -- the production of goods by firms during the month. We show here that the time series properties of these two series are radically different. We examine means, variances, and serial correlation coefficients of the log growth rates, and show that these statistics differ substantially between the two series. In addition, the cross-correlations between the two seasonally adjusted series range from .7 to .0 and are in most cases less than .4. We then demonstrate the significance of these differences in two ways.

TI The Seasonal Cycle and the Business Cycle. **AU** Barsky, Robert B.; Miron, Jeffrey A.

PD July 1987. **TI** Seasonality, Cost Shocks, and the Production Smoothing Model of Inventories. **AU** Miron, Jeffrey A.; Zeldes, Stephen P. **AA** Miron: University of Michigan. Zeldes: University of Pennsylvania. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-22; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 38. **PR** No Charge. **JE** 023, 131, 212. **KW** Cost Shocks. Seasonal Fluctuations. Production Smoothing. Inventories.

AB A great deal of research on the empirical behavior of inventories examines some variant of the production smoothing model of finished goods inventories. The overall assessment of this model that exists in the literature is quite negative: there is little evidence that manufacturers hold inventories of finished goods in order to smooth production patterns. This paper examines whether this negative assessment of the model is due to one or both of two features: costs shocks and seasonal fluctuations. The reason for considering costs shocks is that if firms are buffetted more by cost shocks than demand shocks, production should optimally be more variable than sales. The reasons for considering seasonal fluctuations are that seasonal fluctuations account for a major portion of the variance in production and sales, that seasonal fluctuations are precisely the kinds of fluctuations that producers should most easily smooth, and that seasonally adjusted data is likely to produce spurious rejections of the production smoothing model even when it is correct.

TI The Worldwide Change in the Behavior of Interest Rates and Prices in 1914. **AU** Barsky, Robert; Mankiw, N. Gregory; Miron, Jeffrey; Weil, David.

PD August 1987. **TI** Seasonality, Cost Shocks, and the Production Smoothing Model of Inventories. **AU** Miron, Jeffrey A.; Zeldes, Stephen P. **AA** Miron: University of Michigan. Zeldes: University of Pennsylvania. **SR** National Bureau of Economic Research Working Paper: 2360; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 022, 631, 212, 512. **KW** Inventory. Production Smoothing. Manufacturing. Seasonal Fluctuation. Costs. Seasonal Adjustment.

AB A great deal of research on the empirical behavior of inventories examines some variant of the production smoothing model of finished goods inventories. The overall assessment of this model that exists in the literature is quite negative: there is little evidence that manufacturers hold inventories of finished goods in order to smooth production patterns. This paper examines whether this negative assessment of the model is due to one or both of two features: costs shocks and seasonal fluctuations. First, we present a general production smoothing model of inventory investment that is consistent with both seasonal and non-seasonal fluctuations in production, sales, and inventories. The model allows for both observable and unobservable changes in marginal costs. Second, we estimate this model using both seasonally adjusted and seasonally unadjusted data plus seasonal dummies. The goal here is to determine whether the incorrect use of seasonally adjusted data has been responsible for the rejections of the production smoothing model reported in previous studies. The third part of our approach is to explicitly examine the seasonal movements in the data. We test whether the residual from an Euler equation is uncorrelated with the seasonal component of contemporaneous sales. Even if unobservable seasonal cost shocks make the seasonal variation in output greater than that in sales, the timing of the resulting seasonal movements in output should not necessarily match that of sales. The results of our empirical work provide a strong negative report on the production smoothing model, even when it includes cost shocks and seasonal fluctuations.

Mitchell, Olivia S.

PD September 1987. **TI** Social Security Reforms and Poverty Among Older Dual-Earner Couples. **AA** Cornell University. **SR** National Bureau of Economic Research Working Paper: 2382; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 915, 921, 918.

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KW Retirement. Dual Incomes. Social Security.
AB Most retirement studies examine older married couples in which the husband is the sole earner. This paper extends the focus of analysis to examine older dual-earner couples. It further evaluates the impact of Social Security reforms on older working couples' retirement ages and retirement incomes. Specifically, we examine two questions: (1) What are the likely effects of changes in Social Security rules on the retirement decisions of older working women and their husbands? and (2) How are these changes likely to alter the incidence of poverty among retired dual-earner couples? The evidence suggests that benefit reforms intended to bolster the Social Security Administration's financial position are also likely to worsen the economic status of an important minority of dual-earner couples.

Mohring, R. H.

TI Scheduling Project Networks with Resource Constraints and Time Windows. **AU** Bartusch, M.; Mohring, R. H.; Radermacher, F. J.

Monfort, A.

TI A General Framework for Testing a Null Hypothesis in a "Mixed" Form. **AU** Gourieroux, C.; Monfort, A.

TI Contraintes bilineaires: estimation et test. **AU** Gourieroux, C.; Monfort, A.; Renault, E.

Morgan, Peter

TI Search Intensity in Experiments. **AU** Harrison, Glenn W.; Morgan, Peter.

Morris, John

TI How Much Care Do the Aged Receive from their Children? A Bimodal Picture of Contact and Assistance. **AU** Kotlikoff, Laurence; Morris, John.

Nakamura, Shinsuke

TI On Nash Implementation of the Walrasian or Lindahl Correspondence in the Two-Agent Economy. **AU** Kwan, Yum Keung; Nakamura, Shinsuke.

Negri, Donald

TI Pastures of Plenty: When is the Standard Analysis of Common Property Extraction Under Free Access Incorrect? **AU** Salant, Stephen; Negri, Donald.

Nelson, Charles R.

PD November 1987. **TI** Spurious Trend and Cycle in the State Space Decomposition of a Time Series with a Unit Root. **AA** University of Washington. **SR** National Bureau of Economic Research Technical Paper: 63; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 211, 131. **KW** Trend Components. Cycle Components. State Space Framework. Kalman Filter. Nonstationary Time Series.
AB Recent research has proposed the state space (SS) framework for decomposition of Gross National Product and other economic time series into trend and cycle components, using the Kalman filter. This paper reviews the empirical evidence and suggests that the resulting decomposition may be spurious, just as detrending by linear regression is known to generate spurious trends and cycles in nonstationary time series. A Monte Carlo experiment confirms that when data is generated by a random walk, the SS model tends to indicate (incorrectly) that the series consists of cyclical variations around a smooth trend. The improvement in fit over the true model will typically appear to be statistically significant. These results suggest that caution should be exercised in drawing inferences about the nature of economic processes from the SS decomposition.

Nelson, Julianne

TI Product Availability as a Strategic Variable: The Case of Retailer Stockouts. **AU** Katz, Barbara G.; Nelson, Julianne.

Neuefeind, Wilhelm

TI Quantity Guided Price Setting. **AU** Dierker, Egbert; Neuefeind, Wilhelm.

Neumark, David

PD June 1987. **TI** Employers' Discriminatory Behavior and the Estimation of Wage Discrimination. **AA** Board of Governors of the Federal Reserve System. **SR** Board of Governors of the Federal Reserve System, Special Studies Section Discussion Paper: 227; C/O Francis X. Diebold, Mail Stop 180, Federal Reserve Board, Washington, DC 20551. **PG** 21. **PR** No Charge. **JE** 821, 824, 826, 212. **KW** Discriminatory Tastes. Male-Female Wage Differentials.
AB This paper considers the linkage of empirical estimates of wage discrimination between two groups, introduced by Oaxaca (1973), to a theoretical model of employers' discriminatory behavior. It is shown that, conditional on different assumptions about employers' discriminatory tastes, Oaxaca's estimators of wage discrimination can be derived. That the approach is more generally useful is demonstrated by deriving an alternative estimator of wage discrimination, based on a different assumption about employers' discriminatory tastes. The estimators are compared empirically in an application to male-female wage differentials.

PD July 1987. **TI** Duration Analysis of Birth Intervals and Underlying Fertility Behavior. **AA** Board of Governors of the Federal Reserve System. **SR** Board of Governors of the Federal Reserve System, Special Studies Section Discussion Paper: 226; C/O Francis X. Diebold, Mail Stop 180, Federal Reserve Board, Washington, DC 20551. **PG** 36. **PR** No Charge. **JE** 841, 212. **KW** Birth Intervals. Duration Models. Reduced Form Effects. Timing Expectations.
AB This paper studies the fertility behavior underlying estimates of duration or hazard models from data on first birth intervals, in particular the meaning of the estimated effects of exogenous demographic variables on the hazard rate. Most simply, the question is whether these effects represent variation in planned or expected birth intervals, or instead direct effects on the probability of a birth. Utilization of data on timing expectations, along with the demographic variables, allows this question to be answered. The conclusion is that timing plans or expectations are the dominant empirical determinant of

actual first birth durations. An implication of this, with important consequences for family policy, is that the source of high fertility among young women with certain demographic characteristics is more the result of their plans and expectations than of "mistakes" (or deviations of actual from expected timing).

PD August 1987. **TI** Gender Differences in Family Effects on Human Capital and Earnings: An Empirical Study of Siblings. **AA** Federal Reserve Board. **SR** Board of Governors of the Federal Reserve System Special Studies Section Discussion Paper: 228; c/o Francis X. Diebold, Mailstop 180, Federal Reserve Board, Washington, D.C. **PR** No Charge. **JE** 821, 826, 851, 917, 212. **KW** Earnings. Schooling. Ability. Labor Force Experience.

AB This paper studies the role of the family in determining earnings and various dimensions or measures of human capital, focusing in particular on gender differences in this process. Most directly, the essay asks whether the finding of Bound, Griliches and Hall (1986), of "symmetric" treatment of male and female offspring in the ability-schooling part of the process, carries over when extended to the accumulation of labor force experience. The findings that emerge are somewhat ambiguous, due to the difficulty of identifying parameters capturing all of the possible channels of influence. In one identifiable version of the model, significant family effects on labor force experience for both men and women are found, and these effects are very dissimilar by gender. In a second version, the finding on the dissimilarity of the effects is attenuated.

Newey, Whitney K.

PD February 1987. **TI** Adaptive Estimation of Regression Models Via Moment Restrictions. **AA** Princeton University. **SR** Princeton Econometric Research Program Memorandum: 330; Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 52. **PR** $2.00. **JE** 211. **KW** Adaptive Estimation. Generalized Method of Moments. Efficiency. Independence. Symmetry.

AB This paper considers adaptive estimation of regression models by means of generalized method of moment estimators. Two models are considered, that with an i.i.d. disturbance that is independent of the regressors and that with a conditionally symmetric but (possibly) heteroskedastic disturbance. For both cases the paper develops linearized estimators that are asymptotically efficient if the number and variety of moment conditions is allowed to grow at an appropriate rate with the sample size. In the general symmetric case no other adaptive estimator has yet been proposed. Also, results of a small Monte Carlo study indicate that in the independence case the small sample performance of the generalized method of moments estimator can be quite good vis-a-vis other estimators previously proposed.

PD June 1987. **TI** Efficient Estimation of Linear and Type I Censored Regression Models Under Conditional Quantile Restrictions. **AU** Newey, Whitney K.; Powell, James L. **AA** Newey: Princeton University. Powell: University of Wisconsin at Madison. **SR** Princeton Econometric Research Program Memorandum: 331; Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 34. **PR** $2.00. **JE** 211. **KW** Semiparametric Efficiency. Kernel Estimation. Nearest Neighbor Estimation. Asymptotic Efficiency. Censored Least Absolute Deviation Estimation.

AB We consider the linear regression model with censored dependent variable, where the disturbance terms are restricted only to have zero conditional median (or other prespecified quantile) given the covariates and censoring point. For this model, a lower bound for the asymptotic covariance matrix for locally-regular estimators of the regression coefficients is derived. We also show how an estimator which attains this lower bound can be constructed. As a special case, our results apply to the (uncensored) linear model.

Nguyen, Trien T.

PD 1986. **TI** General Equilibrium World Trade Under Bilateral Quotas. **AU** Nguyen, Trien T.; Whalley, John. **AA** University of Waterloo/University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8628C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 14. **PR** $4.00 Canadian. **JE** 411, 021, 422. **KW** Quota. International Trade. General Equilibrium.

Ordeshook, Peter

PD September 1987. **TI** The Reintegration of Political Science and Economics and the Presumed Imperialism of Economic Theory. **AA** California Institute of Technology. **SR** Caltech Social Science Working Paper: 655; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 36. **PR** No Charge. **JE** 031, 025, 026. **KW** Public Choice. Rational Choice. Game Theory. Politics. Elections. Legislatures. Law. Judicial Processes. International Relations.

AB No discipline can claim a greater impact on contemporary political theorizing than that of economics, whether that theorizing concerns the study of legislatures, elections, international affairs, or judicial processes. This essay questions, however, whether this impact is a form of "economic imperialism," or the logical development of two disciplines whose artificial separation in the first part of this century merely allowed the development and refinement of the rational choice paradigm, unencumbered by the necessity for considering all of reality. Indeed, applications to specific substantive political matters -- most notably collective and cooperative processes where game theory proves most relevant -- reveal the paradigm's incompleteness. These applications, however, illuminate the necessary theoretical extensions, which is no longer the sole domain of the economist.

TI A Decade of Experimental Research on Spatial Models of Elections and Committees. **AU** McKelvey, Richard; Ordeshook, Peter.

Osler, Carol L.

PD November 1987. **TI** Factor Prices and Welfare Under Integrated Capital Markets. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2447; National Bureau of

Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 441, 411, 421, 023. **KW** Overlapping Generations Model. Uncertainty. Free Trade. Portfolio. Risk.

AB This paper considers the effect on factor prices and welfare of trade between economies whose production is characterized by nation-specific technological uncertainty. The analysis is carried out using a two-country Diamond overlapping-generations model in which technological uncertainty is reflected in factor prices, and "equities" refer to claims on the returns to capital. We find that trade in capital is complementary to trade in commodities, in the sense that adding free trade in capital to the spectrum of permitted economic activities will cause significant changes in wages, output, and capital returns. Furthermore, for countries which are identical, or not very different, factor prices move in parallel when free trade in capital is introduced. Specifically, as we show in the text, capital returns fall, while wages rise, in both countries. These results are based on the portfolio diversification permitted by international capital market integration: the reduction of portfolio risk associated with portfolio diversification induces adjustments in savings behavior which, in turn, change factor prices.

PD November 1987. **TI** Portfolio Diversification, Real Interest Rates and the Balance of Payments. **AA** Dartmouth College. **SR** National Bureau of Economic Research Working Paper: 2441; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 441, 411, 224. **KW** Capital Markets. Current Account. Risk. Population. Overlapping Generations Model.

AB The paper shows that differences in real interest rates across countries can arise even with perfect competition and fully integrated international capital markets. Specifically, we find that factor returns will differ across countries which are identical except for differences in technological riskiness, overall productivity, or labor force size. We also show that differences across countries in technological riskiness, in risk aversion, in population size and in overall productivity will lead to a non-zero current account in the steady state. Higher technological riskiness, greater risk aversion, and a larger population should be associated with a current account surplus. The analysis is carried out using a two-country Diamond overlapping-generations model in which technological uncertainty is reflected in factor returns.

Ouliaris, Sam

TI Asymptotic Properties of Residual Based Tests for Cointegration. **AU** Phillips, Peter C. B.; Ouliaris, Sam.

TI Testing for Cointegration using Principal Component Methods. **AU** Phillips, Peter C. B.; Ouliaris, Sam.

Owen, Guillermo

TI Paths Leadings to the Nash set. **AU** Maschler, Michael; Owen, Guillermo; Peleg, Bezalel.

Owen, Joel

TI An Equilibrium Model of a Second Economy Market in a Centrally Planned Economy. **AU** Katz, Barbara G.; Owen, Joel.

TI Rationed and Walrasian Markets for the Same Good: A Rational Expectations Determination of the Relative Prices. **AU** Katz, Barbara G.; Owen, Joel.

Pagan, Adrian

PD July 1987. **TI** The Econometric Analysis of Models with Risk Terms. **AU** Pagan, Adrian; Ullah, Aman. **AA** Pagan: Department of Economics, The University of Rochester. Ullah: Department of Economics, The University of Western Ontario. **SR** University of Western Ontario Centre for Decision Sciences and Econometrics Technical Report: No. 16; Department of Economics, University of Western Ontario, London, Ontario CANADA N6A 5C2. **PG** 40. **PR** Not for Sale. **JE** 211, 026. **KW** Risk. Moments. Risk Proxy. Instrumental Variables.

AB This paper considers the estimation of a linear model containing a term representing the risk originating from a failure to perfectly predict some variable. Theoretical models show that this risk is related to the moments of the probability density function of the variable conditioned upon whatever information agents use in their optimization. The paper looks at issues arising when the level of risk is to be explained rather than when it is an explanator. Within the literature a variety of proxies for risk can be found. Section 4 looks at these to see how satisfactory each method is when used as a measure of risk in a modeling environment. In general the proxies suffer from a variant of the "errors in variables" problem, and therefore should only be used in conjunction with an instrumental variables estimator; if substituted directly into a regression an underestimate of the effect of risk on decisions is likely. An exception to this rule occurs if a parametric model for the risk term is adopted, but this methodology has its own problems involving potential misspecification, which can be partially alleviated by following our instrumental variables approach.

Palfrey, Thomas R.

PD December 1986. **TI** Nash Implementation Using Undominated Strategies. **AU** Palfrey, Thomas R.; Srivastava, Sanjay. **AA** Palfrey: California Institute of Technology. Srivastava: Carnegie-Mellon University. **SR** Caltech Social Science Working Paper: 649; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PR** No Charge. **JE** 026, 025. **KW** Implementation. Game Theory. Social Choice. Equilibrium Refinements. Nash Equilibrium. Subgame Perfect. Complete Information.

AB This paper provides a characterization of fully implementable outcomes using undominated Nash equilibrium, i.e. a Nash equilibrium in which no one uses a weakly dominated strategy. The analysis is conducted in general domains in which agents have complete information. Our main result is that with at least three agents any social choice function or correspondence obeying the usual no veto power condition is implementable unless some players are completely indifferent over all possible outcomes. This result is contrasted with the more restrictive implementation findings with either (unrefined) Nash equilibrium or subgame perfect equilibrium.

