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.)

Abel, Andrew

PD January 1986. **TI** Aggregate Savings in the Presence of Private and Social Insurance. **AA** Department of Economics, Harvard University. **SR** National Bureau of Economic Research Working Paper: 1873; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 915. **KW** Social Security. Fully Funded Social Security. Aggregate Savings. Private Social Insurance.

AB In the presence of uncertain lifetimes, social security has the characteristics of an annuity: a consumer pays a tax when young in exchange for receiving a social security benefit if he survives to be old. If consumers have identical ex ante mortality probabilities, then a fully funded social security system would offer a rate of return equal to the actuarially fair rate available on competitively supplied private annuities. In this case fully funded social security would be a redundant asset and would have no effect on consumption or national saving. In this paper, consumers have different (publicly known) ex ante mortality probabilities and consequently can buy actuarially fair private annuities offering different rates of return. If the social security system does not discriminate on the basis of ex ante mortality probabilities, then the introduction of social security induces a redistribution of income from consumers with a high probability of dying young to consumers with a low probability of dying young. Under homothetic utility this redistribution reduces aggregate bequests and aggregate consumption of young consumers in the steady state; the steady state national capital stock can either increase or decrease. If consumers display at least as much risk aversion as the logarithmic utility function, then average steady state welfare is increased by the introduction of fully funded social security.

Abreu, Dilip

PD April 1986. **TI** Toward a Theory of Discounted Repeated Games with Imperfect Monitoring. **AU** Abreu, Dilip; Pearce, David W.; Stacchetti, Ennio. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 791; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 31. **PR** No Charge. **JE** 026. **KW** Pure Strategy Sequential Equilibria. Repeated Games. Imperfect Monitoring.

AB This paper investigates pure strategy sequential equilibria of repeated games with imperfect monitoring. The approach emphasizes the equilibrium value set and the static optimization problems embedded in extremal equilibria. We characterize these equilibria, and provide computational and comparative statics results. The "self-generation" and "bang-bang" propositions which were at the core of our analysis of optimal cartel equilibria '2, are generalized to asymmetric games and infinite action spaces. New results on optimal implicit reward functions include the necessity (as opposed to sufficiency) of bang-bang functions, and the nature of optimal punishment regions.

Adams, F. Gerard

TI Suggested Simulations for Elsa - Commodity Link. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-14; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 3. **PR** No Charge. **JE** 212, 132. **KW** Econometric Link System for Asean. LINK.

AB This memorandum summarizes suggested simulations to be carried out with the combined Econometric Link System for Asean LINK models.

PD January 28, 1985. **TI** Commodities in the Econometric Link System for Asean (ELSA). **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-16; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 57. **PR** No Charge. **JE** 212, 423, 132. **KW** Commodity Market Models. Econometric Link System for Asean. International Economic Linkages.

AB This paper describes how commodity market models have been introduced into the Asean Link System, Econometric Link System for Asean. In the first section, we consider the conceptual issues of introducing commodity market models in international economic linkages -- the role of commodity prices and earnings, the nature of the principal linkages, and conceptually the implications of such modeling on the behavior of a world model system. In the second section we consider the commodity models themselves, the structure of such models, the principal behavioral coefficients, and the operation of commodity models under a variety of external assumptions. In the third and fourth sections we consider the way in which the commodity models have been integrated into the ELSA model and the specification of the linking mechanisms. The next sections consider commodity model simulations with and without linkage to the ELSA model. A section on conclusions completes this paper.

PD March 1985. **TI** Commodity Export Instability, Micro and Macro Policies and Economic Development. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-17; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 20. **PR** No Charge. **JE** 112, 423, 212. **KW** International Economic Interrelations. Economic Instability. Commodity Export Instability. Commodity Markets.

AB International economic interrelations have come increasingly into the foreground as internationally linked economic instability has mounted since the early 1970s. Policy responses, or lack of response, has greatly affected the impact of fluctuations on the economy and producing countries. It is fortunate that economists are also increasingly better able to handle global econometric systems and to integrate commodity price impacts into these models. In this paper we consider econometric approaches to deal with commodities in international economic linkages. And we focus particularly on the interaction of macro policies with commodity markets on a global and producer country perspective.

Adler, Michael

PD December 1985. **TI** Inflation, Translation and Conflicts in Statements of Financial Accounting Standards. **AU** Adler, Michael; Harris, Trevor. **AA** Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-86-14; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 441, 541. **KW** Foreign Currency Translation. Accounting. Information Consistency.

AB This paper uses an information economics based concept of "information consistency," to show that a conflict between Statement of Financial Accounting Standards (SFAS) 33 (accounting for changing prices), and SFAS 52 (foreign currency translation), has created a standard practice in SFAS 70 which is contrary to the stated objectives of the former two standards; and results in "garbled" signals from the consolidated accounting data, when foreign subsidiaries employ their local currency as the functional currency. The resulting translation adjustment disclosed in the reported supplementary data is material in some cases, which suggests that the garbling may have a significant impact on users' payoff functions which are conditioned on the signal received. The paper also clarifies the issues in the restate/translate versus translate/restate (RTTR) debate by analyzing for each, the conditions which are sufficient for information consistency. This analysis provides for a possible solution to this long standing RTTR debate.

Admati, Anat R.

PD December 1985. **TI** Viable Allocations of Information in Financial Markets. **AU** Admati, Anat R.; Pfleiderer, Paul. **AA** Stanford University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economic Series) Technical Report: 482; IMSSS, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 79. **PR** $4.00. **JE** 026, 522. **KW** Rational Expectations. Markets in Information. Value of Information. Informational Complements. Informational Substitutes. Information Acquisition.

AB This paper studies allocations of information that are viable in the sense that they can be sustained when information acquisition is endogenous. The analysis is performed in the context of a securities market; information pertains to asset returns, and is used by investors to form portfolios. When traders have rational expectations, the value of information depends in part on the information conveyed by prices and, therefore, on the information possessed by others. We focus on whether in a viable allocation of information among identical traders, the available information is concentrated in a fraction of the market or the allocation of information is diffuse. Two effects of informative prices are identified. The first is due to the aggregation of different pieces of information in prices. This effect makes signals more complementary than they would be absent price information, so that information tends to be concentrated. The second effect occurs when there is more than one asset and is due to the possibility that some signals, together with prices, may be good predictors of other signals. This increases the degree of substitutability among signals, favoring diffuse allocations of information. We present conditions under which each of these effects is particularly strong.

PD March 1986. **TI** Strategic Delay in Bargaining. **AU** Admati, Anat R.; Perry, Motty. **AA** Perry: Department of Economics, Tel-Aviv University. Admati: Stanford University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 11-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 28. **PR** No Charge. **JE** 026. **KW** Game Theory. Bargaining.

AB This paper analyses a bargaining model with incomplete information in which the time between offers is an endogenous strategic variable. We find equilibria involving a delay to agreement, which does not vanish as the minimal time between offers becomes small. This is due to the use of strategic time delay by bargainers to communicate their relative strength.

Aizenman, Joshua

PD April 1986. **TI** Targeting Rules for Monetary Policy. **AU** Aizenman, Joshua; Frenkel, Jacob A. **AA** Aizenman: Graduate School of Business, University of Chicago. Frenkel: Department of Economics, University of Chicago. **SR** National Bureau of Economic Research Working Paper: 1881; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 311, 023. **KW** Targeting Rules. Monetary Policy.

AB This paper develops an analytical framework for the analysis of targeting rules for monetary policy. We derive the optimal money supply rule and analyze the implications of other monetary rules including rules that target nominal GNP, the price level, the monetary growth rate and the interest rate. An explicit welfare criterion is used in order to rank the alternative rules. In the model monetary policy is needed because labor market contracts set nominal wages in advance of the realization of the stochastic shocks. The principal result is that the welfare ranking of alternative targeting rules depends on whether the elasticity of labor demand exceeds or falls short of the elasticity of labor supply. Specifically, it is shown that if the demand for labor is more elastic than the supply, then targeting nominal GNP produces a smaller welfare loss than targeting the CPI which in turn produces a smaller welfare loss than interest-rate targeting.

PD April 1986. **TI** Country Risk, Asymmetric Information and Domestic Rules. **AA** Graduate School of Business, University of Chicago. **SR** National Bureau of Economic Research Working Paper: 1880; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 443. **KW** Credit. Country Risk. Cost Minimising Policies.

AB This paper describes an economy where incomplete information regarding the default penalty can result in an upward-sloping supply of credit. We evaluate the role of partial information and other related factors in determining the elasticity of supply of credit and the credit ceiling facing the economy. We identify conditions under which the presence of country risk induces a domestic distortion. Next, we derive the cost-minimizing domestic policies needed in the presence of such a distortion. It is shown that cost-minimising policies for a country that wishes to service its debt in the presence of country risk calls for a combination of borrowing taxes and time varying consumption taxes. If all consumers have access to the domestic capital market, the two policies are equivalent. If domestic consumers are subject to liquidity constraints, cost-minimizing policies call for a combination of time varying consumption taxes and product subsidies that will mimic the consumption distribution achieved by cost-minimising policies in the absence of liquidity constraints. The policies derived in the paper are formulated in terms of the country risk, as embodied in the elasticity of supply of credit facing the borrower. In a mixed economy, where some consumers are subject to credit rationing whereas others have full access to the domestic credit market, there is a need for taxes on borrowing as well as time varying consumption and production tax cum subsidies. The analysis also shows that if the level of external borrowing is substantial, cost-minimising domestic policies call for instituting a two-tier exchange rate system.

Allen, Beth

PD January 1985. **TI** The Approximation of Competitive Equilibria by Bertrand-Edgeworth Equilibria in Large Markets. **AU** Allen, Beth; Hellwig, Martin. **AA** Allen: University of Pennsylvania. Hellwig: University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A1; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 59. **PR** No Charge. **JE** 021. **KW** Bertrand-Edgeworth Equilibria. Equilibria in Large Markets.

AB The foundations of perfect competition are examined in a partial equilibrium model of the market for a single homogeneous good in which capacity constrained firms choose prices as strategies. An arbitrary competitive equilibrium with the property that at slightly higher prices, demand is less than aggregate capacity can be generated as the limit of (mixed strategy) Bertrand-Edgeworth equilibria with increasing numbers of (smaller) firms. This approximation does not require a regularity condition or globally downward sloping demand. The result provides a justification for perfect competition that is based on an explicit account of price formation.

PD April 1985. **TI** Smooth Preferences and the Approximate Expected Utility Hypothesis. **AA** University of Pennsylvania. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A7; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 26. **PR** No Charge. **JE** 021, 022. **KW** Behavior Under Uncertainty. Smooth Preferences. Expected Utility Hypothesis.

AB Mild smoothness conditions on continuous complete preorders over lotteries imply that various local versions of the expected utility hypothesis are satisfied -- i.e., for small deviations, there is a utility (representing the individual's preferences) that is linear in probabilities. For these results, notions of smooth preferences over an infinite dimensional set of probability measures are developed.

Alogoskoufis, George

PD January 1986. **TI** On Optimal Policy and Exchange Market Intervention with Non Tradeable Goods and Partial Wage Indexation. **AA** Birkbeck College. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 241; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 36. **PR** No Charge. **JE** 311, 431. **KW** Monetary Policy. Exchange Rates. Exchange Rate Regimes.

AB In this paper, we examine optimal monetary policy, and the exchange rate regime in the context of a stochastic short run model of a small open economy. Contrary to recent findings, we find that the distortion that imperfect wage indexation introduces in the labour market cannot in general be completely eliminated by either monetary policy or exchange market intervention. There are two reasons for that. The first is the assumption that monetary control is subject to random errors that impose a welfare loss, and the second is the existence of non-traded goods, the production of which is also assumed to be subject to random shocks, that augment the labour market distortion generated by imperfect wage indexation. The second best optimal policy is for the money supply to react to all observable aggregate shocks, and for exchange rate flexibility to be as low as possible, but only to the extent that monetary policy does not become ineffective, as with fixed exchange rates.

Alsalam, Nabeel

PD September 1985. **TI** The Effect of Cohort Size on Earnings: An Examination of Substitution Relationships. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 21; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 25. **PR** No Charge. **JE** 821, 841. **KW** Experience Cohorts. Earnings-Experience Profiles. Baby Booms. Cohort Size.

AB An aggregate production function approach to understanding the effect of baby booms and busts on earnings-experience profiles is pursued. Use of the heuristic notion that workers of similar or close in experience are better substitutes than those that are dissimilar or distant in experience is made to make estimation tractable. Based on the aggregate production function, a (non-linear) wage function that depends on the full experience distribution is specified and estimated using data from the 1968-1982 March Current Population Surveys. Life cycle earnings depend on the sise distribution of experience cohorts. Members of large cohorts earn less, and enhance the earnings of other cohorts, particularly those that are some distance away in experience. Members of a single unusually large cohort will earn a constant fraction less than members of normal cohorts. Members of large cohorts on the leading edge of a baby boom earn less but much of the depressant effect erodes as other large cohorts follow them into the market. The effect is symmetric for members of large cohorts on the trailing edge of a baby boom. The initial depressant effect increases as smaller cohorts follow and larger cohorts retire.

PD October 1985. **TI** The Dynamic Behavior of College Enrollment Rates: The Effect of Baby Booms and Busts. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 23; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 31. **PR** No Charge. **JE** 912, 841. **KW** Birth Rates. College Enrollments.

AB There has been little theoretical discussion of why variation in birth rates might have effects on college enrollments, and it is this void that this paper attempts to fill. I make use of the simple fact that school takes time to produce a non-neutral effect of variation in the number of births on the incentive for college attendance. I get the result that increases in the growth rate of births increases enrollment rates. I also find that these increases lead the arrival of the larger cohorts. This suggests that declining college enrollments in the early seventies may have been in anticipation of the smaller birth cohorts that would begin arriving in the late 1970's and early 1980's. This is in contrast to the suggestion that the decline was in response to the worsening labor market for college graduates in the early 1970's, due primarily to the entry of the large baby boom birth cohorts.

Altonji, Joseph G.

PD April 1986. **TI** Job Characteristics and Hours of Work. **AU** Altonji, Joseph G.; Paxson, Christina H. **AA** Department of Economics, Columbia University. **SR** National Bureau of Economic Research Working Paper: 1895; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 824. **KW** Job Characteristics. Hours of Work.

AB This paper provides evidence that hours of work are heavily influenced by the particular job which a person holds. The empirical work consists of a comparison of the variance in the change in work hours across time intervals containing a job change with the variance in the change in hours across time periods when the job remains the same. To the extent that workers choose hours and these hours choices are influenced by shifts in individual preferences and resources, the variance in the time change of hours should not depend upon whether the worker has switched jobs. The desire to reduce or increase hours could be acted upon in the current job. On the other hand, if hours are influenced by employer preferences or if job specific characteristics dominate the labor supply decision, then hours changes should be larger when persons change jobs than when they do not. Using the Panel Study of Income Dynamics and the Quality of Employment Survey, we find that hours changes are typically two to four times more variable across jobs than within jobs. This result holds for both men and women and for both quits and layoffs, is obtained for weeks per year, hours per week, and annual hours, and is not sensitive to the use of controls for a set of job characteristics (including the wage) which might influence the level of hours persons wish to supply. The findings are also inconsistent with the view that workers may costlessly adjust hours by changing jobs. The finding that the job has a large influence on work hours suggests that much greater emphasis should be given to demand factors and to job specific labor supply factors in future research on hours of work. The overwhelming emphasis upon the wage and personal characteristics in conventional labor supply analyses of work hours may in part be misplaced.

Ambarish, Ramasastry

PD May 1986. **TI** Efficient Signalling with Dividends and Investments. **AU** Ambarish, Ramasastry; John, Kose; Williams, Joseph. **AA** Ambarish: University of Wisconsin-Madison. John; Williams: New York University. **SR** New York University Salomon Brothers Center Working Paper: 377; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 44. **PR** $2.00. **JE** 313, 026, 521. **KW** Efficient Signalling Equilibrium. Dividends. Investment.

AB An efficient signalling equilibrium with dividends and investments is identified and its properties are developed. Because a firm's insiders can convey to outside investors all private information through many combinations of their corporate dividend and investment or, equivalently, the dividend and either sales or repurchases of stock, the efficient mix must minimize the cost of signalling. In equilibrium, many firms signal with both dividends and investments. Across firms, the impact of dividends on stock prices is positive; whereas, with new stock issues this cross-sectional announcement effect is negative for mature firms and positive for growth firms.

Amihud, Yakov

PD May 1986. **TI** Asset Pricing and the Bid-Ask Spread. **AU** Amihud, Yakov; Mendelson, Haim. **AA** Amihud: Tel Aviv University. Mendelson: University of Rochester. **SR** New York University Salomon Brothers Center Working Paper: 378; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 46. **PR** $2.00. **JE** 313. **KW** Asset Pricing. Expected Returns. Bid-Ask Spread.

AB This paper studies the effect of securities' bid-ask spreads on asset pricing. We analyse a model in which investors with different expected holding periods trade assets with different relative spreads. The resulting testable hypothesis is that market-observed expected return is an increasing and concave function of the spread. We test this hypothesis, and the empirical results are consistent with the predictions of the model.

Anderson, Robert M.

PD August 1984. **TI** "Almost" Implies "Near". **AA** Departments of Economics and Mathematics, University of California, Berkeley. **SR** University of California at Berkeley Center for Research in Management Science Working Paper in Economic Theory and Econometrics: IP-324; Department of Economics, 250 Barrows Hall, University of California at Berkeley, Berkeley, CA 94720. **PG** 16. **PR** No Charge. **JE** 021, 213. **KW** Existence Theorems. Fixed Points. Competitive Equilibria.

AB We formulate a formal language in which it is meaningful to say that an object almost satisfies a property. We then show that any object which almost satisfies a property is near an object which exactly satisfies the property. We show how this principle can be used to prove existence theorems. We give an example showing how one may strengthen the statement to give information about the relationship between the amount by which the object fails to satisfy the property and the distance to the nearest object which satisfies the property. Examples are given concerning commuting matrices, additive sequences, Brouwer fixed points, competitive equilibria, and differential equations.

PD October 25, 1985. **TI** Notions of Core Convergence. **AA** Departments of Economics and Mathematics, University of California, Berkeley. **SR** University of California at Berkeley Center for Research in Management Science Working Paper in Economic Theory and Econometrics: IP-325; Department of Economics, 250 Barrows Hall, University of California at Berkeley, Berkeley, CA 94720. **PG** 24. **PR** No Charge. **JE** 021. **KW** Core Convergence.

AB We develop a taxonomy of the principal assumptions and conclusions that have been used in the literature on the convergence of cores of large finite economies. We then present, in tabular form, a survey of the major results on core convergence, describing the theorems in terms of the taxonomy.

PD October 31, 1985. **TI** Core Allocations are Almost Utility-Maximal. **AA** Departments of Economics and Mathematics, University of California, Berkeley. **SR** University of California at Berkeley Center for Research in Management Science Working Paper in Economic Theory and Econometrics: IP-326; Department of Economics, 250 Barrows Hall, University of California at Berkeley, Berkeley, CA 94720. **PG** 10. **PR** No Charge. **JE** 021. **KW** Core Allocations. Demand Sets. Utility-Maximal.

AB It is known that in large economies with strongly convex preferences, the commodity bundles agents receive at core allocations are near their demand sets. Without convexity, it is known that agents' bundles need not be near their demand sets, although these bundles will satisfy a weaker condition. In this paper, we give sufficient conditions to ensure that core allocations almost maximise utility over the agents' budget sets.

PD January 20, 1986. **TI** The Second Welfare Theorem with Nonconvex Preferences. **AA** Departments of Economics and Mathematics, University of California, Berkeley. **SR** University of California at Berkeley Center for Research in Management Science Working Paper in Economic Theory and Econometrics: IP-327; Department of Economics, 250 Barrows Hall, University of California at Berkeley, Berkeley, CA 94720. **PG** 15. **PR** No Charge. **JE** 024. **KW** Welfare Economics. Second Theorem of Welfare Economics.

AB We prove two versions of the second theorem of welfare economics for large exchange economies with non-convex preferences.

Anderson, Simon

PD December 1985. **TI** Spatial Competition and Price Leadership. **AA** Centre for Operations Research and Econometrics. **SR** Universite Catholique de Louvain Centre for Operations Research and Econometrics Discussion Paper: 8602; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 36. **PR** No Charge. **JE** 941, 022, 611. **KW** Price Leadership. Spatial Competition. Stackelberg Model. Hotelling Model.

AB In the Stackelberg price leader/price follower model, each firm is typically better off as a follower than as a leader. In this paper we show that introducing the spatial dimension provides a means of endogenising the role of price leadership. Furthermore, the leader/follower framework yields existence of a price and location equilibrium in the Hotelling spatial model of competition where none exists under the original specification. We first analyse the original Hotelling model by determing reaction functions for firms. This approach allows the model to be fully characterised and affords an intuitive explanation of the non-existence of a price equilibrium for certain locations. The reaction functions are then used to determine the solution when one firm adopts the Stackelberg leadership role. Contrary to the existing predictions of the simple spatial duopoly model, it is found that the outcome is asymmetric in terms of Stackelberg equilibrium locations, prices and profits, with the first firm in the market enjoying higher profits than the subsequent entrant. The equilibrium involves one firm locating at the mid-point of the market - this outcome is also appealing as it corresponds to the entry-deterring and monopoly solutions.

PD February 1986. **TI** Equilibrium Existence in the Circle Model of Product Differentiation. **AA** Centre for Operations Research and Econometrics, Universite Catholique de Louvain. **SR** Universite Catholique de Louvain Centre for Operations Research and Econometrics Discussion Paper: 8606; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 14. **PR** No Charge. **JE** 611, 022. **KW** Duopoly. Price-Location Equilibrium. Product Differentiation.

AB Duopoly price-location equilibrium is analysed in the context of the circle model, under both of the prevalent equilibrium concepts used in this class of models. It is shown that strong restrictions to the class of consumer utility functions are necessary for equilibrium existence in both cases. Moreover, if equilibrium exists under one solution concept, then it can not exist for the other for the same utility function.

Andrews, Donald W. K.

PD March 1986. **TI** Best Median Unbiased Estimation in Linear Regression With Bounded Asymmetric Loss functions. **AU** Andrews, Donald W. K.; Phillips, Peter C. B. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 786; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 23. **PR** No Charge. **JE** 211. **KW** Generalized Least Squares. Elliptically Symmetric Distribution. Restricted Parameter Space. Minimum Risk. Variance Estimation.

AB We first show that the Generalized Least Squares estimator is the best median unbiased estimator of the regression parameters for quite general loss functions, when the parameter space is unrestricted. Of note is the fact that this result holds without moment restrictions. Thus, the errors may have multivariate Cauchy distribution. Next, we show that a restricted GLS estimator is best median unbiased for a linear combination of the regression parameters, when that linear combination is restricted to lie in an interval. Certain other linear combinations of the parameter vector may be subject to arbitrary additional restrictions. The paper then presents best median unbiased estimators of the error variance sigma-squared, as well as monotone functions of sigma-squared, when the errors are normally distributed. If sigma-squared is constrained to lie in a finite interval, the best estimator is a censored version of its unconstrained counterpart. When sigma-squared is constrained only to be positive, the best median unbiased estimator is always larger than the best mean unbiased estimator s-squared, and is approximately equal to s-squared calculated with its degrees of freedom reduced by .66.

PD April 1986. **TI** Consistency in Nonlinear Econometric Models: A Generic Uniform Law of Larger Numbers. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 790; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 25. **PR** No Charge. **JE** 211. **KW** Uniform Law of Large Numbers. Consistency. Nonlinear Econometric Models.

AB A basic tool of modern econometrics is a uniform law of large numbers (LLN). It is a primary ingredient used in proving consistency and asymptotic normality of parametric and nonparametric estimators in nonlinear econometric models. Thus, in a well-known review article, Burguete, Gallant, and Sousa '8, p. 162 introduce a uniform LLN with the statement: "The following theorem is the result upon which the asymptotic theory of nonlinear econometrics rests." So pervasive is the use of uniform LLNs, that numerous authors appeal to an unspecified generic uniform LLN. Others appeal to some specific result. The purpose of this paper is to provide a generic uniform LLN that is sufficiently general to incorporate most applications of uniform LLNs in the nonlinear econometrics literature. In summary, the paper presents a result that can be used to turn state of the art pointwise LLNs into uniform LLNs over compact sets, with the addition of a single smoothness condition -- either a Lipschitz condition or a derivative condition. The latter is particularly easy to verify, and is implied by common assumptions used to prove asymptotic normality of estimators. Thus, the additional condition is not particularly restrictive. In contrast to other uniform LLNs that appear in the literature, the one given here allows the full range of heterogeneity of summands (i.e., non-identical distributions), and temporal dependence, that is available with pointwise LLNs.

PD April 1986. **TI** Asymptotic results for generalized Wald Tests. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 761R; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 14. **PR** No Charge. **JE** 211. **KW** Generalized Inverse. Wald Test. Asymptotics. Chi-Square.

AB This note presents conditions under which a quadratic form based on a g-inverted weighting matrix converges to a chi-square distribution as the sample size goes to infinity. Subject to fairly weak underlying conditions, a necessary and sufficient condition is given for this result. The result is of interest, because it is needed to establish asymptotic significance levels and local power properties of generalized Wald tests (i.e., Wald tests with singular limiting covariance matrices). Included in this class of tests are Hausman specification tests and various goodness of fit tests, among others. The necessary and sufficient condition is relevant to procedures currently in the econometrics literature, because it illustrates that some results stated in the literature only hold under more restrictive assumptions than those given.

Apps, Patricia

PD June 1985. **TI** Optimal Taxation of Couples. **AU** Apps, Patricia; Jones, Glenn. **AA** Apps: University of Sydney. Jones: Macquarie University. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A 20; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 25. **PR** No Charge. **JE** 321, 323. **KW** Horizontal Equity. Vertical Equity. Aggregation of Individuals. Household Utility Function. Tax Discrimination.

AB It has long been considered that the choice of the tax unit involves trade-offs between horizontal and vertical equity. More recently optimal tax theory has clarified these arguments and empirical estimates indicate that efficiency considerations are paramount in determining the optimum. This paper argues that these results are conditioned by the reliance on aggregating the welfare of individuals into a household utility function. In contrast, the paper employs the results of a trade model to analyse explicitly Walrasian exchange between individuals within the household. The model suggests that tax discrimination on sex and/or employment status is desirable not only for efficiency gains but because of equity advantages as well.

Auerbach, Alan J.

PD March 1986. **TI** Tax Loss Carryforwards and Corporate Tax Incentives. **AU** Auerbach, Alan J.; Poterba, James M. **AA** Auerbach: Department of Economics, University of Pennsylvania. Poterba:

Department of Economics, MIT. **SR** National Bureau of Economic Research Working Paper: 1863; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 522. **KW** Corporate Tax Incentives. Investment Incentives. Tax Loss Carryforwards.

AB This paper investigates the extent to which loss-offset constraints affect corporate tax incentives. Using data gathered from corporate annual reports, we estimate that in 1984 fifteen percent of the firms in the nonfinancial corporate sector had tax loss carryforwards. When weighted by their market value, however, these firms account for less than three percent of this sector, suggesting that loss carryforwards are concentrated among small firms and affect relatively few large corporations. For those firms with loss carryforwards, however, the incentive effects of the corporate income tax may differ significantly from those facing taxable firms. We demonstrate this by calculating the effective tax rates on equipment and structures for both types of firms. Our results suggest that firms which are currently taxable have a substantially greater incentive for equipment investment than firms with loss carryforwards, but that loss carryforwards have a relatively smaller effect on the tax incentive for investing in structures. Overall, firms with loss carryforwards receive a smaller investment stimulus than taxable firms.

PD March 1986. **TI** Taxes and the Merger Decision: An Empirical Analysis. **AU** Auerbach, Alan J.; Reishus, David. **AA** Auerbach: Department of Economics, University of Pennsylvania. Reishus: Department of Economics, Harvard University. **SR** National Bureau of Economic Research Working Paper: 1855; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 611, 323. **KW** Tax Incentives to Merge. Merger Activity.

AB One motive that is often cited for merger activity is the avoidance of federal income taxes by corporations and their shareholders. Yet there is little empirical evidence on the tax consequences of merger activity, or on the postmerger effects on firm policies of tax motivated mergers. In this paper, we present some initial results based on a large sample of mergers and acquisitions that occurred over the period 1968-83. We find that, in about one fifth of all mergers, there was a potential gain from the transfer of unused tax losses and credits, with an average value of approximately ten percent of the acquired company's market value. Other tax incentives to merge are also measured, but found to be less important quantitatively.

PD April 1986. **TI** Anticipated Tax Changes and the Timing of Investment. **AU** Auerbach, Alan J.; Hines, James R. Jr. **AA** Auerbach: Department of Economics, University of Pennsylvania. Hines: Department of Economics, Harvard University. **SR** National Bureau of Economic Research Working Paper: 1886; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 323, 522. **KW** Tax Reform. Investment.

AB This paper analyses the short-run and long-run effects of corporate tax changes over the last three decades and the likely consequences of proposed future tax changes. Consideration of short-run effects of tax reform on investment and market value requires a careful analysis of three elements of behavior that are normally omitted from long run analyses: the state of investor expectations, the time lags involved in putting new capital in place, and the tax law's distinctions between new and old capital. The model described in this paper considers investment in equipment and investment in plant separately, and does so under different specifications of investor expectations. Our results for the period 1954-1985 suggest that investors did take account of fluctuations in profitability, real interest rates, and the tax code in making their investment plans. We examine the consequences of the nonindexation of depreciation benefits as well as the introduction of the investment tax credit and the Accelerated Cost Recovery System by simulating the corporate sector's performance in the absence of these features. In addition, we analyze the effects of changing the tax code in 1986 along the lines proposed in the Bradley-Gephardt "Fair Tax" plan, the Treasury II plan, and the Rostenkowski plan, H.R. 3838. The simulation results suggest that all three plans would reduce fixed investment in the short run, with the reduction coming primarily in equipment. At the same time, the simulations predict large windfalls for existing capital assets under all three reform proposals.

Bachem, Achim

PD January 1984. **TI** Adjoints of Oriented Matroids. **AU** Bachem, Achim; Kern, Walter **AA** University of Cologne. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 84.1; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 14. **PR** No Charge. **JE** 213. **KW** Geometric Lattices. Oriented Matroids.

AB An adjoint of a geometric lattice G is a geometric lattice G* of the same rank into which there is an embedding e mapping the copoints of G onto the points of G*. In this paper we introduce oriented adjoints and prove that they can be embedded into the extension lattice of oriented matroids.

PD February 1985. **TI** Recent Trends in Combinatorial Optimization. **AU** Bachem, Achim; Euler, Reinhardt. **AA** Bachem: University of Cologne. Euler: University of Grenoble. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 84.2; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 53. **PR** No Charge. **JE** 213. **KW** Combinatorial Optimization. Convex Polyhedra. Algorithm.

AB We survey important parts of the theory of combinatorial optimization as it is developed today. The emphasis lies on new theoretical results, which have proven useful in practical applications. In section 2) we present some examples and explain our basic notation. The purpose of section 3) is to introduce central concepts of complexity theory, in particular the notions of easy and hard problems. Starting from matroid, matching and network flow problems we describe how polynomially solvable generalisations of these can be obtained, taking account of the theory of submodular functions as a general framework. Oriented matroids as a suitable concept by which to generalise the theory of convex polyhedra in a purely combinatorial setting are discussed in the first part

https://doi.org/10.1017/S0951007900000322 Published online by Cambridge University Press

of a section on polyhedral theory. Part 2 is concerned with the relations between linear systems and combinatorics, in particular integer polyhedra. The structure and evaluation of heuristic algorithms is the subject of section 6). Finally, we describe basic ideas for the solution of hard optimization problems as they have proven efficient for particular problem classes.

PD October 1985. **TI** Separation Theorems for Oriented Matroids. **AU** Bachem, Achim; Wanka, Alfred. **AA** University of Cologne. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85.19; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 8. **PR** No Charge. **JE** 213. **KW** Minty's Lemma. Hahn-Banach Theorem. Radon's and Helly's Theorem.
AB In this paper we show that Minty's lemma can be used to prove the Hahn-Banach theorem as well as other theorems in this class such as Radon's and Helly's theorem for oriented matroids having an intersection property which guarantees that every pair of flats intersects in some point extension O union p of the oriented Matroid O.

Banks, Jeffrey S.

PD March 1986. **TI** Liability Rules and Pretrial Settlement. **AA** California Institute of Technology. **SR** Caltech Social Science Working Paper: 608; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 43. **PR** No Charge. **JE** 916. **KW** Liability. Negligence. Settlement. Incomplete Information.
AB The effect of different liability rules on the pretrial behavior of litigants to a civil suit is analyzed. The interaction is modeled as a game of incomplete information, where both the plaintiff and the defendant know whether or not they were negligent in actions leading to the accident. Selection criteria are used to refine the set of sequential equilibria of the game.

Barahona, F.

PD February 1985. **TI** Compositions in the Acyclic Subdigraph Polytope. **AU** Barahona, F.; Mahjoub, A. R. **AA** Barahona: University of Chile. Mahjoub: University of Grenoble. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85371; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 40. **PR** No Charge. **JE** 213. **KW** Acyclic Subdigraph Polytope.
AB Given a digraph D that is a 2-sum of two digraphs D1 and D2, we characterise a system of linear inequalities that define the acyclic subdigraph polytope of D, provided that such systems are known for D1 and D2. This fact is used to characterise this polytope for symmetric digraphs not contractibel to K(3,3).

Barro, Robert J.

PD February 1985. **TI** Reputation in a Model of Monetary Policy with Incomplete Information. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 17; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 29. **PR** No Charge. **JE** 311, 134. **KW** Monetary Policy. Inflation. Reputation.
AB Previous models of rules versus discretion are extended to include uncertainty about the policymaker's "type." When people observe low inflation, they raise the possibility that the policymaker is committed to low inflation (type 1). This enhancement of reputation gives the uncommitted policymaker (type 2) an incentive to masquerade as the committed type. In the equilibrium the policymaker of type 1 delivers surprisingly low inflation -- with corresponding costs to the economy -- over an extended interval. The type 2 person mimics this outcome for awhile, but shifts eventually to high inflation. This high inflation is surprising initially, but subsequently becomes anticipated.

TI A Reformulation of the Economic Theory of Fertility. **AU** Becker, Gary S.; Barro, Robert J.

Becker, Gary S.

PD October 1985. **TI** A Reformulation of the Economic Theory of Fertility. **AU** Becker, Gary S.; Barro, Robert J. **AA** Barro: University of Rochester. Becker: University of Chicago. **SR** University of Rochester Center for Economic Research Working Paper: 26; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 46. **PR** No Charge. **JE** 841, 851. **KW** Fertility. Consumption Growth.
AB When parents are altruistic toward children, the choices of fertility and consumption come from the maximization of a dynastic utility function. The maximization conditions imply first, an arbitrage condition for consumption across generations, and second, the equation of the benefit from an extra child to the net cost of rearing that child. These conditions imply that fertility in open economies depends positively on the world interest rate, on the degree of altruism, and on the growth of child-survival probabilities; and negatively on the rate of technical progress and the growth rate of social security. The growth of consumption across generations depends on changes in the net cost of rearing children, but not on interest rates or time preference. Even when we include life-cycle elements, we conclude that the growth of aggregate consumption per capita depends in the long run on the growth of consumption across generations. Thereby we show that real interest rates and growth rates of consumption per capita would be unrelated in the long run.

Beenstock, Michael

PD April 1986. **TI** The Market for Labour in Interwar Britain. **AU** Beenstock, Michael; Warburton, Peter. **AA** The City University Business School, London. **SR** Centre for Economic Policy Research Discussion Paper: 105; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, England. **PG** 35. **PR** 1 pound ($2) individuals; 1.50 pounds ($3) companies, libraries, institutions. **JE** 044, 212, 824. **KW** Labour Market. United Kingdom Econometric Model.
AB Using annual data we estimate an econometric model of the interwar labour market in Britain. The model determines aggregate employment, unemployment, the working population and wage rates. The latter are

determined via an augmented Phillips Curve, in which the 'natural' rate of unemployment is hypothesised to be influenced, inter alia, by the real level of unemployment benefit. Various counterfactual simulations are conducted to explore the effects of social security policy, monetary policy and the state of the world economy on domestic labour market developments. We find that much, though not all, of the rise in interwar unemployment was an equilibrium phenomenon.

Behrman

PD November 1985. **TI** Determinants of Nutrient Consumption and Health Status of Individual Family Members in Rural India: A Latent Variable Analysis. **AU** Behrman; Jere, R.; Deolalikar, Anil B. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-33; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 19. **PR** No Charge. **JE** 913, 718. **KW** Food Prices. Agricultural Prices. Nutrient Consumption. Health Status. India.

AB In this paper we present the first estimates to our knowledge of the impact of food and agricultural prices and of assets on the nutrient consumption and health status of different groups of individuals within a household (viz., husbands, wives, sons, daughters). The data we use are from rural South India for the period 1976-78. Unlike most previous studies, we consider a wide range of nutrient intakes, including calories, proteins, calcium, iron, beta-carotene, thiamine, niacin, riboflavin, and vitamin C, as well as a wide range of health outcomes, including anthropometric measures of height, weight, fat-fold, and arm circumference, and recall data on morbidity. The various types of nutrient intakes and health outcomes are treated as imperfect indicators of unobserved unidimensional variables for nutrient consumption and health status, respectively, within a latent variable framework. Our study should add significantly to our understanding of important dimensions of the nutrition and health behavior of farm households in a low-income rural area.

Behrman, Jere R.

PD 1985. **TI** How Do Food and Product Prices Affect Nutrient Intakes, Health and Labor Force Behavior for Different Family Members in Rural India?. **AU** Behrman, Jere R.; Deolalikar, Anil B. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-7; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 29. **PR** No Charge. **JE** 913, 813, 711. **KW** Nutrient Intakes. Health Outcomes. Labor Market Behavior. Food Price. Agricultural Price. Household-Farm Behavior.

AB In the present study we present the first estimates to our knowledge of the impact of food and agricultural price and agricultural asset impact on individual nutrient intakes, health outcomes, and labor market behavior. These should add significantly to our understanding of these important dimensions of household-farm behavior in a particular rural developing country context. We first briefly present the household-farm conceptual framework, then discuss the data, and finally turn to the estimates.

PD January 1985. **TI** How Important is 'The woman Behind the Man?' Spouse Interactions in Brazilian Earnings Functions. **AU** Behrman, Jere R.; Birdsall, Nancy. **AA** Behrman: University of Pennsylvania. Birdsall: The World Bank. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-8; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 14. **PR** No Charge. **JE** 825, 851, 824. **KW** Brazil. Human Capital of Wife. Earnings Functions. Productivity of Wife.

AB In the present study we first argue that more systematic consideration of earnings functions suggests that the wife's human capital may affect the returns to schooling and to experience and not just enter in additively as in previous studies. Second, we introduce an additional measure of the wife's productivity beyond her schooling: the difference between the husband's actual schooling and what is his expected schooling given the wife's schooling if there were perfect assortative mating on schooling. We argue that this difference may reflect unobserved productivity characteristics of the wife which may contribute to the husband's earnings through her household productivity. That is, a woman with low schooling who has an unusually highly educated husband may herself have strong unobserved productivity characteristics which account for this match. We note that the same variable, alternatively, may reflect oppositely-signed characteristics of the husband, but such an interpretation implies the opposite sign of any effect on the husband's earnings -- a possibility that we can test empirically. Third, we utilize a data set from urban Brazil, a society for which such studies have not been undertaken previously to our knowledge and in which the extent to which women dominate in household production seems to be, if anything, greater than in the industralized countries.

PD August 1985. **TI** Commodity Price Instability and Economic Goal Attainment in Developing Countries. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-24; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 22. **PR** No Charge. **JE** 121, 023. **KW** Commodity Price Instability. Developing Countries. Macroeconomic Goal Attainment.

AB Does the evidence suggest that international primary commodity price instabilities have deleterious effects on primary-commodity-exporting developing economies? This question is obviously of great importance in the context of the claims about negative effects of primary commodity instability on developing countries and primary-commodity exporters. The answer to it has been debated extensively. The present paper reviews some of the major contributions to this debate, both on a micro and macro level.

PD November 1985. **TI** Will Developing Country

Nutrition Improve with Income? A Case Study for Rural South India. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-32; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 19. **PR** No Charge. **JE** 718, 914, 913, 112. **KW** Malnutrition. Rural South India. Economic Development. Nutrient Income Elasticities. Food Income Elasticities.

AB Shah has argued that, even at low levels of income, considerable weight is given by households and individuals to such attributes as taste in making marginal food demand decisions -- at least in comparison to the weight placed on nutrition. If this is indeed the case, it is possible, as Behrman and Wolfe have conjectured, that high food income elasticities may be consistent with low nutrient income elasticities. In the present paper our contribution is to explore this possibility for a relatively poor, malnourished sample from rural south India. Our procedure is to compare directly reduced-form elasticity estimates for major foods with those for major nutrients. For the determinations of each food and each nutrient intake we compare the expenditure elasticities obtained from four specifications: a simple log linear Engel curve, a relation with geographical and time dichotomous variables to control for differing prices and other characteristics in different markets in addition to expenditures, and two with fixed effects in addition. These fairly simple estimated relations give important insights into the assertion by the World Bank and others that economic development will lead to substantial improvements in nutrient intakes among members of currently poor populations.

PD December 1985. **TI** Empirical Studies of Agricultural Supply. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-36; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 12. **PR** No Charge. **JE** 711. **KW** Agricultural Supply Functions.

AB One of the longest and most fruitful areas for econometric studies has been the investigation of agricultural supply functions. Recently there have been supply response studies with systematic emphasis on systemic characteristics, risk aversion, the household/farm model framework and alternative representations of price expectations. This article reviews these basic developments in empirical studies of agricultural supply responses by starting with the most common framework for such analysis and then considering what questions arise when some of the traditional assumptions are weakened.

PD December 1985. **TI** Wages and Labor Supply in Rural India: The Role of Health, Nutrition and Seasonality. **AU** Behrman, Jere R.; Deolalikar, Anil B. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-30; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 24. **PR** No Charge. **JE** 718, 913, 112, 825. **KW** Rural South India. Labor Productivity. Nutrient Intakes. Health Status.

AB In this paper we explore, for a rural south Indian sample, what is the nature of seasonality in the effects of nutrition intakes and health status on labor market productivity as reflected in wages and labor supplies. Our exploration attempts to improve on the previous literature by treating health and nutrition as simultaneously determined with wages and labor supply, focusing on marginal effects under the maintained hypothesis that wages reflect marginal productivities -- which also effectively controls for the type of tasks, and controlling for seasonality within our integrated framework. We investigate questions such as the following. Do the impacts of nutrition and health differ between the peak and slack labor seasons? Is there evidence of differential direct links between nutrient intakes and short-run productivity with little impact on longer-run health status as might be suggested by the adaptability hypothesis emphasized by Payne and Culter (1984), Sukhatme (1982), Srinivasan (1981) and others? Are the seasonal effects different for wages than for labor supply? Do the seasonal effects differ for males versus females?.

PD December 1985. **TI** Seasonal Demands for Nutrient Intakes and Health Status in Rural South India. **AU** Behrman, Jere R.; Deolalikar, Anil B. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-31; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 31. **PR** No Charge. **JE** 718, 913. **KW** Rural South India. Health Status. Nutrient Intakes. Seasonal Health Effects.

AB Seasonal variations are substantial in many rural areas of developing countries. Seasonal fluctuations often are great in environmental conditions, food availability, food prices, and labor demands. Chambers, Longhurst and Payne, Schofield, and others have suggested that such variations may have substantial impact on nutrition and health status. However, even if seasonal variations in environmental conditions, income and prices are substantial, seasonal savings and dissavings patterns may preclude there being much impact on nutrient intakes. Moreover, even if there are seasonal patterns in nutrient intakes, adjustments in energy expenditure may mitigate the effect on indicators of even fairly short-run health status. Whether seasonal variations in such variables as prices affect nutrition and health status substantially, thus, is an empirical question. Our contribution is this paper is to explore such impacts for a rural south Indian sample by investigating questions such as the following: Do nutrient intakes and health status vary seasonally? Do demands for nutrient intakes differ significantly across seasons? Do price and asset elasticities differ seasonally? Are these seasonal effects different for nutrient intakes of men versus women versus boys versus girls? Likewise, does health status differ significantly across seasons and among demographic groups? Do comparisons of the nutrient and health status results indicate similar or differential responses to prices and assets? Do parental preferences regarding the equity-productivity tradeoff and favoring children by birth order or gender in the intrahousehold allocation of nutrients vary across seasons? We organize our investigation of these questions by first discussing briefly alternative farm-household models of demand for nutrient intakes and health status, then presenting and summarizing our data, and finally presenting and discussing our empirical estimates.

PD 1986. **TI** Communication on "Returns to Education: A Further International Update and Implications". **AU** Behrman, Jere R.; Birdsall, Nancy. **AA** Behrman: University of Pennsylvania. Birdsall: The World Bank. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-29; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 4. **PR** No Charge. **JE** 912. **KW** Education. Returns to Education.

AB Psacharopoulos '8 has provided a useful service by updating his survey on estimates of the return to education and their implications. However his update excludes discussion of several recent studies that question whether the returns to education are as high or of the nature that Psacharopoulos suggests. To put his survey into perspective, a brief review of some of the studies that he ignores is presented here.

PD January 1986. **TI** Imperfect Assortative Mating, Unobserved Human Capital and Earnings Determinants for Brasilian Males. **AU** Behrman, Jere R.; Birdsall, Nancy. **AA** Behrman: University of Pennsylvania. Birdsall: The World Bank. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 86-4; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 19. **PR** No Charge. **JE** 851, 824, 811. **KW** Earnings Functions. Imperfect Assortative Mating. Human Capital. Brazil. Schooling. On-the-Job Experience.

AB A number of studies with special data or using special techniques suggest that standard earnings function estimates may misrepresent the impact of schooling and of on-the-job experience because of the failure to control for usually unobserved components of human capital. We propose an empirically tractable representation of such components of human capital in the form of the difference in the individual's expected schooling given his (or her) spouse's education and his (her) actual schooling. We argue that this construct may provide useful added information about productivity beyond that embodied in the standard schooling measure, particularly in societies in many parts of the developing world in which marginal schooling decisions tend to be made when individuals are very young and years before marriage. We demonstrate the use of this measure of unobserved human capital with data from the 1970 Brasilian census. Our results for adult males suggest that our unobserved human capital variable is representing primarily characteristics of these males (and not their wives), that the formulation with the unobserved human capital variable included is statistically preferable to the standard formulation, and that the inclusion of this unobserved human capital construct leads to a different understanding about how unobserved human capital increases earnings both through increasing no-human-capital-investment gross earnings and the impact of on-the-job training.

PD January 1986. **TI** Peeking into the Black Box of Econometric Models of the Household. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 86-3; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 13. **PR** No Charge. **JE** 851. **KW** Economic Models of the Household.

AB Given our present state of knowledge, it is pretty dark in the black box of economic models of the household. However Rosenzweig's survey usefully could be extended to acknowledge that some peeks inside are possible empirically, although at a data cost which limits wide replicability. Limited efforts to peek inside theoretically lead to the conclusion that testing of alternative hypotheses about the functioning of households is difficult since usually the predictions regarding the reduced forms do not differ for existing data. In such a case there is nothing to recommend the alternative over the economic household model or vice versa except for simplicity. Because of such possibilities, nevertheless, care must be taken in interpretation because often the identification of the impact of particular variables (e.g., schooling) depends upon assuming away other a priori plausible affects.

PD January 1986. **TI** Is Child Schooling a Poor Proxy for Child Quality?. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 86-2; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 30. **PR** No Charge. **JE** 912, 851. **KW** Schooling. Child Quality. Investment in Children.

AB I explore the question: how good a proxy is child schooling for child quality? The answer to this question is shown to depend on the definition of quality, the nature of intrafamilial allocation processes, interfamilial differences in the determinants of schooling investments, and the extent of imperfect information at the time of schooling investments.

PD February 1986. **TI** Health and Nutrition. **AU** Behrman, Jere R.; Deolalikar, Anil B. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-25; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 76. **PR** No Charge. **JE** 913, 112, 825. **KW** Health. Nutrition. Development. Productivity.

AB In recent years economists have directed increasing attention towards exploring the determinants of and the impact of health and nutrition in the development process. Despite such efforts substantial lacunae remain in our knowledge about health and nutrition and development. Controversies exist about the extent of health and nutrition problems, about the determinants of health and nutrition in general and the role of income in particular, about the interrelations between health and nutrition, about the impact of health and nutrition on productivity, and, for all of these reasons, about health and nutrition policy design. In this chapter we review a number of these issues regarding health and nutrition in developing countries and available studies on the determinants of health and nutrition and on their impact on productivity in developing countries. We consider first a theoretical framework and some issues pertaining to the empirical representation of health and nutrition. We then survey existing studies on both health and nutrition determinants and on their productivity impact and conclude with some discussion of policy issues and directions for future research.

Bergstrom, Ted

PD April 1986. **TI** The Efficiency of the Supply of Public Education. **AU** Bergstrom, Ted; Rubinfeld, Daniel; Roberts, Judith; Shapiro, Perry. **AA** Bergstrom: Department of Economics, University of Michigan at Ann Arbor. Rubinfeld: School of Law, University of California Berkeley. Roberts: School of Business, USC. Shapiro: Department of Economics, University of California Santa Barbara. **SR** National Bureau of Economic Research Working Paper: 1901; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 912. **KW** Efficiency. Supply of Education. Education.

AB The question of whether governments spend too much or too little has been a frequent subject of debate, but has been infrequently analyzed. This paper proposes and then applies a methodology which checks to see whether the "Samuelson condition" for the efficient provision of local public education is satisfied, i.e. whether the sum over the school district of individual marginal rates of substitution between public education and a private numeraire equals the marginal rate of technical substitution between these two goods. The econometric methodology uses a micro-based approach to the estimation of marginal rate of substitution functions, which accounts for possible biases associated with the selection of school districts by individual households.

Bernanke, Ben S.

PD April 18, 1986. **TI** Alternative Explanations of the Money-Income Correlation. **AA** Princeton University. **SR** Princeton Econometric Research Program Memorandum: 321; Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 47. **PR** $2.00. **JE** 311, 211. **KW** Monetary Policy. Financial Intermediation. Vector Autoregressions.

AB Standard explanations of the bivariate correlation of money and income attribute this correlation to an inability of agents to discriminate in the short run between real and nominal sources of price shocks. This paper is an empirical comparison of the standard explanation with two alternatives: 1) the "credit view", which focuses on financial market imperfections rather than real-nominal confusion; and 2) the real business cycle approach, which argues that the money-income correlation reflects a passive response of money to income. The methodology, which is a variant of the Sims VAR approach, follows Blanchard and Watson (1984) in using an estimated, explicitly structural model to orthogonalize the VAR residuals. (This variant methodology, I argue, is the more appropriate for structural hypothesis testing.) The results suggest that the standard explanations of the money-income relation are largely, but perhaps not completely, displaced by the alternatives.

Bhatia, Kul B.

PD December 1985. **TI** Taxes, Intermediate Goods, and Relative Prices: The Case of Variable Coefficients. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Department of Economics Research Report: 8604; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 26. **PR** No Charge. **JE** 022, 323. **KW** Output Tax. Production Subsidy. Tax-Incidence. Price Effects.

AB Price effects of an output tax in Sector 1 and an equivalent production subsidy in the second industry are analyzed in a general equilibrium model. Each commodity satisfies final demand and uses two primary inputs and the other good as an intermediate product. Production coefficients are variable and demand is elastic. In a Leontief model with fixed coefficients, Metzler showed that price of the taxed good will rise and price of the subsidized good will fall. This result generally holds under less restrictive conditions also although it is sometimes reversed. How the topic relates to the tax-incidence literature is also discussed.

Bhattacharya, Sudipto

PD April 1985. **TI** Sequential Research and the Adoption of Innovations. **AU** Bhattacharya, Sudipto; Chatterjee, Kalyan; Samuelson, Larry. **AA** Bhattacharya: University of California, Berkeley; Chatterjee; Samuelson: Pennsylvania State University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-86-18; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 40. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 621. **KW** Sequential Research. Diffusion.

AB This paper examines a firm which can either adopt an innovation of uncertain profitability, reject the innovation, or delay such a decision in order to conduct a costly experiment which yields information on the innovation's profitability. We exploit the established literature on sequential sampling to derive the optimal experimentation strategy of the firm. We then employ these results to construct a theory of the diffusion of innovation. Firms are assumed to hold identical prior expectations of an innovation's profitability, and to conduct privately observed experiments on its profitability. The naturally arising distribution of experimental results yields a distribution of adoption times which exhibits the stylized facts established by the empirical literature on the diffusion of innovation. We finally examine the implications of strategic interactions between firms, where this interaction affects both the learning process and the payoffs from adopting.

PD May 1985. **TI** Preference Shocks, Liquidity and Central Bank Policy. **AU** Bhattacharya, Sudipto; Gale, Douglas. **AA** Bhattacharya: University of California, Berkeley. Gale: University of Pennsylvania. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-86-17; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 39. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00

outside United States, Canada and Puerto Rico). **JE** 023, 311, 314. **KW** Liquidity. Reserves. Discounting. Central Bank.

AB We characterise the role of a central bank as a mechanism designer for risk-sharing across banks that are subject to privately observed "liquidity shocks". The optimal mechanism involves borrowing/lending from a "discount window". The optimal discount rate and the induced distortions in holdings of liquid assets suggest a rationale for subsidised lending and reserve requirements on the observable part of liquid asset holdings.

TI Distinguishing Panics and Information-Based Bank Runs: Welfare and Policy Implications. **AU** Jacklin, Charles J.; Bhattacharya, Sudipto.

PD January 1986. **TI** Portfolio Choice in Research and Development. **AU** Bhattacharya, Sudipto; Mookherjee, Dilip. **AA** Bhattacharya: University of California, Berkeley. Mookherjee: Stanford University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-86-19; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 30. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 026, 621. **KW** Risk. Correlation. Research Strategy.

AB This paper analyses the implication of a "winner -- take-all" patent mechanism on the choices of riskiness of research strategies by competing firms, as well as their incentives to duplicate research projects in a one-shot complete information context where competitors choose from different research strategies that affect the riskiness and/or correlation of their research performance. Nash equilibrium choices are compared with socially optimal ones. It is shown neither society nor firms have any preference for correlation per se, while divergences between social and privately optimal levels of risk depend on skewness characteristics of the distribution over discovery dates and on common levels of risk-aversion.

Bhiladwalla, Maharukh B.

PD January 1985. **TI** An Econometric Model of the World Rice Market. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-12; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 33. **PR** No Charge. **JE** 712, 212. **KW** Rice.

AB This paper presents estimates of an econometric model of the world rice market.

Bick, Avi

PD January 1986. **TI** Identifying the Utility Function Corresponding to a Given Stock Price Process. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 369; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 18. **PR** $2.00. **JE** 313, 022. **KW** Diffusion Process. Stock Price. Utility Function.

AB We identify the utility function which the representative individual must have in equilibrium (in a setup to be elaborated upon) if a stock price follows a general diffusion process.

Bils, Mark Joseph

PD December 3, 1985. **TI** Pricing in a Customer Market. **AA** Department of Economics University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 31; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 30. **PR** No Charge. **JE** 022, 131, 611. **KW** Price Markup. Optimal Pricing.

AB In standard pricing models movements in demand are partially offset by price responses. In a customer market, however, I find that optimal pricing is to lower price/marginal cost markup in a period of high demand. Therefore price may magnify, rather than stabilize, demand movements. I consider a monopolist selling a good of which first-time consumers are uncertain. Repeat customers, however, know the product works, and are therefore willing to pay discretely more than comparable new consumers. The monopolist trades off the pricing objectives of exploiting past customers and attracting new ones. In a period with many new potential customers it is optimal to give more importance to attracting; so the monopolist lowers its markup.

Birdsall, Nancy

TI How Important is 'The woman Behind the Man?' Spouse Interactions in Brazilian Earnings Functions. **AU** Behrman, Jere R.; Birdsall, Nancy.

TI Communication on "Returns to Education: A Further International Update and Implications". **AU** Behrman, Jere R.; Birdsall, Nancy.

TI Imperfect Assortative Mating, Unobserved Human Capital and Earnings Determinants for Brazilian Males. **AU** Behrman, Jere R.; Birdsall, Nancy.

Black, Jane

PD April 1986. **TI** The Role of Strategic Information Transmission in a Bargaining Model. **AU** Black, Jane; Bulkley, George. **AA** Department of Economics, University of Exeter, England. **SR** University of British Columbia Department of Economics Discussion Paper: 86-15; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C. CANADA V6T 1Y2. **PG** 27. **PR** **JE** 026. **KW** Valuation of Outcomes. Bargaining Models. Optimal Signals.

AB Although uncertainty about opponents valuations can result in inefficient outcomes in bargaining models it may not be in the private interest of either party to reveal their valuation to the other. It is shown that if each can send a verifiable signal, which partially reveals their valuations, then efficient trade is possible if optimal signals, characterised in the paper, are used. Under two sided uncertainty both parties share in the increased joint surplus which results from this communication. A mediator may be able to play a role in constructing optimal signals.

Blackorby, Charles

PD April 1986. **TI** Welfare Ratios and

Distributionally Sensitive Cost-Benefit Analysis. **AU** Blackorby, Charles; Donaldson, David. **AA** University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-12; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C. CANADA V6T 1Y2. **PG** 43. **PR JE** 024, 225. **KW** Welfare. Welfare Ratios.