Papageorgiou, Yorgos Y.

TI On Welfare Theory and Urban Economics. **AU** Berliant, Marcus; Papageorgiou, Yorgos Y.; Wang, Ping.

Park, Joon Y.

PD February 1987. **TI** Statistical Inference in Regressions with Integrated Processes: Part II. **AU** Park, Joon Y.; Phillips, Peter C. B. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 819; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 69. **PR** No Charge. **JE** 211. **KW** Inference. Integrated Processes. Time Trends. Unit Roots. VAR's.

AB This paper continues the theoretical investigation of Park and Phillips (1986). We develop an asymptotic theory of regression for multivariate linear models that accommodates integrated processes of different orders, nonzero means, drifts, time trends and cointegrated regressors. The framework of analysis is general but has a common architecture that helps to simplify and codify what would otherwise be a myriad of isolated results. A good deal of earlier research by the authors and by others comes within the new framework. Special models of some importance are considered in detail, such as VAR systems with multiple lags and cointegrated variates.

PD August 1987. **TI** Statistical Inference in Regressions with Integrated Processes: Part I. **AU** Park, Joon Y.; Phillips, Peter C. B. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 811-R; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 48. **PR** No Charge. **JE** 211. **KW** Brownian Motion. Cointegration. Integrated Regressors. Unit Roots.

AB This paper develops a multivariate regression theory for integrated processes which simplifies and extends much earlier work. Our framework allows for both stochastic and certain deterministic regressors, vector autoregressions and regressors with drift. The main focus of the paper is statistical inference. The presence of nuisance parameters in the asymptotic distributions of regression F-tests is explored and new transformations are introduced to deal with these dependencies. Some specializations of our theory are considered in detail. In models with strictly exogenous regressors we demonstrate the validity of conventional asymptotic theory for appropriately constructed Wald tests. These tests provide a simple and convenient basis for specification robust inferences in this context. Single equation regression tests are also studied in detail. Here it is shown that the asymptotic distribution of the Wald test is a mixture of the chi square of conventional regression theory and the standard unit root theory. The new result accommodates both extremes and intermediate cases.

Parkin, Michael

PD 1987. **TI** Monetary Policy and Aggregate Fluctuations. **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8712C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 36. **PR** $4.00 Canadian. **JE** 311, 131, 133. **KW** Monetary Policy. Fluctuations.

Pascal, A. H.

PD May 1987. **TI** The Costs of Treating AIDS Under Medicaid: 1986-1991. **AA** The Rand Corporation. **SR** Rand Note: N-2600; The Rand Corporation, 1700 Main Street, PO Box 2138, Santa Monica, CA 90406-2138. **PG** 52. **PR** No Charge. **JE** 913, 322. **KW** Medicaid Coverage. Medical Costs and AIDS. Forecasted Costs of AIDS.

AB AIDS (Acquired Immune Deficiency Syndrome) ranks near the top of the list of major impairments in terms of average lifetime medical costs. A large share of the rapidly escalating costs for treating victims of the AIDS epidemic will fall on the Medicaid program. This Note reports the results of a five-month exploratory research effort that attempted to estimate these costs. The findings are only best estimates, given current knowledge. Combining assumptions as to case load, Medicaid eligibility, average treatment costs, and Medicaid reimbursement rates yields a range of estimates for cumulative Medicaid costs in 1986-1991. The intermediate estimate amounts to about $10 billion, although the most optimistic set of assumptions would yield an estimate as low as $2 billion, and the most pessimistic would produce an estimate as high as $47 billion. National total treatment costs are also estimated.

Patterson, Douglas M.

TI Linear Versus Nonlinear Macroeconomies: A Statistical Test. **AU** Ashley, Richard A.; Patterson, Douglas M.

Pearce, Douglas K.

PD August 1987. **TI** Firm Characteristics, Unanticipated Inflation, and Stock Returns. **AU** Pearce, Douglas K.; Roley, V. Vance. **AA** Pearce: North Carolina State University. Roley: University of Washington. **SR** National Bureau of Economic Research Working Paper: 2366; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 313, 521, 134, 212. **KW** Inflation. Stock Returns. Debt-Equity Ratio. Stock Prices. Nominal Contracts.

AB This paper re-examines the effects of nominal contracts on the relationship between unanticipated inflation and individual stock's rate of return. This study differs in three main ways from previous research. First, announced inflation data are used to examine the effects of unanticipated inflation. Second, a different specification is used to obtain more efficient estimates. Third, additional nominal contracts are considered. The empirical results indicate that time-varying firm characteristics related to inflation predominately determine the effect of unanticipated inflation on a stock's rate of return. A firm's debt-equity ratio appears to be particularly important in determining the response.

Peleg, Bezalel

TI Paths Leadings to the Nash set. **AU** Maschler, Michael; Owen, Guillermo; Peleg, Bezalel.

Peracchi, Franco

PD October 1987. **TI** Robust Estimation of Engel Curves with Censored Data. **AA** University of California, Los Angeles. **SR** Princeton Econometric Research Program Memorandum: 333; Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 46. **PR** $2.00. **JE** 211, 212. **KW** Censored Regression. Engel Curves. ML Estimator. Bounded-influence Estimators.

AB In this paper we compare the Tobit ML estimator with a number of semi-parametric and bounded-influence estimators for the censored regression model. The comparison is carried out on the basis of an empirical example, in which we estimate Engel curves using household budget data containing a significant fraction of reported zero expenditure. The ML estimator appears to be very sensitive to extreme observations and is way off in some cases. Semi-parametric and bounded-influence estimators are close to each other and look more reliable. However, bounded-influence estimators appear to be more precise, and provide diagnostic information that is useful to identify sources of model failures.

Peristiani, Stavros

TI Bank Size, Collateral and Net Purchase Behavior in the Federal Funds Market: Empirical Evidence A Note. **AU** Allen, Linda; Peristiani, Stavros; Saunders, Anthony.

Perloff, Jeffrey M.

TI Estimating Market Structure and Tax Incidence: The Japanese Television Market. **AU** Karp, Larry S.; Perloff, Jeffrey M.

PD August 1987. **TI** The Effect of Tariffs in Markets with Vertical Restraints. **AU** Perloff, Jeffrey M.; Fargeix, Andre. **AA** Department of Agricultural and Resource Economics, University of California, Berkeley. **SR** (CUDARE) University of California at Berkeley Department of Agricultural and Resource Economics Working Paper: 446; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 36. **PR** $7.20. **JE** 421, 531, 921, 022. **KW** Tariffs. Marketing. Vertical Restraints. Retail Markets.

AB Where manufacturers impose vertical restraints on domestic retailers, raising tariffs on international competition may increase domestic welfare, may benefit consumers, and may harm domestic manufacturers. This result is illustrated in a model in which the manufacturer transfers monopoly power to retailers by limiting their number, so as to induce the retailers to provide services to consumers. We derive conditions for each group to benefit from higher tariffs.

Perron, Pierre

TI Testing for a Unit Root in Time Series Regression. **AU** Phillips, Peter C. B.; Perron, Pierre.

Perry, Martin K.

PD June 1987. **TI** Vertical Integration: Determinants and Effects. **AA** Bell Communications Research, Inc. **SR** Bell Communications Research Inc. Economics Discussion Paper: 30; Bell Communications Research, Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PG** 74. **PR** No Charge. **JE** 611, 022. **KW** Contracts. Markets. Firms. Production Processes.

AB This paper is a survey of the economic literature on vertical integration. It will be published by North-Holland in the Handbook of Industrial Organization, edited by Richard Schmalensee and Robert D. Willig.

Persson, Torsten

TI Empirical Examinations of the Information Sets of Economic Agents. **AU** Gottfries, Nils; Persson, Torsten.

Pestieau, Pierre

TI Tax-Transfer Policies and the Voluntary Provision of Public Goods. **AU** Boadway, Robin; Pestieau, Pierre; Wildasin, David.

Peterson, Jane

TI Change in the Status of Women Across Generations in Asia. **AU** King, Elizabeth; Peterson, Jane; Adioetomo, Sri M.; Domingo, Lita; Syed, Sabiha H.

Phillips, Peter C. B.

PD February 1987. **TI** Spherical Matrix Distributions and Cauchy Quotients. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 823; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 5. **PR** No Charge. **JE** 211. **KW** Cauchy Quotients. Invariant Measures. Matrix Variates. Spherical Distributions.

AB It is shown that matrix quotients of submatrices of a spherical matrix are distributed as matrix Cauchy. This generalizes known results for scalar ratios of independent normal variates. The derivations are simple and make use of the theory of invariant measures on manifolds.

PD February 1987. **TI** Conditional and Unconditional Statistical Independence. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 824; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 10. **PR** No Charge. **JE** 211. **KW** Conditioning. Independence. Projection. Uniform Distribution.

AB Examples are given to illustrate that conditional independence almost everywhere in the space of the conditioning variates does not imply unconditional independence, although it may well imply unconditional independence of certain functions of the variables. An example that is important in linear regression theory is discussed in detail. This involves orthogonal projections on random linear manifolds, which are conditionally independent but not unconditionally independent under normality.

TI Statistical Inference in Regressions with Integrated Processes: Part II. **AU** Park, Joon Y.; Phillips, Peter C. B.

PD July 1987. **TI** Partially Identified Econometric Models. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 845; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 92. **PR** No

Charge. **JE** 211. **KW** Identification. LAN. Locally Asymptotically Mixed Normal Families. Partial Identification. Time Series Spurious Regression.
AB This paper studies a class of models where full identification is not necessarily assumed. We term such models partially identified. It is argued that partially identified systems are of practical importance since empirical investigators frequently proceed under conditions that are best described as apparent identification. One objective of the paper is to explore the properties of conventional statistical procedures in the context of identification failure. Our analysis concentrates on two major types of partially identified model: the classic simultaneous equations model under rank condition failures; and time series spurious regressions. Both types serve to illustrate the extensions that are needed to conventional asymptotic theory if the theory is to accommodate partially identified systems. Some applications are discussed including the Gaussian AR(1) for stable, explosive and unit root coefficients.

PD July 1987. **TI** Weak Convergence of Sample Covariance Matrices to Stochastic Integrals Via Martingale Approximations. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 846; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 9. **PR** No Charge. **JE** 211. **KW** Martingale Approximations. Stochastic Integrals. Weak Convergence.
AB Under general conditions the sample covariance matrix of a vector martingale and its differences converges weakly to the matrix stochastic integral from zero to one of BdB; where B is vector Brownian motion. For strictly stationary and ergodic sequences, rather than martingale differences, a similar result obtains. In this case, the limit is the same with a constant matrix, of bias terms whose magnitude depends on the serial correlation properties of the sequence. This note gives a simple proof of the result using martingale approximations.

PD July 1987. **TI** Asymptotic Properties of Residual Based Tests for Cointegration. **AU** Phillips, Peter C. B.; Ouliaris, Sam. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 847; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 52. **PR** No Charge. **JE** 211. **KW** Cointegration. Residual Based Tests. Stochastic Integral. Unit Roots.
AB This paper develops an asymptotic theory for residual based tests for cointegration. These tests involve procedures that are designed to detect the presence of a unit root in the residuals of (cointegrating) regressions among the levels of economic time series. Attention is given to the augmented Dickey Fuller (ADF) test and the Z (alpha) and Z(t) unit root tests recently proposed by Phillips (1987). Two new tests are also introduced, one of which is invariant to the normalization of the cointegrating regression. All of these tests are shown to be asymptotically similar and simple representations of their limiting distributions are given in terms of standard Brownian motion. The ADF and Z(t) tests are asymptotically equivalent. Power properties of the tests are also studied. The analysis shows that all the tests are consistent if suitably constructed but that the ADF and Z(t) tests have slower rates of divergence under cointegration than the other tests. The paper concludes by addressing the larger issue of test formulation. Some major pitfalls are discovered in procedures that are designed to test a null of cointegration (rather than no cointegration). These defects provide strong arguments against such test formulations and support the continuing use of residual based unit root tests.

PD July 1987. **TI** Testing for Cointegration using Principal Component Methods. **AU** Phillips, Peter C. B.; Ouliaris, Sam. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 809-R; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 37. **PR** No Charge. **JE** 211. **KW** Latent Root. Spectral Density Matrix. Time Series.
AB This paper studies cointegrated systems of multiple time series which are individually well described as integrated processes (with or without a drift). Necessary and sufficient conditions for cointegration are given. These conditions form the basis for a new class of statistical procedures designed to test for cointegration. The new procedures rely on principal components methods. They are simple to employ and they involve only the standard normal distribution. Monte Carlo simulations reported in the paper indicate that the new procedures provide simple and apparently rather powerful diagnostics for the detection of cointegration. Some empirical applications to macroeconomic data are conducted.

TI Statistical Inference in Regressions with Integrated Processes: Part I. **AU** Park, Joon Y.; Phillips, Peter C. B.

PD September 1987. **TI** Testing for a Unit Root in Time Series Regression. **AU** Phillips, Peter C. B.; Perron, Pierre. **AA** Phillips: Yale University. Perron: University of Montreal. **SR** Yale Cowles Foundation Discussion Paper: 795-R; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 31. **PR** No Charge. **JE** 211. **KW** Brownian Motion, Noncentral Distributions. Weak Convergence. Nonparametic Tests.
AB This paper proposes some new tests for detecting the presence of a unit root in quite general time series models. Our approach is nonparametric with respect to nuisance parameters and thereby allows for a very wide class of weakly dependent and possibly heterogeneously distributed data. The tests accommodate models with a fitted drift and a time trend so that they may be used to discriminate between unit root nonstationarity and stationarity about a deterministic trend. The limiting distributions of the statistics are obtained under both the unit root null and a sequence of local alternatives. The latter noncentral distribution theory yields local asymptotic power functions for the tests and facilitates comparisons with alternative procedures due to Dickey and Fuller. Some simulations are reported which provide evidence on the performance of the new tests in finite samples.

Pines, D.

PD August 1987. **TI** Tiebout Without Politics. **AA** Department of Economics, Tel-Aviv University and the University of Western Ontario. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper:

21-87; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 22. **PR** No Charge. **JE** 025, 324, 931. **KW** Politics. Public Goods. Political Process. Local Government. Developers.

AB This paper reexamines the existence and the efficiency of an equilibrium with developers who supply local public goods to maximize profits. It is shown that, as in the club theory, if communities are perfectly replicable, such an equilibrium exists and is efficient. But if communities cannot be replicated, equilibrium with profit maximising developers need not exist, unless we adopt a strong assumption regarding the preference and the production technology. Since the assumption of perfect replicability is unrealistic in view of the uneven distribution in space of local amenities, we conclude that, in the real world, equilibrium with profit maximizing developers need not exist. Consequently, some form of political process is indispensable for efficient provision of public goods, even on a local level.

TI The Demand for a Risky Asset when its Returns are Stochastically Related to Prices of Consumption Goods. **AU** Schwartz, A.; Pines, D.; Eldor, R.

Pitchford, J. D.

PD February 1988. **TI** Optimum Responses of the Current Account when Income is Uncertain. **AA** Australian National University. **SR** Australian National University Working Paper in Economics and Econometrics: 157; Department of Economics, Australian National University, P.O. Box 4, Canberra A.C.T. 2601, AUSTRALIA. **PG** 17. **PR** No Charge. **JE** 431, 026, 311, 023. **KW** Current Account. Income. Consumption Smoothing.

AB The question of how the current and capital accounts in the balance of payments should adjust when there are exogenous shocks has recently been examined in the context of optimal intertemporal choice of consumption and borrowing. Thus a fall in income will call forth a variety of responses depending on whether it is thought to be permanent or temporary, long term or short term. In this paper uncertainty is introduced into the timing of the reversal of an income fall. Conditions under which this will produce an initial improvement or worsening of the current account are derived as well as the subsequent optimal paths. It is shown that the main feature of the uncertainty case is that responses are conditioned by the current income level to an extent not found when certainty is assumed. In particular there is no scope for the anticipation of an income rise which occurs when the timing involved is assumed to be known with certainty.

PD March 1988. **TI** Short and Long Run Effects of Macroeconomic Policies in an Open Economy: A Survey. **AA** Department of Economics, Australian National University. **SR** Australian National University Working Paper in Economics and Econometrics: 156; Department of Economics, Australian National University, P.O. Box 4, Canberra A.C.T. 2601, AUSTRALIA. **PG** 28. **PR** No Charge. **JE** 431, 411, 311, 321. **KW** Exchange Rate. Fiscal Policy. Monetary Policy. Wage Indexation. Open Economy.

AB The open economy macroeconomic model has been extended by various authors, for instance Bruce and Purvis '1985, Marston '1985, to cover fully indexed and partially indexed wages. The present paper uses simple diagrams to codify the results of these models, namely the effects on aggregate output and price, the nominal and real exchange rate, the interest rate, and net exports of fiscal and monetary policy in a flexible exchange rate regime. Fiscal policy is separated into government spending on home goods and imports. In the very short run, responses may be such that elasticities are low, meaning that the Marshall-Lerner condition is not satisfied. It is shown, for instance, that while increased government expenditure on the home good normally appreciates real and nominal exchange rates, with low elasticities they may depreciate. These short run results of monetary and fiscal policy lead to changes in net wealth through current account effects. The system is therefore extended to study the long run in which changing asset supplies have fed back through domestic responses on the real exchange rate to bring about current account equilibrium.

Plott, Charles R.

TI A Study of Zero-Out Auction: Experimental Analysis of a Process of Allocating Private Rights to the Use of Public Property. **AU** Guler, Kemal; Plott, Charles R.; Vuong, Quang H.

Popper, Steven W.

PD December 1986. **TI** Hungarian Management in Transition: Enterprise Guidance in an Era of Economic Reform. **AA** The Rand Corporation. **SR** Rand Paper: P-7285; The Rand Corporation, 1700 Main Street, PO Box 2138, Santa Monica, CA 90406-2138. **PG** 41. **PR** No Charge. **JE** 027, 113. **KW** Centrally Planned Economies. Government Policy.