AB We introduce a new method for distributionally sensitive cost-benefit analysis that uses household welfare ratios (the ratio of household income to the appropriate poverty line) as an index of each household member's well-being. Advantages include: (i) welfare ratios are easy to compute and interpret, and they take account of economies of scale in consumption; (ii) the method is price-sensitive, and household-specific prices may be used, allowing for rationing, public goods and work effort; (iii) welfare ratios are linear in income and therefore concave (not a general property of money metrics), ensuring that their quasi-concave aggregation will be consistent with normal ethical judgements; and (iv) welfare ratios economize on interpersonal comparisons of utility, needing only the comparisons provided by the poverty lines.

Bloom, David E.

PD March 1986. **TI** Models of Firm Behavior Under Minimum Wage Legislation. **AU** Bloom, David E.; Grenier, Gilles. **AA** Bloom: Department of Economics, Harvard University. Grenier: Department of Economics, University of Ottawa. **SR** National Bureau of Economic Research Working Paper: 1877; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 821, 822. **KW** Minimum Wage Legislation. Government Compliance Mechanisms.

AB This paper sets out three simple models of firm behavior under minimum wage legislation. The key feature of these models is that they account for important aspects of the government's mechanism for monitoring and enforcing compliance with the minimum wage law. The major results of the paper are (1) that minimum wage legislation does not generally lead to upward movements along labor demand curves but rather, that it often leads to movements off, and to the left, of the labor demand curve; (2) that minimum wage legislation is likely to have a positive effect on the distribution of wages paid to workers who would earn less than the minimum in the absence of the legislation, but is not likely to bring all of those workers up to the minimum; and (3) that imposing additional penalties on second offenders promotes compliance by firms with no previous violations. The paper considers the implications of these results for empirical work on the adverse employment effects of minimum wage legislation and for the design of government compliance mechanisms.

Blundell, Richard W.

PD 1985. **TI** Lambda - Constant and Alternative Empirical Models of Life-Cycle Behaviour Under Uncertainty. **AU** Blundell, Richard W.; Fry, Vanessa; Meghir, Costas. **AA** University College London. **SR** University College London Discussion Paper: 85-26; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PR** 1.50 pounds sterling. **JE** 921, 212. **KW** Life-Cycle Models. Consumer Demand.

AB In this paper we consider a variety of alternative empirical representations of life-cycle models of consumer demand and labour supply under uncertainty. Attention is focussed on the implicit preference restrictions underlying each representation. In particular, the popular lambda-constant first differenced specification is found to require within-period preferences to fall within either of two restrictive classes. Moreover, estimated parameters of within-period preferences are not invariant to the choice of monotononic transformation. This link between intertemporal and within-period preferences is shown to be relaxed in alternative representations, in which more flexible within-period preferences can also be estimated.

PD 1985. **TI** Estimation in the Simultaneous Equation Tobit Model. **AU** Blundell, Richard W.; Smith, Richard. **AA** Blundel: University College London. Smith: University of Manchester. **SR** University College London Discussion Paper: 85-29; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 47. **PR** 1.50 pounds sterling. **JE** 211. **KW** Exogeneity. Limited Dependent Variables. Simultaneity. Estimation.

AB In this paper the framework developed in Smith and Blundell (1985) for testing exogeneity in censored, grouped or truncated dependent variable models is extended in order to consider estimation under simultaneity for such models. In particular, we use a minimum Chi-squared approach to compare a new conditional maximum likelihood estimator with the marginal maximum likelihood estimators of Amemiya (1978, 1979), Heckman (1978), and Nelson and Olsen (1978). The new estimator is shown to be asymptotically equivalent to the joint maximum likelihood estimator for just identified models and can be updated by a simple two step algorithm to asymptotic efficiency in overidentified models. This update algorithm provides a natural iterative framework for computing the joint maximum likelihood estimator. The estimators are illustrated using a simultaneous equation Tobit model of labour market behaviour for individual survey data and their relative efficiency is examined through a set of Monte-Carlo simulation experiments.

PD 1986. **TI** Engel Curve Estimation with Individual Data. **AU** Blundell, Richard W.; Meghir, Costas. **AA** University College London. **SR** University College London Discussion Paper: 86-05; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PR** 1.50 pounds sterling. **JE** 921, 229. **KW** Clothing Consumption. Clothing Purchase Frequency. Engel Curves.

AB The increasing availability of good quality continuous survey data has allowed a revival of the analysis of household consumption behaviour. The potential for constructing systems that explain jointly the labour supply and commodity demand decisions of the household is greatly enhanced. This is bound to lead to increasing interest in applied Public Policy analysis. Yet the cost of high quality survey data limits the length of time over which the household can be surveyed. For many goods like clothing, that are purchased infrequently but consumed continuously, observed expenditure over the sample period (two weeks for the United Kingdom Family Expenditure Survey) will not represent the value of actual consumption. In fact, many seroes will be observed, while the positive expenditures will be larger than consumption, as these households will be purchasing for a period larger than the period of observation. Thus some individual consumption expenditures, and consequently total household consumption, is observed with error. This can have severe implications for both Engel curve and complete demand system estimation. In this paper we present and estimate a bivariate model for the consumption and purchase frequency of clothing. We present the appropriate likelihood function and propose a simple two step estimator for Engel curves of goods always consumed but purchased infrequently. We focus on appropriate diagnostic tests and in particular on a test of independence between the two stochastic processes of our model. Finally, we suggest extensions of this analysis to the case of goods with corners. The emprirical results relate to the U.K. Family Expenditure Survey of 1981.

PD May 1986. **TI** Unemployment, Labor Force Participation and Hours of Work. **AU** Blundell, Richard W.; Ham, John; Meghir, Costas. **AA** Blundell; Meghir: University College London. Ham: Princeton University. **SR** University College London Discussion Paper: 86-06; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PR** 1.50 pounds sterling. **JE** 821, 824, 813. **KW** Labor Force Participation. Hours of Work. Reservation Wage Assumption.

AB The underlying reservation wage assumption that defines the widely used definition of labour supply in labour force statistics. In the standard labour supply model all individuals not supplying positive hours of work are assumed to have set their reservation wage above their perceived market wage. On the other hand, labour supply in the labour force statistics is often defined to include not only those supplying positive hours but also those actively searching for work. Indeed, it is often considered appropriate to include those who are discouraged from searching by a low (perceived) probability of a successful outcome to search activity. This paper is an attempt to reconcile these models by allowing labour supply model. This turns out to be a convenient way to enter demand side factors directly into the determination of an individual's labour market position. The model is applied with some success to the working behaviour of married women in the UK Family Expenditure Survey.

Bohi, Douglas R.

PD June 1986. **TI** Evolution of the Oil Market and Energy Security Policy. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Paper: EM86-03; Energy and Materials Division, Resources for the Future, 1616 P Street NW Washington DC 20036, United States of America. **PG** 27. **PR** $5.00 (United States funds only). **JE** 723, 611. **KW** Energy Security. Oil Markets.

AB This paper examines recent and prospective changes in the structure and performance of the world petroleum market, and considers the implications of these changes for the design of United States and international energy security policies. It is argued that market changes make the past a misleading guide to the future, since "panic" responses in the private sector and price spirals from market rigidities are less likely to occur. This observation suggests the need for more rather than less flexibility in the use of strategic oil stocks and other crisis measures. With respect to international concerns, the paper argues that the current International Energy Agency (IEA) plan for emergency response is both obsolete and misguided. However, strengthening of international cooperation is hindered by disparate interests of oil-consuming countries and by concerns about free-riding. A practical suggestion for overcoming these obstacles is offered that involves a mixture of policy initiatives undertaken by different IEA members.

Bohm, Volke

PD December 1985. **TI** Inflation and Welfare in International Trade. **AU** Bohm, Volke; Keiding, Hans. **AA** Bohm: Universitat Mannheim. Keiding: University of Copenhagen. **SR** Universite Catholique de Louvain Centre for Operations Research and Econometrics Discussion Paper: 8601; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 44. **PR** No Charge. **JE** 411, 134. **KW** Inflation. International Trade Inefficiencies.

AB The paper demonstrates the role of inflation as one of the major causes of inefficiencies in international trade. In a model of international trade among two overlapping generations economies it is shown that opening up trade between the two countries may change an efficient autarchic situation to an inefficient free trade equilibrium and that all agents of one country are made worse off under free trade. Furthermore, inefficient international competitive equilibria can always be improved upon through price distortions and/or quantity constraints, but never by choosing a constant exchange rate.

Bokowsky, Jurgen

PD July 1985. **TI** Coordinatisation of Oriented Matroids. **AU** Bokowsky, Jurgen; Sturmfels, Bernd. **AA** University of Darmstadt. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85.21; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 18. **PR** No Charge. **JE** 213. **KW** Combinatorial Geometry. Oriented Matroids.

AB Several important and hard realizability problems of combinatorial geometry can be reduced to the realizability problem of oriented matroids. In this paper we describe a method to find a coordinatization for a large class of realizable cases. This algorithm has been used successfully to decide several geometric realizability problems. It is shown that all realizations found by our algorithm fulfill the isotopy-property.

Boldrin, Michele

PD August 1985. **TI** On the Indeterminacy of Capital Accumulation Paths. **AU** Boldrin, Michele; Montrucchio, Luigi. **AA** Boldrin: University of Rochester. Montrucchio: Politechnico Di Torino, Italy.

SR University of Rochester Center for Economic Research Working Paper: 24; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 33. **PR** No Charge. **JE** 021, 023, 111. **KW** Optimal Growth Models. Discount Parameter. Optimal Path. Capital Accumulation.

AB In neoclassical optimal growth models the stability of the paths of capital accumulation depends on the discount parameter. We prove here that, for discount factors small enough, the policy function which describes an optimal path can be of any type. The result is achieved by making use of the notion of alpha-concavity and it leads to a constructive approach. Given any twice differentiable map we show how to construct an optimal growth problem which produces that map as the optimal policy function. An obvious consequence is that also "chaos" is possible in this class of models.

Bollerslev, Tim P.

TI Modelling the Persistence of Conditional Variances. **AU** Engle, Robert F.; Bollerslev, Tim P.

Boskin, Michael J.

PD March 1986. **TI** New Results on the Effects of Tax Policy on the International Location of Investment. **AU** Boskin, Michael J.; Gale, William G. **AA** Boskin: National Bureau of Economic Research, Stanford. Gale: Stanford University. **SR** National Bureau of Economic Research Working Paper: 1862; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 323, 441. **KW** Foreign Direct Investment. Direct Investment Abroad. Tax Policy. Investment Location.

AB We study the effects of tax laws on foreign direct investment (FDI) and direct investment abroad (DIA), distinguishing in each case between investment financed by retained earnings and investment financed by transfers from abroad. We find that tax policy, through its effect on the rate-of-return available in the United States, has an important effect on the international location of investment. FDI in the United States is very sensitive to after-tax rates-of-return available here. United States direct investment abroad is also affected, although to a lesser extent. We use these estimates to examine the effects of the 1981-82 tax changes on the international location of investment. We estimate that the tax changes lowered annual DIA by $0.5 billion to $1.0 billion (2 per cent to 4 per cent of its 1980 value), and raised annual FDI by $2 billion to $4 billion (11 per cent of 20 per cent of its 1980 value). We also discuss the welfare effects of tax policy toward international investment. Our results suggest that the tax effects on the international location of investment are important. Tax policies, such as ACRS and the ITC, which raise the after tax rate-of-return on new investment without losing revenue from previous investment, not only stimulate domestic fixed investment, but also attract additional investment from abroad. The additional investment supplements the domestic investment impact on productivity and raises corporate tax revenue. However, our results should be taken as preliminary estimates, not as definitive statements about the long-run impacts of tax policy.

PD April 1986. **TI** Social Security: A Financial Appraisal Across and Within Generations. **AU** Boskin, Michael J.; Kotlikoff, Laurence J.; Puffert, Douglas J.; Shoven, John B. **AA** Boskin and Kotlikoff: National Bureau of Economic Research, Cambridge. Puffert and Shoven: Department of Economics, Stanford University. **SR** National Bureau of Economic Research Working Paper: 1891; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 915. **KW** Social Security. Internal Rate of Return. Present Value of Benefits.

AB This paper computes the expected present value of Social Security retirement benefits and taxes for households of different marital circumstances, incomes, and age cohorts. Also computed are the net gain or loss from participation in the system and the expected internal rate of return it offers various participants. The paper calculates the marginal linkage between benefits and contributions, and also examines how the age of entry into the covered workforce affects the participant. All computations are made for the 1985 Social Security and income tax laws. The general results are that Social Security offers vastly different terms to households in different circumstances. The net gain or loss varies by $200,000 and the real internal rate of return on contributions ranges from negative numbers to 6.6 per cent for households of different ages, income levels, and marital status. These differences are far greater than the widely debated distributional effects of relevant income tax alternatives. We also find that there is a great deal of variance in the marginal linkage of benefits and taxes with many households facing a situation where the present value of benefits increases from 0 to 30 cents per extra dollar of taxes paid.

Boyd, John H.

TI Dynamic Coalitions, Growth, and the Firm. **AU** Prescott, Edward C.; Boyd, John H.

Bracken, Paul

PD April 1986. **TI** Issues Arising in Management And Control of Naval Forces. **AU** Bracken, Paul; Shubik, Martin. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 787; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 20. **PR** No Charge. **JE** 114, 511. **KW** Deterrence. Naval Forces.

AB This paper takes the context of political and military command as given and considers the fundamental question of how a modern navy fits in with the usual conception of nuclear deterrence between the United States and the Soviet Union. We here summarize the major issues, questions, and conclusions from this research as they serve to provide the context for our observations on the relevance of and potential for operations research and decision sciences contributions to providing understanding and analysis for these critical and highly qualitative problems.

Breeden, Douglas T.

PD April 1986. **TI** Empirical Tests of the Consumption-Oriented CAPM. **AU** Breeden, Douglas T.; Gibbons, Michael R.; Litzenberger, Robert. **AA** Breeden: Fuqua School of Business, Duke University.

Gibbons and Litzenberger: Graduate School of Business, Stanford University. **SR** Stanford Graduate School of Business Research Paper: 879; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. **PG** 42. **PR** No Charge. **JE** 313. **KW** Capital Asset Pricing Model. Mean-Variance Efficiency. Consumption. Asset pricing models.

AB The empirical implications of the consumption-oriented capital asset pricing model (CCAPM) are examined, and its performance is compared with a market portfolio-oriented capital asset pricing model. Measurement problems associated with reported aggregate consumption are analyzed, and some adjustments for these problems are incorporated. When using measured aggregate consumption to estimate risk, the evidence on the validity of the parameter restrictions is mixed. The CCAPM is reformulated in terms of a return on the portfolio of assets which has maximum correlation with real aggregate consumption growth. For the overall period, the ex ante mean-variance efficiency of this portfolio is rejected, which is inconsistent with the CCAPM. For all tests the market price of consumption risk is significantly positive. Estimates of the expected real return on the zero consumption beta portfolio are less than 0.15 per cent (annualized) for all subperiods.

Brenner, Menachem

PD February 1986. **TI** Estimation of Errors in the Implied Standard Deviation. **AU** Brenner, Menachem; Galai, Dan. **AA** Brenner: The Hebrew University and New York University. Galai: The Hebrew University and UCLA. **SR** New York University Salomon Brothers Center Working Paper: 370; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 19. **PR** $2.00. **JE** 313. **KW** Call Options. Implied Standard Deviation.

AB In this paper we derive the distribution properties of the estimated implied standard deviation (ISD) with specific attention to the dispersion of the estimate. The effects of random errors in prices of call options on the estimation of the ISD are analyzed. A model is derived to estimate the variability of errors in the estimation of the ISD's. Simulations are used to better understand the ways various parameters affect the variability of the errors in the ISD's and some empirical observations are described.

Bresnahan, Timothy F.

PD May 19, 1986. **TI** Entry in Monopoly Markets. **AU** Bresnahan, Timothy F.; Reiss, Peter C. **AA** Bresnahan: Department of Economics, Stanford University. Reiss: Graduate School of Business, Stanford University. **SR** Stanford Graduate School of Business Research Paper: 883; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. **PG** 40. **PR** No Charge. **JE** 611. **KW** Monopoly. Entry. Automobile Dealers.

AB Existing empirical models of entry in concentrated markets make indirect inferences about the competitive effect of entry. We propose empirical models whose structural equations are those of several different game-theoretic models of entry. These models are used to estimate the competitive effect that entry has on the margins of monopoly automobile dealerships in the United States.

Brunner, Karl

PD September 1984. **TI** Shadow Open Market Committee Policy Statement and Position Papers. **AU** Brunner, Karl; Levy, Mickey D.; Jordan, Jarry L.; Rasche, Robert H. **AA** Brunner: University of Rochester. Levy: Fidelity Bank. Jordan: University of New Mexico. Rasche: Michigan State University. **SR** University of Rochester Center for Research in Government Policy and Business Working Paper: PPS 84-3; Graduate School of Management, University of Rochester, Rochester, NY 14627. **PG** 33. **PR** No Charge. **JE** 134, 322, 311, 133. **KW** Shadow Open Market Committee.

AB This paper presents the policy statement and position papers of the Shadow Open Market Committee from their September/1984 meeting.

PD March 1985. **TI** Shadow Open Market Committee Policy Statement and Position Papers. **AU** Brunner, Karl; Levy, Mickey D.; Jordan, Jerry L.; Rasche, Robert H.; Tumlir, Jan. **AA** Brunner: University of Rochester. Levy: Fidelity Bank. Jordan: First Interstate Bancorp. Rasche: Michigan State University. Tumlir: GAAT. **SR** University of Rochester Center for Research in Government Policy and Business Working Paper: PPS 85-1; Graduate School of Management, University of Rochester, Rochester, NY 14627. **PG** 66. **PR** No Charge. **JE** 322, 133, 411. **KW** Shadow Open Market Committee.

AB This paper presents the policy statement and position papers of the Shadow Open Market Committee from their March/1985 meeting.

Buffie, Edward F.

PD January 1985. **TI** Imported Capital Goods, Accumulation and the Theory of Commercial Policy in Less Developed Countries. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-16; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 36. **PR** No Charge. **JE** 422. **KW** Commercial Policy. Capital Accumulation. Trade Strategies.

AB This paper analyzes the effects of commercial policy in a general three-factor, three-sector model that allows for endogenous capital accumulation, nontraded goods and both consumption and capital good imports. Simple, well defined conditions are derived under which different trade strategies raise or lower real wages, land and capital rentals and are effective in promoting capital accumulation.

PD June 1985. **TI** Shadow Prices and Substitution in Trade Distorted Economies. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-9; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 71. **PR** No Charge. **KW** Shadow Pricing Rules. Accounting Ratios. Shadow Exchange Rates.

AB This paper derives simple and operational shadow pricing rules in a three-sector, three-factor general equilibrium model incorporating nontraded goods. Under the Little-Mirrlees method, if a single simple and empirically plausible condition is satisfied, the accounting ratio for land will exceed unity and those for capital and labor will lie below unity. If this condition is not satisfied or cannot be verified, it is still possible to fix some accounting ratios above or below unity just from knowledge of the signs of substitution patterns in consumption and factor intensity patterns in production. Guidelines are also derived for setting the shadow exchange rate and the shadow prices of nontraded goods or quota restricted imports. It is shown that the alternative, domestic price method generally yields less useful guidelines than the Little-Mirrlees method.

PD June 1985. **TI** Trade Liberalization in Oligopolistic Industries: The Quota Case. **AU** Buffie, Edward F.; Spiller, Pablo T. **AA** Buffie: University of Pennsylvania. Spiller: Hoover Institution on War, Revolution and Peace. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-11; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 29. **PR** No Charge. **JE** 422, 411. **KW** Quota Restrictions. Liberalization. Prices. Output.

AB This paper analyzes the short- and long-run effects on domestic price and output of partially liberalizing quota restrictions in a general model of oligopolistic interactions. It is shown that perverse outcomes are possible in a number of cases, including that of rational conjectures. A larger quota may result in an increase in domestic output in the short-run and a higher price in the long-run. The relationship between oligopolistic conjectures and the number of firms in the industry is critical in determining the long-run outcome.

PD January 1986. **TI** Commercial Policy, Growth and the Distribution of Income in a Dynamic Trade Model. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 86-7; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 52. **PR** No Charge. **JE** 422, 411. **KW** Capital Accumulation. Commercial Policy.

AB This paper analyzes the effects of commercial policy in a dynamic three-factor, three-sector model that allows for endogenous capital accumulation, nontraded goods and both consumption and capital good imports. Simple, well defined conditions are derived under which different trade strategies raise or lower real wages, land and capital rentals and are effective in promoting capital accumulation.

Buiter, Willem H.

PD January 1986. **TI** Macroeconomic Policy Design in an Interdependent World Economy: An Analysis of Three Contingencies. **AA** Economic Growth Center, Yale University. **SR** Centre for Economic Policy Research Discussion Paper: 92; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 50. **PR** 1 pound ($2.00) individuals; 1.50 pounds ($3.00) companies, libraries, institutions. **JE** 133, 321, 431, 423. **KW** International Economic Interdependence. Macroeconomic Policy Design. United States Dollar Collapse. Exchange Rates.

AB The paper uses a small analytical model of two regions, the United States and the Rest of the Industrial World, to analyze three topical issues concerning international economic interdependence and macroeconomic policy coordination. They are: (1) What should be the monetary and/or fiscal response in the Rest of the Industrial World to a tightening of United States fiscal policy and what should be the United States monetary response? (2) What should be the monetary and/or fiscal response in the United States and in the Rest of the Industrial World to a 'collapse of the United States dollar?' The paper highlights the importance of determining the causes of such a 'hard landing' for the United States dollar, as the appropriate policy responses are very sensitive to this; (3) What should be the macroeconomic policy response in the Industrial World to a disappointing real growth performance? Again the correct identification of the reason(s) for the disappointment is shown to be crucial. The final section discusses and qualifies the activist policy conclusions derived from the formal analysis.

PD February 1986. **TI** Macroeconomic Responses by Developing Countries to Changes in External Economic Conditions. **AA** Economic Growth Center, Yale University. **SR** Centre for Economic Policy Research Discussion Paper: 93; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 56. **PR** 1 pound ($2.00) individuals; 1.50 pounds ($3.00) companies, libraries, institutions. **JE** 133, 310, 315, 320, 430. **KW** Stabilization Policy. Developing Countries. External Shocks. Financial Markets. Credit Rationing.

AB The paper presents a non-technical survey of some of the issues involved in the design of stabilization policy in developing countries with special emphasis on policy responses to external shocks. First, the six most important external economic parameters of developing countries are reviewed: 1) the terms of trade, 2) the growth of world markets, 3) the cost and availability of private external finance, 4) the cost and availability of official and other concessional finance, including aid, 5) the world rate of inflation and 6) the exchange rates between the currencies of the major industrial countries. The paper then reviews the macroeconomic policy arsenal and the demand and supply effects of the various policy instruments (monetary and credit policy, the entire array of fiscal instruments, exchange rate policy, the use of exchange and capital controls and incomes policy). Finally, there is a discussion of stabilization responses to four external shocks: a deterioration in the terms of trade, a slowdown in the rate of growth of export demand, an increase in the interest rate at which developing countries borrow abroad and an increase in the external rate of inflation. The prevalence of repressed financial markets and credit rationing makes effective demand and effective supply responses to monetary, fiscal and exchange rate policy quite different from what they are in most of the industrial world.

PD April 1986. **TI** A Gold Standard Isn't Viable

Unless Supported by Sufficiently Flexible Monetary and Fiscal Policy. **AA** Economics Department, Yale University. **SR** National Bureau of Economic Research Working Paper: 1903; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 311, 431. **KW** Gold Standard. Domestic Credit Expansion.

AB The paper studies an idealised gold standard in a two-country setting. Without flexible national domestic credit expansion (dce) policies which offset the effect of money demand shocks on international gold reserves, the gold standard collapses with certainty in finite time through a speculative selling attack against one of the currencies. Various policies for postponing a collapse are considered. When a responsive dce policy eliminates the danger of a run on a country's reserves, the exogenous shocks disturbing the system which previously were reflected in reserve flows, now show up in the behaviour of the public debt. Unless the primary (non-interest) government deficit is permitted to respond to these shocks, the public debt is likely to rise (or fall) to unsustainable levels. For the idealised gold standard analysed in the paper, viability can be achieved only through the active and flexible use of monetary and fiscal policy.

Bulkley, George

TI The Role of Strategic Information Transmission in a Bargaining Model. **AU** Black, Jane; Bulkley, George.

Calfee, John E.

PD April 1985. **TI** Incentives to Comply With Uncertain Legal Standards. **AU** Calfee, John E.; Craswell, Richard. **AA** Calfee: Bureau of Economics, Federal Trade Commission. Craswell: University of Southern California Law Center. **SR** Federal Trade Commission Bureau of Economics Working Paper: 123; Bureau of Economics, Federal Trade Commission, Washington, D.C. 20580. **PG** 51. **PR** No Charge. **JE** 916. **KW** Uncertain Rules. Compliance. Punishment.

AB Economic models of legal rules often assume that the behavior required by the rule is known in advance by all parties. In practice, though, this is rarely the case. In regulatory fields such as antitrust or securities fraud, or in common law subjects such as torts or contracts, legal rules are often defined in vague terms like "reasonable" or "substantial." At the time the parties must choose their behavior, they may have only a very rough idea of how a court will apply those standards to any particular set of facts. We analyse the effects of such uncertainty on the compliance decisions of profit-maximizing risk-neutral parties. In general, we find that uncertainty may lead the parties subject to the rule either to overcomply or to undercomply. Uncertainty can create a positive probability that an offender will not be held liable, thereby reducing his incentives to comply, a result that is familiar from the criminal deterrence literature. However, uncertainty usually also means that each increment of increased compliance marginally increases the chance that the defendant will not be held liable, thus increasing the chance that the social costs of his behavior will be borne by someone else. This tends to create an incentive to overcomply. As a result, many traditional recommendations of the law-and-economics literature must be abandoned or modified when legal standards are uncertain. For example, the recommendation that penalties should be increased by one over the probability of punishment, in order to prevent underdeterrence, remains valid only in a special set of cases. In other contexts, where incentives to overcomply are present, the multiplier should be much smaller -- possibly even less than one. The traditional recommendation that negligence standards (for example) should be set at the cost-effective level of care must also be modified to take account of potential under- or overcompliance.

PD December 1985. **TI** Cigarette Advertising, Health Information and Regulation Before 1970. **AA** Bureau of Economics, Federal Trade Commission. **SR** Federal Trade Commission Bureau of Economics Working Paper: 134; Bureau of Economics, Federal Trade Commission, Washington, D.C. 20580. **PG** 79. **PR** No Charge. **JE** 531. **KW** Cigarette Advertising. Advertising.

AB This paper discusses the history of cigarette advertising with special attention paid to its responses to government regulation.

Calvo, Guillermo A.

PD December 1984. **TI** Welfare, Banks and Capital Mobility in Steady State - the case of Predetermined Exchange Rates. **AA** Columbia University. **SR** Columbia International Economics Research Center Discussion: 59 (276); Department of Economics, Columbia University, New York, NY 10027. **PG** 46. **PR** $5.00. **JE** 134, 311, 312. **KW** Optimal Rate of Inflation. Banking. Liberalization of Banking. Capital Mobility.

AB We argue that the presence of a stable foreign demand for domestic money is not a reason against a movement towards banking liberalization; but, on the other hand, if either the demand for real domestic monetary balances by foreigners is random, or ends up being a function of the "liquidity" of, say, the Central Bank's assets, then the cost of attracting foreign funds into a relatively liberalised banking system may be significant. Thus, an optimal arrangement may call for an important reduction of the rate of return of bank deposits. We also argue that a possible way to reduce the costs of foreign demand for domestic money may be to have the domestic banking system become a member of some "international" system, and/or to allow "international" banks to operate at home.

PD February 1985. **TI** Temporary and Permanent Exchange Rate and Banking Policy with and Without Capital Mobility. **AA** Columbia University. **SR** Columbia International Economics Research Center Discussion: 70 (278); Department of Economics, Columbia University, New York, NY 10027. **PG** 50. **PR** $5.00. **JE** 441, 431. **KW** Banking Policy. Capital Mobility. Exchange Rate Policy. Devaluation.

AB We wish to be able to understand the impact of temporary, as against permanent, exchange rate and banking policy, and whether the degree of international capital mobility plays any significant role. We will pay special attention to the behavior of the differential effects between permanent and transitory policy when the period of the latter shrinks to zero.

PD February 1985. **TI** Fractured Liberalism - Argentina Under Martines de Hoz. **AA** Columbia University. **SR** Columbia International Economics Research Center Discussion: 58 (275); Department of Economics, Columbia University, New York, NY 10027. **PG** 50. **PR** $5.00. **JE** 121, 133. **KW** Argentina. Anti-Inflationary Policies.

AB We will attempt to shed some more light on the apparent ineffectiveness of Argentine Economic Minister de Hoz's anti-inflationary policies; as a result, we are not going to examine in any great detail aspects of the period that do not appear to be independent determinants of the inflationary process; prominent examples of this kind are issues having to do with income distribution and the rate of investment. On the other hand, our analysis will pay special attention to monetary and fiscal arrangements that have been somewhat neglected by previous writers. The thrust of our analysis can be summarized as follows. We will argue that the roots of the inflation problem during the administration of Martines de Hoz appear to be the Banking and Financial Reforms implemented in the third quarter of 1977, while the root of the problem for the succeeding administrations was de Hoz's gross inability to make the budget deficit consistent with his other policy targets.

Camerer, Colin

PD March 1986. **TI** Rational Price Bubbles in Asset Markets: A Review of Theory and Evidence. **AU** Camerer, Colin; Weigelt, Keith. **AA** Camerer: The Wharton School, University of Pennsylvania. Weigelt: New York University. **SR** New York University Salomon Brothers Center Working Paper: 371; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 43. **PR** $2.00. **JE** 215, 313. **KW** Speculative Bubbles. Rational Bubbles. Experimental Work. Asset Prices.

AB There is much theoretical confusion about whether bubbles are rational, and between types of bubbles. For example, Shiller's (1984) "fads", Tirole's (1982) "growing bubbles", French and Roll's (1984: 19) "mini-speculative bubbles", Cass and Shell's (1983) "sunspots", and Keynes's (1976/1964-:156) "beauty contests" are all different. In this paper, we distinguish theoretically between several types of bubbles, and describe examples and formal evidence about each type. All the bubbles we describe are rational or "near-rational" -- that is, their occurrence is consistent with maximizing behavior and rational expectations; or if not, it would take extraordinary rationality for agents to avoid forming bubbles. Thus, we answer Tirole's (1982:1180) call for "more research..devoted to the explanation of actual price bubbles by non-rational behavior", by adding a bit of irrationality to standard models of rational behavior. These theoretical distinctions are intended to guide future empirical work. To this end, we describe some natural examples of apparent bubbles, and try to match them up with our theoretical bubble types. This armchair empirical work is difficult, because the intrinsic value of assets is so hard to measure (e.g., with collectibles, intrinsic value may be largely aesthetic or psychological); and even if a bubble can be clearly identified, it may not be clear what type of bubble it is. Thus, we conclude that experimental work, in which intrinsic values can be controlled or measured, is a useful way to proceed in studying bubbles. Our theoretical distinctions then become a blueprint for an ambitious agenda of experimentation.

Campbell, John Y.

PD March 1986. **TI** Cointegration and Tests of Present Value Models. **AU** Campbell, John Y.; Shiller, Robert J. **AA** Campbell: Princeton University. Shiller: Yale University. **SR** Yale Cowles Foundation Discussion Paper: 785; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 36. **PR** No Charge. **JE** 211, 313. **KW** Cointegration. Present Value Models. Stock Price Index. Interest Rates. Term Structure. Volatility. Efficient Markets.

AB In a model where a variable Y is proportional to the present value, with constant discount rate, of expected future values of a variable y, the "spread" S - Y - qy will be stationary for some q whether or not y must be differenced to induce stationarity. Thus, Y and y are cointegrated. The model implies that S is proportional to the optimal forecast of next period's change in Y, and also to the optimal forecast of S*, the present value of future changes in y. We use vector autoregressive methods, and recent literature on cointegrated processes, to test the model. When Y is the long-term interest rate and y the short-term interest rate, we find in postwar United States data that S behaves much like an optimal forecast of S* even though as earlier research has shown it is negatively correlated with next period's change in Y. When Y is a real stock price index and y the corresponding real dividend, using annual United States data for 1871-1986 we obtain less encouraging results for the model, although the results are sensitive to the assumed discount rate.

PD April 1986. **TI** Cointegration in Tests of Present Value Models. **AU** Campbell, John Y.; Schiller, Robert J. **AA** Campbell: Department of Economics, Princeton University. Schiller: Cowles Foundation, Yale University. **SR** National Bureau of Economic Research Working Paper: 1885; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 211, 313. **KW** Cointegration. Present Value Models. Stock Price Index. Interest Rates. Term Structure. Volatility. Efficient Markets.

AB In a model where a variable Y is proportional to the present value, with constant discount rate, of expected future values of a variable y, the "spread" S - Y - qy will be stationary for some q whether or not y must be differenced to induce stationarity. Thus, Y and y are cointegrated. The model implies that S is proportional to the optimal forecast of next period's change in Y, and also to the optimal forecast of S*, the present value of future changes in y. We use vector autoregressive methods, and recent literature on cointegrated processes, to test the model. When Y is the long-term interest rate and y the short-term interest rate, we find in postwar United States data that S behaves much like an optimal forecast of S* even though as earlier research has shown it is negatively correlated with next period's change in Y. When Y is a real stock price index and y the corresponding real dividend, using annual United States data for 1871-1986 we obtain less encouraging results for the model, although the results are sensitive to the assumed discount rate.

Card, David

PD February 1986. **TI** Measuring the Effect of CETA Participation on Movements in and out of Employment. **AU** Card, David; Sullivan, Daniel. **AA** Card: Princeton University. Sullivan: Northwestern University. **SR** Princeton Industrial Relations Section Working Paper: 206; Industrial Relations Section, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 29. **PR** $1.50 plus postage. **JE** 811, 824, 215. **KW** Employment Probability. Markov Model. Logistic Regression. Heterogeneity. Random-Effect.

AB In this paper we present several alternative estimators of the effect of CETA participation on movements in and out of employment. Using Social Security earnings records for 1970 to 1979, we construct employment histories for adult males in the 1976 CETA cohort and a control group drawn from the Current Population Study. Our results suggest that CETA participation had a small to moderately large impact on the probability of employment. The estimated effects of classroom training programs are uniformly larger than the effects of non-classroom programs. For both programs, the largest estimates are obtained from a random-effects specification which expresses the probability of employment as a function of year effects, previous employment experience and training effects. We find that a relatively simple first-order Markov model together with a four grid-point distribution of individual effects is remarkably consistent with the employment data for both trainees and controls. The smallest program estimates are obtained from an exact match procedure which compares post-training employment outcomes of trainees and controls with identical pre-training histories. The matched comparisons also highlight some of the difficulties in using nonexperimental data to evaluate the effectiveness of training.

Chalfant, James A.

TI Sparse Data and Risk-Efficient Choice Under Uncertainty. **AU** Collender, Robert N.; Chalfant, James A.

Champ, Bruce A.

PD October 1985. **TI** The Underissuance of National Banknotes During the Period 1875-1913. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 120. **PR** No Charge. **JE** 042, 311. **KW** National Banknotes. Risk of Issuing Banknotes. Backing.

AB This paper attempts to resolve some aspects of the paradox of the under issuance of national banknotes backed by government bonds during 1875-1913 by taking into account risk features that have been previously overlooked or not investigated systematically.

Chatterjee, Kalyan

TI Sequential Research and the Adoption of Innovations. **AU** Bhattacharya, Sudipto; Chatterjee, Kalyan; Samuelson, Larry.

Chick, Victoria

PD March 4, 1986. **TI** The Evolution of the Banking System and the Theory of Swing, Investment and Interest. **AA** University College London. **SR** University College London Discussion Paper: 86-01; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 23. **PR** 1.50 pounds sterling. **JE** 311, 041, 312. **KW** Banking System. Swing. Investment. Interest Rates.

AB As the banks have evolved, their behavior has altered sufficiently to make changes in the theory of saving, investment and interest appropriate. Five stages in banks' evolution are traced. The connection with changes in theory is indicated, including suggestions for changes at the present time.

Christiano, Lawrence J.

PD December 1985. **TI** A Method for Estimating the Timing Interval in a Linear Econometric Model, With an Application to Taylor's Model of Staggered Contracts. **AA** Federal Reserve Bank of Minneapolis Research Department. **SR** Federal Reserve Bank of Minneapolis Staff Report: 101; Research Department, Federal Reserve Bank of Minneapolis, 250 Marquette Avenue, Minneapolis, MN 55480. **PG** 61. **PR** No Charge. **JE** 131, 211. **KW** Temporal Aggregation. Time Series Models. Identification. Maximum Likelihood. Staggered Contracts.

AB This paper describes and implements a procedure for estimating the timing interval in any linear econometric model. The procedure is applied to Taylor's model of staggered contracts using annual averaged price and output data. The fit of the version of Taylor's model with serially uncorrelated disturbances improves as the timing interval of the model is reduced.

Chu, Ke young

PD March 1986. **TI** World Non-Oil Primary Commodity Markets: A Medium-Term Framework of Analysis. **AU** Chu, Ke young; Morrison, Thomas K. **AA** International Monetary Fund. **SR** International Monetary Fund Departmental Memoranda/Staff Paper: (33)1/6; International Monetary Fund, Washington D.C. 20431. **PG** 46. **PR** No Charge. **JE** 131, 123, 711, 641. **KW** Primary Commodity Price Fluctuations. Supply-Demand Analysis. Econometric Models. Capacity.

AB This study presents a medium-term framework for analysis of commodity price fluctuations. The model takes into account both demand factors (economic activity, inflation, and exchange rates in consuming countries) and commodity production, which is decomposed into capacity and capacity utilisation. Capacity is shown to respond to medium-term fluctuations, and utilisation to short-term fluctuations, in real prices. The model, which traces the historical movements of commodity prices fairly closely, is used to simulate and explain recent developments in commodity prices, such as the influence on prices of large changes in aggregate commodity supplies in recent years.

Chun, Youngsub

PD November 1985. **TI** The Solidarity Axiom for

Quasi-Linear Social Choice Problems. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 29; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 18. **PR** No Charge. **JE** 025. **KW** Quasi-Linear Social Choice Problems. Social Choice. Solidarity Axiom.

AB Recently, Moulin gave various axiomatic characterizations of solutions to quasi-linear social choice problems. He used a consistency axiom, which relates solutions for societies of different sizes, in addition to some basic axioms. In this paper, we introduce another axiom relating solutions for societies of different sizes, called the "Solidarity Axiom". This axiom demands that when additional agents enter the scene, all of the original agents be affected in the same direction, i.e., all of them gain or all of them lose. Our main result is a complete characterization of solutions satisfying the solidarity axiom, in addition to Pareto optimality, anonymity and two normalization axioms. All solutions satisfying these five axioms are in the egalitarian spirit; each solution assigns to every agent an equal share of the surplus over some reference level, but uses a different method to compute the reference level. Then, using additional milder axioms, we give further characterization results concerning various subfamilies.

Claessens, Stian

PD 1985. **TI** An Econometric Model of the Wheat Market. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-15; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 99. **PR** No Charge. **JE** 712. **KW** Wheat Market.

AB This paper presents estimates of a model of the world wheat market.

PD January 1985. **TI** Additional Linkage Functions for Econometric Link System for Asean Model. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-13; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 11. **PR** No Charge. **JE** 212, 132. **KW** Econometric Link System for Asean. World Commodity Model. Linkage Functions.

AB The introduction of commodity models provides important feedback possibilities in world econometric models. This memorandum includes additional linkage functions which will greatly increase the responses of Econometric Link System for Asean model to fluctuations in world commodity markets. We propose to insert these equations into the system and to test its operation with these additional feedbacks. The integration of the commodity models also calls for a considerable number of linkage equations between information available in ELSA, for example, GNP in the United States and Japan, and variables used in the commodity models for example industrial production in the OECD countries. This memorandum also summarizes these equations.

Coate, Douglas

PD March 1986. **TI** Effects of Alcoholic Beverage Prices and Legal Drinking Ages on Youth Alcohol Use. **AU** Coate, Douglas; Grossman, Michael. **AA** Coate: Department of Economics, Rutgers University. Grossman: Department of Economics, City University of New York Graduate School. **SR** National Bureau of Economic Research Working Paper: 1852; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 913, 921. **KW** Youth Alcohol Use. Legal Drinking Age. Alcohol Excise Tax.

AB Based on an analysis of the second National Health and Nutrition Examination Survey, conducted between 1976 and 1980, we find that the frequency of the consumption of beer, the most popular alcoholic beverage among youths, is inversely related to the real price of beer and to the minimum legal age for its purchase and consumption. The negative price and legal drinking age effects are by no means limited to reductions in the fraction of youths who consume beer infrequently (less than once a week). Instead, the fractions of youths who consume beer fairly frequently (1-3 times a week) and frequently (4-7 times a week) fall more in absolute or percentage terms than the fraction of infrequent drinkers when price or the drinking age rises. These are striking findings because frequent and fairly frequent drinkers are likely to be responsible for a large percentage of youth motor vehicle accidents and deaths. Simulations suggest that, if reductions in youth alcohol use and abuse are desired, both a uniform drinking age of 21 and an increase in the Federal excise tax rate on beer are effective policies to accomplish this goal. They also suggest that the tax policy may be more potent than the drinking age policy.

Coles, Jeffrey L.

PD February 1986. **TI** Walrasian Equilibrium without Survival: Existence, Efficiency and Remedial Policy. **AU** Coles, Jeffrey L.; Hammond, Peter J. **AA** Coles: University of Utah. Hammond: Stanford University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: 483; IMSSS, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 52. **PR** $4.00. **JE** 021, 914. **KW** Famine. Equilibrium Existence. Pareto Efficiency. Core Equivalence. Nonconvexities. Discontinuities. Survival.

AB A simple three good model -- output, labor and land -- is used to illustrate how, when agents' survival is not guaranteed, their feasible sets may well be nonconvex, even if their "survival" sets are. Also, preferences may be discontinuous at the boundary of the survival set. Nevertheless, in general economies with a continuum of agents, the four central theorems of general equilibrium theory -- existence, two efficiency theorems, and core equivalence -- all remain valid as long as the set of agents on the margin of survival always has measure zero. In particular, free markets without redistributive policy do not ensure survival.

Collender, Robert N.

PD April 10, 1986. **TI** Sparse Data and Risk-Efficient Choice Under Uncertainty. **AU** Collender, Robert N.;

https://doi.org/10.1017/S0951007900000322 Published online by Cambridge University Press

Chalfant, James A. **AA** Collender: Department of Economics and Business, North Carolina State University. Chaltant: 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: 403; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 11. **PR** $1.65. **JE** 026, 022. **KW** Risk. Uncertainty. Sparse Data. Risk-Efficient Choice. Decision-Making. Monte Carlo Simulation.

AB Small sample performance of two decision rules used with expected utility maximisation is explored analytically and empirically. A nonparametric rule performs roughly as well as the well-known mean-variance rule when normality holds and is expected to dominate otherwise. However, neither rule performs well given sparse data.

Cook, W.

PD November 1985. **TI** On the Complexity of Cutting-Plane Proofs. **AU** Cook, W.; Coullard, C. R.; Turan, Gy. **AA** Cook: University of Bonn. Coullard: Purdue University. Turan: University of Szeged. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85377-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 20. **PR** No Charge. **JE** 213. **KW** Cutting Planes. System of Linear Inequalities.

AB As introduced by Chvatal, cutting planes provide a canonical way of proving that every integral solution of a given system of linear inequalities satisfies another specified inequality. In this note we make several observations on the complexity of such proofs in general and when restricted to proving the unsatisfiability of formulae in the propositional calculus.

Coullard, C. R.

TI On the Complexity of Cutting-Plane Proofs. **AU** Cook, W.; Coullard, C. R.; Turan, Gy.

Craswell, Richard

TI Incentives to Comply With Uncertain Legal Standards. **AU** Calfee, John E.; Craswell, Richard.

Crystal, Donna

PD July 1985. **TI** On Abstract Integral Dependence. **AU** Crystal, Donna; Trotter, L. R. Jr. **AA** Crystal: University of Atlanta. Trotter: Cornwall University. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85379; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 16. **PR** No Charge. **JE** 213. **KW** Dual Pairs of Tag Systems. Matroids. Tag Systems.

AB The concept of a tag system is introduced. In its general form the combinatorial structure of a dual pair of tag systems arises through composition of blocking pairs of clutters. This leads to a "painting" characterisation for dual pairs of tag systems which is useful for establishing combinatorial theorems of the alternative for certain classes of tag systems. Integral tag systems arise as a natural combinatorial abstraction of integral linear dependence properties of rational vectors in analogy with the manner in which matroids arise from linear dependence properties. Tag systems subsume matroids and several characterisations of matroids as tag systems are given; however, tag systems are shown to be generally less tractable computationally than matroids by establishing NP-completeness for the problem of determining a smallest base for an integral tag system.

Davies, James B.

PD February 1986. **TI** A Dynamic Model of Redistribution, Inheritance and Inequality. **AU** Davies, James B.; Kuhn, Peter. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Department of Economics Research Report: 8602; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 48. **PR** No Charge. **JE** 024, 323. **KW** Redistribution. Inequality. Wealth Taxation. Bequests.

AB This paper characterizes the transition path of inequality that arises from an increase in redistribution by solving out a fully dynamic version of the Becker-Tomes (BT) model. We show that, following a permanent increase in lifetime wealth taxation, inequality always falls in the impact generation, even when the change is fully anticipated and bequests are reduced in response to it. Indeed, regardless of whether the new steady-state inequality lies above or below the old, we show that inequality must always "overshoot" its new steady state value, falling to a level below the new steady state before approaching it from below. According to calculations with an example, minimum inequality occurs between four and six generations after the tax increase is announced. This occurs, even though the level of the "equalizing" transfer payment begins to fall after the first period, because the initial reduction in inequality is "passed on" through inheritances to subsequent generations. Results for other tax schemes (except a pure tax on endowed ability) exhibit patterns similar to that for lifetime wealth tax. Also, in all these schemes, the length and depth of the initial decline in inequality tends to be larger with higher mean inheritances -- as implied, e.g., when inheritance includes expenditures on children's upbringing and education. Similar results are also obtained when the BT model is modified to incorporate alternative motivations for bequests, such as "strategic" bequests or different forms of altruism. Thus our results do not support the Becker-Tomes conjecture, and suggest that explanations for the small changes in apparent inequality over the last 50 years be sought elsewhere -- for example by considering endogenous factor prices, or in a re-examination of the data itself.

de Janvry, Alain

PD March 7, 1986. **TI** Rural Labor in Latin America. **AU** de Janvry, Alain; Sadoulet, Elisabeth; Wilcox, Linda. **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: 397; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 104. **PR** $15.60.

JE 813, 718, 121. **KW** Rural Labor. Agricultural Wages. Agricultural Labor Contracts. Structure of Employment. Latin America.
AB The report is structured in five parts that address (1) the changes in the rural and agricultural populations and the patterns of rural-urban migration; (2) the structure of employment and the importance of wage employment in agriculture; (3) the evolution of agricultural wages and surplus labor; (4) the nature of labor contracts in agriculture; and (5) the levels of household income and the magnitude of rural poverty.

DeAngelo, Linda

PD December 1985. **TI** Accounting Numbers As Market Valuation Substitutes: A Study of Management Buyouts of Public Stockholders. **AA** University of Rochester. **SR** University of Rochester Managerial Economics Research Center Working Paper: 84-20; Graduate School of Management, University of Rochester, Rochester, NY 14627. **PG** 35. **PR** No Charge. **JE** 541, 512. **KW** Leveraged Buyouts. Management Buyouts. Fairness Opinions. Fair Value. Accrual Method. Going Private.
AB This study investigates the accounting decisions made by managers of 64 New York and American Stock Exchange firms who proposed to purchase all publicly-held common stock and "go private" during 1973-1982. These management buyouts engender potentially severe conflicts of interest for insider-managers, who both have a fiduciary duty to negotiate fair value for the publicly-held shares and are themselves the purchasers of those shares. Although managers virtually always engage an independent investment banker to evaluate the offer terms, the typical management buyout nonetheless generates litigation by public stockholders who claim their compensation is inadequate. Because the courts and investment bankers employ earnings-based valuation methods to assess fair value, managers have incentives to understate reported income in attempts to reduce the buyout compensation. However, a variety of tests that employ the recently-developed accrual methodology reveal no indication that managers of sample firms systematically understated earnings in periods before a management buyout of public stockholders.

Deolalikar, Anil B.

TI How Do Food and Product Prices Affect Nutrient Intakes, Health and Labor Force Behavior for Different Family Members in Rural India?. **AU** Behrman, Jere R.; Deolalikar, Anil B.

TI Determinants of Nutrient Consumption and Health Status of Individual Family Members in Rural India: A Latent Variable Analysis. **AU** Behrman; Jere, R.; Deolalikar, Anil B.

TI Wages and Labor Supply in Rural India: The Role of Health, Nutrition and Seasonality. **AU** Behrman, Jere R.; Deolalikar, Anil B.

TI Seasonal Demands for Nutrient Intakes and Health Status in Rural South India. **AU** Behrman, Jere R.; Deolalikar, Anil B.

TI Health and Nutrition. **AU** Behrman, Jere R.; Deolalikar, Anil B.

Derigs, Ulrich

PD March 1985. **TI** On the Use of Optimal Matchings for Solving the Integer Matching Problem. **AU** Derigs, Ulrich; Metz, Achim. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85366; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 8. **PR** No Charge. **JE** 213. **KW** Optimal Fractional Matchings. Augmenting Path Method.
AB We show how optimal fractional matchings can be used to start the shortest augmenting path method for solving the (integer) matching problem. Computational results are presented which indicate that this start procedure is highly efficient, i.e. it is fast and reduces the amount of work for the shortest augmenting path method significantly such that the overall computing time is reduced drastically. The main importance of this basic result is the applicability of LP-duality to characterize optimal matchings.

PD June 1985. **TI** An In-Core/Out-of-Core Method for Solving Large Scale Assignment Problems. **AU** Derigs, Ulrich; Metz, Achim **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85376; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 10. **PR** No Charge. **JE** 213. **KW** Augmenting Path Method. Assignment Problem. Subgraph Sparse.
AB We describe how the shortest augmenting path method can be used as basis for an in core/out of core approach for solving large assignment problems. Here we start by solving the assignment problem on a sparse subgraph and then we introduce the remaining edges in an outpricing/reoptimization phase. We introduce several strategies which enable to keep the working subgraph sparse throughout the procedure and even lead to an all in-core code which is faster than the basic shortest augmenting path code.

Devarajan, Shantayanan

PD June 12, 1986. **TI** A Bibliography of Computable General Equilibrium (CGE) Models Applied to Developing Countries. **AU** Devarajan, Shantayanan; Lewis, Jeffrey D.; Robinson, Sherman. **AA** Devarajan: Harvard University. Lewis: Harvard University. Robinson: 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: 400; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 22. **PR** $3.30. **JE** 021, 121. **KW** Computable General Equilibrium Models. Bibliography. Developing Countries. CGE Models.
AB This is a bibliography of work dealing with the application of multisectoral, computable general equilibrium (CGE) models to developing countries. The coverage of published work is quite wide. There is also a selection of unpublished papers, but the coverage is spotty. As with any bibliography, the boundaries are somewhat arbitrary. For example, we have chosen to include

examples of CGE models applied to countries such as Australia, Sweden, Hungary, Yugoslavia, and Japan because they are closely related to models applied to developing countries. Similarly, we have included models applied to the historical analysis of the development process in the United States, England, and Japan. We have, however, excluded the extensive work dealing with two-sector models. The applications section contains a subset of the references of the full alphabetic listing, organized by country of application. The selection criterion was to choose models that are country-focused, and exclude references that are issue or theory-focused, even if they refer to specific countries.

Dickens, William T.

PD March 1986. **TI** Wages, Employment and the Threat of Collective Action by Workers. **AA** Sloan School of Management, Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 1856; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 832, 831. **KW** Collective Bargaining. Employment Levels. Wage Rates.

AB For many reasons a group of workers may have sufficient bargaining power to claim for themselves some share of any monopoly surplus earned by an enterprise and (in the short run) a share of the return on fixed assets. This paper explores the effect of the threat of collective action on wages and employment in firms which wish to avoid collective bargaining with their employees. The threat of collective action analysed here is a stylized representation of the institutional situation created by United States labor laws. If a firm wishes to avoid collective bargaining it must choose wages and employment so that no coalition greater than or equal to a fixed fraction of its workforce can be formed around a feasible bargaining agreement. The constraint this implies on employment and wages is analyzed for several assumptions about how bargained surplus is distributed among workers. It is found that the threat may affect only employment, or both wages and employment. For a firm with monopoly power a threat may either increase or decrease employment. Effects on wages and employment are found to be possible even in a market with price competition and free entry if firms must make fixed investments to produce output. Even when union contracts are efficient a threat of collective action can be expected to distort employment and investment decisions. If a threat causes firms to pay a wage above the reservation wage there will be an excess supply of labor to the firm. Under certain conditions this may manifest itself as involuntary unemployment. Further, unemployed workers will be unable to bid wages down. Like efficiency wage models, the threat of collective action provides an explanation for industry wage differences and the dual structure of the labor market. The model may also be able to provide some insight into the reasons for the stability of nominal and real wages over the business cycle.

PD April 1986. **TI** Crime and Punishment Again: The Economic Approach with a Psychological Twist. **AA** Sloan School of Management, M.I.T. **SR** National Bureau of Economic Research Working Paper: 1884; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 916. **KW** Criminal Behavior. Cognitive Dissonance. Punishment Severity.

AB Akerlof and Dickens (1982) suggested that in a model of criminal behavior which considered the effects of cognitive dissonance, increasing the severity of punishment could increase the crime rate. This paper demonstrates that that conjecture was correct. With cognitive dissonance, people may have to rationalize not committing crimes under normal circumstances if punishment is not severe. The rationalization may lead them to underestimate the expected utility of committing crimes when opportunities present themselves. If punishment is severe, then rationalization may not be necessary and people may be more likely to commit crimes when opportunities arise.

PD April 1986. **TI** Labor Market Segmentation and the Union Wage Premium. **AU** Dickens, William T.; Lang, Kevin. **AA** Dickens: Sloan School of Management, M.I.T. Lang: School of Social Sciences, University of California at Irvine. **SR** National Bureau of Economic Research Working Paper: 1883; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 831, 824. **KW** Dual Labor Markets. Unions. Union Wage Premium. Labor Market Segmentation.

AB Studies of the earnings of union workers have consistently shown that they earn considerably more than nonunion workers. This paper considers whether part of this observed union/nonunion differential is due to unions organizing high paying primary sector jobs. We extend our earlier work on the dual labor market in which we used an unknown regime switching regression to identify two labor market sectors -- a high wage primary sector and a low wage secondary sector. Here we estimate a model where worker's wages are determined by one of three wage equations: a union wage equation, a nonunion primary equation or a nonunion secondary equation. If individuals are in the union sector their sector is treated as known. If they are not then their sector is treated as unknown. Parameter estimates for this model suggest that union/nonunion differences are very large for average workers even when comparing union and nonunion primary workers. We continue to find distinct primary and secondary sectors with wage equations similar to those that would be expected from the dual market perspective. Since it appears that union workers may be receiving large wage premiums it seems likely that there is non-price rationing of union jobs. If there is, our finding in previous papers of non-price rationing of primary sector jobs may have been due only to the rationing of union jobs. We test for the existence of non-price rationing of nonunion primary sector employment in this three sector model and continue to find evidence that at least black workers find it difficult to secure primary sector employment.

PD April 1986. **TI** Structural Changes in Unionization: 1973-1981. **AU** Dickens, William T.; Leonard, Jonathan S. **AA** Dickens: Sloan School of Management, M.I.T. Leonard: National Bureau of Economic Research, Cambridge. **SR** National Bureau of Economic Research Working Paper: 1882; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 831.

KW Union Density. Unionization. Structural Components.
AB This paper presents a decomposition of the decline in union density into structural and within sector components using CPS data for private sector workers. We find that 58 to 68 percent of the decline in private sector unionization between 1973 and 1981 can be accounted for by structural changes in the economy, particularly in the occupational, educational and gender distribution of the workforce. This is a large impact, but we find that while structural change is important, its importance was not appreciably greater during the 1970s than during previous decades. At the same time, we find that the decline of private sector unionization within sectors has been pervasive, accounting for 32 to 42 percent of union decline. As part of this analysis we find that the decline in union density has been greater in those sectors of the economy where employment decline has been greater. This fact can help reconcile previous divergent findings on the importance of structural change.

Diewert, W. Erwin

TI Productivity Growth and Changes in the Terms of Trade in Japan and the United States. AU Morrison, Catherine; Diewert, W. Erwin.

PD May 1986. TI Normalised Quadratic Systems of Consumer Demand Functions. AU Diewert, W. Erwin; Wales, T. J. AA University of British Columbia. SR University of British Columbia Department of Economics Discussion Paper: 86-16; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C. CANADA V6T 1Y2. PG 35. PR JE 212. KW Consumption Expenditures. Flexible Functional Forms. Global Concavity. Consumer Demand Functions.
AB Empirically estimated demand systems frequently fail to satisfy the appropriate theoretical curvature conditions. We propose and estimate two demand systems for which these conditions can be imposed globally; the first is derived from a normalised quadratic reciprocal indirect utility function and the second is derived from a normalized quadratic expenditure function. The former is flexible if there are no restrictions on its free parameters, but loses flexibility if the curvature conditions need to be imposed. The latter is flexible, in the class of functions satisfying local money metric scaling, even if the curvature conditions need to be imposed. We illustrate our procedures using highly aggregated United States per capita time-series data on nondurable consumption expenditures.