AB In 1968, Hungary introduced a series of reforms to the central planning system. The goal was to make the economy more efficient by placing decision making authority at the level that has the most information on production and marketing possibilities -- the level of the enterprise. This paper examines the situation enterprise managers face and suggests reasons that the changes in managerial behavior that were expected by the reformers, and upon which the reform is predicated, have not come easily. The author argues that reform has altered the terms of economic relations in Hungary, while the underlying structure of relations between enterprise managers and their superiors has not changed enough to allow the new system to function as intended.

Porter, David P.

TI The Design of Mechanisms to Allocate Space Station Resources. **AU** Banks, Jeffrey S.; Ledyard, John O.; Porter, David P.

Poterba, James M.

PD August 1987. **TI** Mean Reversion in Stock Prices: Evidence and Implications. **AU** Poterba, James M.; Summers, Lawrence H. **AA** Poterba: Massachusetts Institute of Technology. Summers: Harvard. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 457; Department of Economics, Massachusetts Institute of Technology,

Cambridge, MA 02139. **PG** 43. **PR** No Charge. **JE** 313, 212, 311. **KW** Stock Returns. Fads. Random Walk Hypothesis. Securities. Finance. Asset Markets.
AB This paper analyzes the statistical evidence bearing on whether transitory components account for a large fraction of the variance in common stock returns. The first part treats methodological issues involved in testing for transitory return components. It demonstrates that variance ratios are among the most powerful tests for detecting mean reversion in stock prices, but that they have little power against the principal interesting alternatives to the random walk hypothesis. The second part applies variance ratio tests to market returns for the United States over the 1871-1986 period and for seventeen other countries over the 1957-1985 period, as well as to returns on individual firms over the 1926-1985 period. We find consistent evidence that stock returns are positively serially correlated over short horizons, and negatively autocorrelated over long horizons. The point estimates suggest that the transitory components in stock prices have a standard deviation of between 15 and 25 percent and account for more than half of the variance in monthly returns. The last part of the paper discusses two possible explanations for mean reversion: time varying required returns, and slowly-decaying "price fads" that cause stock prices to deviate from fundamental values for periods of several years. We conclude that explaining observed transitory components in stock prices on the basis of movements in required returns due to risk factors is likely to be difficult.

PD August 1987. **TI** Mean Reversion in Stock Prices: Evidence and Implications. **AU** Poterba, James M.; Summers, Lawrence H. **AA** Poterba: Massachusetts Institute of Technology. Summers: Harvard University. **SR** National Bureau of Economic Research Working Paper: 2343; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 313, 212, 311, 026. **KW** Stock Prices. ARCH. Stock Returns. Variance Ratios. Random Walk. Fads. Transitory Components. Risk.
AB This paper analyzes the statistical evidence bearing on whether transitory components account for a large fraction of the variance in common stock returns. The first part treats methodological issues involved in testing for transitory return components. It demonstrates that variance ratios are among the most powerful tests for detecting mean reversion in stock prices, but that they have little power against the principal interesting alternatives to the random walk hypothesis. The second part applies variance ratio tests to market returns for the United States over the 1871-1986 period and for seventeen other countries over the 1957-1985 period, as well as to returns on individual firms over the 1926-1985 period. We find consistent evidence that stock returns are positively serially correlated over short horizons, and negatively autocorrelated over long horizons. The point estimates suggest that the transitory components in stock prices have a standard deviation of between 15 and 25 percent and account for more than half of the variance in monthly returns. The last part of the paper discusses two possible explanations for mean reversion: time varying required returns, and slowly-decaying "price fads" that cause stock prices to deviate from fundamental values for periods of several years. We conclude that explaining observed transitory components in stock prices on the basis of movements in required returns due to risk factors is likely to be difficult.

TI What Moves Stock Prices? **AU** Cutler, David M.; Poterba, James M.; Summers, Lawrence H.

Pound, John

PD March 1988. **TI** Proxy Contests and the Efficiency of Shareholder Oversight. **AA** J. F. Kennedy School of Government. **SR** Harvard John F. Kennedy School of Government Discussion Paper; 166D. **PG** 50. **PR** No Charge. **JE** 512, 611, 511. **KW** Proxy Contest. Corporate Control. Shareholder Voting.
AB Three problems may discourage the use of proxy contests to challenge management and transfer corporate control. First, inefficiency in the system of proxy vote solicitation can give management a vote-getting advantage. Second, due to conflict-of-interest pressures, institutional investors may vote with management against their own fiduciary interests. Third, because some dissident proxy challenges may be "crank" bids, with no prospect for increasing share values, dissidents may have to incur costs to signal the value of their bid to outside shareholders. Tests on a sample of 100 proxy contests from the period 1981-1985 confirm the existence of these problems.

PD April 1988. **TI** Clearly Heard on the Street: The Effect of Takeover Rumors on Stock Prices. **AU** Pound, John; Zeckhauser, Richard. **AA** J. F. Kennedy School of Government. **SR** Harvard John F. Kennedy School of Government Discussion Paper: 167D. **PG** 31. **PR** No Charge. **JE** 313, 522, 611. **KW** Takeovers. Insider Trading. Efficient Markets. Speculation. Stock Market.
AB This paper investigates the effects of takeover rumors on firms' stock prices, using a sample of takeover rumors from the Wall Street Journal's "Heard on the Street" column. We find that the market reacts efficiently to rumors; simple trading strategies based on buying or selling rumored targets' stocks yield zero excess returns. This refutes the widespread perception that speculation in takeover targets is profitable, and the implicit argument that the market fails to incorporate rumors efficiently into prices. We document a significant price run-up for rumored targets in the month before publication of the takeover rumor. We find that widespread takeover rumors accurately predict imminent takeover bids less than half the time, implying that relatively few are caused by leaks of inside information about imminent deals. Finally, we find that most takeover rumors are preceded by unusual price and volume activity in the rumored targets' stock, which may stimulate speculation that a large block position is being accumulated.

Powell, Andrew

TI The Management of Developing Country Commodity Risks: A New Role for Public Policy. **AU** Gilbert, Christopher; Powell, Andrew.

Powell, James L.

TI Efficient Estimation of Linear and Type I Censored Regression Models Under Conditional Quantile

Restrictions. **AU** Newey, Whitney K.; Powell, James L.

Prescott, Edward C.

TI Invariant Distributions for Monotone Markov Processes. **AU** Hopenhayn, Hugo A.; Prescott, Edward C.

Pulleyblank, W. R.

TI Matroid Steiner Problems, the Tutte Polynomial and Network Reliability. **AU** Colbourn, Charles J.; Pulleyblank, William R.

TI The Maximum Size of a Convex Polygon in a Restricted Set of Points in the Plane. **AU** Alon, N.; Katchalski, M.; Pulleyblank, W. R.

Purvis, Douglas D.

TI Taxation and Business Activity: A Survey. **AU** Mintz, Jack M.; Purvis, Douglas D.

Putler, Daniel S.

PD August 1987. **TI** A Framework for Analyzing the Effects of Health Information on Product Demand with an Application to Shell Egg Consumption. **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: 449; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 32. **PR** $6.40. **JE** 913, 921, 026. **KW** Health Information. Consumers' Demand. Epidemic Model. Product Demand.

AB This paper presents a theoretical framework to assess the effect of health information on the demand for an affected product. This framework is applied to the shell egg market. The empirical evidence suggests that health information linking diet to heart disease is responsible for reducing per capita shell egg consumption by 10 to 11 eggs per quarter (a 14 per cent reduction).

PD August 1987. **TI** The Effect of Health Information on Shell Egg Consumption. **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: 448; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 15. **PR** $3.00. **JE** 913, 921, 026. **KW** Health Information. Epidemic Model. Product Demand. Consumer Demand.

AB A method is presented to assess the effect of health information on the demand for an affected product. This method is applied to the shell egg market. Empirical evidence indicates that health information linking diet to heart disease is responsible for reducing per capita shell egg consumption by 14 per cent.

PD September 1987. **TI** Computer Use in Agriculture: Evidence from Tulare County, California. **AU** Putler, Daniel S.; Zilberman, David. **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: 444; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 33. **PR** $6.60. **JE** 621, 635, 212. **KW** Microcomputers. Agriculture Technology. Agriculture Innovations.

AB Despite the interest in agricultural computer use, little work has been done to examine the individual farm-firm's choice of whether or not to adopt a computer. Understanding (and quantifying) the factors that influence the farm computer adoption choice will assist interested parties in developing successful computer-oriented programs by (1) identifying their potential clientele and (2) better understanding the needs of that clientele. Consequently, the goals of this study are twofold: first, to formulate and estimate empirical models of the decision to use a computer and various types of computer applications using a theoretical choice model and discrete econometrics and, second, to identify the most likely clientele groups for both extension and agricultural education programs.

Quah, 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. **PR** $2.00. **JE** 131, 212. **KW** Aggregate Output. Unit Root. 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.

Quandt, Richard E.

TI Budget Constraints, Bailouts and the Firm Under Central Planning. **AU** Goldfeld, Stephen M.; Quandt, Richard E.

Quinzii, M.

PD September 1987. **TI** On the Optimality of Central Places. **AU** Quinzii, Martine; Thisse, Jacques Francois. **AA** Quinzii: University of Southern California. Thisse: CORE. **SR** University of Southern California Modelling Research Group Working Paper: M8733; Department of Economics, University of Southern California, University Park, Los Angeles, CA 90089-0152. **PG** 24. **PR** No Charge. **JE** 024, 615, 931. **KW** Transportation Cost. Multipurpose Shopping. Central Place Theory.

AB Using the Eaton and Lipsey model, we show that a hierarchical system of central places is socially optimal: firms having less frequent purchases are clustered with firms having more frequent purchases in any configuration minimizing total transport costs.

TI Generic Inefficiency of Stock Market Equilibrium When Markets Are Incomplete. **AU** Geanakoplos, J.; Magill, M.; Quinzii, M.; Dreze, J.

Radermacher, F. J.

TI Scheduling Project Networks with Resource Constraints and Time Windows. **AU** Bartusch, M.; Mohring, R. H.; Radermacher, F. J.

Ramey, Garey

PD December 1986. **TI** Information Transfer and Investment in Product Quality. **AA** Stanford University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: TR499; Institute for Mathematical Studies in the Social Sciences, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 46. **PR** $4.00. **JE** 022, 026, 611, 522. **KW** Product Quality. Signaling. Repeat Business. Moral Hazard. Adverse Selection. Investment.

AB This paper considers monopoly provision of product quality for experience goods when the firm's investment in quality is distinct from its quality outcome. Thus, the problem involves moral hazard and adverse selection. In this case, the firm chooses zero investment regardless of how much information about product quality is transferred by the product's price, and even if information transfer is complete. Further, the repeat business mechanism is incapable of providing investment incentives when price is fully-informative as to quality. The market is consequently limited in its ability to provide quality, since investment in quality is incompatible with information transfer.

PD February 1987. **TI** Product Quality Signaling and Market Performance. **AA** Stanford University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: TR504; Institute for Mathematical Studies in the Social Sciences, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 50. **PR** $4.00. **JE** 611, 026, 022, 541. **KW** Signaling. Product Quality. Monopoly Pricing. Advertising. Warranties.

AB This paper analyzes monopoly pricing, advertising and warranty provision when the firm and consumers are asymmetrically informed as to the quality of the product. The paper offers a general approach to the derivation of multidimensional signaling equilibria when quality can assume a continuum of possible levels. When greater actual quality has the effect of raising production costs and quality is signaled through price, the firm will choose prices above complete-information monopoly levels. Signaling through price and advertising increases consumer welfare and reduces profits relative to signaling through price alone. When quality is signaled through price and warranty, consumer welfare improves when warranties are a sufficiently close substitute for quality, and profits improve if the effect of actual quality on warranty costs outweighs its effect on production costs.

Rankin, Neil

PD November 1987. **TI** Monetary and Fiscal Policy in a "Hartian" Model of Imperfect Competition. **AA** Queen Mary College. **SR** Centre for Economic Policy Research Discussion Paper: 205; 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** 023, 311, 321. **KW** Imperfect Competition. Monetary Policy. Walrasian Equilibrium. Fiscal Policy. Keynesian Model. Price Expectations.

AB Monetary and fiscal policy are introduced into a version of Hart's "Keynesian features" model of imperfect competition. Individuals' labour supply is exogenous, so, under perfect competition, output is always at the exogenous "full employment" level. Imperfect competition takes the form of Cournot-Nash quantity-setting trade unions, seeking to maximise their members' total wage income. Equilibrium with unemployment is then possible. In this case, fiscal policy (money-financed government spending increases) nearly always affects output, while monetary policy only does so if price expectations are not unit-elastic. Thus in Walrasian equilibrium, not only imperfect competition but also non-neutral money are needed for monetary effectiveness.

Rasakhoo, Nima

TI A Fortran Program for Time-Varying Linear Regression Via Flexible Least Squares. **AU** Kalaba, Robert; Rasakhoo, Nima; Tesfatsion, Leigh.

Razin, A.

PD September 1987. **TI** Fiscal Policies and the Stock Market: International Dimensions. **AA** Tel Aviv University. **SR** National Bureau of Economic Research Working Paper: 2389; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 321, 026, 023. **KW** Fiscal Policy. Intertemporal. Uncertainty. Stock Prices. Consumption.

AB The dynamic effects of fiscal policies on the real equilibrium have been the subject of a large body of recent research, emphasizing the intertemporal dimensions of tax and spending policies both in closed and open-economy contexts. The analysis in this paper extends the intertemporal analysis which was conducted under full certainty to uncertain environments. Specifically the paper uses a two-country stochastic general-equilibrium model of the world economy to address issues concerning the effects of government tax and spending policies on private sector consumption asset portfolios and stock market valuations. The key result of the paper is that the consequences of expected future policies and the characteristics of their international transmission depend critically on the precise variability of these policies across states of nature. The effects of current policies on consumption savings and stock market prices are shown, however to conform closely to the predictions of the corresponding certainty intertemporal model.

PD October 1987. **TI** Fiscal Policies and the Stock Market: International Dimensions. **AA** Department of Economics, Tel Aviv University and NBER. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 27-87; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 30. **PR** No Charge. **JE** 431, 321, 023. **KW** International Stock Market. Fiscal Policy. Intertemporal Uncertainty Model.

AB The dynamic effects of fiscal policies on the real equilibrium have been the subject of a large body of recent research, emphasizing the intertemporal dimensions of tax and spending policies both in closed and open-economy

contexts. The analysis in this paper extends the intertemporal analysis which was conducted under full certainty to uncertain environments. Specifically the paper uses a two-country stochastic general-equilibrium model of the world economy to address issues concerning the effects of government tax and spending policies on private sector consumption asset portfolios and stock market valuations. The key result of the paper is that the consequences of expected future policies and the characteristics of their international transmission depend critically on the precise variability of these policies across states of nature. The effects of current policies on consumption savings and stock market prices are shown, however to conform closely to the predictions of the corresponding certainty intertemporal model.

Redish, Angela

TI Credible Commitment and Exchange Rate Stability: Canada's Interwar Experience. **AU** Bordo, Michael D.; Redish, Angela.

Reisman, Haim

PD March 1988. **TI** A Note on the CAPM with Differential Information. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 457; New York University Salomon Brothers Center for the Study of Financial Institutions, 90 Trinity Place, New York, NY 10006. **PG** 18. **PR** $4.00. **JE** 313, 311. **KW** Capital Asset Pricing Model. Information Set.

AB This paper provides a very general version of the Capital Asset Pricing Model in economies with differential information that can be tested by an observer who is using a restricted set of assets and a restricted set of conditioning information in his tests.

Renault, E.

TI Contraintes bilineaires: estimation et test. **AU** Gourieroux, C.; Monfort, A.; Renault, E.

Reny, Philip J.

PD October 1987. **TI** A Simple Proof of the Existence of Subgame Perfect Equilibria in Infinite-Action Games of Perfect Information. **AU** Reny, Philip J.; Robson, Arthur J. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Centre for Decision Sciences and Econometrics Technical Report: No. 19; Department of Economics, University of Western Ontario, London, Ontario CANADA N6A 5C2. **PG** 16. **PR** Not for Sale. **JE** 026. **KW** Existence. Subgame Perfect Equilibria. Complete Information.

AB This paper examines an extensive form game with complete information for each player regarding previous moves. Each player chooses from an infinite action set. Such games are much more prevalent in economic applications than the finite action counterparts originally described in the literative. The contribution of the paper is to present a direct and elementary proof of the existence of subgame perfect equilibrium. It is assumed that all action sets are sequentially compact, first countable, and separable. Payoffs are continuous functions of all actions. The direct proof establishing existence also shows how finite action games can be used to approximate a given infinite-action game.

Richter, Marcel K.

TI Testing Strictly Concave Rationality. **AU** Matzkin, Rosa L.; Richter, Marcel K.

Riezman, Raymond

TI Optimal Tariff Equilibria with Customs Unions. **AU** Kennan, John; Riezman, Raymond.

Robinson, Marc S.

TI Government Saving, Capital Formation and Wealth in the United States, 1947-1985. **AU** Boskin, Michael J.; Robinson, Marc S.; Huber, Alan M.

Robinson, P. M.

PD 1987. **TI** Adaptive Estimation of Heteroskedastic Econometric Models. **AA** London School of Economics. **SR** London School of Economics Econometrics Programme Discussion Paper: R.7; Department of Economics, London School of Economics and Political Science, Houghton Street, London WC2A 2AE, ENGLAND. **PG** 17. **PR** No Charge. **JE** 211. **KW** Heteroskedasticity. Autoregressive Conditional Heteroskedasticity. Adaptive Estimators.

AB We focus on the linear model with conditional heteroskedasticity of unknown form. "Adaptive" estimators of the coefficients of the linear model, based on no rigid parameterisation of the heteroskedasticity, but having the same asymptotic efficiency as estimators which do use such information, are surveyed. A small Monte Carlo study of their performance is reported. We describe a modification of the popular paradigm in which the variance is a function of the mean, allowing this function to be of unknown form. We describe a modification also of the autoregressive conditional heteroskedasticity (ARCH) model, in which the heteroskedasticity function is of unknown form.