Diwan, Ishac

PD January 1986. TI Managerial Entrenchment and Greenmail Endogenous Solutions to Free Riding in the Market for Corporate Control. AU Diwan, Ishac; Waldron, Jerome; Weigelt, Keith. AA New York University. SR New York University Salomon Brothers Center Working Paper: 368; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. PG 36. PR $2.00. JE 512, 514. KW Takeovers. Greenmail. Free Riders. Managerial Entrenchment.
AB In the event of a hostile takeover, the threat of greenmail is shown to provide sufficient dilution of shareholder property rights to overcome free riding considerations. A set of stable rational expectation equilibrium prices are shown to exist which allows the raider and shareholders to share the value improvement arising from a successful takeover. While the actual payment of greenmail, an agency cost properly born by shareholders, makes shareholders worse off, the ex ante threat of greenmail reinstills the takeover mechanism as an effective market discipline on managerial actions.

Djajic, Slobodan

PD April 21, 1986. TI Temporary Import Quota and the Current Account. AA Department of Economics, Queen's University. SR Queen's Institute for Economic Research Discussion Paper: 647; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. PG 23. PR $2.50 Canada; $3.00 United States; $3.50 foreign. JE 422, 431. KW Import Quota. Current Account.
AB This paper studies the effects of a temporary import quota on the real exchange rate and the current account of a small-open economy populated by utility-maximizing individuals. The optimal current-account response is determined by the interaction between two opposing forces: The intertemporal-relative-price effect tends to improve the current account, while the wealth effect contributes to a deterioration. For a sufficiently low degree of intertemporal consumption substitution, the wealth effect is shown to dominate. In this event, the current account deteriorates in response to a temporary quota and improves only after the quota is lifted.

Dominguez, Kathryn M.

PD May 1986. TI Are Foreign Exchange Forecasts Rational? New Evidence from Survey Data. AA Department of Economics, Yale University and International Finance Division, Federal Reserve Board. SR Board of Governors of the Federal Reserve System International Finance Discussion Papers: 281; Division of International Finance, Board of Governors of the Federal Reserve system, Washington, D.C. 20551. PG 41. PR No Charge. JE 431, 132. KW Exchange Rate. Rational Expectations. Forecast Test. Stationarity. Survey Data. Expectations Formation.
AB Tests of rational expectations in foreign exchange markets have been inconclusive because of disagreement over the underlying asset pricing model. This paper uses a newly available set of data on foreign exchange forecasts to examine directly expectations formation in four foreign currency markets. Generally, results do not support the simple rational expectations hypothesis.

Donaldson, David

TI Welfare Ratios and Distributionally Sensitive Cost-Benefit Analysis. AU Blackorby, Charles; Donaldson, David.

Duffie, Darrell

PD May 14, 1986. TI Optimal Hedging and Equilibrium in a Dynamic Futures Market. AU Duffie, Darrell; Jackson, Matthew O. AA Graduate School of Business, Stanford University. SR Stanford Graduate

School of Business Research Paper: 814; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. **PG** 17. **PR** No Charge. **JE** 021, 313. **KW** Futures Market. Hedging. Equilibrium in Futures Market. Continuous Time Hedging.

AB In this paper optimal hedging strategies are solved for in a continuous time setting. We consider a single agent maximising the expected utility of the sum of the terminal value of a fixed portfolio of spot market assets and the terminal value of a margin account on a futures trading position. Closed form solutions for the optimal hedging strategy are provided for general "smooth" utility functions under the expectations hypothesis, and for exponential Von Neumann-Morgenstern utility (without the expectations hypothesis). Necessary conditions for an equilibrium are shown. Finally, the optimal hedge is provided for log-normal spot price distributions, assuming the prices of the futures are the expected prices of the spot assets at delivery.

Easley, David

PD April 13, 1986. **TI** Theories of Price Formation and Exchange in Double Oral Auctions. **AU** Easley, David; Ledyard, John. **AA** Ledyard: California Institute of Technology. Easley: Cornell University. **SR** Caltech Social Science Working Paper: 611; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 55. **PR** No Charge. **JE** 026, 022. **KW** Auctions. Price Formation. Experiments.

AB We provide a theory to explain the data generated by Double Oral Auctions. The primary conclusion suggested by Double Oral Auction experiments is that the quantities exchanged and the prices at which transactions take place converge to, or near to, the values predicted by the competitive equilibrium model. Our theory predicts convergence to the competitive equilibrium and provides an explanation of disequilibrium behavior. The predictions of our theory fit the data better than do the predictions of Walrasian, Marshallian or game theoretic models.

Eastman, Kelly A.

TI A Note on Allowed and Realised Rates of Return in the Electric Utility Industry. **AU** Rothwell, Geoffrey S.; Eastman, Kelly A.

Eaton, Jonathan

PD April 1986. **TI** The Pure Theory of Country Risk. **AU** Eaton, Jonathan; Gersovitz, Mark; Stiglitz, Joseph E. **AA** Eaton: Department of Economics, University of Virginia. Gersovitz: Woodrow Wilson School, Princeton University. Stiglitz: Department of Economics, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1894; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 443. **KW** Credit Relations. International Lending. Enforcement.

AB This paper attempts to survey, and to put into perspective, recent literature that has analysed the nature of credit relations between developed and developing countries. This analysis has made use of recent advances in the economics of information and strategic interaction. Traditional concepts of solvency and liquidity are of little help in understanding problems of sovereign debt. Creditors do not have the means to seize the assets of a borrower in default. Hence the borrower's net worth is not relevant in determining the amount of a loan that can be recovered. A borrower who is expected eventually to repay his debts should be able to borrow to meet any current debt-service obligations. A problem that is essential to a theory of international lending is that of enforcement. The difficulty is one of ensuring that the two sides of a loan contract adhere to it; in particular that the borrower repays the lender and the lenders can commit themselves to penalize the borrower if he does not.

Edmonds, Jack

PD November 1985. **TI** Bipartition Systems and How to Partition Polygons. **AU** Edmonds, Jack; Lubiw, Anna. **AA** Edmonds: University of Waterloo. Lubiw: University of Toronto. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85406-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 10. **PR** No Charge. **JE** 213. **KW** Polygons. Subpolygons. Bipartition System.

AB The bipartition system problem is introduced as a generalization of the following problem: Given a polygon in the plane and given weights on its subpolygons, partition the polygon by adding chords into subpolygons the sum of whose weights is minimum. The bipartition system problem has other applications. A totally integral system of linear inequalities describing the convex hull of solutions to the bipartition system problem is given. A good algorithm is given for a special case of the bipartition system problem which unifies and generalizes the known polygon partitioning algorithms, and makes clear the role of planar geometry.

Eldor, R.

PD February 1986. **TI** Housing Prices and Tenure Choice in a Rational Expectations General Equilibrium Model with Production Risk. **AU** Eldor, R.; Pines, D. **AA** Eldor: Department of Economics, Tel-Aviv University. Pines: University of Western Ontario and Tel-Aviv University. **SR** Tel-Aviv Foerder Institute for Economic Research Working Paper: 9-86; Department of Economics, Tel-Aviv University, Ramat Aviv 69978, Tel-Aviv, ISRAEL. **PG** 36. **PR** No Charge. **JE** 932. **KW** Housing Prices. Housing Tenure Choice.

AB This paper analyzes the housing market in a general equilibrium context, where there is uncertainty about the overall level of production. This model investigates the relationship between the price of a house and its expected return and the effects of wealth, risk and risk aversion on the equilibrium price, and on tenure choice.

Emons, Winand

PD June 1985. **TI** Warranties, Moral Hazard and the Lemons Problem. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A15; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 35. **PR** No Charge. **JE** 024, 026, 021. **KW** Informational Asymmetries.

Competitive Equilibrium. Welfare Properties. Warranties. Lemons Problem.
AB This paper examines the use of warranties in the market for a good with two informational asymmetries. Buyers cannot observe the quality of the good. Sellers cannot monitor the level of care with which buyers handle the product. The existence of perfectly competitive equilibria for this market is established and their welfare properties are analysed.

PD February 1986. **TI** On the Limitation of Warranty Duration. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A 41; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 26. **PR** No Charge. **JE** 026. **KW** Warranty Duration.
AB This paper analyses the frequently observed phenomenon that firms offer product warranties which are of much shorter duration than the life expectancy of these products. It is shown that competitive equilibria may entail limitation of warranty duration if firms face adverse selection problems with respect to different consumers.

Engel, Charles

PD March 1986. **TI** Tariffs, Saving and the Current Account. **AU** Engel, Charles; Kletsor, Kenneth. **AA** Economic Growth Center, Yale University. **SR** National Bureau of Economic Research Working Paper: 1869; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 422. **KW** Tariffs. Current Account.
AB We investigate the effects of higher tariffs on the current account. Tariffs may increase or decrease investment depending on the capital intensity of the sector protected. We find that the response of saving to tariffs is sensitive to the modelling of saving behavior. In a model in which consumers' discount rate varies endogenously (in the Uzawa preference form), saving falls with higher tariffs. This result may, however, be reversed in the Blanchard-Yaari type model in which consumers have uncertain lifetimes. We find that in both models the response of saving depends on a production distortion effect which changes steady-state income and an effect on steady-state expenditures.

PD March 1986. **TI** International Borrowing to Finance Investment. **AU** Engel, Charles; Kletzer, Kenneth. **AA** Economic Growth Center, Yale University. **SR** National Bureau of Economic Research Working Paper: 1865; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 441. **KW** Foreign Debt. Small Country Borrowing. Investment Finance.
AB The motives of a small country for borrowing to purchase capital equipment on international markets are studied. The country produces tradable capital and a nontradable consumption good and borrows or lends capital to achieve higher levels of welfare. A shift in time-preference favoring future over current consumption has an ambiguous impact effect on foreign debt. Whether the country lends or borrows immediately depends upon whether the consumption goods sector is capital or labor intensive. The dynamic behavior of the current account for an initially capital-poor country is also derived. Our results contrast with those of previous studies of optimal indebtedness in which consumables are borrowed directly.

Engle, Robert F.

PD April 1986. **TI** Forecasting and Testing in Co-Integrated Systems. **AU** Engle, Robert F.; Yoo, Byung Sam. **AA** University of California, San Diego. **SR** University of California at San Diego Department of Economics Discussion Paper: 86-7; Department of Economics, D-008, University of California at San Diego, La Jolla, CA 92093. **PG** 24. **PR** $2.00; checks payable to University of California Regents. **JE** 211. **KW** Forecasting. Vector Autoregression. Unit Root. Error Correction. Co-Integration.
AB This paper examines the behavior of forecasts made from a co-integrated system as introduced by Granger(1981), Granger and Weiss(1983) and Engle and Granger(1986). It is established that a multi-step forecast will satisfy the co-integrating relation exactly and that this particular linear combination of forecasts will have a finite limiting forecast error variance. A simulation study compares the multi-step forecast accuracy of unrestricted vector autoregression with the two step estimation of the vector autoregression imposing the co-integration restriction. To test whether a system exhibits co-integration, the procedures introduced in Engle and Granger(1986) are extended to allow different sample sizes and numbers of variables.

PD June 3, 1986. **TI** Modelling the Persistence of Conditional Variances. **AU** Engle, Robert F.; Bollerslev, Tim P. **AA** Engle: Department of Economics, University of California at San Diego. Bollerslev: Department of Economics, Northwestern University. **SR** University of California at San Diego Department of Economics Discussion Paper: 86-9; Department of Economics, D-008, University of California at San Diego, La Jolla, CA 92093. **PG** 50. **PR** $2.00; checks payable to University of California Regents. **JE** 211, 431. **KW** Autoregressive Conditional Heteroskedasticity. Generalized Autoregressive Conditional Heteroskedasticity. Integration in Variance. Student-T. Conditional Kurtosis. Time Aggregation. Exchange Rate Determination. Asset Pricing.
AB This paper will discuss the current research in building models of conditional variances using the Autoregressive Conditional Heteroskedastic (ARCH) and Generalized ARCH (GARCH) formulations. The discussion will be motivated by a simple asset pricing theory which is particularly appropriate for examining futures contracts with risk averse agents. A new class of models defined to be integrated in variance is then introduced. This new class of models includes the variance analogue of a unit root in the mean as a special case. The models are argued to be both theoretically important for the asset pricing models and empirically relevant. The conditional density is then generalised from a normal to a Student-t with unknown degrees of freedom. By estimating the degrees of freedom, implications about the conditional kurtosis of these models and time aggregated models can be drawn. A further generalisation allows the conditional variance to be a non-linear function of the squared innovations. Throughout, empirical estimates of the logarithm of the exchange rate between the United

States dollar and the Swiss franc are presented to illustrate the models.

Ericsson, Neil R.

PD March 1986. **TI** Post-simulation Analysis of Monte Carlo Experiments: Interpeting Pesaran's (1974) Study of Non-nested Hypothesis Test Statistics. **AA** Ericsson: International Finance Division, Federal Reserve Board. **SR** Board of Governors of the Federal Reserve System, International Finance Discussion Papers: 276; International Finance Division, Board of Governors of the Federal Reserve System, Washington, DC 20551. **PG** 44. **PR** No Charge. **JE** 211, 212. **KW** Asymptotic Distributions. Econometrics. Finite Sample Properties. Inference. Monte Carlo. Non-Nested Hypotheses. Power. Response Surfaces. Simulation. Test Statistics.

AB "Monte Carlo experimentation in econometrics helps 'solve' deterministic problems by simulating stochastic analogues in which the analytical unknowns are reformulated as parameters to be estimated." (Hendry (1980)) With that in mind, Monte Carlo studies may be divided operationally into three phases: design, simulation, and post-simulation analysis. This paper provides a guide to the last of those three, post-simulation analysis, given the design and simulation of a Monte Carlo study, and uses Pesaran's (1974) study of statistics for testing non-nested hypotheses to illustrate the techniques described. A statistic is derived for testing for significant deviations between the asymptotic and (observed) finite sample properties. Further, that statistic provides the basis for analysing discrepancies between the finite sample and asymptotic properties using response surfaces. The results for Pesaran's study indicate the value of asymptotic theory in interpreting finite sample properties and certain limitations for doing so. Finally, a method is proposed for adjusting the finite sample sizes of different test statistics so that comparisons of their power may be made. Extensions to other finite sample properties are indicated.

Euler, R.

PD February 1985. **TI** On a Composition of Independence Systems by Circuit-Identification. **AU** Euler, R.; Mahjoub, A. R. **AA** University of Grenoble. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85.13; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 46. **PR** No Charge. **JE** 213. **KW** Independence System. Circuit-Exchange Property. Composition. Polyhedral Description. Total Dual Integrality. Algorithm.

AB The composition of general bipartite subgraph resp. acyclic subdigraph independence systems and in particular of their associated polyhedra by the identification of a pair of 3-cycles resp. 2-dicycles together with its implications for an algorithmic treatment has been the central subject of other papers. We generalise this kind of composition within the framework of independence systems satisfying a special circuit-exchange property and discuss its implications for associated polyhedra, totally dual integral linear systems describing these as well as related optimisation problems. Special attention is given to linearly relaxable such independence systems.

Euler, Reinhardt

TI Recent Trends in Combinatorial Optimization. **AU** Bachem, Achim; Euler, Reinhardt.

Faigle, Ulrich

PD May 1985. **TI** On the Complexity of Interval Orders and Semiorders. **AU** Faigle, Ulrich; Turan, Gy. **AA** Faigle: University of Bonn. Turan: University of Szeged. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85373; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 12. **PR** No Charge. **JE** 213. **KW** Interval Orders. Semiorders.

AB The recognition complexity of interval orders is shown to be omega (n log2n), and an optimal algorithm is given for the identification of semiorders.

PD May 1985. **TI** Exchange Properties of Combinatorial Closure Spaces. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85372; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 12. **PR** No Charge. **JE** 213. **KW** Subadditive Closure Spaces. Exchange Property.

AB Finite closure spaces with the Steinitz exchange property are characterised and the connection between the Steinitz and the MacLane exchange property and related exchange properties is discussed. A Kurosh-Ore theorem is proved for subadditive closure spaces with the Steinitz exchange property. Finally, closure spaces with monotone dimension functions are investigated.

PD May 1985. **TI** On Simplical Decomposition in Combinatorial Structures. **AU** Faigle, Ulrich; Goecke, Oskar; Schrader, Rainer. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 84349; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 15. **PR** No Charge. **JE** 213. **KW** Combinatorial Decomposition. Unique Irreducible Kernel. Greedoids.

AB A general framework for a combinatorial decomposition scheme is presented which includes, for example, simplicial elimination in chordal graphs as well as direct product decomposition of algebraic structures. With respect to this decomposition scheme, all maximal elimination sequences for a given combinatorial object have the same length and determine an (up to isomorphism) unique irreducible kernel. In particular, the relationship with greedoids is investigated and transposition greedoids are seen to have a natural setting in this framework.

PD July 1985. **TI** Setup Minimization Techniques for Comparability Graphs. **AU** Faigle, Ulrich; Schrader, Rainer. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85380; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 17. **PR** No Charge. **JE** 213. **KW** Polynomial Time Algorithm. Odd Crowns.

AB Making use of the fact that the setup number of an order only depends on its comparability graph we extend setup minimization techniques, which need not be comparability invariant, to classes of orders closed with respect to comparability equivalence. Furthermore, a polynomial time algorithm for the recognition of odd crowns in perfect graphs is presented.

PD August 1985. **TI** On the Computational Complexity of the Order Polynomial. **AU** Faigle, Ulrich; Schrader, Rainer. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85386; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 7. **PR** No Charge. **JE** 213. **KW** Classes of Orders with Bounded Width. Series-Parallel Orders.

AB Computing the order polynomial of an ordered set is a hard counting problem in general. We present efficient algorithms for the classes of orders with bounded width and for series-parallel orders.

PD August 1985. **TI** Interval Orders without Odd Crowns are Defect Optimal. **AU** Faigle, Ulrich; Schrader, Rainer. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85382; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 10. **PR** No Charge. **JE** 213. **KW** Kernel of the Incidence Matrix. Interval Orders without Odd Crowns.

AB The defect of a (partial) order relation P is defined to be the rank of the kernel of the associated incidence matrix. Giers and Poguntke '4 have shown that the defect provides a lower bound for the number of incomparable adjacent pairs in an arbitrary topological sorting of P. We show that this bound is sharp for interval orders without odd crowns. Furthermore, an efficient algorithm for topological sortings of such orders is presented which achieves the bound. We finally exhibit a natural matroid structure associated with the optimal topological sortings under consideration.

Feldstein, Martin

PD March 1986. **TI** The Effects of Tax Rules on Nonresidential Fixed Investment: Some Preliminary Evidence from the 1980's. **AU** Feldstein, Martin; Jun, Joosung. **AA** National Bureau of Economic Research, Cambridge, MA. **SR** National Bureau of Economic Research Working Paper: 1857; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 323, 522. **KW** Investment Profitability. Nonresidential Fixed Investment. Investment-Gross National Product Ratio. Tax Changes.

AB The evidence presented in this study confirms that tax-induced changes in the profitability of investment have had a powerful effect on the share of Gross National Product devoted to nonresidential fixed investment. More specifically, we have reestimated two models of aggregate investment initially presented in Feldstein, "Inflation, Tax Rules and Investment: Some Econometric Evidence," (Econometrica, 1982). The present study extends the previous analysis by using revised national income accounts, by improving the estimation of the effective tax rate and the profitability of new investments, and by extending the sample to include the years 1978 through 1984. Despite these changes, the new statistical estimates are remarkably close to the previous results. The statistical estimates are also very robust with respect to sample period, estimation method, and the presence of other variables. The estimates imply that the 1985 tax bill passed by the House of Representatives would reduce the investment-GNP ratio by between 10 percent and 15 percent of its average value, depending on the model used to make the calculation. Such reductions would represent between one-half and three-fourths of the rise in the investment-GNP ratio since the 1981 investment incentives were adopted.

PD April 1986. **TI** The Budget Deficit and the Dollar. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 1898; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 431, 322. **KW** Budget Deficit. Exchange Rate. Dollar-DM Rates.

AB This study examines the reasons for changes in the real exchange rate between the dollar and the German mark from the beginning of the floating rate regime in 1973 through 1984. The econometric analysis focuses on the effects of anticipated structural budget deficits and monetary policy in the United States and Germany and the changes in United States profitability induced by changes in tax rules. The possible impact of a number of other variables is also examined. The evidence indicates that the rise in the expected future deficits in the budget of the United States government has had a powerful effect on the exchange rate between the dollar and the German mark. Each one percentage point increase in the ratio of future budget deficits to Gross National Product increased the exchange rate by about 30 percentage points. Changes in the growth of the money supply also affect the exchange rate. Changes in the tax rules and in the inflation-tax interaction that altered the corporate demand for funds did not have any discernible effect on the exchange rate. A separate analysis confirms that there is an equilibrium structural relation between the dollar-DM rates in the United States and Germany. An increase of one percentage point in the real interest rate differential has been associated with a rise in the DM-dollar ratio of about five percent.

Feltenstein, Andrew

PD February 1986. **TI** An Analysis of the Welfare Implications of Alternative Exchange Rate Regimes: An Intertemporal Model with an Application. **AU** Feltenstein, Andrew; Lebow, David; Sibert, Anne. **AA** Feltenstein and Lebow: World Bank. Sibert: Board of Governors of the Federal Reserve System. **SR** Board of Governors of the Federal Reserve System International Finance Discussion Paper: 273; Federal Reserve Board, 20th and C Streets, N.W., Washington, DC 20551. **PG** 44. **PR** No Charge. **JE** 122, 431, 024. **KW** Exchange Rates. Computable General Equilibrium. Welfare Implications. Australia.

AB We construct a two-period model of an open economy and use the model to analyse the welfare implications of fixed and floating exchange regimes. Consumers have perfect foresight and save by holding domestic and foreign bonds, which are chosen according to relative interest rates, deflated by the rate of devaluation of the domestic currency. The government produces a pure public good and finances its deficits by issuing money, domestic bonds, and by foreign borrowing. The government's bonds compete with private investment, which is entirely debt financed. Foreign exchange, i.e., foreign bonds, is made available via the current account, endogenous private borrowing, and exogenous public borrowing. The government, in turn, acts as a passive auctioneer, trading foreign currency at market prices, and the exchange rate is defined as the domestic price of foreign bonds. The parameters of the model are estimated for Australia, and two counterfactual simulations have been carried out. In the first of these, a fixed exchange regime has been imposed upon 1983-84, when the exchange rate was actually allowed to float. Assuming that all exogenous parameters remain constant, the welfare implications of the two regimes are compared. The floating regime is found to be welfare superior for both categories of domestic consumers. Similar results are derived in a simulation in which the floating regime is imposed upon 1981-82, when a fixed exchange regime was actually in place. Our initial conclusion would be that, from the point of view of consumer welfare, floating exchange rates are superior to fixed rates in this Australian case.

PD March 1986. **TI** Financial Crowding Out: Theory with an Application to Australia. **AA** Country Policy Department, The World Bank. **SR** International Monetary Fund Departmental Memoranda/Staff Paper: (33)1/3; International Monetary Fund, Washington D.C. 20431. **PG** 30. **PR** No Charge. **JE** 023, 122. **KW** Public Expenditure. Private Sector Crowding Out. Public Sector Deficit. Australia.

AB The paper constructs a theoretical model designed to analyze the extent to which spending by the public sector crowds out production and investment by the private sector. The model is dynamic, with two periods and perfect foresight. Private enterprises are constrained to cover current expenditures from current revenues, but investment is financed by the sale of bonds. The government issues a combination of money and bonds to finance any deficit it may incur. The model is applied to Australia, and two counterfactual simulations are carried out in which government spending and financing rules are changed.

Flood, Robert P.

PD March 1986. **TI** Asset Price Volatility, Bubbles and Process Switching. **AU** Flood, Robert P.; Hodrick, Robert J. **AA** Flood: Department of Economics, Northwestern University. Hodrick: Kellogg Graduate School of Management, Northwestern University. **SR** National Bureau of Economic Research working Paper: 1867; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** \$2.00. **JE** 313. **KW** Speculative Bubbles. Excess Volatility. Government Policy Switches.

AB Evidence of excess volatilities of asset prices compared with those of market fundamentals is often attributed to speculative bubbles. This study examines the sense in which speculative bubbles could in theory lead to excess volatility, but it demonstrates that some of the variance bounds evidence reported to date precludes bubbles as a reason why asset prices might violate such bounds. The findings must represent some other model misspecification or market inefficiency. One important misspecification occurs when the researcher incorrectly specifies the time series properties of market fundamentals. A bubble-free example economy characterized by a potential switch in government policies produces paths of asset prices that would appear, to an unwary researcher, to contain bubbles.

Foot, David K.

PD March 1986. **TI** Population Aging and Immigration Policy in Canada: Implications and Prescriptions. **AA** University of Toronto Department of Economics and Institute for Policy Analysis. **SR** University of Toronto Institute for Policy Analysis Working Paper: 8606; Department of Economics, University of Toronto, Toronto, Ontario, 150 Street George Street CANADA M5S 1A1. **PG** 29. **PR** No Charge. **JE** 841, 918, 823. **KW** Population Aging. Immigration Policy. Age Directed Immigration.

AB The integration of immigration policy with demographic and labour market considerations is required under the Immigration Act. A review of the current distribution of immigrants by age shows that nearly one-half of all immigration to Canada falls in the age groups which comprise the Baby Boom generation, namely 20 to 39 years. Persons in this generation have faced increasingly hostile labour market conditions in recent years. Current immigration policy is, therefore, potentially intensifying the problems associated with population aging in Canada which is dominated by this generation. This need not happen, particularly in an era of announced moderately controlled increases in immigration levels, oriented to the economic class. The illustrative calculations presented in this paper demonstrate the feasibility and flexibility of a new, age-directed immigration program for Canada oriented at the younger age groups. Such a program is defensible under the criteria specified in the Act, is readily implementable within the existing immigration framework, and contains an automatic "sunset" provision. Moreover, there appear to be many potential source populations in the world. With the entire Baby Boom generation now of labour force age in Canada, there could not be a more appropriate time to consider the introduction of such a new, age-directed immigration program.

Frank, Andras

PD May 1985. **TI** An Application of the Simultaneous Approximation in Combinatorial Optimization. **AU** Frank, Andras; Tardos, Eva. **AA** University of Budapest. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85375; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 14. **PR** No Charge. **JE** 213. **KW** Polynomial Algorithm. Combinatorial Optimization.

AB We present a preprocessing algorithm to make certain polynomial algorithms strongly polynomial. The running time of some of the known combinatorial optimization algorithms depends on the size of the objective function w. Our preprocessing algorithm replaces w by an integral valued w-bar whose size is polynomially bounded in the size of the combinatorial structure and which yields the same set of optimal solutions as w. As applications we show how existing polynomial algorithms for finding a maximum weight clique in a perfect graph, for the minimum cost submodular flow problem, and for testing membership in a matroid polyhedron can be made strongly polynomial. A strongly polynomial algorithm for the last problem has been developed earlier by W. H. Cunningham. The method relies on the simultaneous approximation algorithm of Lenstra, Lenstra and Lovasz.

Frankel, Jeffrey A.

PD March 1986. **TI** The Dollar as a Speculative Bubble: A Tale of Fundamentalists and Chartists. **AU** Frankel, Jeffrey A.; Froot, Kenneth A. **AA** Department of Economics, University of California Berkeley. **SR** National Bureau of Economic Research Working Paper: 1854; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 431, 313. **KW** Speculative Bubbles. Dollar Appreciation.

AB Several recent developments have inspired us to consider a non-standard model of the dollar as a speculative bubble without the constraint of fully rational expectations: (1) the dollar continued to rise in 1984 after real interest rate differentials and other fundamentals began moving the wrong way; (2) the results of market efficiency tests imply that the rationally expected rate of dollar depreciation has been less than the forward discount; (3) Krugman-Marris current account calculations suggest that the rationally expected rate of depreciation is greater than the forward discount; (4) survey data show an expected rate of depreciation that is also greater than the forward discount; (5) the hypothesis of a "safe-haven" shift into United States assets and a decrease in the United States risk premium, which would explain some of the foregoing, is contradicted by a decline in the differential between offshore interest rates (covered) and United States interest rates. Our model features three classes of actors: fundamentalists, chartists and portfolio managers. Fundamentalists forecast a depreciation of the dollar based on an overshooting model that would be rational if there were no chartists. Chartists extrapolate recent trends based on an information set that includes no fundamentals. Portfolio managers take positions in the market, and thus determine the exchange rate, based on expectations that are a weighted average of the fundamentalists and chartists. The first stage of the dollar appreciation after 1980 is explained by increases in real interest differentials. The second stage is explained by the endogenous takeoff of a speculative bubble when the fundamentalists have mis-forecast for so long that they have lost credibility. In 1985, the dollar may have entered a third stage in which an ever-worsening current account deficit begins a reversal of the bubble.

PD May 1986. **TI** Using Survey Data to Test Standard Propositions Regarding Exchange Rate Expectations. **AU** Frankel, Jeffrey A.; Froot, Kenneth A. **AA** Department of Economics, University of California at Berkeley. **SR** University of California at Berkeley Institute of Business and Economic Research, Research Paper in Economics: 86-11; Institute of Business and Economic Research, 156 Barrows Hall, University of California at Berkeley, Berkeley, CA 94720. **PG** 45. **PR** $5.00. **JE** 431. **KW** Survey Data. Exchange Rate Expectations. Exchange Rate.

AB Survey data provide a measure of exchange rate expectations superior to the forward rate in that no risk premium interferes. We test standard propositions using three new sources of survey data. We estimate extrapolative, adaptive and regressive models of expectations. Static or "random walk" expectations and bandwagon expectations are rejected: current appreciation generates the expectation of future depreciation because variables other than the contemporaneous spot rate receive weight. For example, when the dollar was strong, 1981-85, it was expected to depreciate strongly against five foreign currencies. In comparing expectations to the process governing the spot rate we find statistically significant bias.

Freeman, Richard B.

PD April 1986. **TI** Bonuses and Employment in Japan. **AU** Freeman, Richard B.; Weitzman, Martin. **AA** Freeman: National Bureau of Economic Research, Cambridge. Weitzman: Department of Economics, M.I.T. **SR** National Bureau of Economic Research Working Paper: 1878; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 821, 824, 122. **KW** Share Economy. Bonuses. Japan. Labor Compensation.

AB Japan has a relatively unique system of labor compensation. Most Japanese workers are paid large bonuses twice a year. This paper examines the cyclical movement of bonuses compared with wages and the relation of bonuses to employment in the context of the Weitzman "share economy." The paper makes three basic points: (1) The Japanese bonus is much more pro-cyclical than Japanese base wages, but not as cyclically variable as profits. Bonuses can be interpreted as containing a quantitatively significant revenue or profit-sharing component. (2) Bonuses have quite different employment consequences than do base wages. Even after controlling for other economic factors, bonuses are positively related to employment, whereas base wages are negatively related to employment. (3) The bonus system of paying workers, while far from explaining the whole macroeconomic story in Japan, seems to play a role in helping to stabilize Japanese unemployment at comparatively low levels.

French, Kenneth R.

PD November 1985. **TI** Expected Stock Returns and Volatility. **AU** French, Kenneth R.; Schwert, G. William; Stambaugh, Robert F. **AA** French: University of Chicago. Schwert: University of Rochester. Stambaugh: University of Chicago. **SR** University of Rochester Managerial Economics Research Center Working Paper: 85-10; Graduate School of Management, University of Rochester, Rochester, NY 14627. **PG** 34. **PR** No Charge. **JE** 313. **KW** Expected Risk Premiums. Volatility. Autoregressive-Integrated-Moving Average Models. ARCH Models. Leverage.

AB This paper analyses the relations between both the predictable and the unpredictable components of stock market volatility and the realized returns to stocks. We find direct evidence that the expected market risk premium (the expected return to a stock portfolio minus the Treasury bill yield) is positively related to the predictable volatility of stock returns. There is even stronger evidence that unexpected stock market returns are negatively related to the unexpected volatility of stock returns. This relation provides indirect evidence of a positive relation between expected risk premiums and volatility.

Frenkel, Jacob A.

TI Targeting Rules for Monetary Policy. **AU** Aizenman, Joshua; Frenkel, Jacob A.

PD April 1986. **TI** The Limited Viability of Dual Exchange-Rate Regimes. **AU** Frenkel, Jacob A.; Razin, Assaf. **AA** Frenkel: Department of Economics, University of Chicago. Razin: Department of Economics, Tel-Aviv University. **SR** National Bureau of Economic Research Working Paper: 1902; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 431. **KW** Dual Exchange-Rate. Exchange-Rate.
AB This paper examines the viability of dual exchange-rate regimes. Typically, under such a regime the exchange rates applicable to current-account (commercial) transactions and to capital-account (financial) transactions differ from each other. This difference may be determined in the free market if the authorities peg the commercial exchange rate and set a binding quota on external borrowing, or it may result from direct pegging of both exchange rates. The analysis starts with a specification of the characteristics of the distortion introduced by the exchange-rate premium (that is, the percentage discrepancy between the financial and the commercial exchange rates), and then provides explicit formulae for the equilibrium premium, for its evolution over time and for the welfare cost induced by the distortion. The paper outlines the set of policy options consistent with sustaining a permanently viable dual exchange-rate system and highlights the severe constraints that intertemporal solvency requirements of the private sector and of the government impose on the long-run viability of the regime. The paper concludes with an analysis of the monetary changes associated with dual exchange-rate policies and draws the implications of such a regime for the intertemporal distribution of taxes and for the intergenerational distribution of welfare.

Froot, Kenneth A.

TI The Dollar as a Speculative Bubble: A Tale of Fundamentalists and Chartists. **AU** Frankel, Jeffrey A.; Froot, Kenneth A.

TI Using Survey Data to Test Standard Propositions Regarding Exchange Rate Expectations. **AU** Frankel, Jeffrey A.; Froot, Kenneth A.

Fry, Vanessa

TI Lambda - Constant and Alternative Empirical Models of Life-Cycle Behaviour Under Uncertainty. **AU** Blundell, Richard W.; Fry, Vanessa; Meghir, Costas.

Fullerton, Don

PD April 1986. **TI** A Disaggregate Equilibrium Model of the Tax Distortions Among Assets, Sectors, and Industries. **AU** Fullerton, Don; Henderson, Yolanda K. **AA** Fullerton: Department of the Treasury. Henderson: American Enterprise Institute and Federal Reserve Bank. **SR** National Bureau of Economic Research Working Paper: 1905; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 323, 024. **KW** Inefficiency. Tax System. Tax Distortions.
AB This paper encompasses multiple sources of inefficiency introduced by the United States tax system into a single general equilibrium model. Using disaggregate calculations of user cost, we measure interasset distortions from the differential taxation of many types of assets. Simultaneously, we model the intersectoral distortions from the differential treatment of the corporate sector, noncorporate sector, and owner-occupied housing. Industries in the model have different uses of assets and degrees of incorporation. Results indicate that distortions between sectors are much smaller than those of the Harberger model. Distortions among industries are also much smaller than those in models using average effective tax rates. Distortions among assets are larger, but the total of all these welfare costs is still below one percent of income.

PD April 1986. **TI** The Impact of Fundamental Tax Reform on the Allocation of Resources. **AU** Fullerton, Don; Henderson, Yolanda K. **AA** Fullerton: Department of the Treasury. Henderson: Research Department, Federal Reserve Bank and American Enterprise Institute. **SR** National Bureau of Economic Research Working Paper: 1904; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 323. **KW** Tax Reform. Intersectoral Distortions.
AB Recent proposals for fundamental tax reform differ in their relative emphasis on interasset, intersectoral, interindustry, and intertemporal distortions. The model in this paper addresses these multiple issues in the design of taxes on capital incomes. It is capable of measuring the net effects of changes in statutory rates, credits, depreciation allowances, and other features such as the indexation of interest and capital gains. It can compare costs of capital for individual assets, sectors, and industries, and it weighs these together to evaluate the impact on total investment incentives. In a fully general equilibrium system, it can simulate alternative resource allocations and associated changes in welfare. For the overall evaluation of alternative tax reform proposals, the simultaneous consideration of these multiple effects is crucial. The model is used to compare current law, the Treasury tax reform plan of November 1984, and the President's proposal of May 1985. Under the "new view" that dividend taxes have a small effect on investment incentives, both reforms would reduce interasset distortions and the President's plan would reduce intersectoral distortions, but the Treasury plan would exacerbate intertemporal distortions. Still, for most parameters, both reforms generate net welfare gains even with slight declines in the capital stock. Under the "old view" that dividend taxes have a significant effect on investment incentives,

both plans reduce corporate taxation through their partial deductions for dividends paid. They thus reduce intersectoral distortions as well as differences among assets. Under this view, the Treasury plan no longer increases intertemporal distortions. Even for the least favorable set of parameters in this case, these reforms raise both the capital stock and the real value of output above their baseline values. Finally, the paper shows alternative allocations of capital among assets, sectors, and industries.

Fuss, Melvyn A.

PD March 1986. **TI** The Extent and Sources of Cost and Efficiency Differences Between United States and Japanese Automobile Producers. **AU** Fuss, Melvyn A.; Waverman, Leonard. **AA** Department of Economics, University of Toronto. **SR** National Bureau of Economic Research Working Paper: 1849; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 123, 226. **KW** Cost Difference Estimates. Efficiency Difference Estimates. Japan. United States.

AB In this paper we present for the first time estimates of cost and efficiency differences between United States and Japanese producers based on an econometric cost function methodology rather than the accounting frameworks previously used. We demonstrate that the cost difference estimates for 1979 which were influential in the debate that resulted in the Voluntary Restraints Agreements of 1981-85 were substantial overestimates of the Japanese advantage. While our estimate of the Japanese cost advantage for 1980 is similar to previous estimates, we attribute most of this advantage to short-run phenomena - underutilization of United States production capacity and an undervalued yen. In a previous paper we have shown that the Japanese TFP growth rate was much faster than the United States rate during the 1970's. However we estimate the long-run underlying Japanese efficiency advantage as of 1980 to have been only 1-2 per cent, much less than previously estimated. This results from the fact that Japan began the 1970's with a long-run efficiency disadvantage of over 20 per cent, and the decade of the 1970's represented a catch-up period for Japanese producers.

Galai, Dan

TI Estimation of Errors in the Implied Standard Deviation. **AU** Brenner, Menachem; Galai, Dan.

Gale, Douglas

TI Preference Shocks, Liquidity and Central Bank Policy. **AU** Bhattacharya, Sudipto; Gale, Douglas.

Gale, William G.

TI New Results on the Effects of Tax Policy on the International Location of Investment. **AU** Boskin, Michael J.; Gale, William G.

Garfinkel, I.

PD February 1986. **TI** Budget Size Effects on the Optimal Linear Income Tax. **AU** Garfinkel, I.; Moreland, K.; Sadka, E. **AA** Sadka: Department of Economics, Tel-Aviv University. Garfinkel: University of Wisconsin-Madison. Moreland: Eastern Michigan University. **SR** Tel-Aviv Foerder Institute for Economic Research Working Paper: 6-86; Department of Economics, Tel-Aviv University, Ramat Aviv 69978, Tel-Aviv, ISRAEL. **PG** 26. **PR** No Charge. **JE** 320, 323. **KW** Budget Size. Linear Income Tax.

AB This paper examines the effects of the government budget on the optimal linear income tax. Benthamite and Rawlsian social welfare functions are employed to simulate the optimal tax. In most cases, an increase in the government budget raises the marginal tax rate and lowers the guarantee of the optimal linear income tax.

Gavin, Michael K.

PD April 1986. **TI** The Stock Market and Exchange Rate Dynamics. **AA** International Finance Division, Federal Reserve Board. **SR** Board of Governors of the Federal Reserve System International Finance Discussion Papers: 278; International Finance Division, Board of Governors of the Federal Reserve System, Washington D.C. 20551. **PG** 82. **PR** No Charge. **JE** 023, 431, 321. **KW** Stock Market. Exchange Rate. Fiscal Expansion.

AB This paper articulates a model of the small, open economy in which the stock market, rather than the bond market, determines domestic aggregate demand. It resembles in many respects the widely adopted dynamic Mundell-Fleming approach, but can, in some circumstances, exhibit output and asset price dynamics that differ in economically illuminating ways from that more standard framework. In particular, if the stock market effects are important enough, then a monetary expansion can result in real exchange rate appreciation, rather than depreciation. Anticipated fiscal expansion can, if the favorable effects on future productivity lead to strong enough stock market effects, lead to an output expansion, rather than a contraction as in, for example, Burgstaller (1983), Blanchard (1984) and Branson, Fraga and Johnson (1985). Furthermore, if the delay between announcement and implementation of the fiscal expansion is long enough, an anticipated fiscal expansion can lead to exchange rate depreciation, rather than appreciation.

Gaynor, Martin

PD March 1986. **TI** Internal Non-Price Competition, Pricing, and Incentive Systems in the Cooperative Service Firm: Evidence from Medical Group Practice. **AA** Department of Economics, SUNY at Binghampton. **SR** National Bureau of Economic Research Working Paper: 1866; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 022, 511. **KW** Within-Firm Non-Price Competition. Medical Group Practice. Incentive Mechanisms.

AB The model developed in this paper is a model of internal non-price competition among members of a cooperative firm. Members take price and income distribution method as given, but perceive a positive relationship between their own production of quality and the flow of consumers to them, when constrained by demand. At an internal Nash equilibrium, each member may be producing "too much" quality, yet will not reduce production for fear of losing customers. In this paper, the focus is on the price and income distribution method, which serve as an incentive mechanism for coordinating behavior. An unusual feature of this model is the switching behavior generated as members of the firm move from the unconstrained to the constrained regime. This feature is incorporated for empirical testing by specifying the model to be estimated as a spline function. The empirical testing is possible due to the existence of a unique data set for American medical group practice. The estimation results of this study confirm the hypotheses of switching behavior and a positive relationship between price and the strength of the link between reward and productivity. This provides strong evidence to support the contention that internal non-price competition is present in cooperative service firms, and that it increases as members' rewards are linked more closely with their own productivity.

Gerards, Albertus

PD September 1985. **TI** Total Dual Integrality Implies Local Strong Unimodularity. **AU** Gerards, Albertus; Sebo, Andras. **AA** Gerards: University of Tilburg. Sebo: University of Budapest. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85395; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 5. **PR** No Charge. **JE** 213. **KW** Full Dimensional Polyhedron.

AB We prove that any totally dual integral description of a full dimensional polyhedron is locally strongly unimodular in every vertex.

Gersovitz, Mark

TI The Pure Theory of Country Risk. **AU** Eaton, Jonathan; Gersovitz, Mark; Stiglitz, Joseph E.

Gibbons, Michael R.

PD April 1986. **TI** A Test of the Efficiency of a Given Portfolio. **AU** Gibbons, Michael R.; Ross, Stephen A.; Shanken, Jay. **AA** Gibbons: Graduate School of Business, Stanford University. Ross: School of Organisation and Management, Yale University. Shanken: Graduate School of Management, University of Rochester. **SR** Stanford Graduate School of Business Research Paper: 853; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. **PG** 54. **PR** No Charge. **JE** 313. **KW** Mean-Variance Efficiency. Capital Asset Pricing Model.

AB A test for the ex ante efficiency of a given portfolio of assets is developed. The relevant statistic has a tractable small sample distribution. Its power function is derived and used to study the sensitivity of the test to the portfolio choice and to the number of assets used to determine the ex post mean-variance efficient frontier. Several intuitive interpretations of the test are provided, including a simple mean-standard deviation geometric explanation. A univariate test, equivalent to our multivariate-based method, is derived, and it suggests some useful diagnostic tools which may explain why the null hypothesis is rejected. Empirical examples suggest that the multivariate approach can lead to more appropriate conclusions than those based on traditional inference which relies on a set of dependent univariate statistics.

TI Empirical Tests of the Consumption-Oriented CAPM. **AU** Breeden, Douglas T.; Gibbons, Michael R.; Litzenberger, Robert.

PD May 9, 1986. **TI** Empirical Examination of the Return Generating Process of the Arbitrage Pricing Theory. **AA** Graduate School of Business, Stanford University. **SR** Stanford Graduate School of Business Research Paper: 881; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. **PG** 37. **PR** No Charge. **JE** 521, 522. **KW** Factor Models. Factor Analysis. Stock Returns. APT. Arbitrage Pricing Theory.

AB The return generating process of the arbitrage pricing theory is examined using factor analysis. Over the period 1953-1971 not only do formal statistical tests fail to confirm the notion of industry factors, but the statistics suggest that the number of factors may be large. In addition, factor analysis seems to be sensitive to the choice of assets included in the covariance matrix. For example, analyzing bonds and stocks together reveals additional factors, common to both groups, which are not found when only one set of securities is examined. Finally, factor analysis assumes that the covariance (or the correlation) matrix is constant over time. Such an assumption is not necessarily consistent with the data.

Gilboa, Itzhak

PD March 1986. **TI** A Combination of Expected Utility and Maxmin Decision Criteria. **AA** Department of Economics, Tel-Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 12-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 31. **PR** No Charge. **JE** 26. **KW** Expected Utility. Maxmin. Allais Paradox.

AB A new explanation of the Allais paradox is suggested. A decision rule representable by an increasing function of the expected utility and the minimum utility is axiomatized. The lexicographic separability of this function is also discussed and axiomatized.

Glassman, Debra

PD February 1986. **TI** Currency Depreciation in Early Modern England and France. **AU** Glassman, Debra; Redish, Angela. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-04; Department of Economics, University of British Columbia, 997 1873 East Mall, Vancouver, B.C. CANADA V6T 1Y2. **PG** 28. **PR** $0.20 per page Canadian to other than educational institutions. **JE** 311, 431, 044. **KW** Depreciation. Gresham's Law. Medium of Exchange. Specie. Monetary Standard.

AB The monetary history of early modern Europe has emphasized the issues of bimetallism, currency instability and the shortage of money. This paper argues that these issues are all facets of the same problem - no specie metal had the properties of durability and portability required in a perfect medium of exchange. This problem led to the monetary features that characterize the early modern period, including the choice of a bimetallic standard, the issue of base money and counterfeiting, all of which generated undervalued coins. Undervaluation, in turn, led to certain coins trading at above their official values and to the disappearance of others from circulation. Depreciating the currency was a means of eliminating such phenomena. We examine the causes of depreciation in England and France in the period from 1500 to 1680 and conclude that the existence of undervalued coins was the primary reason for depreciation in these countries. The fact that depreciation was primarily a response to undervaluation, rather than a trade policy or a means to raise revenue or reduce debt, suggests that the optimality of currency stability was perceived long before the Classical gold standard era.

Goecke, Oskar

TI On Simplical Decomposition in Combinatorial Structures. **AU** Faigle, Ulrich; Goecke, Oskar; Schrader, Rainer.

Goldin, Claudia

PD April 1986. **TI** The Earnings Gap Between Male and Female Workers: An Historical Perspective. **AA** Department of Economics, University of Pennsylvania. **SR** National Bureau of Economic Research Working Paper: 1888; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 824, 826, 041. **KW** Earnings Differential. Male-Female Wage Gap.

AB Has economic progress increased the relative earnings of females to males over the long run? Evidence on trends in the earnings gap for the last four decades appears to run counter to this hypothesis. Numerous data sources are used in this paper to piece together a 170-year history of the earnings of females relative to those of males and the variables that determine earnings in the market place. In brief, the constancy of the earnings gap from the 1950s is a short-run phenomenon and cannot be extrapolated into the more distant past. The ratio of female to male earnings in the economy as a whole rose from just over 0.45 to just under 0.60 during 1890 to 1930. It rose to just over 0.60 by 1950 but has been virtually stable from then, declining somewhat during the early to mid-fifties and rising after 1981. The ratio in the manufacturing sector rose from about 0.35 in 1820, to 0.50 in 1850, and to 0.58 in 1930. Advances in the labor market experience of the female working population account for 24 percent of the increase in the earnings ratio over the 1890 to 1940 period. Increases in the returns to education and, to a lesser extent, in educational attainment, account for about 40 percent of the increase from 1890 to 1970. It is also possible that the decreased return to physical attributes (such as strength) accounts for another 28 percent of the increase in the female to male earnings ratio. The various factors considered account for about 85 percent of the entire increase in the ratio from 1890 to 1970 (some factors served to decrease the ratio). The constancy of the gender gap from the 1950s is a function of the increased labor force participation of women which served to stabilize the work experience of the working population of women and to make the future highly unpredictable for many cohorts.

Gordon, Roger H.

PD April 1986. **TI** Notes on the Tax Treatment of Structures. **AU** Gordon, Roger H.; Hines, James R. Jr; Summers, Lawrence H. **AA** Gordon: Department of Economics, University of Michigan. Hines And Summers: Department of Economics, Harvard University. **SR** National Bureau of Economic Research Working Paper: 1896; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 323, 522, 932. **KW** Taxation of Structures. Structures Investment.

AB More than three quarters of the United States tangible capital stock represents structures. Tax policies potentially have a major impact on both the level and composition of investment in structures and equipment. This point is explicitly recognized in most discussions of the effects of capital income taxation. Two aspects of the taxation of structures -- the relative burden placed on structures as opposed to equipment investment and the non-taxation of owner occupied housing under the income tax -- have attracted substantial attention in recent years. This paper explores these two aspects of the taxation of structures investments. While the tax system may well have a potent impact on the level and composition of structures investment, this paper argues that conventional analyses of these effects are very misleading. We reach two main conclusions. First, under current tax law, certain types of structures investment are very highly tax favored. Structures can be transferred and therefore depreciated more than once, and structures may be readily financed with tax-favored debt. Overall, it is unlikely that a significant bias towards equipment and against structures exists under current law. Second, the conventional view that the tax system is biased in favor of homeownership is wrong. Because of the possibility of "tax arbitrage" between high bracket landlords and low bracket tenants, the tax system has long favored rental over ownership for most households. The 1981 reforms by reducing the top marginal tax rate reduced this bias somewhat.

Gourieroux, C.

PD 1986. **TI** Generalized Residuals. **AU** Gourieroux, C.; Monfort, A.; Renault, A.; Trognon, A. **AA** Gourieroux: CEPREMAP. Monfort: INSEE. Renault and Trognon: ENSAE. **SR** Unite de Recherche Document de Travail ENSAE/INSEE: 8604; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. **PG** 38. **PR** No Charge. **JE** 211. **KW** Residuals. Latent Models. Score Tests.

AB In this paper we propose a definition of the residuals which generalises the usual one and which is valid in a large class of non linear econometric models. These generalised residuals are shown to be useful in many situations and, specially, in hypothesis testing problems.

Green, Steven

PD April 1986. **TI** The Illusion of Stabilization Policy?. **AU** Green, Steven; Grossman, Herschel. **AA** Green: Research Department, Federal Reserve Bank of Dallas. Grossman: Department of Economics, Brown University. **SR** National Bureau of Economic Research Working Paper: 1889; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 023, 133, 311. **KW** Monetary Policy. Stabilization Policy. Money Growth.

AB For the period 1959-1972 money growth in the United States was positively correlated with past inflation and negatively correlated with past unemployment, whereas for the period 1973-1984 this correlation pattern was reversed. International data, moreover, show that the eight largest western economies exhibit a wide variety of patterns for these correlations, and these patterns seem to be unrelated to average inflation. Theoretical analysis reveals that a model in which the monetary authority is concerned only with controlling inflation is consistent with any pattern of sample correlations of money growth with past inflation and past unemployment. This analysis suggests that international differences in these sample correlations result from differences in the sample variances of disturbances to productivity growth and to aggregate demand. Specifically, the analysis suggests that the critical difference between the pre-1973 and post-1973 periods for the United States was a decrease in the importance of transitory disturbances to aggregate demand relative to permanent disturbances to productivity growth. More generally, these results imply that we cannot readily infer the objectives of the monetary authority from observed patterns of monetary policy.

Greenberg, Joseph

PD March 1986. **TI** Stable Standards of Behavior: A Unifying Approach to Solution Concepts. **AA** University of Haifa. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: 484; IMSSS, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 53. **PR** $4.00. **JE** 026. **KW** Inducement Correspondence. Core. Nash. Coalition-Proof Nash Equilibria. Subgame Perfect Equilibria. Stable Standards of Behavior.

AB I suggest a stability requirement that, I believe, ought to be satisfied by every consistent solution concept for any game, regardless of whether it is given in characteristic function, normal or extensive form. The underlying motivation, as well as the formal representation of the proposed stability criterion, are very closely related to von Neumann-Morgenstern's solution -- the Stable Set. The basic idea is that a group of individuals, S, will reject an outcome if and only if S can thereby make each of its members better-off. This criterion can fully characterize notions such as The Core, the set of Nash Equilibria, and selections from Perfect Nash Equilibria.

PD March 1986. **TI** A Simple Proof of the Equivalence Theorem for Oligopolistic Mixed Markets. **AU** Greenberg, Joseph; Shitovitz, Benyamin. **AA** University of Haifa. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: 486; Institute for Mathematical Studies in the Social Sciences, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 9. **PR** $4.00. **JE** 021, 022. **KW** Voting. Public Goods. General Equilibrium. Oligopolistic Mixed Markets.

AB In a rather long and complicated way Shitovitz proved that in mixed markets with at least two large traders all of the same "type," all core allocations are competitive. We provide a simple and short proof for this important result. Unlike Shitovitz, we do not prove directly this equivalence. Rather, we first show that the core of an oligopolistic market coincides with the core of the atomless market derived by splitting the atoms into a continuum of traders. We then apply Aumann's Equivalence Theorem to this atomless market, whose set of competitive equilibria coincides with that of the original mixed market.

Greenwood, Jeremy

PD April 1986. **TI** Investment, Capacity Utilization and the Real Business Cycle. **AU** Greenwood, Jeremy; Hercowitz, Z. **AA** Greenwood: University of Western Ontario and University of Rochester. Hercowitz: Tel Aviv University, University of Western Ontario, and University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 38; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 22. **PR** No Charge. **JE** 641, 621, 131. **KW** Partial Capacity Utilization. Technological Changes. Investment. Business Cycles.

AB This paper addresses the macroeconomic effects of direct shocks to investment in a framework where the investment decision affects the optimal utilization rate of the already installed capital stock. The shocks considered take the form of technological changes that affect the productivity of new capital goods, or changes in taxes relevant for investment decisions, such as investment subsidies. The results in the paper imply that a variable capacity utilization rate may be important for the understanding of business cycles. It provides a channel by which investment shocks generate a higher utilization rate of the existing capital stock and hence higher labor demand. This mechanism stands in contrast to the intertemporal substitution effect which works on labor supply. Because of the variable capacity utilization, the model predicts the Keynesian type of result of less than "full capacity equilibrium". Unlike in the Keynesian model, however, the labor market always clears and partial capacity utilization is socially optimal.

Grenier, Gilles

TI Models of Firm Behavior Under Minimum Wage Legislation. **AU** Bloom, David E.; Grenier, Gilles.

Grilli, Vittorio U.

PD November 1985. **TI** Investment Banking Contracts in a Speculative Attack Environment: Evidence from the 1890's. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 28; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 47. **PR** No Charge. **JE** 042, 311. **KW** Investment Banking Contracts. Speculative Attacks. Belmont-Morgan Contract.

AB The objective of this paper was to examine the empirical relevance of theories of investment banking contracts in a speculative attack environment. Given the impossibility of applying standard regression analysis, I propose a different approach to tackle the problem. To begin with, this unconventional procedure involved the reproduction of the environment in which the Belmont-Morgan contract took place. During this first phase, we obtain results which are interesting per-se. A speculative attack model was estimated from January 1885 to December 1895. This allowed us to identify the periods of the greatest stress on the system; here the discriminating criteria is the probability of an attack on the gold standard. Moreover, we were able to determine the effects of the Treasury's fiscal policy on the viability of the gold standard regimes. Next, we provide estimates of the additional parameters and constraints involved in the contracting problem, facing the Treasury and the Belmont-Morgan syndicate. Finally, by using the elements estimated in the first two steps of the procedure, we solve the optimization problem that the Treasury was facing, according to the theory under investigation. We find that there exists a reasonable set of parameters which supports the Belmont-Morgan contract as an optimal outcome. We therefore conclude that the hypothesis -- that the Treasury and the syndicate behaved following the proposed theory -- receive some support.

Gros, Daniel

PD March 1986. **TI** Wage Indexation and the Real Exchange Rate in Small Open Economies: A Study of the Effects of Fluctuations in Export Earnings. **AA** International Monetary Fund. **SR** International Monetary Fund Departmental Memoranda/Staff Paper: (33)1/5; International Monetary Fund, Washington D.C. 20431. **PG** 22. **PR** No Charge. **JE** 431, 133. **KW** Wage Indexation. Real Exchange Rate. Export Fluctuations.

AB Fluctuations in export earnings can have profound effects on small open economies. This paper considers how required adjustments in the real exchange rate and real wage can be achieved in high-inflation economies with indexed wages. It is argued that necessary adjustments in wages and the real exchange rate can take place even in the presence of indexation rules if wages are not only adjusted to compensate for changes in the price level but are also linked to changes in export earnings. The paper also examines the welfare and employment effects of different suboptimal indexation rules.

Grossman, Gene M.

PD March 1986. **TI** Counterfeit-Product Trade. **AU** Grossman, Gene M.; Shapiro, Carl. **AA** Woodrow Wilson School, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1876; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 411. **KW** Trade. Counterfeiting. Trademarks. Disposing Counterfeit Goods. Counterfeit-Product Trade.

AB We analyse a two-country model of trade in both legitimate and counterfeit products. Domestic firms own trademarks and establish reputations for delivering high-quality products in a steady-state equilibrium. Foreign suppliers export legitimate low-quality merchandise and counterfeits of domestic brand-name goods. Heterogeneous home consumers either purchase low-quality imports or buy brand-name products, rationally expecting some degree of counterfeiting of the latter. We characterise a counterfeiting equilibrium and explore its properties. We describe the positive and normative effects of counterfeiting in comparison with a no-counterfeiting benchmark. Finally, we provide a welfare analysis of border inspection policy and of policy regarding the disposition of counterfeit goods that are confiscated at the border.