PD 1987. **TI** The Stochastic Difference Between Econometric Statistics. **AA** London School of Economics. **SR** London School of Economics Econometrics Programme Discussion Paper: R.10; Department of Economics, London School of Economics and Political Science, Houghton Street, London WC2A 2AE, ENGLAND. **PG** 30. **PR** No Charge. **JE** 211. **KW** Parametric Models. Nonparametric Models. Stochastic Order Relations. Search Estimation. Simultaneous Equations.

AB In a somewhat general context, and in a variety of special cases, we calculate the order in probability of the difference between consistent roots of rival estimating equations, with application to point estimators in parametric and non-parametric models, interval estimators and test statistics. The emphasis is on comparison of statistics having the same first-order asymptotic distribution, our results indicating the degree to which their stochastic expansions correspond. Differences in the statistical performances of various commonly-used iterative procedures are detected. We discuss implications of our results for higher-order efficiency comparisons, and for matching the first-order efficiency of an implicitly defined target statistic in finitely many iterative steps, commenced

by an estimator that is consistent but not T(1/2)-consistent, justifying as suitable initial estimators ones obtained via a search of the objective function, and via nonparametric methods. Some of our results are applied to the linear-in-variables simultaneous equations system.

PD 1987. **TI** Semiparametric Econometrics: A Survey. **AA** London School of Economics. **SR** London School of Economics Econometrics Programme Discussion Paper: R.11; Department of Economics, London School of Economics and Political Science, Houghton Street, London WC2A 2AE, ENGLAND. **PG** 34. **PR** No Charge. **JE** 211. **KW** Nonparametrics. Semiparametric Models.
AB Semiparametric econometric models contain both parametric and nonparametric components, reflecting in some fashion what has been learned from economic theory and previous empirical experience, and what remains unknown. They raise such questions as how well the parametric component can be estimated, and how to construct rules of inference with good statistical properties. The paper attempts to survey the econometric and most relevant statistical literature on semiparametric inference, and includes a partial bibliography.

TI Efficient Estimation of Nonstationary Time Series Regression. **AU** Harvey, A. C.; Robinson, P. M.

Robinson, Sherman

PD September 1987. **TI** Macroeconomic Structure and Computable General Equilibrium Models. **AU** Robinson, Sherman; Roland, Holst David W. **AA** Robinson: Department of Agricultural and Resource Economics, University of California, Berkeley. Roland-Holst: Department of Economics, Mills College. **SR** University of California at Berkeley Department of Agricultural and Resource Economics (UDARE) Working Paper: 450; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 23 p. **PR** $4.60. **JE** 213, 225, 023. **KW** Social Accounting Matrix. CGE Models. SAM. Multiplier Decomposition.
AB This paper develops an approach to analysing Jacobian multipliers that decomposes macro, sectoral, and institutional linkages in a SAM framework. The first section discusses the Jacobian multipliers and associated decomposition for a theoretical CGE model. We then discuss linkage decompositions in a SAM-based macromodel. Finally, we give an illustration of the multiplier decomposition and macro linkages with a small CGE model of the United States.

Robson, Arthur J.

TI A Simple Proof of the Existence of Subgame Perfect Equilibria in Infinite-Action Games of Perfect Information. **AU** Reny, Philip J.; Robson, Arthur J.

Rockett, Katharine E.

TI International Macroeconomic Policy Coordination When Policy-Makers Disagree on the Model. **AU** Frankel, Jeffrey A.; Rockett, Katharine E.

Rodrik, Dani

PD October 1987. **TI** The Dilemma of Government Responsiveness. **AU** Rodrik, Dani; Zeckhauser, Richard. **AA** Harvard University. **SR** Harvard John F. Kennedy School of Government Discussion Paper: 161D; John F. Kennedy School of Government, Harvard University, 79 John F. Kennedy Street, Cambridge, MA 02138. **PG** 38. **PR** No Charge. **JE** 321. **KW** Government Responsiveness. Commitment. Policy Making.
AB The ability to create appropriate incentives is often compromised by the expectation that the government will respond to future circumstances, say bailing out a dictator to avoid a bloodbath, or raising taxes on immovable capital investments. The government's dilemma, simply, is that it may be unable to commit future governments not to be responsive. Contracts and constitutional provisions are mechanisms to limit responsiveness. So too are arrangements that lower certain government payoffs to increase the cost of being responsive, or build reputations for adhering to certain patterns of behavior. A promising strategy for being unresponsive is to base government actions on variables not under the control of individuals, such as unalterable characteristics or aggregate outcomes. These at best are palliative measures: Informed policy making must recognize the tension between providing appropriate incentives and permitting government to be responsive.

Roemer, John E.

PD December 1987. **TI** Allocation of Resources by an International Agency. **AA** University of California at Davis. **SR** University of California at Davis Economics Department Working Paper: 304; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 46. **PR** No Charge. **JE** 024, 025, 026, 913. **KW** Infant Mortality. Lexicographical Egalitarianism. Resource Allocation. Utilitarianism.
AB An international agency, such as the World Health Organization (WHO), is charged to distribute an endowment of resources among many countries, with a goal to reduce their rates of infant mortality. What allocation rule should it use? In the first part, the problem is presented abstractly, and a new axiomatic characterization of the lexicographical egalitarian allocation rule is derived. It is suggested that the axioms are ones that an international agency should endorse. In the second part, the author reports the results of his interviews with WHO officials and his analysis of the WHO budget, to determine how, in fact, resources are allocated. A tension among three allocation rules is discovered: lexicographic egalitarianism, population-weighted utilitarianism, and modifed country utilitarianism. The paper concludes with an evaluation of the salience of the axiomatic method as a policy guide for those who actually allocate resources.

Rogoff, Kenneth

PD November 1987. **TI** Equilibrium Political Budget Cycles. **AA** University of Wisconsin. **SR** National Bureau of Economic Research Working Paper: 2428; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 321, 131, 133, 024. **KW** Fiscal Policy. Signalling Process. Political Business Cycle. Elections. Equilibrium Framework.
AB Prior to elections, 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.

Roland, Holst David W.

TI Macroeconomic Structure and Computable General Equilibrium Models. **AU** Robinson, Sherman; Roland, Holst David W.

Roley, V. Vance

TI Firm Characteristics, Unanticipated Inflation, and Stock Returns. **AU** Pearce, Douglas K.; Roley, V. Vance.

Rolph, John E.

PD April 1987. **TI** Identifying High-Rate Serious Criminals from Official Records. **AU** Rolph, John E.; Chaiken, Jan M. **AA** The Rand Corporation. **SR** Rand Report: R-3433; The Rand Corporation, 1700 Main Street P.O. Box 2138, Santa Monica CA 90406-2138. **PG** 67. **PR** No Charge. **JE** 916, 212. **KW** Identifying Repeat Offenders.

AB Can official criminal records reliably be used to conclude that certain offenders are committing serious crimes at high rates? By comparing official records with self reports of criminal activity collected in RAND's second inmate survey, this study finds that commonly available official criminal history data are of only marginal help in discriminating between high-rate serious offenders and others. Using additional self-reported data on offenders' backgrounds, particularly regarding substance abuse and early juvenile criminal activity, improves the identification to about 36 percent over what can be achieved by chance.

Romer, Christina D.

PD November 1987. **TI** Changes in the Cyclical Behavior of Individual Production Series. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2440; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 042, 131, 111. **KW** Production. Time Series. Output.

AB This paper uses simple time series techniques to analyze changes in the short-run behavior of 38 physical production series for 1889-1984. The main finding is that fluctuations in these output series in the periods 1889-1914 and 1947-1984 are very similar, while those in the period 1922-1939 are anomalous. Relative to the prewar era, the postwar era exhibits only a slight damping of fluctuations and no increase in the persistence of short-run movements. At the same time, the correlation between the growth rates of the 38 goods is very low in both the prewar and postwar eras and has declined slightly over time.

Romer, David

TI The Equilibrium and Optimal Timing of Price Changes. **AU** Ball, Laurence; Romer, David.

Rose, Nancy L.

TI The Effects of Economic Regulation. **AU** Joskow, Paul L.; Rose, Nancy L.

Rosen, Harvey S.

TI Federal Deductibility and Local Property Tax Rates. **AU** Holtz, Eakin Douglas; Rosen, Harvey S.

Rosen, Sherwin

PD May 1987. **TI** Transactions Costs and Internal Labor Markets. **AA** University of Chicago. **SR** Economics Research Center/NORC Discussion Paper: 87-12; Economics Research Center/NORC, 6030 South Ellis, Chicago, IL 60637. **PG** 26. **PR** $2.00; send requests to Librarian, NORC. **JE** 821, 851, 512, 022. **KW** Agency Theory. Personnel Management System. Transaction Costs. Internal Labor Market.

AB The concept of transactions costs used by Coase in "The Nature of the Firm" is applied to the internal labor market of an organization. Under joint production it is shown that the number of transaction-specific prices necessary to decentralize labor allocations rises geometrically with the size of the work force. Complexity of calculation and costs of implementation constrains the possibilities for internal decentralization through a price mechanism and substitutes a more authoritarian system of allocation instead. These same issues of complexity and implementation costs limit the usefulness of agency theory as a conceptual framework for this problem. The analysis suggests that an internal labor market must be viewed in a more comprehensive framework of a personnel management system.

PD September 1987. **TI** The Value of Changes in Life Expectancy. **AA** University of Chicago, Hoover Institution. **SR** Stanford Hoover Institute Working Paper in Economics: E-87-45; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 48. **PR** No Charge. **JE** 022, 913, 024. **KW** Age-specific Mortality Risk. Life-Cycle Expected Utility Theory. Valuation of Risks. Cost-benefit analysis.

AB A valuation formula is derived for changes in age-specific mortality risks using life-cycle expected utility theory. These methods are useful for valuing activities involving substantial delays between exposure and risk, such as consumption of carcinogens, and for cost-benefit analysis of medical research. The methodology implies straightforward connections between cross-section value-of-life estimates and the appropriate life-cycle estimates. Illustrative calculations are presented based on one cross-section study of equalizing differences in wage-rates. Issues of randomization, time-consistency in valuations, regret for past actions and how valuations change over the life-cycle

are also discussed.

Ross, Thomas W.

PD September 1987. **TI** Movements toward Free Trade and Domestic Market Performance with Imperfect Competition. **AA** Carleton University; National Fellow, Hoover Institution. **SR** Stanford Hoover Institute Working Paper in Economics: E-87-46; Domestic Studies Program Working Paper Series, Hoover Institution, Stanford University, Stanford, CA 94305. **PG** 52. **PR** No Charge. **JE** 612, 411, 421, 023. **KW** Free Trade. Competition Policy. Imperfect Competition. Oligopoly. Protective Tariff.

AB This paper studies the response of a dominant domestic oligopoly to the reduction in the rate of a protective tariff. The issue here is whether domestic market performance is improved through a movement toward free trade alone. Put another way, is free trade always a substitute for competition policy? We find that the lower tariff may lead to inferior domestic market performance. The direction of the change and its magnitude are functions of the shape of the import supply function, the degree of competition between oligopolists and whether or not entry is possible. Thus, there is reason to believe that a strong competition policy may, in some markets be complementary to free trade.

Roubini, Nouriel

PD August 1987. **TI** Sources of Macroeconomic Imbalance in the World Economy: A Simulation Approach. **AU** Roubini, Nouriel; Sachs, Jeffrey. **AA** Harvard University. **SR** National Bureau of Economic Research Working Paper: 2339; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 132, 212, 023, 431, 321. **KW** World Model. Macroeconomic Simulation. Trade. Financial Imbalance. Fiscal Deficits. Exchange Rates.

AB This paper uses a global macroeconomic simulation model to identify the factors that have contributed to global trade and financial imbalances in the 1980s. After investigating the properties of monetary and fiscal policies in the model, we examine whether the budgetary shifts in the OECD economies in the 1980s can account for the bulk of trade and exchange rate movements. Our conclusions are mixed. The combination of sharply higher fiscal deficits in the United States and sharply reduced deficits in Japan goes far to explain the movements of the trade balances and exchange rates of the two economies. However, the drop in the dollar vis-a-vis the Yen since late 1985 is not well explained by the model. We also investigate the prospects for a reduction of the United States trade deficits if United States budget deficits are in fact reduced, as well as the possible role for Japanese monetary and fiscal policies in reducing the trade imbalances of the two countries.

Rubinstein, Ariel

PD November 1986. **TI** Decentralized Trading, Strategic Behavior and the Walrasian Outcome. **AU** Rubinstein, Ariel; Wolinsky, Asher. **AA** Rubinstein: The Hebrew University and London School of Economics. Wolinsky: The Hebrew University and the University of Pennsylvania. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: TR497; Institute for Mathematical Studies in the Social Sciences, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 40. **PR** $4.00. **JE** 022, 021. **KW** Decentralized Trading. Walrasian Equilibrium. Strategic Behavior.

AB It is pointed out that the outcome of decentralized trading is not necessarily Walrasian even when the market is frictionless. The equilibria that support non-Walrasian outcomes are interpreted as corresponding to markets in which the institutional structure is such that the interaction between agents depends on their identities and is affected by personal relationships that may develop between them. It is shown that, in frictionless markets in which the interaction between agents depends only on impersonal market information, the unique outcome of decentralized trading is the Walrasian outcome.

Rutstrom, E. E.

TI Trade Wars and Trade Negotiations: A Computational Approach. **AU** Harrison, Glenn W.; Rutstrom, E. E.

Ryan, Cillian

PD 1987. **TI** Trade in the Presence of Endogenous Intermediation in an Asymmetric World. **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8703C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PR** $4.00 Canadian each. **JE** 411, 421. **KW** International Trade. Intermediation.

Sachs, Jeffrey

TI Sources of Macroeconomic Imbalance in the World Economy: A Simulation Approach. **AU** Roubini, Nouriel; Sachs, Jeffrey.

Sadoulet, Elisabeth

TI Agrarian Structure, Technological Innovations, and the State. **AU** de Janvry, Alain; Sadoulet, Elisabeth; Fafchamps, Marcel.

TI Agricultural Growth and Import Demand in the LDCs. **AU** de Janvry, Alain; Sadoulet, Elisabeth.

Safra, Zvi

PD September 1987. **TI** Efficient Sets With and Without the Expected Utility Hypothesis. **AU** Safra, Zvi; Zilcha, Itzhak. **AA** Department of Economics, Tel-Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 22-87; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 23. **PR** No Charge. **JE** 022, 026, 511. **KW** Efficient Sets. Nonexpected Utility. Risk Aversion. Insurance. Decision Making.

AB Consider a feasible set, X, of C.D.F.'S. Assume that the set of decision makers, who must choose from X, includes non-expected utility decision makers who are risk averse in some weaker notions. We show that in this case the efficient set of X expands relative to the expected utility case. We characterize the efficient sets for each

notion of risk aversion including the expected utility case. It is also shown that the limited-coverage insurance policies, which are not efficient under the expected utility hypothesis, belong to the efficient set when weakly risk averse non-expected utility functionals are assumed to exist.

Sahi, Siddhartha

PD September 1987. **TI** The Noncooperative Equilibria of a Trading Economy with Complete Markets and Consistent Prices. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 850; Cowles Foundation, Yale University, Box 2125, New Haven, CT 06520. **PG** 24. **PR** No Charge. **JE** 021, 026. **KW** Exchange Economy. Competitive Equilibria.

AB An exchange economy with complete markets is described and a general theorem for the existence of equilibrium points is proved. It is further shown that under replication of traders, the equilibrium points approach competitive equilibria of the economy. The model under discussion here was first proposed by L. Shapley and represents one of two possible generalizations of the "single money" model described in Dubey and Shubik. It has the pleasant feature that it yields consistent prices.

Salant, Stephen

PD February 1987. **TI** When is Inducing Self-Selection Suboptimal for a Monopolist? **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-32; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 7. **PR** No Charge. **JE** 022. **KW** Monopoly. Price Discrimination. Intertemporal Pricing.

AB Stokey (1979) showed in an intertemporal context that, under reasonable assumptions, price discrimination is never optimal if a monopolist can pre-commit to a price path. This note explores the implications of Stokey's result for the optimality of inducing self-selection in the static quantity and quality contexts of Spence (1980) and Mussa-Rosen (1978). It is shown that Stokey's result carries over to these other contexts under appropriate curvature assumptions. Moreover, even under traditional curvature assumptions, inducing self-selection may be suboptimal. Necessary and sufficient conditions for discrimination to be optimal are derived for the two-type case.

PD April 1987. **TI** Committee Voting Under Alternative Procedures and Preferences: An Experimental Analysis. **AU** Salant, Stephen; Goodstein, Eban. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-35; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 53. **PR** No Charge. **JE** 026, 215. **KW** Condorcet Point. Experimental Economics. Cartels.

AB This paper reports on four series of experiments in a five-person committee voting under majority rule. Each of two voting procedures was paired with each of two types of preference sets. The types were characterized as high or low intensity. Every set of preferences had a Condorcet point and that point was the best alternative for one (and only one) voter. When the high intensity preferences were used, committees operating under either voting procedure selected the Condorcet point more than 90 per cent of the time; when low intensity payoffs were used, the success rate was less than 51 per cent. A theory is suggested which predicts which preference sets should successfully induce selection of the Condorcet point and which should not; in the latter case, the same theory predicts that the choice will be confined to a certain collection of the other points. Our observations are consistent with this theory.

PD July 1987. **TI** Pastures of Plenty: When is the Standard Analysis of Common Property Extraction Under Free Access Incorrect? **AU** Salant, Stephen; Negri, Donald. **AA** Salant: University of Michigan. Negri: U.S. Department of Agriculture. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-31; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 20. **PR** No Charge. **JE** 026, 024. **KW** Nash Equilibrium. Rent Dissipation. Subgame Perfect Equilibrium.

AB There are two ways to calculate the dynamic path of aggregate extraction when there is free access to a common property resource: (1) calculate the rent-dissipating aggregate extraction in any period (as a function of the stock) and then derive the dynamic path using the transition equation and initial condition or (2) examine the path of aggregate extraction in a subgame perfect equilibrium as the number of players expands without bound. The latter approach is theoretically correct but often intractable. The former approach, which has been widely used for more than thirty years, is tractable and generally presumed to yield the identical aggregate extraction path. We show by example that this presumption is erroneous. We then provide conditions which suffice for the traditional approach to be correct.

PD August 1987. **TI** Air Force Academy Attrition: A New Perspective on the College Dropout Problem. **AU** Salant, Stephen W.; Danchick, Roy. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-36; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 72. **PR** No Charge. **JE** 811, 822, 026, 214. **KW** Labor Force Attrition. Manpower Training. Decision Theory.

AB The report is divided into two parts. In part one, we provide an overview of attrition at the Air Force Academy, then summarize several widely accepted findings of the attrition literature which have influenced our modeling, then describe our model's structure, and then turn to illustrative simulations of the effects of policy changes. Two types of policy changes are illustrated: 1) selection policies which alter the composition of the entering class but not student incentives and 2) environmental policies which alter cadet (and applicant) incentives. Part one concludes with a discussion of how the model can be estimated. Part two, which is self-contained, describes the main program and the six subroutines which comprise the computerized implementation of the model. The report contains two appendices. The appendix to part one is a historical summary of the service obligations faced by dropouts from the Class of 1959 onwards. The appendix to part two is a listing of the computer program.

PD August 1987. **TI** Treble Damage Awards in Private Lawsuits for Price-Fixing. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-33; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 13. **PR** No Charge. **JE** 022, 024. **KW** Collusion. Antitrust Enforcement. Welfare Outcomes.

AB Although Block, Nold and Sidak sought to build in part on the prior work of Breit and Elzinga, they neglected to incorporate the central insight of Breit and Elzinga that the prospect of treble damages stimulates demand at any given price. Breit and Elzinga in turn failed to note that in anticipation of this outward shift in demand, colluding sellers will adjust their price. The purpose here is to take account both of the incentive of the buyers to "get damaged" and its effect on the pricing strategy of the sellers. Under a plausible condition on the exogenous data, a neutrality result is shown to hold. Under this condition, imposition of a multiple-damage regime has no effect on output, aggregate surplus or its expected distribution relative to laissez-faire and must raise the market price. When this neutrality result does not hold, imposing multiple damages increases output and aggregate surplus while reducing the expected surplus of the sellers. We begin by characterizing the market equilibrium in the absence of any antitrust enforcement. We then reconsider Block, Nold and Sidak's assessment of the multiple-damage regime -- taking proper account of the buyers' "perverse incentives." The conditions when the neutrality result holds are characterized and comparative statics results are derived with and without neutrality.

Sappington, David E. M.

TI Regulating a Monopolist with Unknown Demand and Cost Functions. **AU** Lewis, Tracy R.; Sappington, David E. M.

TI Regulating a Monopolist with Unknown Demand. **AU** Lewis, Tracy R.; Sappington, David E. M.

TI Sharing Productive Knowledge in Internally Financed R&D Contests. **AU** Bhattacharya, Sudipto; Glazer, Jacob; Sappington, David E. M.

Saunders, Anthony

TI Bank Size, Collateral and Net Purchase Behavior in the Federal Funds Market: Empirical Evidence A Note. **AU** Allen, Linda; Peristiani, Stavros; Saunders, Anthony.

Schankerman, Mark

TI The Interaction Between Capital Investment and R&D in Science-Based Firms. **AU** Lach, Saul; Schankerman, Mark.

Scharfstein, David

TI Simultaneous Signaling to the Capital and Product Markets. **AU** Gertner, Robert; Gibbons, Robert; Scharfstein, David.

Scheffman, David T.

PD August 1987. **TI** Buyers and Entry Barriers. **AU** Scheffman, David T.; Spiller, Pablo T. **AA** Scheffman: Federal Trade Commission. Spiller: University of Illinois. **SR** Federal Trade Commission Bureau of Economics Working Paper: 154; Bureau of Economics, Federal Trade Commission, 6th and Pennsylvania Avenue, Northwest, Washington, D.C. 20580. **PG** 35. **PR** No Charge. **JE** 611, 022, 026. **KW** Entry Barriers. Sunk Costs. Limit Pricing. Sunk Investments. Switching Costs.

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.

Schmeidler, David

TI Information Dependent Games: Can Common Sense be Common Knowledge? **AU** Gilboa, Itzhak; Schmeidler, David.

Schmidt, Peter

TI Models for which the MLE and the Conditional MLE Coincide. **AU** Cornwell, Christopher; Schmidt, Peter.

PD November 1987. **TI** Predicting Criminal Recidivism Using "Split Population" Survival Time Models. **AU** Schmidt, Peter; Witte, Ann Dryden. **AA** Schmidt: Michigan State University. Witte: Wellesley College. **SR** National Bureau of Economic Research Working Paper: 2445; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 916. **KW** Prison. Survival Time Model. Crime.

AB In this paper we develop a survival time model in which the probability of eventual failure is less than one, and in which both the probability of eventual failure and the timing of failure depend (separately) on individual characteristics. We apply this model to data on the timing of return to prison for a sample of prison releasees, and we use it to make predictions of whether or not individuals return to prison. Our predictions are more accurate than previous predictions of criminal recidivism. The model we develop has potential applications in economics; for example, it could be used to model the probability of default and the timing of default on loans.

Schrijver, A.

TI Chvatal Closures for Mixed Integer Programming Problems. **AU** Cook, W.; Kannan, R.; Schrijver, A.

https://doi.org/10.1017/S0951007900001054 Published online by Cambridge University Press

Schwartz, A.

TI The ECU--An Imaginary or Embryonic Form of Money: What Can We Learn from History? **AU** Bordo, Michael D.; Schwartz, Anna J.

PD November 1987. **TI** The Demand for a Risky Asset when its Returns are Stochastically Related to Prices of Consumption Goods. **AU** Schwartz, A.; Pines, D.; Eldor, R. **AA** Schwartz and Pines: Department of Economics, Tel Aviv University. Eldor: Department of Economics, Boston University. **SR** Tel Aviv Foerder Institute for Economic Research Working Papers: 30-87; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 50. **PR** No Charge. **JE** 022, 024. **KW** Portfolio Selection Uncertainty. Investment Risk. Risk Aversion. Expected Utility.

AB The presence of a stochastic relation between the returns on a risky asset and a price of a consumption good alters the effects of parametric changes on the demand for a risky asset and on the expected utility of a consumer-investor from what they are in the classical case in which such a relation does not exist. In particular the qualitative equivalence of the effects of risk and risk aversion on the demand for a risky asset breaks. The reason for this departure from the classical portfolio selection behavior is the existence of conflicting objectives. On the one hand the consumer-investor prefers a stable income over a random income with the same expected value. On the other, he prefers a lottery in the price of a consumption good over an assured price which equals the expected value of the lottery. These conflicting objectives come into play if the consumer-investor's income is stochastically related to a price of a consumption good. This is the case if the rate of return on the risky asset is stochastically related to a price of a consumption good.

Sharkey, W. W.

PD July 1987. **TI** Models of Competitive Telecommunications Markets. **AA** Bell Communications Research, Inc. **SR** Bell Communications Research Inc Economics Discussion Paper: 29; Bell Communications Research, Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PG** 24. **PR** No Charge. **JE** 611, 026, 612, 633, 022. **KW** Communication. Oligopoly. Mixed Strategies. Deregulation. Network.

AB The objective of this paper is to examine the nature of competition in a deregulated telecommunications network. When firms on separate links myopically set prices for a jointly provided service the Nash equilibrium is inefficient. When firms in two separate markets directly compete there may be no pure strategy equilibrium if there is a fixed cost of production or a cost advantage for each firm in its home market. In this paper the mixed strategy equilibria are computed and their properties commented upon.

Shiller, Robert J.

PD August 1987. **TI** The Term Structure of Interest Rates. **AU** Shiller, Robert J.; McCulloch, J. Huston. **AA** Shiller: Yale University. McCulloch: Ohio State University. **SR** National Bureau of Economic Research Working Paper: 2341; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 311, 313. **KW** Interest Rates. Term Structure. Rates of Return. Forward Rates. Holding Returns. Duration. Continuous Compounding. Bond Yields.

AB This paper consolidates and interprets the literature on the term structure, as it stands today. Definitions of rates of return, forward rates and holding returns for all time intervals are treated here in a uniform manner and their interrelations, exact or approximate, delineated. The concept of duration is used throughout to simplify mathematical expressions. Continuous compounding is used where possible, to avoid arbitrary distinctions based on compounding assumptions. Both the theoretical and the empirical literature are treated. The attached tables by J. Huston McCulloch give term structure data for United States government securities 1946-1987. The tables give discount bond yields, forward rates and par bond yields as defined in the paper. The data relate to the concepts in the paper more precisely than does any previously published data series.

TI Prices of Single Family Homes Since 1970. New Indexes for Four Cities. **AU** Case, Karl E.; Shiller, Robert J.

PD November 1987. **TI** Investor Behavior in the October 1987 Stock Market Crash: Survey Evidence. **AA** Cowles Foundation, Yale University. **SR** National Bureau of Economic Research Working Paper: 2446; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 313. **KW** Stock Market. Rational Behavior. Investment.

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.

Shleifer, Andrei

PD August 1987. **TI** Breach of Trust in Hostile Takeovers. **AU** Shleifer, Andrei; Summers, Lawrence H. **AA** Shleifer: University of Chicago. Summers: Harvard University. **SR** National Bureau of Economic Research Working Paper: 2342; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 521, 522, 631, 313, 512. **KW** Acquisitions. Takeovers. Human Capital. Managerial Behavior. Corporations. Trust. Stakeholders.

Shareholders.
AB The paper questions the common view that share price increases of firms involved in hostile takeovers measure efficiency gains from acquisitions. Even if such gains exist, most of the increase in the combined value of the target and the acquiror is likely to come from stakeholder wealth losses, such as declines in value of subcontractors' firm-specific capital or employees' human capital. The use of event studies to gauge wealth creation in takeovers is unjustified. The paper also suggests a theory of managerial behavior, in which hiring and entrenching trustworthy managers enables shareholders to commit to upholding implicit contracts with stakeholders. Hostile takeovers are an innovation allowing shareholders to renege on such contracts ex post, against managers' will. On this view, shareholder gains are redistributions from stakeholders, and can in the long run result in deterioration of trust necessary for the functioning of the corporation.

PD April 1988. **TI** Costs of Financial Distress, Delayed Calls of Convertible Bonds, and the Role of Investment Banks. **AU** Shleifer, Andrei; Jaffee, Dwight. **AA** Shleifer: University of Chicago. Jaffee: Princeton University. **SR** National Bureau of Economic Research Working Paper: 2558; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 521, 522, 313, 312. **KW** Convertible Bond. Stock Market.
AB In a frictionless market with perfect information, a shareholder-wealth-maximizing firm should force conversion of its convertible bond issue into stock as soon as the bond comes in-the money. Firms however appear to systematically delay forced conversion, sometimes for years, beyond this time. We show that the observed delays can be plausibly explained in terms of costs to shareholders of a failed conversion and the ensuing financial distress. Firms delay the forced conversion to avoid the self-fulfilling outcome that bondholders expect the conversion to fail, tender their bonds for cash, and the stock price falls to account for the costs of financial distress, in which case tendering for cash is in fact optimal. Unlike other explanations of delayed forced conversion, we can explain the common use of investment banks to underwrite these transactions, since the banks can eliminate the self-fulfilling bad outcome.

Shughart, II Wm

TI Price Leadership with Incomplete Information. **AU** Higgins, Richard; Shughart, II Wm; Tollison, Robert.

Sibley, D. S.

TI An Analysis of Tapered Access Charges for End Users. **AU** Heyman, D. P.; Lazorchak, J. M.; Sibley, D. S.; Taylor, W. E.

Sichel, Daniel E.

PD August 1987. **TI** Business Cycle Asymmetry: A Deeper Look. **AA** Princeton University. **SR** Princeton Financial Research Center Memorandum: 85; Financial Research Center, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 46. **PR** $3.00. **JE** 131, 212. **KW** Business Cycles. Asymmetry. GNP. Unemployment. Industrial Production.
AB This paper defines two types of asymmetry in business cycles: steepness and deepness. Steepness refers to cycles in which the slope of contractions exceeds the slope of expansions. Deepness refers to cycles in which troughs are further below trend than peaks are above. Previous research has focused exclusively on steepness. Two tests for deepness are proposed and applied to United States Postwar quarterly unemployment, real GNP, and industrial production. Statistically significant evidence of deepness is found for all three variables. Monte Carlo power simulations indicate that this finding is consistent with either a random walk with drift or a linear deterministic trend.

Simon, Leo K.

PD July 1987. **TI** Exclusive Form Games in Continuous Time: Pure Strategies. **AU** Simon, Leo K.; Stinchcombe, Maxwell B. **AA** Simon: Department of Economics, University of California at Berkeley. Stinchcombe: Department of Economics, University of California at San Diego. **SR** University of California at Berkeley Working Paper in Economics: 8746; IBER, 156 Barrows Hall, University of California, Berkeley Berkeley, CA 94720. **PG** 57. **PR** $3.50. **JE** 026, 611, 022. **KW** Game Theory. Continuous-Time Games. Subgame Perfect Equilibrium. Coordination Games. Patent Races.
AB We propose a new framework for modelling games in continuous time. Continuous time is viewed as "discrete-time, but with a grid that is infinitely fine." We apply the model to several standard problems from the industrial organization literature. We then address questions such as: "is discrete time with a very fine grid a good proxy for continous time?" and "does every continuous-time equilibrium in our model have a discrete-time analog"?

PD July 1987. **TI** Basic Timing Games. **AA** Department of Economics, University of California at Berkeley. **SR** University of California at Berkeley Working Paper in Economics: 8745; IBER, 156 Barrows Hall, University of California, Berkeley Berkeley, CA 94720. **PG** 56. **PR** $3.50. **JE** 026. **KW** Game Theory. Continuous Time Games. Subgame Perfect Equilibrium. Behavior Strategies. Noisy Duel. Cournot. Stackelberg. Discrete Time Games.
AB We propose a new approach to modelling finite-move, closed-loop games in continuous time. Continuous time is modeled as "discrete-time, but with a grid that is arbitrarily fine." We construct a "calculus for continuous-time games" that enables us to solve a certain class of timing games with a minimum of computation. Our machinery yields sharp and intuitive results for a range of interesting economic problems. These problems include games that might be hard to solve in discrete time without a great deal of computation. The paper concludes with an example of a continuous-time game with a subgame perfect equilibrium that is far away from any approximate equilibrium of any nearby discrete-time game.

Smith, Bruce D.

PD 1987. **TI** Money and Inflation in the American Colonies: Further Evidence on the Failure of the Quantity Theory. **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study

of International Economic Relations Working Paper: 8715C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 62. **PR** $4.00 Canadian. **JE** 042, 134. **KW** Quantity Theory of Money. American Colonies. Money.

PD 1987. **TI** Legal Restrictions, "Sunspots", and Cycles. **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8713C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 37. **PR** $4.00 Canadian. **JE** 133. **KW** Business Cycles. Legal Restrictions.

Smith, Gregor W.

PD July 1987. **TI** Apparent Bubbles and Misspecified Fundamentals. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 692; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 20. **PR** $3.00 Canada; $3.50 United States and Foreign. **JE** 431, 132, 313, 211, 023. **KW** Bubbles. Regime Changes. Stochastic Process Switching. Exchange Rates. Time Series Models. Stationarity. Ergodicity. Asset Prices.

AB Deviations from ergodicity in fundamentals may give rise to apparent bubbles (non-stationary residuals) in time series models of asset prices if an econometrician is unaware of them. This paper examines a number of such deviations in the form of expected, future, regime changes and explicitly calculates the effects of this misspecification. Some positive theories of currency reform and exchange rate pegging with endogenous process switching do not generally give rise to apparent bubbles.

PD July 1987. **TI** Menu-Cost Pricing Theory and Endogeneous Conditional Heteroskedasticity. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 689; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 16. **PR** $3.00 Canada; $3.50 United States and Foreign. **JE** 023, 611, 134, 212. **KW** Menu-Cost Pricing. Conditional Heteroskedasticity. Adjustment Costs. Prices. Trigger Points. Optimal Pricing Strategy.

AB Macroeconomic theories in which there is a fixed cost to changing prices have proliferated recently. This paper solves a menu-cost pricing problem faced by a monopolistic firm in continuous time and subject to both the stochastic aggregate price level emphasized by Sheshinski and Weiss (1983) and the stochastic demand and cost disturbances emphasized by Barro (1972). It finds closed-form expressions for the time-varying trigger points of an optimal pricing strategy. These controls are forward-looking since the economy is not assumed to be in a steady state. The analysis suggests some guidelines for microeconomic tests of the menu-cost pricing hypothesis. It also provides an example of how conditional heteroskedasticity can arise endogenously in an optimizing model.

PD October 1987. **TI** Testing a Government's Present-Value Borrowing Constraint. **AU** Smith, Gregor W.; Zin, Stanley E. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 695; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 20. **PR** $3.00 Canada and United States; $3.50 Foreign. **JE** 023, 322. **KW** Debt. Deficits. Present-Value Relation. Cointegration.

AB This paper investigates whether public financial policy satisfies a borrowing constraint. Direct tests of the present-value relation suggested by this constraint are rare, despite widespread discussion of the feasibility of current policy. We examine monthly data on Canadian federal government finances using tests for cointegration. We also conduct variance bounds tests of the present-value relation between debt and surpluses. The results indicate that although real debt and real surpluses are nonstationary processes, their joint behaviour is consistent with a government borrowing constraint. Also the variability in current debt can be accounted for by the variability in anticipated future surpluses.

Smith, Vernon L.

PD October 1987. **TI** Theory, Experiment and Economics. **AA** University of Arizona. **SR** University of Southern California Modelling Research Group Working Paper: M8736; Department of Economics, University of Southern California, University Park, Los Angeles, CA 90089-0152. **PG** 46. **PR** No Charge. **JE** 036, 022, 215. **KW** Experimental Economics. Economic Methodology. Institutional Design.