Grossman, Herschel

TI The Illusion of Stabilization Policy?. **AU** Green, Steven; Grossman, Herschel.

Grossman, Michael

TI Effects of Alcoholic Beverage Prices and Legal Drinking Ages on Youth Alcohol Use. **AU** Coate, Douglas; Grossman, Michael.

Grubb, David B.

PD December 1985. **TI** Bias in Regressions with a Lagged Dependent Variable. **AU** Grubb, David B.; Symons, James S. V. **AA** Grubb: Centre for Labour Economics. Symons: University College London. **SR** University College London Discussion Paper: 85-28; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 27. **PR** 1.50 pounds sterling. **JE** 211. **KW** Estimation Bias. Lagged Dependent Variables. Autocorrelation.

AB We give an expression for bias to order $0(1/T)$, where T is the sample size, for bias to the estimated coefficient on a lagged dependent variable when all other regressors are exogenous. In general the coefficient on a lagged dependent variable is biased downwards by the presence of positively autocorrelated regressors and upwards by the presence of negatively autocorrelated regressors. The maximum bias which can arise when K exogenous regressors are present is a linear function of K. Bias is decreased in proportion as the variance of the lagged dependent variable, after regressing out other explanatory variables, is a function of the exogenous variables rather than of the equation error.

Haller, Hans

PD February 1986. **TI** Competition in a Stock Market with Small Firms. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E-86-02-02; Working Paper Coordinator, Department of Economics Sandy Hall, Blacksburg, VA 24061. **PG** 29. **PR** No Charge. **JE** 021, 514, 313. **KW** Objectives of Firms. Shareholder Unanimity. Competition.

AB In a type economy with many small firms and investors which is obtained by modifying the mean-variance model of stock and capital markets, the initial shareholders of any firm want that firm to maximise its net market value. Further, we provide sufficient conditions for the existence of a competitive equilibrium, i.e., a stock and capital market price system and production plans such that (i) each firm chooses a production plan which maximises the firm's net market value given the price system; (ii) given the profile of production plans the price system is clearing the stock market.

Ham, John

TI Unemployment, Labor Force Participation and Hours of Work. **AU** Blundell, Richard W.; Ham, John; Meghir, Costas.

Hamermesh, Daniel S.

PD April 1986. **TI** Compensating Wage Differentials and the Duration of Wage Loss. **AU** Hamermesh, Daniel S.; Wolfe, John R. **AA** Department of Economics, Michigan State University. **SR** National Bureau of Economic Research Working Paper: 1887; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 824, 831. **KW** Compensating Wage Differentials. Duration of Wage Loss. Risk of Injury. Union-Nonunion Differences.

AB Several reasons are offered why workers will receive larger compensating wage differentials for increases in the duration of wage losses than for increases in the probability of loss that produce the same expected loss. A formal model of occupational choice is developed that shows the extent to which the compensation for increased duration exceeds that for increased risk. Using Panel Study of Income Dynamics data linked to industry data on injuries and unemployment, we find: 1) Nearly all the compensating wage differential for losses due to workplace injuries is compensation for increases in the duration of loss; 2) Similarly, nearly all the compensation for losses due to cyclical unemployment is compensation for increases in duration, especially for increases in duration beyond the 26 weeks of unemployment that are usually compensated by unemployment insurance. The compensating differentials for risk of injury are larger for union than for nonunion workers, while those for cyclical unemployment are smaller for union workers.

Hammond, Peter J.

TI Walrasian Equilibrium without Survival: Existence, Efficiency and Remedial Policy. **AU** Coles, Jeffrey L.; Hammond, Peter J.

PD March 1986. **TI** Consequentialism, Ellsberg's Paradox and Expected Evaluation. **AA** Stanford University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: 472; IMSSS, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 43. **PR** $4.00. **JE** 026, 511. **KW** Consequentialist Behavior. Expected Utility. Subjective Probability. Ellsberg's Paradox. Bayes' Rule.

AB "Consequentialism" requires behaviour in decision trees (or in subtrees) to have consequences which depend only on available consequences, not on the structure of the tree. Earlier work showed how consequentialism, together with a weak continuity axiom, entails expected utility maximisation when probabilities are objective. Here decision trees are considered in which some events without objective probabilities may occur. In general, only a weakened form of Anscombe and Aumann's extension of Savage's sure thing principle holds, and "Ellsberg's paradox" is consistent with consequentialism. But a natural "perfectly correlated consequence principle" and a very weak structural assumption together imply that consequentialist behavior maximises the expected total evaluation of possible consequence state pairs.

Hanemann, W. Michael

PD March 6, 1986. **TI** On Reconciling Different Concepts of Option Value. **AA** University of California, Berkeley. **SR** University of California at Berkeley Department of Agricultural and Resource Economics (CUDARE) Working Paper: 295; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 31. **PR** $4.65. **JE** 721, 026. **KW** Option Value. Risk Premium. Uncertainty. Benefit-Cost Analysis.

AB Two concepts of option value -- Schmalensee-Bohm-Graham and Arrow-Fisher-Henry -- deal with different aspects of uncertainty. However, in this paper I want to show that they can be reconciled. The issues addressed by SBG option value also arise in the context of AFH option value, and one can actually construct an analog of the SBG concept within the AFH framework. I should add that a similar argument has recently been made by Maler (1984), and our two papers are complementary. Unlike Maler, I will focus exclusively on a single individual and will not deal with the aggregation of option values across individuals. However, in addition to showing how the SBG and AFH concepts of option value can be integrated, I will investigate the link between SBG option value and the concept of a risk premium. I show that there are some subtle differences between the two concepts.

Hanushek, Eric A.

PD April 28, 1986. **TI** The Economics of Schooling: Production and Efficiency in Public Schools. **AA** University of Rochester. **SR** University of Rochester Department of Economics Discussion Paper: 39; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 72. **PR** $3.00. **JE** 912. **KW** Educational Production Functions. Efficiency in Schools. Elementary and Secondary Education.

AB The objective of this study to examine the research on the economics of education and schooling and to explore what has been learned and where major gaps remain. The center of attention is production and efficiency aspects of schools as opposed to the ultimate uses of education.

Harrington, Joseph E. Jr

PD October 1984. **TI** Oligopolistic Entry Deterrence Under Incomplete Information. **AA** The Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: 173; Department of Political Economy, Johns Hopkins University, Baltimore, MD 21218. **PG** 41. **PR** No Charge. **JE** 026, 611. **KW** Asymmetric Information. Entry Deterrence.

AB Recent work has investigated the effects of asymmetric information between an incumbent firm and a potential entrant. This study extends the analysis to allow the initial market structure to be a noncooperative oligopoly. A Bayesian-Nash equilibrium is shown to exist in which the incumbent firms, although unable to collude, strategically deter entry which would have occurred under complete information. In contrast to the past limit pricing literature, it is a high price that deters entry as it signals to the potential entrant that this is a high cost industry. Extending the model to allow for multiple potential entrants, it is found that increasing the degree of potential competition raises the pre-entry price and reduces the likelihood of entry.

PD April 1986. **TI** The Alternating Offer Model As A Voting Procedure. **AA** The Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: 172; Department of Political Economy, Johns Hopkins University, Baltimore, MD 21218.

PG 30. **PR** No Charge. **JE** 025. **KW** Alternating Offer Model. Voting Rules. Risk Aversion.
AB This paper extends the alternating offer model to allow for n players and non-unanimity voting rules. For the case of identical preferences, we find that the initial proposal maker earns a share of at least (1-d) for a d-majority rule. As the voting rule moves from requiring a simple majority towards unanimity, the asymmetric advantage of the initial proposal maker declines and the equilibrium distribution becomes more equal. Under heterogeneous preferences, an effect of risk aversion is found which has not arisen in bargaining models because of the implicit use of an unanimity voting rule. With a non-unanimity rule, this effect arises and can result in an equilibrium distribution in which the most (least) risk averse player earns the highest (lowest) expected share.

Harris, Trevor

TI Inflation, Translation and Conflicts in Statements of Financial Accounting Standards. **AU** Adler, Michael; Harris, Trevor.

Hartley, Peter R.

PD April 1986. **TI** Inside Money and Monetary Neutrality. **AU** Hartley, Peter R.; Walsh, Carl E. **AA** Hartley: Department of Economics, Princeton University. Walsh: Federal Reserve Bank of San Francisco. **SR** National Bureau of Economic Research Working Paper: 1890; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 311, 023. **KW** Neutrality of Money. Inside Money. Intermediation. Shocks.
AB This paper examines the interaction between the financial and real sectors of the economy within the framework of a stochastic, rational expectation model that distinguishes between inside and outside money. The model also can be used to study the impact of variations in the degree of intermediation, measured by the elasticity of bank deposit supply. In contrast to earlier work which emphasized confusion between monetary and real shocks, we focus on the role played by confusion between inside and outside money and temporary and permanent base money disturbances. Financial sector disturbances, as well as temporary shocks to the monetary base, are shown to have real effects even when private agents have complete information. When contemporaneous information on economic disturbances is incomplete, permanent shocks to the monetary base also have real effects. If our model is correct, it is invalid to reject equilibrium models of the business cycle on the grounds that anticipated money affects output. We argue that this result is robust in the sense that many "reasonable" models which incorporate inside money would yield a non-neutrality of portfolio and temporary base money supply shocks.

Hasbrouck, Joel

PD May 1986. **TI** Intraday Stock Returns: Empirical Evidence of Lagged Adjustment. **AU** Hasbrouck, Joel; Ho, Thomas S. Y. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 376; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 34. **PR** $2.00. **JE** 313. **KW** Intraday Stock Returns. Adjustment Speed.
AB This paper discusses and tests a model for the process generating intraday stock returns. The model is a discrete-time version of Goldman and Beja's '1979 model in which prices follow a random walk subject to transient market disturbances, lagged adjustment and observational error. Using two months of transaction and quote data for NYSE stocks, we find the model appropriate for intraday returns based on prices adjusted for the bid/ask spread. In particular, we can reject naive models specifying the price as a random walk plus bid/ask spread, and affirm the existence of lagged adjustment effects. The adjustment speed, moreover, appears to be a positive function of market value, taken as a proxy for market quality.

Heinemann, H. Erich

TI Shadow Open Market Committee Policy Statement and Position Papers. **AU** Jordan, Jerry L.; Poole, William; Levy, Mickey D.; Rasche, Robert H.; Heinemann, H. Erich.

Hellwig, Martin

TI The Approximation of Competitive Equilibria by Bertrand-Edgeworth Equilibria in Large Markets. **AU** Allen, Beth; Hellwig, Martin.

PD September 1985. **TI** On the Existence of Subgame-Perfect Equilibrium in Infinite-Action Games of Perfect Information. **AU** Hellwig, Martin; Leininger, Wolfgang. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A 26; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 29. **PR** No Charge. **JE** 026. **KW** Infinite-Action Games. Equilibrium Strategies.
AB The paper studies infinite-action games of perfect information with finitely or countably many players. It is assumed that payoff functions are continuous, strategy sets are compact, and constraint correspondences are continuous. Under these assumptions we prove the existence of subgame-perfect equilibria in pure strategies which are measurable functions. If we make the additional assumption that for any date t, the subgame that is played from date t on depends on the history up to t only as this history affects some vector of "state" variables, then equilibrium strategies admit a "closed-loop" representation as measurable functions of the current values of the "state" variables.

Hendershott, Patric H.

PD April 1986. **TI** Tax Reform and the Slope of the Playing Field. **AA** Ohio State University. **SR** National Bureau of Economic Research Working Paper: 1909; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 323. **KW** Tax Reform. Saving.
AB Possible benefits of tax reform include faster economic growth and greater equity across households. A part of economic growth is the channeling of saving into the most productive real investments. The ability of various tax regimes to channel saving efficiently and independently of the inflation rate is the focus of the current paper. The tax regimes include current law,

preERTA law, the Treasury and Administration reform proposals, HR 3838, and what seems likely to come out of the Senate Finance Committee.

Henderson, Yolanda K.

TI A Disaggregate Equilibrium Model of the Tax Distortions Among Assets, Sectors, and Industries. **AU** Fullerton, Don; Henderson, Yolanda K.

TI The Impact of Fundamental Tax Reform on the Allocation of Resources. **AU** Fullerton, Don; Henderson, Yolanda K.

Hercowitz, Z.

TI Investment, Capacity Utilisation and the Real Business Cycle. **AU** Greenwood, Jeremy; Hercowitz, Z.

Hernandez, D. Alejandro

TI Exchange Controls, Capital Controls, and International Financial Markets. **AU** Stockman, Alan C.; Hernandez, D. Alejandro.

Hildenbrand, Kurt

PD July 1985. **TI** Models of Income Distribution in Britain: Lognormal, Gamma and Beta Densities. **AU** Hildenbrand, Kurt; Islam, Saiful. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A16; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 29. **PR** No Charge. **JE** 221, 024. **KW** Properties of the Distributions. Income Distribution. Britain.

AB In this note we model the British Income Distribution for the years 1969 to 1981 using the lognormal, gamma and beta densities. Comparison of various properties of the distributions shows that the gamma distribution fits the samples best.

Hines, James R. Jr

TI Anticipated Tax Changes and the Timing of Investment. **AU** Auerbach, Alan J.; Hines, James R. Jr.

TI Notes on the Tax Treatment of Structures. **AU** Gordon, Roger H.; Hines, James R. Jr; Summers, Lawrence H.

Hinich, Melvin J.

PD February 1986. **TI** Estimating Linear Filters with Errors in Variables Using the Hilbert Transform. **AU** Hinich, Melvin J.; Weber, Warren E. **AA** Federal Reserve Bank of Minneapolis, Research Department. **SR** Federal Reserve Bank of Minneapolis Staff Report: 96; Research Department, Federal Reserve Bank of Minneapolis, 250 Marquette Avenue, Minneapolis, MN 55480. **PG** 41. **PR** No Charge. **JE** 211. **KW** Errors-in-Variables. Distributed Lags. Frequency Domain. Hilbert Transform. Spectral Estimation.

AB In this paper we present a consistent estimator for a linear filter (distributed lag) when the independent variable is subject to observational error. Unlike the standard errors-in-variables estimator which uses instrumental variables, our estimator works directly with observed data. It is based on the Hilbert transform relationship between the phase and the log gain of a minimum phase-lag linear filter. The results of using our method to estimate a known filter and to estimate the relationship between consumption and permanent income demonstrate that the method performs quite well even when the noise-to-signal ratio for the observed independent variable is large. We also develop a criterion for determining whether an estimated phase function is minimum phase-lag.

Ho, Thomas S. Y.

PD May 1986. **TI** Term Structure Movements and Interest Rates Contingent Claims Pricing. **AU** Ho, Thomas S. Y.; Lee, Sang Bin. **AA** Ho: New York University. Lee: Korea Economic Research Institute. **SR** New York University Salomon Brothers Center Working Paper: 375; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 39. **PR** $2.00. **JE** 311. **KW** Term Structure. Arbitrage Free Interest Rate Movements. Interest Rate Contingent Claims.

AB This paper derives a general class of arbitrage free interest rate movements models (AR models). These models take the complete term structure as given and derive the subsequent stochastic movement of the term structure such that the movement is arbitrage free. We then show how they can be used to price interest rate contingent claims relative to the observed complete term structure of interest rates. We also study the behavior and the economics of a particular AR-model. Our approach can be used to price a broad range of interest rates contingent claims, including bond options, and callable bonds.

TI Intraday Stock Returns: Empirical Evidence of Lagged Adjustment. **AU** Hasbrouck, Joel; Ho, Thomas S. Y.

Hodrick, Robert J.

TI Asset Price Volatility, Bubbles and Process Switching. **AU** Flood, Robert P.; Hodrick, Robert J.

Holly, Alberto

PD February 1986. **TI** Specification Tests: An Overview. **AA** Department d'econometrie et d'economie politique, Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8603; Department d'econometrie et d'economie politique, Universite de Lausanne BFSH - Dorigny, CH-1015 Lausanne/Switserland. **PG** 57. **PR** No Charge. **JE** 211, 212. **KW** Specification Tests. Hausman Test. Multiple Hypothesis Testing. White's Information Matrix Test.

AB This paper is concerned with methodological aspects of specification tests, with particular emphasis on general methods for deriving the asymptotic properties of specification test statistics in the presence of nuisance parameters in the context of nonlinear models. The properties of the classical procedures are briefly recalled. A general derivation of Hausman's specification test is given. The problem of simultaneous misspecification tests is discussed. Finally, the properties of some test statistics are examined when the model is misspecified.

PD March 1986. **TI** A Note on Instrumental Variables and Maximum Likelihood Estimation Procedures. **AU** Holly, Alberto; Magnus, Jan R. **AA** Holly: University of Lausanne. Magnus: London School of Economics. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8605; Departement d'econometrie et d'economie politique, Universite de Lausanne BFSH - Dorigny, CH-1015 Lausanne / Switzerland. **PG** 20. **PR** No Charge. **JE** 211. **KW** Instrumental Variables. Maximum Likelihood.
AB Two alternative formulations of instrumental variables procedure are presented in this paper. It is shown that the instrumental variables estimator of a vector of regression parameters is asymptotically as efficient as the maximum likelihood estimator of this vector in the context of a "completed model". The derivation of the information matrix for this model and of some important elements of its inverse is presented in the appendix.

Holzer, Harry J.

PD March 1986. **TI** Employed and Unemployed Job Search: A Comparison of Choices and Outcomes Among Youth. **AA** Department of Economics, Michigan State University. **SR** National Bureau of Economic Research Working Paper: 1861; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 824. **KW** Search. Search Effort.
AB This paper presents evidence that young unemployed jobseekers choose higher levels of search effort (as measured by numbers of methods used and time spent per method) and lower relative reservation wages than do comparable employed seekers. The unemployed also have higher probabilities of gaining new employment, which reflect higher probabilities of receiving offers and especially higher probabilities of accepting them; as well as slightly lower wages. These differences in outcomes between the two groups are at least partly explained by differences in their respective search choices. The evidence thus suggests that unemployed jobseekers have higher costs of search (from foregone earnings) than do the employed, causing the former to seek new jobs more eagerly.

PD March 1986. **TI** Informal Job Search and Black Youth Unemployment. **AA** Department of Economics, Michigan State University. **SR** National Bureau of Economic Research Working Paper: 1860; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 821, 826, 813. **KW** Search Methods. Black Unemployment.
AB In this paper I analyse how young black and white unemployed jobseekers use various methods of search, and the employment outcomes which result from their use. The focus is on distinguishing informal search methods (i.e., friends and relatives or direct application without referral) from more formal ones in analysing racial differences. The results show that the two informal methods of search account for about 90 per cent of the difference in employment probabilities between white and black youth. This also accounts for 57-71 per cent of the difference in unemployment rates between the two. Furthermore, most of these results reflect differences in the ability of these methods to generate job offers, as opposed to differences in search effort or job acceptance rates. However, our ability to explain these differences through personal, family, and household characteristics was generally quite limited.

PD March 1986. **TI** Search Method Use by Unemployed Youth. **AA** Department of Economics, Michigan State University. **SR** National Bureau of Economic Research Working Paper: 1859; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 821, 824. **KW** Job Search. Search Methods.
AB In this paper I investigate the use of different search methods by unemployed youth. I present a job search model which shows that search method choices should be related to their costs and expected productivities, as well as other factors such as nonwage income and wage offer distributions. I then present empirical evidence on the use of these methods and their effects on employment outcomes. These results show that the most frequently used search methods, which are friends and relatives and direct applications without referral, are also the most productive in generating job offers and acceptances. Econometric evidence then shows that the number of methods used is affected by factors which presumably reflect market opportunities as well as income sources and needs. While the use of specific search methods respond differently to these factors, they are chosen in a manner which generates positive average effects on employment outcomes for those who use them. The results are thus consistent with the search model presented here.

Huang, Cliff J.

TI On the Extent of the Market: Wholesale Gasoline in the Northeastern United States. **AU** Spiller, Pablo T.; Huang, Cliff J.

Inder, Brett

PD May 1986. **TI** An Approximation to the Null Distribution of the Durbin-Watson Statistic in Models Containing Lagged Dependent Variables. **AA** Department of Econometrics and Operations Research, Monash University. **SR** Monash Department of Econometrics and Operations Research Working Paper: 4/86; Department of Econometrics and Operations Research, Monash University, Clayton, Victoria 3168, AUSTRALIA. **PG** 36. **PR** No Charge. **JE** 211. **KW** Durbin-Watson Test. Dynamic Models. Autoregressive Disturbances.
AB We consider testing for autoregressive disturbances in the linear regression model with a lagged dependent variable. An approximation to the null distribution of the Durbin-Watson statistic is developed using small-disturbance asymptotics, and is used to obtain test critical values. We also obtain nonsimilar critical values for the Durbin-Watson and Durbin's h and t tests. Monte Carlo results are reported comparing the performances of the tests under the null and alternative hypotheses. The Durbin-Watson test is found to be more powerful and to perform more consistently than either of Durbin's tests under the null hypothesis.

Islam, Saiful

TI Models of Income Distribution in Britain:

Lognormal, Gamma and Beta Densities. AU Hildenbrand, Kurt; Islam, Saiful.

Ito, Takatoshi

PD March 1986. TI News from the United States and Japan: Which Moves the Yen/Dollar Exchange Rate?. AU Ito, Takatoshi; Roley, V. Vance. AA Ito: Department of Economics, University of Minnesota. Roley: Graduate School of Business Administration, University of Washington. SR National Bureau of Economic Research Working Paper: 1853; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR $2.00. JE 431. KW Market Efficiency. Overshooting. Economic Announcements. Dollar Appreciation. Yen/Dollar Exchange Rate.

AB Intra-daily movements in the yen/dollar exchange rate were examined in four non-overlapping segments within each business day from January 1980 to September 1985. The empirical results yielded several conclusions. First, most depreciation of the yen (appreciation of the dollar) from late 1982 to early 1984 occurred in the New York market. The direction of the yen was mostly neutral in the Tokyo market. Also, the volatility of the exchange rate decreased considerably in the Tokyo market. The volatility in the New York market, on the other hand, did not decrease until very recently. Second, market efficiency was examined in terms of the random-walk behavior of short-run movements in the yen/dollar rate. Information on the preceding segments within a day was sometimes significant in predicting the exchange rate movement in a market. Third, there is evidence of the "profit-taking" behavior, or overshooting, in that a large jump (more than 3 absolute yen) in any market tends to be reversed by a fifth of the jump during the same day in the next market. Finally, the relative effects of news from the United States and Japan were examined explicitly both with respect to possible major events behind large jumps and the response of the yen/dollar rate to particular economic announcements in both countries. Over the entire sample period, news concerning the United States money stock had the only significant effects.

Jacklin, Charles J.

PD July 1985. TI Distinguishing Panics and Information-Based Bank Runs: Welfare and Policy Implications. AU Jacklin, Charles J.; Bhattacharya, Sudipto. AA Jacklin: University of Chicago. Bhattacharya: University of California, Berkeley. SR Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-86-16; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. PG 45. PR $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). JE 026, 314. KW Risk. Bank Runs. Welfare.

AB In this paper we contrast panics and information-based bank runs in an effort to provide a robust and empirically plausible model of how bank runs are triggered. The model of information-based runs is characterised by two-sided asymmetric information -- the bank cannot observe the true liquidity needs of the depositors while the depositors are asymmetrically informed about the quality of the bank's assets. We also examine the degree of risk sharing provided by bank deposit contracts relative to that provided by traded equity contracts. We show that the choice of risk sharing instrument (deposit or equity) depends upon the attributes of and information about the underlying investment returns; for example, deposit contracts are better for financing relatively low risk assets while equity contracts are better for financing relatively high risk assets.

Jackson, Matthew O.

TI Optimal Hedging and Equilibrium in a Dynamic Futures Market. AU Duffie, Darrell; Jackson, Matthew O.

Jere, R.

TI Determinants of Nutrient Consumption and Health Status of Individual Family Members in Rural India: A Latent Variable Analysis. AU Behrman; Jere, R.; Deolalikar, Anil B.

John, Kose

TI Efficient Signalling with Dividends and Investments. AU Ambarish, Ramasastry; John, Kose; Williams, Joseph.

Johnson, Robert A.

PD February 1986. TI A Method for Solving Systems of First Order Linear Homogeneous Differential Equations when the Elements of the Forcing Vector are Modelled as Step Functions. AA International Finance Division, Federal Reserve Board. SR Board of Governors of the Federal Reserve System International Finance Discussion Papers: 275; International Finance Division, Board of Governors of the Federal Reserve System, Washington, DC 20551. PG 31. PR No Charge. JE 213. KW Simulation Methods. Perfect Foresight. Anticipated Policy Changes. Solving Systems of Equations.

AB This paper presents a method for solving a system of first order linear differential equations with constant coefficients when the elements of the forcing vector are step functions. The analysis presented in the text has been programmed for use in the computer simulation of linear continuous time rational expectations models using any combination of anticipated and unanticipated, permanent or temporary shocks. The program entitled "JAB" is available from the author upon request.

Jones, Glenn

TI Optimal Taxation of Couples. AU Apps, Patricia; Jones, Glenn.

Jones, Stephen R. G.

PD February 1986. TI The Role of Negotiators in Bargaining. AA Department of Economics, University of British Columbia. SR University of British Columbia Department of Economics Discussion Paper: 86-08; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C. CANADA V6T 1Y2. PG 34. PR JE 026, 832. KW Bargaining. Negotiators. Union Leader Objectives.

AB Differences between the objectives of union leaders and those of the rank and file have traditionally been thought the result of political processes or irrationality. This paper shows that such differences will naturally arise as part of a rational bargaining strategy, since delegation of authority to a negotiator permits the union members to achieve advantageous commitment. This use of negotiators leads to revised interpretation of many popular theories of wage and employment determination, such as the efficient bargain and the right-to-manage models, and may form the foundation, when both parties to a bargain use negotiators, of a theory of disagreements in bargaining.

Jordan, Jarry L.

TI Shadow Open Market Committee Policy Statement and Position Papers. **AU** Brunner, Karl; Levy, Mickey D.; Jordan, Jarry L.; Rasche, Robert H.

Jordan, Jerry L.

TI Shadow Open Market Committee Policy Statement and Position Papers. **AU** Brunner, Karl; Levy, Mickey D.; Jordan, Jerry L.; Rasche, Robert H.; Tumlir, Jan.

PD September 1985. **TI** Shadow Open Market Committee Policy Statement and Position Papers. **AU** Jordan, Jerry L.; Poole, William; Levy, Mickey D.; Rasche, Robert H.; Heinemann, H. Erich. **AA** Jordan: First Interstate Bancorp. Poole: Brown University. Levy: Fidelity Bank. Rasche: Michigan State University. Heinemann: Ladenburg, Thalmann and Company. **SR** University of Rochester Center for Research in Government Policy and Business Working Paper: PPS 85-2; Graduate School of Management, University of Rochester, Rochester, NY 14627. **PG** 62. **PR** No Charge. **JE** 133, 322, 311. **KW** Shadow Open Market Committee.
AB This paper presents the policy statement and position papers of the Shadow Open Market Committee from their September/1985 meeting.

Jorion, Philippe

PD January 1986. **TI** Integration versus Segmentation in the Canadian Stock Market. **AU** Jorion, Philippe; Schwartz, Eduardo. **AA** Jorion: Graduate School of Business, Columbia University. Schwartz: Faculty of Commerce, University of British Columbia. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-86-20; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 21. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 441. **KW** International Finance. Canadian Stock Market. Interlisted Stocks. Integration of Capital Markets. International Asset Pricing Model.
AB This paper examines the issue of integration versus segmentation of the Canadian equity market relative to a global North American market. We compare the international and domestic versions of the CAPM, and find that integration, or the mean-variance efficiency of the global market index, is rejected by the data. Segmentation is the preferred model, based on a maximum likelihood procedure correcting for thin trading. We further divide the sample into securities that are interlisted in Canada and the United States, and those that are not. Integration is rejected for both groups, which indicates that the source of segmentation can be traced to legal barriers based on the nationality of issuing firms.

PD March 1986. **TI** The European Currency Unit and Efficient Portfolio Choice. **AA** Graduate School of Business, Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-86-21; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 21. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 441, 522. **KW** European Currency Unit. International Diversification. Currency Baskets. Portfolio Choice. International Finance.
AB One of the most interesting developments in international capital markets in recent years has been the emergence of the European Currency Unit (ECU) as a currency basket in financial transactions. The ECU market, virtually insignificant four years ago, now accounts for about 5 percent of the international bond and Eurocurrency markets. This success warrants an examination of the role of the ECU as a currency basket in international portfolio choice. This paper shows that, given the sampling variability observed in the data, the ECU does not appear to be suboptimal relative to the subset of individual component currencies. This result suggests that investing in the ECU is about as efficient as tailoring one's optimal portfolio. In addition, if transaction costs are present, then the ECU appears to be a reasonable vehicle for currency diversification.