AB Laboratory experimentation changes the way you think about economics. Theory and observation become co-equal complimentary means for deepening our operating knowledge of how economic processes work. "Better" theory, that increases empirical content and narrows the distance between observation and prediction, is always in order whether or not the implications of current theory fail some particular null hypothesis test. At best such tests merely yield some measure of the urgency of the demand for better theory. The naive falsificationist view of "science" does not and should not characterize our intellectual task. As indicated by the quotation from Weinberg, the dialogue between observation and theory development will sometimes yield lags in either empirical research or in theory. Unfortunately, in economics, the lag in theory tends to be endemic. In addition to gaps between theory and observation, there are gaps between different sets of experimental observations, that need to be filled. An example of the latter is the discrepency between the observations of psychologist on how subjects think about economic problems, and observations on how subjects actually behave in the context of many experimental markets. It appears that subject behavior based upon "thinking about it" is often modified when such behavior fails to be sustained by market equilibrating forces. We also discuss the relation between experimental methods and institutional design.

Spear, Stephen

TI An Overlapping Generations Model of Electoral Competition. **AU** Alesina, Alberto; Spear, Stephen.

Spiller, Pablo T.

TI Buyers and Entry Barriers. **AU** Scheffman, David T.; Spiller, Pablo T.

Srivastava, Sanjay

TI Nash Implementation Using Undominated Strategies. **AU** Palfrey, Thomas R.; Srivastava, Sanjay.

Staiger, Robert W.

TI Compositional Effects of Government Spending in a Two-Country Two-Sector Production Model. **AU** Durlauf, Steven; Staiger, Robert W.

Steinmeier, Thomas L.

TI Pensions, Efficiency Wages and Job Mobility. **AU** Gustman, Alan J.; Steinmeier, Thomas L.

Stinchcombe, Maxwell B.

TI Exclusive Form Games in Continuous Time: Pure Strategies. **AU** Simon, Leo K.; Stinchcombe, Maxwell B.

Stock, James H.

PD August 1987. **TI** Integrated Regressors and Tests of the Permanent Income Hypothesis. **AU** Stock, James H.; West, Kenneth D. **AA** Stock: Stanford University. West: Princeton University. **SR** National Bureau of Economic Research Working Paper: 2359; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 211, 212, 023. **KW** Unit Roots. Integration. Consumption. Permanent Income Hypothesis.

AB We use recent research on estimation and testing in the presence of unit roots to argue that Hall's (1978) t and F tests of whether consumption is predicted by lagged income, or by lags of consumption beyond the first, are asymptotically valid. A Monte Carlo experiment suggests that the asymptotic t and F distributions provide a good approximation to the actual finite sample distribution.

Stockman, Alan C.

PD April 1987. **TI** The Equilibrium Approach to Exchange Rate. **AA** University of Rochester and Federal Reserve Bank of Richmond. **SR** University of Rochester Center for Economic Research Working Paper: 81; Department of Economics, University of Rochester, Rochester, NY 14627. **PR** No Charge. **JE** 431, 311, 023. **KW** Exchange Rate. Policy.

AB The equilibrium approach to exchange rates shows that exogenous disturbances to preferences, technology, or certain government policies can change the nominal and real exchange rates in ways that are consistent with the evidence. Specifically, changes in nominal and real exchange rates are highly correlated, the exchange rates may be approximately random walks, and there are no simple relations between exchange rates and the current account. The interpretations of evidence on exchange rates and the policy conclusions that emerge from this set of models differ from the standard ones.

Summers, Lawrence

TI Mean Reversion in Stock Prices: Evidence and Implications. **AU** Poterba, James M.; Summers, Lawrence H.

TI Employee Crime, Monitoring and the Efficiency Wage Hypothesis. **AU** Dickens, William T.; Katz, Lawrence; Lang, Kevin; Summers, Lawrence.

TI Mean Reversion in Stock Prices: Evidence and Implications. **AU** Poterba, James M.; Summers, Lawrence H.

TI Breach of Trust in Hostile Takeovers. **AU** Shleifer, Andrei; Summers, Lawrence H.

TI What Moves Stock Prices? **AU** Cutler, David M.; Poterba, James M.; Summers, Lawrence H.

Svensson, Lars E. O.

PD May 1987. **TI** Trade in Risky Assets. **AA** Institute for International Economic Studies, University of Stockholm. **SR** University of Rochester Center for Economic Research Working Paper: 88; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 41. **PR** No Charge. **JE** 411, 431, 441, 313, 026. **KW** Capital Mobility. Portfolio Diversification. Comparative Advantage. Asset Trade. Risk Premium.

AB This paper develops a theory of the international trade pattern in risky assets by applying the law of comparative advantage to asset trade. According to this law there is a tendency for a country to import assets that have relatively high autarky prices. The autarky price of an asset is high if the autarky real interest rate is low, or if the asset's autarky risk measure (the product of the risk premium and the asset price) is low. It is examined how autarky interest rates and risk measures are affected by international differences in (i) stochastic properties of output/endowments, (ii) the rate of time preference, (iii) the degree of risk aversion, and (iv) subjective beliefs, and how such differences predict overall capital account deficits or surpluses as well as the composition of the capital account into trade in arbitrary risky assets and the special cases of sure indexed bonds, claims to output (equity), and Arrow-Debreu securities.

Swamy, P. A. V. B.

PD October 1987. **TI** Financial Deregulation, the Demand for Money, and Monetary Policy in Australia. **AU** Swamy, P. A. V. B.; Tavlas, George S. **SR** Board of Governors of the Federal Reserve System, Special Studies Section Discussion Paper: 222; c/o Francis X. Diebold, Mailstop 180, Federal Reserve Board, Washington, D.C. **PG** 50. **PR** No Charge. **JE** 310, 023, 132. **KW** Money Demand. Interest Rates. Estimation. Stochastic Coefficients.

AB In recent years, the Australian financial system has been almost completely deregulated. Financial deregulation has integrated Australia much more firmly into the international financial network and paved the way for the improved functioning of financial markets within Australia. Yet it has also introduced complications in interpreting the behavior of the monetary aggregates, as evidenced by an unexpectedly large surge in the quantity of money in late 1984 and in 1985, and led to the abandonment of monetary targeting. This study examines the factors underlying the move toward the deregulation of

the Australian financial market and analyzes the changed nature of monetary policy in the deregulated environment. A main focus of the paper is on money-demand predictability. Empirical results are presented which show that random-coefficient estimation of money-demand models that incorporate inflationary expectations not only greatly reduces forecast errors, but eliminates any tendency to underpredict real money balances in late 1984 and 1985.

TI Finite Sample Properties of Theil's Measure of Multicollinearity Effect. **AU** Mehta, J. S.; Swamy, P. A. V. B.

Syed, Sabiha H.

TI Change in the Status of Women Across Generations in Asia. **AU** King, Elizabeth; Peterson, Jane; Adioetomo, Sri M.; Domingo, Lita; Syed, Sabiha H.

Tavlas, George S.

TI Financial Deregulation, the Demand for Money, and Monetary Policy in Australia. **AU** Swamy, P. A. V. B.; Tavlas, George S.

Taylor, J. Edward

TI Life in a Mexican Village: a SAM Perspective. **AU** Adelman, Irma; Taylor, J. Edward; Vogel, Stephen.

Taylor, W. E.

TI An Analysis of Tapered Access Charges for End Users. **AU** Heyman, D. P.; Lazorchak, J. M.; Sibley, D. S.; Taylor, W. E.

Tesfatsion, Leigh

TI A Fortran Program for Time-Varying Linear Regression Via Flexible Least Squares. **AU** Kalaba, Robert; Rasakhoo, Nima; Tesfatsion, Leigh.

Thisse, Jacques Francois

TI On the Optimality of Central Places. **AU** Quinzii, Martine; Thisse, Jacques Francois.

Tirole, Jean

TI Contract Renegotiation and Coasian Dynamics. **AU** Hart, Oliver; Tirole, Jean.

TI Noncooperative Game Theory for Industrial Organization: An Introduction and Overview. **AU** Fudenberg, Drew; Tirole, Jean.

TI The Theory of the Firm. **AU** Holmstrom, Bengt R.; Tirole, Jean.

Tobin, James

PD September 1987. **TI** Inventories, Investment, Inflation, and Taxes. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 849; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 18. **PR** No Charge. **JE** 521, 522, 323, 134. **KW** Inventories. Investment. Inflation. Taxes. Depreciation.

AB Sales today were made possible by inputs of factor services and intermediate goods at various previous dates. Prices change between the input dates and the sale date. Especially in periods of general inflation, these price movements create ambiguities in the reckoning of profits. The accounting definition used in taxing profits can have significant economic effects. Tax accounting is generally not neutral vis-a-vis general inflation. Costing inputs at their historical nominal prices (FIFO) is a real burden and disincentive, greater the higher the inflation rate. It is analogous to depreciating durable capital at historical cost. However, it may be partially, completely, or excessively offset by another non-neutrality, the deductibility of nominal interest from taxable income. This too has analogous effects on after-tax returns from fixed capital.

Tollison, Robert

TI Price Leadership with Incomplete Information. **AU** Higgins, Richard; Shughart, II Wm; Tollison, Robert.

Trajtenberg, M.

PD November 1987. **TI** Patents, Citations and Innovations: Tracing the Links. **AA** Department of Economics, Tel Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Papers: 31-87; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 43. **PR** No Charge. **JE** 621, 226, 229. **KW** Innovation. Patents. Citations. Technological Change.

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 Computed 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.

Tremayne, A. R.

PD June 1987. **TI** A Synthesis of Econometric and Time Series Methods to Model and Forecast U.K. Demands for Imports. **AA** University of York. **SR** Monash Department of Econometrics and Operations Research Working Paper: 7/87; Department of Econometrics and Operations Research, Monash University, Clayton, Victoria 3168, AUSTRALIA. **PG** 34. **PR** No Charge. **JE** 132, 211, 212, 421, 431. **KW** Bayesian Posterior Odds. Demand for Imports. Dynamic Models. Time Series Models. Imports. United Kingdom.

AB The methods employed for modelling of economic phenomena by econometricians and time series analysts are often fairly different and, indeed, some approaches to data analysis used by statisticians exhibit other features not generally considered by the former two groups. This paper attempts to bring together some different ideas via an analysis of United Kingdom import figures. Single equation econometric models are fitted, after some simple preliminary data analysis, to the data and to its logarithm. Linear time series models are also considered as modelling

tools for the two variants of the data. The possibility of using more than one model to satisfactorily represent the data is entertained and, in addition, some simple specifications are fitted using fully Bayesian procedures. Several data points at the end of the sample are not used in model fitting. These are employed for purposes of model validation and also to assess the forecasting performance of the chosen specifications.

Udell, Gregory F.

PD March 1988. **TI** Loan Quality, Commercial Loan Review and Loan Officer Contracting. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 459; New York University Salomon Brothers Center for the Study of Financial Institutions, 90 Trinity Place, New York, NY 10006. **PG** 22. **PR** $4.00. **JE** 312, 315. **KW** Commercial Banks. Commercial Loans. Loans.

AB During the 1980s most banks created a new department, commercial loan review, whose primary activity is to systematically assess the continuing quality of loans in the commercial loan portfolio. Conventional wisdom suggests that the purpose of commercial loan review is to serve as an early warning system for spotting credit deterioration. Evidence is presented in this paper that the true purpose of commercial loan review is somewhat more complex: loan review represents a low cost solution to an agency problem involving contracting between a bank and its commercial loan officers. By monitoring the loan portfolio the loan review department insures the presence of proper incentives to encourage loan officers themselves to serve as an early warning system. An analysis of individual bank loan procedures shows that investment in loan review varies systematically with portfolio risk, bank size and loan officer compensation schemes. These results also have implications for optimal bank regulation and the debate on economies of scale in banking.

Ullah, Aman

PD July 1987. **TI** Nonparametric Estimation of Econometric Functionals. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Centre for Decision Sciences and Econometrics Technical Report: No. 17; Department of Economics, University of Western Ontario, London, Ontario CANADA N6A 5C2. **PG** 56. **PR** Not for Sale. **JE** 211. **KW** Density Estimation. Nonparametric.

AB In this paper we have reviewed and explored the nonparametric density estimation approach for analyzing various econometric functionals. The applications of density estimation have been emphasized in the specification, estimation, and testing problems arising in econometrics. Some limitations of the nonparametric approach are also examined, and potential future areas of applied and theoretical research have been indicated.

TI Flexible Production Function Estimation by Nonparametric Kernel Estimators. **AU** Vinod, H. D.; Ullah, Aman.

TI The Econometric Analysis of Models with Risk Terms. **AU** Pagan, Adrian; Ullah, Aman.

Unal, Haluk

TI Change in Market Assessments of Deposit-Institution Riskiness. **AU** Jane, Edward J.; Unal, Haluk.

Usher, Dan

PD May 1987. **TI** The Rise and Fall of the Public Sector in the Estimation of the Economists. **AA** Department of Economics Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 685; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 56. **PR** $3.00 Canada; $3.50 U.S. and Foreign. **JE** 031, 024, 611, 022. **KW** History of Economic Doctrine. Welfare Economics. Efficiency. Public Sector. Bureaucracy. Government. Private Sector. Market Failure.

AB From the Wealth of Nations to the present day, there has been a great cycle of opinion about the sources of inefficiency, from Smith's sharp and unqualified contrast between private sector enterprise and public sector sloth, to Mill's qualified and reluctant allowance of large domains within the economy where the public sector must act because the private sector would not or could not do so, to Sidgwick's concern in the latter part of the nineteenth century with what we would now call market failure and his willingness to trust the public sector to put things right, to Pigou's detailed analysis in the early years of the twentieth century of the defects of the competitive economy coupled with an almost complete disregard of the possibility of public sector inefficiency, to a recent revival of interest in public sector economics and a reassessment of public sector efficiency reminiscent of the views of Adam Smith.

PD June 1987. **TI** Intensity of Preference Under Representative Government. **AA** Department of Economics Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 686; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 27. **PR** $3.00 Canada; $3.50 U.S. and Foreign. **JE** 025. **KW** Voting. Intensity of Preference. Majority Rule. Minorities. Political Parties. Political Platforms.

AB Intensity of preference would be irrelevant to the outcome of public decision-making by majority-rule voting if each issue were resolved in a separate plebiscite. It is not irrelevant when issues are combined in platforms of political parties. Intensity of preference can be represented as a parameter in the voter's utility function. Occasions may arise when a minority of a given size gets its way if and only if its intensity parameter is high. Minorities may also prevail over majorities by organizing to act as though their preferences were intense.

van Damme, Eric

PD October 1987. **TI** The Impossibility of Stable Renegotiation. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A 136; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 7. **PR** No Charge. **JE** 026. **KW** Repeated Game. Renegotiation. Stable Equilibria. Unique Equilibria.

AB This note describes an example of a repeated game which has a unique renegotiation-proof equilibrium

(Farrell (1983)) that however is not stable in the sense of Kohlberg and Mertens (1986). Hence, the requirements of renegotiation-proofness and stability may be mutually inconsistent.

van der Ploeg, C. E.

PD August 1987. **TI** The Efficiency Wage and U.K. Unemployment. **AA** University of Sussex. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 289; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 34. **PR** No Charge. **JE** 824, 212, 023. **KW** Efficiency Wage. Unemployment. Labor Productivity. Monopolistic Competition. Open Economy.

AB This paper presents an alternative to models of unemployment where firms and unions negotiate over wages. Apart from wage formation the basic structure of the model is standard: monopolistic competition in an open economy, estimated on aggregate, quarterly United Kingdom data. However the assumption that firms set wages unilaterally according to the efficiency wage hypothesis yields two original features in the empirical model: (i) an efficiency variable which estimates labour productivity as a function of unemployment and supply-side variables and which identifies the price equation, and (ii) supply-side policy has a non-linear effect on unemployment, its effect decreasing as unemployment increases. The rises in productivity and profits since the early 1980's and continuing increases in both wages and unemployment are empirical facts that cannot be explained satisfactorily within a bargaining framework, yet are not inconsistent with the efficiency wage model.

van Wijnbergen, Sweder

TI Tariffs, the Real Exchange Rate and the Terms of Trade: On Two Popular Propositions in International Economics. **AU** Edwards, Sebastian; van, Wijnbergen Sweder.

TI Financial Policy and Speculative Runs with a Crawling Peg: Argentina 1979-1981. **AU** Cumby, Robert; van, Wijnbergen Sweder.

Varian, Hal R.

PD January 1987. **TI** Differences of Opinion in Financial Markets. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-23; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 28. **PR** No Charge. **JE** 022, 313. **KW** Asset Prices. Trade Generation. Differences in Beliefs.

AB Agents trade because of differences in endowments, tastes and beliefs. In the standard models of finance beliefs are assumed to be identical across agents so that trade is due only to differences in endowments and tastes. In this paper I investigate trade due to different beliefs. Differences in equilibrium beliefs may be due to different opinions (i.e., prior probabilities) or different information (i.e., different values of the likelihood function). Using modified versions of a mean-variance model due to Grossman and an Arrow-Debreu model due to Milgrom-Stokey I argue that differences in information will not in general cause trade. Rather it is only differences in opinion that generate stock market volume. I then go on to examine the effect of different opinions on asset prices. I show that if tastes are identical, and if risk tolerance does not grow too rapidly, then assets that have more dispersed opinions will, other things being equal, have lower prices and a greater volume of trade. In general the effect of differences of opinion on asset prices will depend on the curvature of asset demand functions with respect to the opinions of the agents.

TI Taxation of Asset Income in the Presence of a World Securities Market. **AU** Gordon, Roger H.; Varian, Hal R.

PD July 1987. **TI** Price Discrimination. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-26; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 55. **PR** No Charge. **JE** 022, 024. **KW** Monopoly. Welfare Costs.

AB Price discrimination is one of the most prevalent forms of marketing practices. One may occasionally doubt whether firms really engage in some of the kinds of sophisticated strategic reasoning economists are fond of examining, but there can be no doubt that firms are well aware of the benefits of price discrimination. Three conditions are necessary in order for price discrimination to be a viable solution to a firm's pricing problem. First, the firm must have some market power. Second, the firm must have the ability to sort consumers. And third, the firm must be able to prevent resale. We will briefly discuss each of these points, and develop them in much greater detail in the course of the paper.

PD August 1987. **TI** Optimal Tariffs and Financial Assets. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-29; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 12. **PR** No Charge. **JE** 022, 323, 313. **KW** Tax Policy. International Portfolio Diversification. Domestic Securities.

AB It has been widely observed that investors' financial portfolios seem to be overly concentrated in domestic securities, despite the beneficial reduction in risks that are possible from international portfolio diversification. See for example, Feldstein and Hartman (1979), Obstfeld (1985), and Summers (1985). Indeed, government tax policy in most countries seems to actively discourage international diversification.

PD August 1987. **TI** Three Papers on Revealed Preference. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-28; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 6. **PR** No Charge. **JE** 022. **KW** Subset Of Goods. Portfolio Choice. Risk Aversion. Nonparametric. Optimizing Behavior.

AB 1. Suppose that you observe n choices of k goods and prices when the consumer is actually choosing from a set of k + 1 goods. Then revealed preference theory puts essentially no restrictions on the behavior of the data. This is true even if you also observe the quantity demanded of good k + 1, or its price. The proofs of these

statements are not difficult. 2. This paper derives necessary and sufficient conditions for Arrow-Debreu choices of contingent consumption to be compatible with the maximization of a state independent expected utility function that exhibits increasing or decreasing absolute risk aversion, or increasing or decreasing relative risk aversion. The conditions can be used to bound different measures of risk aversion based on a single observation of Arrow-Debreu portfolio choice. 3. Revealed preference analysis provides a definitive method to test for optimizing behavior. However, it has been criticized because it fails to allow for approximate satisfaction of optimizing behavior. In this note, I describe some possible solutions to this problem.

PD August 1987. **TI** Measuring the Deadweight Costs of DUP and Rent Seeking Activities. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-25; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 16. **PR** No Charge. **JE** 021, 024. **KW** DUP. Rent Seeking. Cost-Benefit Analysis. General Equilibrium.

AB I examine a simple model of rent seeking behavior in order to determine the correct way to measure welfare loss due to rent seeking. I conduct this analysis using a general equilibrium version of the standard partial equilibrium consumers' surplus cost-benefit setup. I conclude that the ordinary tools of cost-benefit analysis, such as consumers' and producers' surplus are up to the task of measuring the deadweight loss due to rent seeking, as long as they are applied in the proper general equilibrium context.

TI Intergenerational Risk Sharing. **AU** Gordon, Roger H.; Varian, Hal R.

Vila, Jean Luc

TI Noise Trading and Takeovers. **AU** Kyle, Albert; Vila, Jean Luc.

Vinod, H. D.

PD January 1987. **TI** Estimation of Reduced Forms of Rational Expectation Models and Volcker Deflation. **AA** Department of Economics, University of Western Ontario and Fordham University. **SR** University of Western Ontario Department of Economics Research Report: #8702; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 17. **PR** $5.00 Canada; $7.00 Elsewhere. **JE** 311, 134, 212. **KW** Monetary Policy. Transfer Functions. Nonlinear Estimation. Unit Roots. Rational Expectations.

AB Multivariate autoregressive moving average models are used to form the "reduced forms" of Muth's rational expectation models. An implication of the modern macroeconomic theory is that economic agents' expectations should change in the presence of major policy changes. This paper proposes a simple method for directly comparing the formulation of expectations, and illustrates it by considering the impact of a recent policy change in the United States under Paul Volcker of the Federal Reserve Bank. New interpretations are based on transfer functions, "gain" calculations, Green's function matrices, solutions of difference equations as weighted sums of exponentials, one real and two complex conjugate roots of cubic polynomials, etc. The traditional distributed lag models arbitrarily assume that the gain is unity, while many time series estimators require differencing of series implicitly assuming that one of the roots is unity. Our direct estimation based on nonlinear estimation does not find either the gain or the real roots to be unity. We provide an equation for minimum mean squared error regulation, and indicate the role played by rational two step ahead speculations made by economic agents, along with changes therein emanating from the policy change.

PD July 1987. **TI** Flexible Production Function Estimation by Nonparametric Kernel Estimators. **AU** Vinod, H. D.; Ullah, Aman. **AA** Vinod: Department of Economics, Fordham University. Ullah: Department of Economics, University of Western Ontario. **SR** University of Western Ontario Centre for Decision Sciences and Econometrics Technical Report: No. 18; Department of Economics, University of Western Ontario, London, Ontario CANADA N6A 5C2. **PG** 25. **PR** Not for Sale. **JE** 211, 212. **KW** Production Functions. Asymptotic Properties. Cost functions. Kernel Estimators. Simulation Study.

AB Productivity studies can benefit from reliable estimates of production/cost functions. The assumption of homogeneity was discarded by using translog type forms in the 1970's by Christensen, Jorgenson, Lau, Vinod, Sudit and others. Barnett (1983) has suggested using flexible Laurent series to improve the second order approximations. A serious drawback of these flexible specifications has been their sensitivity to multicollinearity, and their need for several parameter estimates. This paper considers a nonparametric nonlinear amorphous functional specification which remains parsimonious in the number of parameters used. Rosenblatt suggested kernel methods which were extended by Watson and Nadaraya to conditional densities and expectations. We propose kernel estimates of analytical partial derivatives of production and cost functions. Asymptotic properties of the proposed estimator are investigated. Two illustrative examples concern the production function for the Bell System, and railroad cost function. A simulation study is also included.

Vogel, Stephen

TI Life in a Mexican Village: a SAM Perspective. **AU** Adelman, Irma; Taylor, J. Edward; Vogel, Stephen.

Vuong, Quang H.

TI A Study of Zero-Out Auction: Experimental Analysis of a Process of Allocating Private Rights to the Use of Public Property. **AU** Guler, Kemal; Plott, Charles R.; Vuong, Quang H.

Wagner, Helmut

PD March 1987. **TI** The Costs of a Purely Monetary Disinflation Policy: The Case of Long-Run Involuntary Unemployment. **AA** Massachusetts Institute of Technology and Hochschule fur Wirtschaft und Politik. **SR** Massachusetts Institute of Technology Department of Economics Working Paper: 443; Department of Economics, Massachusetts Institute of Technology Cambridge, MA 02139. **PG** 26. **PR** No Charge.

JE 311, 023. **KW** Inflation. Unemployment. Monetary Policy. Wages. Interest Rate. Information Dilemma.
AB There is a common understanding in economics today that there are only transitory effects of monetary policy on employment. Here I develop the theoretical rationale for the possibility of an economy's getting stuck in long-run involuntary unemployment as a consequence of a purely monetary disinflation policy. Involuntary unemployment persists despite flexible wages and prices and despite rational behavior of economic subjects. The underlying mechanism consists first of a governmental insurance policy against re-igniting inflation expectations and second of an information dilemma, or prisoner's dilemma, in which the entrepreneurs are caught. A falling interest rate--caused by an ending of the disinflation policy--is, per se, not a sufficient incentive to expand production for an individual entrepreneur. There is no functional element such as "the economy" reacting in a homogeneous way. It is rational for the single entrepreneurs to wait for the others to invest first. In this case, only demand policy can get the economy out of unemployment.

Walsh, Carl E.

PD September 1987. **TI** The Impact of Monetary Targeting in the United States: 1976-1984. **AA** University of California at Santa Cruz. **SR** National Bureau of Economic Research Working Paper: 2384; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 311, 134, 133, 212. **KW** Monetary Policy. Impulse Response Functions. Inflation. VAR. M1. Output. Supply Shocks. Aggregate Demand.
AB This paper attempts to assess empirically the impact on output and inflation of monetary policy in the U.S. during the period of M1 targeting from 1976 to 1984. The impact of policy shocks on output and inflation, and the impact of aggregate demand, aggregate supply and money demand shocks on M1 and the Fed's target path, are examined through the use of impulse response functions. These response functions are based on an orthogonalization of VAR residuals derived from an estimated structural model. The VAR specification reflects the finding that M1 and the Fed's target for M1 are cointegrated. The evidence suggests that money supply shocks and shocks to M1 target have accounted for little of the observed volatility of output or inflation. However, the induced policy response to aggregate demand and supply shocks has contributed to subsequent inflation.

Wang, Ping

TI On Welfare Theory and Urban Economics. **AU** Berliant, Marcus; Papageorgiou, Yorgos Y.; Wang, Ping.

Warshawsky, Mark J.

PD November 1987. **TI** The Funding of Private Pension Plans. **AA** Board of Governors of the Federal Reserve System. **SR** Board of Governors of the Federal Reserve System Staff Studies Paper: 155; Staff Studies Section, Division of Research and Statistics, Board of Governors of the Federal Reserve System, Washington, DC 20551. **PG** 25. **PR** No Charge. **JE** 918, 521. **KW** ERISA. Pension. Funding Standards.
AB Any analysis of the financial health of pension plans and of appropriate regulatory responses depends critically on accurate information about the nature and amount of plan liabilities. This study briefly reviews the regulatory, institutional, and economic factors relevant to pension plan obligations. It surveys the literature on the appropriate conceptual framework for measuring pension obligations and summarizes financial accounting standards for calculating and reporting the liability of a pension plan. The study describes, on reported and adjusted bases, the recent funded status (measured by the ratios of assets to liabilities) of a large sample of private pension plans. And it explains how minimum and maximum funding standards are calculated under rules set forth by the Employee Retirement Income Security Act (ERISA), how these standards influence funded ratios, and how some recent proposals could change funding standards.

Webb, Katherine W.

PD June 1986. **TI** Spinoffs: Applying Historical Examples to the Present. **AA** The Rand Corporation. **SR** Rand Paper: P-7323; The Rand Corporation, 1700 Main Street, PO Box 2138, Santa Monica, CA 90406-2138. **PG** 34. **PR** No Charge. **JE** 621, 114. **KW** SDI. Research and Development.
AB To begin to understand how to assess the spinoff potential of the Strategic Defense Initiative, this paper examines other research and development (R&D) programs, investigating both new products and new processes. Programs examined include Apollo and other National Aeronautics and Space Administration (NASA) programs, government demonstration projects, CERN, the Manhattan Project, and military R&D. The research results indicate that (1) industries that are closely involved in both government and commercial efforts seem more likely to transfer scientific research; (2) NASA has encouraged commercial spinoffs, but other benefits include management techniques and quality control procedures; (3) an important spinoff is the training of scientists and engineers; and (4) demonstration projects may lead to spinoffs even if the primary system is not adopted.

Weber, Guglielmo

TI Using Equilibrium Models on Disequilibrium Data: Some Monte-Carlo Evidence on Estimation and Testing. **AU** Martin, Christopher; Weber, Guglielmo.

Weil, David

TI The Worldwide Change in the Behavior of Interest Rates and Prices in 1914. **AU** Barsky, Robert; Mankiw, N. Gregory; Miron, Jeffrey; Weil, David.

Weiss, Jr E. A.

PD February 1987. **TI** Parameterschatzung von Diffusionsprozessen. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: B 83; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 8. **PR** No Charge. **JE** 211. **KW** Parametric Estimation. Diffusion Process. Maximum Likelihood.
AB Abstract is in German.

Weiss, Thomas

PD November 1987. **TI** The Farm Labor Force by Region, 1820-1860: Revised Estimates and Implications for Growth. **AA** University of Kansas. **SR** National Bureau of Economic Research Working Paper: 2438; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 712, 941. **KW** Farm Productivity. Farm Income. Agricultural Labor Force. Agriculture.

AB This paper sets forth new estimates of the farm labor force covering the period 1820 to 1860, for the United States and the major geographic regions. At the national level, the new figures are noticeably different from the previous estimates. In particular, the new estimates lower the 1820 farm labor force by about 8 percent, while raising the figures for 1840, 1850, and 1860 by 7 to 10 percent. As a consequence, the farm work force grew more rapidly than was previously believed, while farm productivity and per capita income grew more slowly. The impact of the revisions, of course, varied by subperiod. The new figures also alter our picture of variations in regional economic performance, the more so in some regions. In particular, the pace and timing of the shift out of farming in New England has been changed substantially. The paper also discusses the reasons for the discrepancies between the new and old series, and provides some assessment of the new evidence.

Weiss, Y.

TI University Policies under Varying Market Conditions: The Training of Electrical Engineers. **AU** Eckstein, Z.; Weiss, Y.; Fleising, A.

Werner, Jan

PD July 1987. **TI** Structure of Financial Markets and Real Indeterminacy of Equilibria. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: B-80; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 16. **PR** No Charge. **JE** 026, 022. **KW** Exchange Economy. Financial Assets. Indeterminacy of Equilibrium Prices. Multiperiod Model. Uncertainty.

AB This paper studies an exchange economy extending over a sequence of dates under uncertainty. There are two alternative structures of complete markets for such an economy. The first one consists of contingent commodity markets at date 0 for all commodities available for consumption within the time interval under consideration (see Debreu (1959, ch. 6)). The second one consists of spot commodity markets at each date and in each state of nature, and markets for financial assets of a special form: for every state, there is an asset that yields one unit of account in this state and nothing in other states (see Arrow (1953)). These two structures are allocation equivalent. In this paper we use the same parametrization of equilibrium allocations as in Werner (1986). We parametrize an equilibrium allocation of commodities by a vector of marginal rates of substitution between income in different dates and states of nature of one consumer. There is an indeterminacy of marginal rates of substitution of income since incomplete markets are insufficient for transferring income freely in time and across states of nature. We show that even for fixed asset prices, there is real indeterminacy of corresponding equilibria.

West, Kenneth D.

PD August 1987. **TI** On the Interpretation of Near Random Walk Behavior in GNP. **AA** Princeton University. **SR** National Bureau of Economic Research Working Paper: 2364; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 131, 132, 212, 023, 311. **KW** Random Walk. GNP. Unit Roots. Overlapping Wage Contracts Model. Monetary Policy. Business Cycle.

AB It is shown that GNP will have an autoregressive root very close to unity in a variant of Taylor's (1980) overlapping wage contracts model, for stylized versions of simple money supply rules and plausible values for the model's parameters. In this variant, monetary policy is the only reason for serial correlation in GNP. It is premature, therefore, to conclude, as some authors have, that the presence of such a root in United States GNP is inconsistent with either a stationary natural rate or with nominal shocks playing a major role in the business cycle.

TI Integrated Regressors and Tests of the Permanent Income Hypothesis. **AU** Stock, James H.; West, Kenneth D.

PD September 1987. **TI** Order Backlogs and Production Smoothing. **AA** Princeton University. **SR** National Bureau of Economic Research Working Paper: 2385; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 631, 616, 226. **KW** Production. Inventories.

AB Empirical examination of some aggregate manufacturing data suggests that order backlogs may help explain two puzzling facts: (1) the variability of production appears to be greater than that of demand, and (2) inventories appear to be drawn down when demand is low, built up when demand is high.

Whalley, John

TI General Equilibrium World Trade Under Bilateral Quotas. **AU** Nguyen, Trien T.; Whalley, John.

TI Regional Effects of Taxes in Canada: An Applied General Equilibrium Approach. **AU** Jones, Rich; Whalley, John.

PD 1986. **TI** What Have We Learned From General Equilibrium Tax Policy Models? **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8625C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 59. **PR** $4.00 Canadian. **JE** 021, 323. **KW** Tax Policy. General Equilibrium.

TI Dealing with the North: Developing Countries and Global Trade Negotiations. **AU** Hamilton, Colleen; Whalley, John.

TI Regional Balance Sheets of Gains and Losses from National Policies. **AU** Jones, Rich; Whalley, John.

TI Incentive Effects of Price Rises and Payment-System

Changes on Chinese Agricultural Productivity Growth. **AU** McMillan, John; Whalley, John; Jing, Zhuli.

White, Alice P.

TI Stock Market Volatility. **AU** Davis, Carolyn D.; White, Alice P.

White, Michelle J.

PD July 1987. **TI** Contract Breach and Contract Discharge Due to Impossibility: A Unified Theory. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-3; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 27. **PR** No Charge. **JE** 916. **KW** Contracts. Damages. Breach of Contract.

AB In this paper I have argued that the courts should treat all cases involving unperformed contracts as breach of contract cases rather than as discharge cases and that the non-performing party should pay non-zero damages except in a few special cases. In other words, contracts should never be discharged. Rules for determining the economically efficient level of damages in different types of cases were developed and were shown to depend on such factors as the risk preferences of the contracting parties, the degree of control or influence of the performing party on whether the event causing non-performance occurs or not, the relative level of the performing party's fixed versus variable production costs, the proportion of the contract price paid in advance, and whether the event causing non-performance affects a single cost item or is due to generalized inflation. Efficient damage remedies were shown to be smallest when the performing party is risk averse and the non-performing party is risk neutral. They are largest when the performing party is risk neutral, regardless of the risk preferences of the non-performing party. Efficient damage remedies are largest when most or all of the contract price has been paid in advance, and smallest when little or none of the price has been paid in advance.

PD July 1987. **TI** The Corporate Bankruptcy Decision. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-6; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 20. **PR** No Charge. **JE** 511, 521, 512, 611. **KW** Bankruptcy. Liquidation. Firm Reorganization. Financial Obligations.

AB A central tenet in economics is that competition drives markets toward a state of long-run equilibrium in which those firms remaining in existence produce at minimum average costs. In the process of transition to long-run equilibrium, inefficient firms, firms using obsolete technologies and those producing products that are in excess supply, are eliminated. Consumers benefit because in the long-run, goods and services are produced and sold at the lowest possible prices. The mechanism through which inefficient firms most often are eliminated is that of bankruptcy, the legal process applied to firms unable to pay their debts. This suggests that bankruptcy serves as a screening process and that it should be designed to eliminate only those firms which are economically inefficient, whose resources can be better used in some other activity. However, firms typically file for bankruptcy voluntarily and they do so based on financial rather than on economic efficiency criteria -- they seek bankruptcy court protection when they cannot meet financial obligations currently due. This raises the possibility that firms in bankruptcy might not always be economically inefficient and that inefficient firms might not always end up in bankruptcy. In fact we show in this paper that none of the commonly considered bankruptcy priority rules gives firms an incentive to choose bankruptcy or to remain out of bankruptcy only when that alternative is more economically efficient. Failing firms may liquidate even in circumstances when their resources are most valuable if they continue operating and they may continue to operate even when their resources can better be employed in some new use. When reorganization is added as an additional bankruptcy alternative, the analysis suggests that too many failing firms are likely to continue operating in the same line of business in which they were previously making losses. Thus the United States bankruptcy systems appears to delay the movement of resources to new and higher value uses.

PD July 1987. **TI** Location Choice and Commuting Behavior in Cities with Decentralized Employment. **AA** University of Michigan. **SR** University of Michigan Center for Research on Economic and Social Theory Working Paper: 87-7; Department of Economics, University of Michigan, Ann Arbor, MI 48109. **PG** 23. **PR** No Charge. **JE** 931, 813, 826, 823. **KW** Job Location. Urban Model. Residential Location. Commuting Behavior. Decentralized Employment.

AB In this paper I explore the determination of residential and job location and the pattern of commuting behavior in an urban model with decentralized employment. Various authors have explored models of cities with decentralized employment, but they have tended to make very specialized assumptions concerning either the pattern of firm location or the nature of household behavior and have often been forced to use numerical simulation techniques to get results. In this paper I try to make very general assumptions concerning firm and household behavior. This approach yields fewer definite answers, but it enables me to consider some new questions.

Wiesmeth, Hans

PD February 1987. **TI** Endogenous Price Fluctuations on Incomplete Markets. **AA** Department of Economics, University of Western Ontario and University of Bonn. **SR** University of Western Ontario Department of Economics Research Report: Number 8705; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 30. **PR** $5.00 Canada; $7.00 Elsewhere. **JE** 131, 021. **KW** Incomplete Markets. Price Fluctuations. Rational Expectations Equilibrium. Radner Equilibrium. Asset Markets.

AB Excessive price variability on asset markets is usually explained by exogenous factors such as expected changes in the relevant environment. In contrast to this, the model underlying this paper allows for endogenously generated price fluctuations. The basic idea is that the information gathering process itself may give rise to price fluctuations.

An appropriate equilibrium concept is introduced and conditions for the existence of such equilibrium are discussed.

PD October 1987. **TI** Endogenous Price Fluctuations. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: B 86; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 30. **PR** No Charge. **JE** 026, 022. **KW** Discrete. Dynamic Equilibrium Model. Asset Pricing. Stochastic Information Signals.

AB A discrete, dynamic general equilibrium model of asset pricing is constructed in which equilibrium prices are influenced by exogenously given stochastic information signals, and by the endogenously generated price function prevailing in the respective preceding period. This structural assumption and its consequences for the informational efficiency of the markets are discussed extensively. The implications for explaining price volatility are also explored. In addition to that the model allows the investigation of a novel issue: learning from price fluctuations. It is shown that sophisticated agents can obtain additional information from stable cycles of equilibrium price functions. The resulting change in the equilibrium structure might induce a rational expectations equilibrium, as illustrated by means of an example.

Wigle, Randall

TI How Robust is Applied General Equilibrium Analysis? **AU** Harrison, Glenn W.; Jones, Richard; Kimbell, Larry J.; Wigle, Randall.

Wildasin, David

TI Tax-Transfer Policies and the Voluntary Provision of Public Goods. **AU** Boadway, Robin; Pestieau, Pierre; Wildasin, David.

Williamson, Stephen D.

PD 1986. **TI** Laissez Faire Banking and Circulating Media of Exchange. **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8624C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 29. **PR** $4.00 Canadian. **JE** 312. **KW** Banks. Medium of Exchange.

Witte, Ann Dryden

TI Predicting Criminal Recidivism Using "Split Population" Survival Time Models. **AU** Schmidt, Peter; Witte, Ann Dryden.

Wolinsky, Asher

TI Decentralized Trading, Strategic Behavior and the Walrasian Outcome. **AU** Rubinstein, Ariel; Wolinsky, Asher.

Woo, Wing T.

PD November 1987. **TI** The External Debt Situation in Indonesia: Performance and Prospects. **AA** University of California at Davis. **SR** University of California at Davis Research Program in Applied Macro and Macro Policy: 48; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 32. **PR** No Charge. **JE** 121, 431, 441, 023. **KW** Debt Crisis. Indonesia. Exchange Rate. Political Economy.

AB In interviews with bankers, government economists and academic observers, most of them attributed the absence of an Indonesian debt crisis during 1982-84 to the fact that a significant portion of external public debt, an average of 37 percent, was long-term concessionary loans from foreign governments and international agencies. Our analysis challenges this conventional explanation. We show that if Indonesia (1) had paid the same effective interest rate as Mexico, (2) had the same maturity structure as Mexican debt, and (3) had the same export-GNP ratio as Mexico, then its average 1980-82 total debt service-export ratio would have been 84.4 per cent instead of the actual 30.1 per cent. We have therefore concluded that the major cause for the favorable 1982-84 outcome is competent management of the exchange rate. In the last section, we recommend an aggressive exchange rate policy and two sets of supplementary measures to reduce the probability of a debt crisis in the medium run.

Wooders, Myrna Holtz

TI The Core of a Market with a Continuum of Players and Finite Coalitions: From Finite to Continuum Economies. **AU** Kaneko, Mamoru; Wooders, Myrna Holtz.

PD February 1987. **TI** NTU Values of Large Games. **AU** Wooders, Myrna Holtz; Zame, William R. **AA** Wooders: The University of Toronto. Zame: State University of New York at Buffalo. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: TR503; Institute for Mathematical Studies in the Social Sciences, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 37. **PR** $4.00. **JE** 026, 021. **KW** NTU Value. Shapley Value. Value Convergence. Cooperative Games. Core. Non-transferable Utility.

AB We show that the well-known value convergence theorems for exchange economies have analogs in a framework which is sufficiently broad to encompass diverse economic situations. The framework we use is that of NTU games (i.e., cooperative games without sidepayments). Our central result is that, for a large game, all NTU values satisfying a mild symmetry condition are in an approximate core. We also obtain an ordinal version of this result.

Wooton, Ian

PD 1987. **TI** Capital, Skills, and International Trade. **AA** University of Western Ontario. **SR** University of Western Ontario Centre for the Study of International Economic Relations Working Paper: 8702C; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 26. **PR** $4.00 Canadian. **JE** 411, 441. **KW** International Trade.

Yamada, Tadashi

PD November 1987. **TI** Nutrition and Infant Health in Japan. **AU** Yamada, Tadashi; Yamada, Tetsuji; Chaloupka, Frank. **AA** Chaloupka and Yamada,

Tadashi: National Bureau of Economic Research. Yamada, Tetsuji: Rutgers University. **SR** National Bureau of Economic Research Working Paper: 2444; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 913. **KW** Nutrition. Infant Mortality.
AB The model presented in this paper emphasizes the importance of the mother's nutritional intake as a determinant of infant health. Using cross-sectional market averages for 1980 and 1981 in Japan, we find that the nutrient intake of the mother during pregnancy is a potential determinant of neonatal and infant mortality in Japan, with increased consumption of calcium and iron leading to improved birth outcomes. Using the results obtained from the estimation of neonatal and infant mortality production functions, we note that increases in the prices of food items, in particular milk and meat, would lead to increases in neonatal and infant mortality rates. We discover that the availability of abortion in Japan, unlike in the United States, is positively related to mortality rates, although never significantly. Finally, we see that cigarette smoking, alcohol consumption, and poor environmental quality all have strongly adverse effects on newborn survival outcomes in Japan.

TI Social Security and Earlier Retirement in Japan: Cross-Sectional Evidence. **AU** Yamada, Tetsuji; Yamada, Tadashi.

Yamada, Tetsuji

TI Nutrition and Infant Health in Japan. **AU** Yamada, Tadashi; Yamada, Tetsuji; Chaloupka, Frank.

PD November 1987. **TI** Social Security and Earlier Retirement in Japan: Cross-Sectional Evidence. **AU** Yamada, Tetsuji; Yamada, Tadashi. **AA** Yamada, Tetsuji: Rutgers University. Yamada, Tadashi: National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 2442; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 915, 918, 821, 824. **KW** Japan. Elderly. Social Security. Retirement.
AB The estimated elasticity of the probability of retirement with respect to social security retirement benefits declines as individuals age. The negative impact of social security retirement benefits on full-time workers is much greater than the impact on part-time workers for all age groups. Earnings test in Japan is, therefore, more effective on full-time workers than part-time workers among the elderly. Social security retirement benefits also provide the elderly with an incentive to prolong their unemployment status. The marginal effect of the market unemployment rate on full-time work is significantly larger than that on part-time work and both effects are negative. The elasticity of retirement with respect to the market unemployment rate for those in their 60's is two to three times larger than those aged 70 and over. Retirement of those in their 60's is quite responsive to changes in labor market condition.

Yancey, Thomas

TI Power and Pre-Test Risk Comparisons for Conventional and Joint One Sided Tests. **AU** Judge, George; Bohrer, Robert; Yancey, Thomas.

Yang, Xiaokai

PD January 1988. **TI** An Approach to Modelling Institutional Development. **SR** Yale Economic Growth Center Discussion Paper: 550. **PG** 34 pp. **PR** $2.00. **JE** 023, 021. **KW** Transactions. Efficiency. Institutions.
AB In this paper we construct an equilibrium model to formalize Coase's idea on the function of the firm in improving transaction efficiency. The relationship between the division of labor, economic growth, and the evolution or economic institutions are investigated.

Young, Robert A.

PD July 1987. **TI** Canada - United States Free Trade: Economic Realities and Political Choices. **AA** Department of Political Science, University of Western Ontario. **SR** University of Western Ontario Centre for the Analysis of National Economic Policy Working Paper: 87-03; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 46. **PR** No Charge. **JE** 421, 422, 423, 122. **KW** Politics. Trade Policy. Protectionism. Bilateral Agreement. Canada. United States.
AB Political choice is worth emphasizing now for three reasons, which also constitute the central themes of this paper. Advocates of all sorts of initiatives resort to the banal argument that their favoured option is inevitable or unavoidable; hence, the first part of the discussion shows that a Canada-United States free-trade agreement is not in this strict sense necessary. Second, the Canadian debate threatens to become terribly bitter. The degree of division will depend on the scope of the agreement, so Part III of this paper analyses the forces which will determine the choice between a limited, incremental deal and one which is comprehensive and daring and which takes continental economic integration to new levels. Finally, if some bilateral agreement is likely to emerge, a precise touchstone for assessing it is essential. In my view, this touchstone should derive from the goal of maximizing the range for political choice, while securing the economic base without which sovereignty is meaningless. Assessing a deal means asking whether its terms will neutralize the policy instruments necessary for development over the next several decades. Within the constraints of an agreement, in short, can Canadians secure their culture, operate desirable social programs, and implement essential industrial policies? This question is approached in Part IV through an analysis of Rick Harris's work for the Macdonald Commission, and this leads at last to predictions about the outcome of the issue.

Zame, William R.

TI NTU Values of Large Games. **AU** Wooders, Myrna Holtz; Zame, William R.

Zarnowitz, Victor

PD September 1987. **TI** The Regularity of Business Cycles. **AA** University of Chicago. **SR** National Bureau of Economic Research Working Paper: 2381; National Bureau of Economic Research, 1050

Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 131, 212, 023. **KW** Business Cycles. Random Walk. Dynamic. Linear Model. Nonlinear Model.
AB Do business cycles have predictable periodicities or are they random walks without past regularities or predictive value? Arguments in support of either position are found in the literature, with no apparent convergence to an agreement. This paper first examines the implications of the NBER chronologies and other findings for the question of the regularity of business cycles. It discusses hypotheses and presents evidence concerning the incidence and coexistence of cycles with different periods. An extension of the analysis covers growth cycles in the United States and other major countries. The paper then considers different models -- linear, nonlinear, endogenous, and exogenous -- for what they have to say about the problem. The regularity of investment cycles and the possible asymmetries in cyclical behavior receive particular attention, and some related data and tests are provided. Our results suggest that business cycles defy simple characterizations: they show a strong tendency to recur and at times even near periodicity, along with great diversity and evolution of phase durations. The age of a phase is not of much help in predicting the date of its end; the regularities are mainly in the dynamics of the developing business conditions.

Zeckhauser, Richard

TI The Dilemma of Government Responsiveness. **AU** Rodrik, Dani; Zeckhauser, Richard.

TI Clearly Heard on the Street: The Effect of Takeover Rumors on Stock Prices. **AU** Pound, John; Zeckhauser, Richard.

Zeldes, Stephen P.

TI Production, Sales, and the Change in Inventories: An Identity that Doesn't Add Up. **AU** Miron, Jeffrey A.; Zeldes, Stephen P.

TI Seasonality, Cost Shocks, and the Production Smoothing Model of Inventories. **AU** Miron, Jeffrey A.; Zeldes, Stephen P.

TI Seasonality, Cost Shocks, and the Production Smoothing Model of Inventories. **AU** Miron, Jeffrey A.; Zeldes, Stephen P.

Zilberman, David

TI Computer Use in Agriculture: Evidence from Tulare County, California. **AU** Putler, Daniel S.; Zilberman, David.

Zilcha, I.

PD September 1987. **TI** Dynamic Efficiency in Overlapping Generations Models with Stochastic Production. **AA** Department of Economics, Tel-Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 23-87; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 25. **PR** No Charge. **JE** 023, 021, 026, 024. **KW** Intertemporal Allocation. Dynamic Efficiency. Overlapping Generations. Stochastic Production. Competitive Equilibrium. Stochastic Dynamic Models.
AB This is an extension of Diamond's (1965) model which includes stochastic production. We obtain a complete characterization of inefficient feasible production consumption allocations. Existence of competitive equilibrium is proved and it is shown that it is short-run efficient. Also any efficient allocations (of type II) can be obtained as a competitive equilibrium for some concave utility functions for all generations.

TI Efficient Sets With and Without the Expected Utility Hypothesis. **AU** Safra, Zvi; Zilcha, Itzhak.

PD October 1987. **TI** Exporting Firm and Forward Markets: The Multi-Period Case. **AU** Zilcha, I.; Eldor, R. **AA** Zilcha: Tel Aviv University. Eldor: Boston University and Tel Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 29-87; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PR** No Charge. **JE** 022, 411, 313, 431. **KW** Forward Markets. Export. Exchange Rates.
AB We consider a model with a competitive risk-averse exporting firm who faces uncertain exchange rates in a multi-period analysis. The capital stock (or fixed input) has to be determined at the outset while the variable input (labor) is chosen optimally at the beginning of each period, but before the realization of the exchange rate. We study the effects of introducing currency forward markets upon the export levels and the investment. We also show that such a firm tends to "overhedge" compared to the one-period cases.

Zin, Stanley E.

PD July 1987. **TI** Aggregate Consumption Behaviour in a Life Cycle Model with Non-Additive Recursive Utility. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 693; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 62. **PR** $3.00 Canada and United States; $3.50 Foreign. **JE** 023, 211, 212, 920. **KW** Non-Additive Utility. Recursive Utility. Generalized Method of Moments. "Increasing Marginal Impatience" Hypothesis.
AB The empirical rejections of life cycle models of aggregate consumption are reviewed and an alternative specification is proposed. In a representative agent, rational expectations equilibrium framework, the maximization of a non-additive recursive utility index yields restrictions on the time series behaviour of aggregate per capita consumption. It is shown that empirical rejections of the conventional additive utility model are not necessarily rejections of these restrictions. Non-additive recursive utility has found frequent use in dynamic economic models because of the non-constancy of time-preference that it embodies and the more general long run behaviour that it can generate. This model, therefore, provides a framework for testing hypotheses about both life cycle consumption behaviour and the nature of time-preference. Observable implications of Euler equations are used to estimate the parameters of the utility function using Generalized Method of Moments and the asymptotic properties of this estimator are analyzed when the consumption process is nonstationary. The model is

estimated and tested using monthly United States post-war data and the time-additivity restriction is rejected. When consumption is measured by aggregate per capita expenditures on nondurable goods, the overidentifying restrictions of the model cannot be rejected at conventional significance levels. However, this is not the case for a consumption measure that includes expenditures on services. The empirical results generally provide support for the "increasing marginal impatience" hypothesis that posits an increasing relationship between the rate of time preference and steady-state consumption (or wealth).

PD July 1987. **TI** Intertemporal Substitution, Risk and the Time Series Behaviour of Consumption and Asset Returns. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 694; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 36. **PR** $3.00 Canada and United States; $3.50 Foreign. **JE** 023, 212, 313. **KW** Consumption. Asset Returns. Risk Aversion. Non-Expected Utility. Ordinal Certainty Equivalent.
AB This paper studies the time series behaviour of aggregate consumption and asset returns when the representative agent does not (necessarily) maximize the expected value of a von Neumann-Morgenstern utility index. By assuming that agents' intertemporal preferences over stochastic consumption sequences have the multiperiod analogue of the Ordinal Certainty Equivalent representation of Selden (1978, 1979), testable implications for the joint behaviour of consumption and asset returns are derived. These preferences contain the conventional von Neumann-Morgenstern representation as a special case and have the attractive property of allowing for "risk preference" and "time preference" to be modelled independently. It is shown that, for this model, the result in Hansen and Singleton (1983) that the serial correlation properties of asset returns are related to the stochastic properties of consumption by the degree of risk aversion, no longer holds. The result in Hall (1981, 1985) linking this relationship to the intertemporal elasticity of substitution (which is allowed to be independent of the degree of risk aversion) is, however, confirmed. Issues involving the intertemporal consistency of optimal plans are briefly discussed. The model is estimated and tested using monthly United States data on non-durable consumption, treasury bill returns, and corporate bond returns.

TI Substitution, Risk Aversion and the Temporal Behavior of Consumption and Asset Returns I: A Theoretical Framework. **AU** Epstein, Larry G.; Zin, Stanley E.

TI Substitution, Risk Aversion and the Temporal Behaviour of Consumption and Asset Returns II: An Empirical Analysis. **AU** Epstein, Larry G.; Zin, Stanley E.

TI Testing a Government's Present-Value Borrowing Constraint. **AU** Smith, Gregor W.; Zin, Stanley E.

Zinde, Walsh Victoria

TI Inflation and the Timing of Price Changes. **AU** McMillan, John; Zinde, Walsh Victoria.