PD May 1986. **TI** The Exchange Rate Exposure of United States Multinationals. **AA** Graduate School of Business, Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: F5-86-22; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 28. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 431, 441, 522. **KW** Exchange Rates. Value of the Firm. Multinationals. Hedging. International Finance.
AB This paper examines the exposure of United States multinationals to foreign currency risk. First, the study focuses on the determinants of exchange rate exposure. The co-movement between stock returns and the value of the dollar is found to be positively related to the percentage of foreign operations of United States multinationals. On the other hand, size does not explain exchange rate exposure. Second, given these results, the paper addresses the issue of the pricing of exchange rate exposure in an APT framework. There is little evidence that exchange risk is priced for United States multinationals.

Jun, Joosung

TI The Effects of Tax Rules on Nonresidential Fixed Investment: Some Preliminary Evidence from the 1980's. **AU** Feldstein, Martin; Jun, Joosung.

Kahn, Qaiser M.

PD 1985. **TI** Household Wealth, Mother's Education, and Female Child Mortality in South Asia: An Empirical

Test of Intrahousehold Resource Allocation and Sex Differentials in Child Mortality. **AA** Bowdoin College. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-6; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 20. **PR** No Charge. **JE** 841, 912. **KW** Life Expectency. Mother's Education. Bangladesh.

AB This paper is an attempt to explain peculiarities in the South Asian pattern of life expectancies, where contrary to biological patterns, males have a higher life expectancy at birth. Using a model of intrahousehold resource allocation developed by Rosenzweig and Schultz, it is shown that this can be explained by preferences for male children. The empirical results from Bangladesh show evidence for this model. An interesting result is that mother's education plays a major role in reducing female child mortality. In fact, a mother who has completed primary education could halve the mortality among her female children. There are a variety of explanations for this finding.

Kalaba, Robert

PD April 1986. **TI** Flexible Least Squares. **AU** Kalaba, Robert; Tesfatsion, Leigh. **AA** Kalaba: Department of Biomedical Engineering, University of Southern California. Tesfatsion: Department of Economics, University of Southern California. **SR** University of Southern California Modelling Research Group Working Paper: M8616; Department of Economics, University of Southern California, University Park, Los Angeles, CA 90089-0152. **PG** 19. **PR** No Charge. **JE** 211. **KW** Flexible Least Squares. Prior Theoretical Specifications.

AB Suppose an investigator observing a dynamical process believes a priori that significant nonlinearities may be present in the dynamics and observations, but has little knowledge of, or belief in, quantifiable stochastic properties. What constitutes a practical and intuitively appealing approach for testing the compatibility of his prior theoretical specifications with his observations? The present paper proposes a "flexible least squares" approach. The prior theoretical specifications of the investigator are combined with his observations to form a complete model specification. The prior theoretical specifications may include dynamical, observational, and stochastic restrictions. The reasonableness of the complete model specification is examined by means of a least squares incompatibility cost function, a weighted sum of squared residual modelling errors which penalizes the investigator for any deviation away from his prior theoretical specifications. If the prior theoretical specifications are correct, then, by construction, the minimised value of the cost function converges almost surely to zero as the number of observations increases. Although it may not be possible to say with precision how small is small, cost comparisons can be made for competing model specifications. An algorithm is given for the exact sequential minimization of the cost function as the duration of the process increases and additional observations are obtained.

Kaminsky, Graciela Laura

PD June 13, 1986. **TI** Uncertainty, Expectations of Devaluation, and the Real Exchange Rate. **AA** University of California, San Diego. **SR** University of California at San Diego Department of Economics Discussion Paper: 86-11; Department of Economics, D-008, University of California at San Diego, La Jolla, CA 92093. **PG** 43. **PR** $2.00; checks payable to University of California Regents. **JE** 121, 431, 022. **KW** Exchange Rates. Expectations. Balance Of Payments Crises.

AB This essay is concerned with the extent to which expectations of depreciation and the degree of uncertainty with respect to the future exchange rate policy may modify the pricing behavior of the domestic firm. It turns out that the optimal price under uncertainty will be larger than in the certain case, if the "price loss", due to underestimation of demand, is larger than the marginal cost of holding inventories. The model was tested with data for Argentina for the period before the collapse of the exchange rate system in March 1981.

Karni, Edi

TI Dynamic Consistency in English Auctions and Expected Utility Theory. **AU** Safra, Zvi; Karni, Edi.

Karp, Larry S.

PD April 24, 1986. **TI** Risk Aversion in a Dynamic Trading Game. **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: 404; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 25. **PR** $3.75. **JE** 026. **KW** Risk Aversion. Dynamic Trading Game.

AB The effect of risk aversion on Nash equilibrium trade restrictions is studied using numerical methods. An increase in a nation's level of risk aversion can lead to either an increase or decrease in its equilibrium restriction and either an increase or decrease in its rival's restriction. The linear quadratic dynamic game is generalized to include risk aversion.

PD April 24, 1986. **TI** Methods for Selecting the Optimal Dynamic Hedge When Production is Stochastic. **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: 405; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 33. **PR** $4.65. **JE** 026. **KW** Optimal Dynamic Hedge. Stochastic Production. Risk Aversion.

AB A dynamic hedging problem with stochastic production is solved. The optimal feedback rules recognize that future hedges will be chosen optimally based on the most current information. The resulting distribution of revenue is analysed numerically. This analysis enables the hedger to select his appropriate level of risk aversion.

Katz, Lawrence

PD April 1986. **TI** Efficiency Wage Theories: A Partial Evaluation. **AA** School of Business Administration, University of California at Berkeley. **SR** National Bureau of Economic Research Working

Paper: 1906; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 821. **KW** Efficiency Wage Theories of Unemployment. Unemployment.

AB This paper surveys recent developments in the literature on efficiency wage theories of unemployment. Efficiency wage models have in common the property that in equilibrium firms may find it profitable to pay wages in excess of market clearing. High wages can help reduce turnover, elicit worker effort, prevent worker collective action, and attract higher quality employees. Simple versions of efficiency wage models can explain normal involuntary unemployment, segmented labor markets, and wage differentials across firms and industries for workers with similar productive characteristics. Deferred payment schemes and other labor market bonding mechanisms appear to be able to solve some efficiency wage problems without resultant job rationing and involuntary unemployment. A wide variety of evidence on inter-industry wage differences is analyzed. Efficiency wage models appear useful in explaining the observed pattern of wage differentials. The models also provide several potential mechanisms for cyclical fluctuations in response to aggregate demand shocks.

Kehoe, Patrick J.

PD February 1986. **TI** Coordination of Fiscal Policies in a World Economy. **AA** Federal Reserve Bank of Minneapolis, Research Department and University of Minnesota. **SR** Federal Reserve Bank of Minneapolis Staff Report: 98; 250 Marquette Avenue, Minneapolis, MN 55480. **PG** 44. **PR** No Charge. **JE** 431, 133, 423. **KW** Policy Coordination. Fiscal Policy. International Public Finance. Policy Games.

AB This paper analyzes the effects of coordinating fiscal policies in a world economy. The paper does this from an intertemporal public finance perspective, using a multicountry version of Diamond's life-cycle growth model modified to include public goods. Government policies are compared under two regimes: a coordinated regime and a noncooperative regime.

PD February 1986. **TI** International Policy Cooperation May Be Undesirable. **AA** Federal Reserve Bank of Minneapolis Research Department and University of Minnesota. **SR** Federal Reserve Bank of Minneapolis Staff Report: 103; 250 Marquette Avenue, Minneapolis, MN 55480. **PG** 29. **PR** No Charge. **JE** 431, 133, 026, 423. **KW** Policy Coordination. Fiscal Policy. International Public Finance. Policy Games.

AB This paper presents a simple counterexample to the belief that international policy cooperation is desirable. It also explains circumstances under which such a counterexample is possible.

Kehoe, Timothy J.

PD April 1986. **TI** Smooth Valuation Functions and Determinancy with Infinitely Lived Consumers. **AU** Kehoe, Timothy J.; Levine, David K.; Romer, Paul M. **AA** Kehoe: Clare College, Cambridge University. Levine: Department of Economics, University of California Los Angeles; Romer: Department of Economics, University of Rochester. **SR** University of Rochester Center for Economic Research Discussion Paper: 42; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 42. **PR** No Charge. **JE** 021. **KW** Dynamic Models. Determinancy. Regularity. Infinite Horizon.

AB In this paper, we consider a production economy with a finite number of heterogeneous, infinitely lived consumers. We show that for almost all endowments, equilibria that converge to a nondegenerate stationary state or cycle are locally unique. We do so by converting the infinite dimensional fixed point problem stated in terms of prices and commodities into a Negishi problem involving individual weights in a social value function. The key step in the analysis is to add a set of artificial fixed factors to utility and production functions. Then the equilibrium conditions equating spending and income for each consumer can be stated entirely in terms of time 0 factor endowments and derivatives of the social value function.

Keiding, Hans

TI Inflation and Welfare in International Trade. **AU** Bohm, Volke; Keiding, Hans.

Kern, Walter

TI Adjoints of Oriented Matroids. **AU** Bachem, Achim; Kern, Walter

PD June 1985. **TI** An Efficient Algorithm for Solving a Special Class of LP's. **AA** University of Cologne. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85.16; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 6. **PR** No Charge. **JE** 213. **KW** Linear Programs.

AB We consider LP's of the form max (cx *where* l <= Ax <= b, L <= x <= U) where l, b, L, U are nonnegative and A is a 0-1 matrix which looks like "Manhattan Skyline", i.e. the support of each row is contained in the support of every subsequent row. An O(nm + n log n) algorithm is presented for solving the problem.

PD November 1985. **TI** On Finite Locally Projective Planar Spaces. **AA** University of Cologne. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85.23; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 7. **PR** No Charge. **JE** 213. **KW** Planar Spaces. Kantor's Conjecture.

AB Let L be a finite geometric lattice of rank 4 (i.e. a planar space) such that any two planes of L meet in a line. There is a longstanding conjecture due to W. M. KANTOR which states that every such lattice can be embedded into a projective space. If L is given as above, then for every point p in L, L/p is a projective plane of order n (independent of p). Recently, A. BEUTELSPACHER has shown that if L has at least n cubed points then L can be embedded into a projective space. We give an alternative proof of his result, which applies to the more general class of finite locally projective planar spaces. Furthermore, our considerations lead to some more insight into the geometrical structure of a possible counterexample to KANTOR's conjecture. For example, they can be used to show that the bound of n cubed is not tight.

Khan, Mohsin S.

PD March 1986. **TI** Islamic Interest-Free Banking. **AA** Development Research Department, The World Bank. **SR** International Monetary Fund Departmental Memoranda/Staff Paper: (33)1/1; International Monetary Fund, Washington D.C. 20431. **PG** 27. **PR** No Charge. **JE** 053, 311, 312. **KW** Islamic Economics. Equity-Participation Finance. Comparative Economic Systems.

AB This paper analyses the Islamic banking system, in which a predetermined rate of interest is forbidden. Banks accordingly must be organised on a strict equity-participation basis. Depositors are equivalent to shareholders in the bank and are not guaranteed the nominal value or a certain rate of return on their deposits. Banks also do not charge borrowers interest, but rather share in the profits and losses of the enterprises. A simple dynamic model incorporating these features is developed, and it is shown that in certain circumstances the Islamic system may be more stable than the traditional banking system.

King, Maxwell L.

PD March 1986. **TI** Efficient Estimation and Testing of Regressions with a Serially Correlated Error Component. **AA** Department of Econometrics and O.R., Monash University. **SR** Monash Department of Econometrics and Operations Research Working Paper: 3/86; Department of Econometrics and Operations Research, Monash University, Clayton, Victoria 3168, AUSTRALIA. **PG** 21. **PR** No Charge. **JE** 211. **KW** Autocorrelated Disturbances. Durbin-Watson Test. Linear Regression. Maximum Likelihood Estimation. Point Optimal Tests.

AB This paper considers the twin issues of efficient estimation and efficient testing of the linear regression model whose disturbances are the sum of independent white noise and first order autoregressive components. A simple algorithm is given for the full maximum likelihood estimator which, unlike Revankar's three-step estimator, does not ignore the initial observation. Point optimal tests for the presence of the autoregression component are constructed. The small sample power of various point optimal tests are compared empirically with the power of the Durbin-Watson test and King's S(0.5) and S(0.75) tests.

Kirman, A. P.

PD January 1985. **TI** Market Excess Demand In Exchange Economies With Identical Preferences and Collinear Endowments. **AU** Kirman, A. P.; Koch, K. J. **AA** Kirman: Universite d'Aix, Marseille. Koch: University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A8; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 11. **PR** No Charge. **JE** 021, 024. **KW** Excess Demand. Distribution of Wealth.

AB In this paper we show that up to an arbitrary small neighbourhood of the boundary of the set of prices any given excess demand function can be considered as the excess demand of an economy with any large enough but finite number of individuals having identical preferences. Moreover, the individual endowments can be chosen collinear and in such a way that they yield any arbitrary collinear price independent distribution of relative wealth.

Klein, Lawrence R.

PD April 1985. **TI** Import Surcharges, United States Deficits, and the World Economy. **AU** Klein, Lawrence R.; Pauly, Peter; Peterson, Christian E. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-22; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 43. **PR** No Charge. **JE** 322, 421, 422. **KW** United States Trade. Project LINK. Import Surcharge. Budget Deficit.

AB It has been the purpose of this paper to examine the potential effects of a temporary import surcharge on the United States economy and the world as a whole under various scenarios. In all these simulations, such a surcharge turns out to reduce the trade deficit and generate Federal revenues, as expected. The initial effects on domestic activity, world trade and world Gross National Product are also unambiguously negative. In the medium term, the effects are, however, rather diverse, depending upon the adjustment of other policy variables, market expectations, and exchange rates. In the long-run, with favorable exchange rate adjustments, a surcharge may improve Gross National Product in the United States while reducing the Federal deficit substantially. The hard-landing scenario, on the other hand, portrays a surcharge as generating significant Gross National Product losses combined with a deterioration of the Federal budget situation. Also, retaliatory actions from trading partners would, in all scenariosM reduce the effectiveness of a surcharge appreciably. In that case, the revenue effect would be reduced to almost half of its original size, while the trade balance effect would even be reversed; Gross National Product losses would end up being substantially higher without the benefit of more than just a marginal reduction in the inflationary effect. Macro effects are examined in this analysis. Individual sectors or industries may gain at the expense of others. At the world level, some countries may gain at the expense of others, but the United States does not appear to be a gainer.

Kletzer, Kenneth

TI International Borrowing to Finance Investment. **AU** Engel, Charles; Kletzer, Kenneth.

Kletzor, Kenneth

TI Tariffs, Saving and the Current Account. **AU** Engel, Charles; Kletzor, Kenneth.

Kling, Arnold S.

PD December 1985. **TI** The Macroeconomics of Exchange Rate Shocks. **AA** Board of Governors of the Federal Reserve System; Washington, D.C. 20551. **SR** Board of Governors of the Federal Reserve System Economic Activity Section Working Paper: 57; Economic Activity Section, Board of Governors of the Federal Reserve System, Washington, D.C. 20551. **PG** 19. **PR** No Charge. **JE** 431, 130, 631. **KW** Exchange Rate Shock. Macroeconometric Models. Manufacturing

Sector.
AB This paper looks at the effect of an exchange rate shock on real Gross National Product, prices, and manufacturing output in the United States. Drawing on available econometric evidence, I estimate that a purely exogenous change in expectations or risk preferences in the foreign exchange market will have almost no net effect on real GNP or manufacturing output, in part because the contractionary effect on net exports of a stronger dollar is offset by an expansionary effect on the real money supply and interest-sensitive spending. Moreover, the effect of the dollar on domestic prices seems surprisingly muted, due to the apparent willingness of foreign producers to allow profit margins to fluctuate with the exchange rate.

Koch, K. J.

TI Market Excess Demand In Exchange Economies With Identical Preferences and Collinear Endowments. **AU** Kirman, A. P.; Koch, K. J.

Koda, Keiichi

PD December 1984. **TI** Legal Restrictions, the Fischer Hypothesis, and Deficits. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E84-12-XX; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 25. **PR** No Charge. **JE** 134, 311, 023, 322, 314. **KW** Fisher Hypothesis. Interest Rates. Inflation. Legal Restrictions Theory. Deficits.
AB Despite its wide acceptance the Fisherian relationship between inflation and interest rates (the Fisher hypothesis) is not something to be taken for granted theoretically. This paper argues, however, that the legal restrictions theory of demand for "money" advanced by Wallace, Bryant, Sargent and others in other contexts has also implications for the Fisher hypothesis. In particular, it is argued that whether the "weak" or "strong" Fisher hypothesis holds or whether or not the Mundell-Tobin effect also obtains depends sensitively on the details of the legal restrictions one imposes on financial intermediation. A similar result obtains for the relationship between deficits and interest rates.

Konieczny, Jerzy D.

PD December 1985. **TI** Inflation and Costly Price Adjustment: A Macroeconomic Analysis. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Department of Economics Research Report: 8603; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 42. **PR** No Charge. **JE** 023, 134. **KW** Price Adjustment. Relative Price Dispersion. Inflation.
AB A general equilibrium model in which firms face fixed costs of price adjustment is constructed. The general equilibrium requirement that the average real price be equal to one is shown to be of crucial importance. Relative price dispersion is positively correlated with inflation and the costs of changing prices. Increased relative price variability leads, for a class of profit functions, to smaller output and higher employment. This is because output variability increases and the firms face increasing marginal costs. Real wages rise but profits, money holdings and welfare fall. The effect on the frequency of price changes is ambiguous. The optimal rate of inflation is zero.

Korte, Bernhard

PD August 1985. **TI** Polyhedra Results for Antimatroids. **AU** Korte, Bernhard; Lovasz, Laslo. **AA** Korte: University of Bonn. Lovasz: University of Budapest. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85390; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 16. **PR** No Charge. **JE** 213. **KW** Greedoid. Conical Hull.
AB Optimizing a linear objective function over a greedoid is NP-hard in general. Thus, there is no good hope to get a nice linear characterization of the associated polytope. However, for certain classes of antimatroids we give here non-trivial linear characterizations of the convex hull resp. the conical hull of feasible sets.

PD August 1985. **TI** On Submodularity in Greedoids and a Counterexample. **AU** Korte, Bernhard; Lovasz, Laslo. **AA** Korte: University of Bonn. Lovsz: University of Budapest. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85384; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 14. **PR** No Charge. **JE** 213. **KW** Trimmed Matroids. Polymatroid Greedoids.
AB We derive two submodularity properties of trimmed matroids and polymatroid greedoids. These are used to answer two questions about local poset greedoids and polymatroid greedoids which we have raised previously. In KORTE and LOVASZ '1985a we have conjectured that polymatroid greedoids can be characterised by three local properties. In that paper and in KORTE and LOVASZ '1985b we have given an inclusion chart of many subclasses of interval greedoids and we showed all inclusions except possibly one. By a rather elaborate counterexample we answer the first question in the negative and we also show that local poset greedoids are not all trimmed matroids.

Kotlikoff, Laurence J.

PD March 1986. **TI** Tax Incidence. **AU** Kotlikoff, Laurence J.; Summers, Lawrence H. **AA** Kotlikoff: National Bureau of Economic Research, Cambridge, MA. Summers: Department of Economics, Harvard University. **SR** National Bureau of Economic Research Working Paper: 1864; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 323. **KW** Theory of Tax Incidence.
AB This paper surveys major issues in the theory of tax incidence. These include the incidence of taxes in dynamic as well as static economies and open as well as closed economies. The survey does not represent a comprehensive review of the literature, rather it is offered to the reader as a pedogogical piece that may be of use in teaching the theory of tax incidence.

TI Social Security: A Financial Appraisal Across and Within Generations. **AU** Boskin, Michael J.; Kotlikoff, Laurence J.; Puffert, Douglas J.; Shoven, John B.

Kuan, Chung Ming

PD June 4, 1986. **TI** Estimation of a General Random Effects Model in Panel Data. **AA** University of California, San Diego. **SR** University of California at San Diego Department of Economics Discussion Paper: 86-10; Department of Economics, D-008, University of California at San Diego, La Jolla, CA 92093. **PG** 24. **PR** $2.00; checks payable to University of California Regents. **JE** 211. **KW** Panel Data. Random Effects Model. Fixed Effects Model. OLS Consistency. Conditional Error Covariance Matrix. Asymptotic Efficiency.

AB The purpose of this paper is to apply asymptotic theory to the estimation methods in a general random effects model. First, conditions ensuring OLS consistency are specified. Secondly, an estimator for the conditional error covariance matrix is proposed, and the resulting feasible GLS estimator is proved to be asymptotically efficient within the class of all weighted least square estimators. Comparison with other estimators is also discussed.

Kuhn, Peter

TI A Dynamic Model of Redistribution, Inheritance and Inequality. **AU** Davies, James B.; Kuhn, Peter.

Laffont, Jean Jacques

PD November 1985. **TI** Using Cost Observation to Regulate Firms. **AU** Laffont, Jean Jacques; Tirole, Jean. **AA** Laffont: Universite des Sciences Sociales. Tirole: M.I.T. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: 477; IMSSS, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 54. **PR** $4.00. **JE** 026, 613, 614. **KW** Regulation. Linear Incentive Contracts. Rate-of-return Regulation.

AB The paper emphasizes the use accounting data in regulatory or procurement contracts when the supplier 1) has superior information about the cost of the project & 2) invests in cost reduction. The main result states that, under risk neutrality, the supplier announces an expected cost and is given an incentive contract linear in cost overruns. This (optional) contract moves toward a fixed price contract as the announced cost decreases. An investment choice is then introduced and the use of a rate-of-return regulation is studied.

Laidler, David

PD April 1986. **TI** English Classical Monetary Economics in the 1870s. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Department of Economics Research Report: 8605; Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 61. **PR** No Charge. **JE** 044, 310. **KW** British Monetary Orthodoxy. Keynesian Revolution. English Classical Monetary Economics.

AB The dominance of the "British Monetary Orthodoxy", in the 1870's particularly in matters of economic theory, was shortlived. The next half century or so was to see a transformation of monetary economics which culminated in the Keynesian Revolution. It is the ultimate purpose of the study, of which this essay forms a part, to describe this transformation; but such a task cannot be attempted if we do not first of all have some idea of just what it was that was transformed. In this paper, therefore, I shall describe English Classical Monetary Economics as it stood in the 1870s.

Lambelet, Jean Christian

PD December 1985. **TI** Conflicts, Arms Races, and War: A Synthetic Approach. **AU** Lambelet, Jean Christian; Luterbacher, Urs. **AA** Lambelet: University of Lausanne and Graduate Institute, Geneva. Luterbacher: Graduate Institute and University of Geneva. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8513; Departement d'econometrie et d'economie politique, Universite de Lausanne BFSH - Dorigny, CH-1015 Lausanne/Switzerland. **PG** 35. **PR** No Charge. **JE** 114, 026. **KW** Conflicts. Arms Races. War.

AB This paper elaborates basic elements for an integrated formal approach to conflicts, arms races, and war in an attempt to remedy the inadequacies we see in similar theoretical efforts. Starting from a rational actor perspective in international politics, the paper presents three interconnected models of arms races or resource allocation processes, diplomatic conflict, and war initiation by nations that are based upon either general optimizing principles through time or differential game theoretic considerations. All these principles are defined as adjustments between actual and target values of key variables of resources devoted to defence, diplomatic conflictual efforts, and evaluations of each side's deterrent capabilities by the other. In addition, time constraints play a crucial role in the representation of the war initiation submodel. An analysis of these three interconnected formulations shows that our conception can account for several types of war initiation. On the one hand, we can emphasize a situation that we label the paradox of the weak where the nation with the least effective deterrent has an incentive to attack first. On the other hand, our model can also represent more classical types of confrontations where either deterrence works or where the strong attacks the weak.

Lang, Kevin

TI Labor Market Segmentation and the Union Wage Premium. **AU** Dickens, William T.; Lang, Kevin.

Lawrence, Colin

PD January 1986. **TI** Banking Cost, Generalized Functional Forms and Estimation of Economies of Scale. **AA** Graduate School of Business, Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-86-15; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 24. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 312, 635. **KW** Banking Costs. Generalized Flexible Forms. Banking Technology.

AB Earlier work in estimation of banking cost structures asserted that the rejection of a generalised flexible form implies non rejection of a simplistic Cobb-Douglas specification. We present empirical results which tend to reject the generalised flexible form as a description of banking technology. However, despite this rejection, we show that a translog specification captures the data quite well. Economies of Scope and Nonlinear cost functions cannot be rejected by the FCA data, 1979-1982. The rejection of the generalised flexible form is a necessary but not sufficient condition to justify the Cobb-Douglas Model. Empirically these sufficient conditions are overwhelmingly rejected by the data.

Le, Van Cuong

PD March 1985. **TI** Stationary Uncertainty Frontiers in Macroeconometric Models and Existence, Unicity of Solutions of Matrix Riccati Equations. **AA** CEPREMAP and CNRS. **SR** CEPREMAP Discussion Paper: 8511; CEPREMAP, 142, rue du Chevaleret, 75013 Paris, FRANCE. **PG** 34. **PR** 10 ff. **JE** 212, 213. **KW** Stationary Uncertainty Frontiers. Macroeconometric Models. Matrix Riccati Equations. Covariance-Matrices. Objective Variables. Optimal Stationary Feedback.

AB In this paper, we characterise the stationary uncertainty frontiers in dynamic macroeconometric models. This frontier, the definition of which is due to Deleau, Malgrange (1979), is the set of the least positive semi-definite covariance matrices of the objective-variables stabilised by stationary contrastochastic policies. We prove that this frontier coincides with the set of the covariance-matrices stabilised by optimal stationary non singular policies. We prove also that solving the matrix Riccati equations with stable feedback controls is equivalent to minimising a linear form in a closed convex set of covariance matrices of the objective variables. As corollaries of this proposition, we have results on the existence and unicity of solutions of matrix Riccati equations.

Lebow, David

TI An Analysis of the Welfare Implications of Alternative Exchange Rate Regimes: An Intertemporal Model with an Application. **AU** Feltenstein, Andrew; Lebow, David; Sibert, Anne.

Lecoutre, Jean Pierre

PD 1986. **TI** La Robustesse Statistique - II: Les M,L,R-Estimateurs. **AU** Lecoutre, Jean Pierre; Tassi, Philippe; Trognon, Alain. **AA** Lecoutre: Universite Paris II. Tassi and Trognon: ENSAE. **SR** Unite de Recherche Document de Travail ENSAE/INSEE: 8605; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. **PG** 55. **PR** No Charge. **JE** 211. **KW** Robustness. M-Estimator. L-Estimator. R-Estimator. Minimax Properties.

AB In a previous working paper the general principles of the robust statistics have been defined. Several tools for detecting the robustness of a statistical procedure have also been presented. In the present paper we focus on the estimation problem of a parameter of translation. We define the M, L and R-estimators and we study the influencial functions and the asymptotic properties of these different types of estimators. Robustness and efficiency are not generally compatible. But it is possible to build an optimal robust estimator in a neighbourhood of the basic distribution. The M, L and R-estimators are also studied from this point of view.

Ledyard, John

TI Theories of Price Formation and Exchange in Double Oral Auctions. **AU** Easley, David; Ledyard, John.

Lee, Sang Bin

TI Term Structure Movements and Interest Rates Contingent Claims Pricing. **AU** Ho, Thomas S. Y.; Lee, Sang Bin.

Lehmann, Bruce N.

PD April 1986. **TI** Residual Risk Revisited. **AA** Graduate School of Business, Columbia University. **SR** National Bureau of Economic Research Working Paper: 1908; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 313. **KW** Residual Risk. Mean Variance Efficient. Betas. Risk Premia. One Factor Model.

AB The Capital Asset Pricing Model in conjunction with the usual market model assumptions implies that well-diversified portfolios should be mean variance efficient and, hence, betas computed with respect to such indices should completely explain expected returns on individual assets. In fact, there is now a large body of evidence indicating that the market proxies usually employed in empirical tests are not mean variance efficient. Moreover, there is considerable evidence suggesting that these rejections are in part a consequence of the presence of omitted risk factors which are associated with nonzero risk premia in the residuals from the single index market model. Consequently, the idiosyncratic variances from the one factor model should partially reflect exposure to these omitted sources of systematic risk and, hence, should help explain expected returns. There are two plausible explanations for the inability to obtain statistically reliable estimates of a linear residual risk effect in the previous literature: (1) nonlinearity of the residual risk effect and (2) the inadequacy of the statistical procedures employed to measure it. The results presented below indicate that the econometric methods employed previously are the culprits. Pronounced residual risk effects are found in the whole fifty-four year sample and in numerous five year subperiods as well when weighted least squares estimation is coupled with the appropriate corrections for sampling error in the betas and residual variances of individual security returns. In addition, the evidence suggests that it is important to take account of the nonnormality and heteroskedasticity of security returns when making the appropriate measurement error corrections in cross-sectional regressions. Finally, the results are sensitive to the specification of the model for expected returns.

Leininger, Wolfgang

TI On the Existence of Subgame-Perfect Equilibrium in Infinite-Action Games of Perfect Information. **AU** Hellwig, Martin; Leininger, Wolfgang.

Leonard, Jonathan S.

TI Structural Changes in Unionisation: 1973-1981. **AU** Dickens, William T.; Leonard, Jonathan S.

Levine, David K.

TI Smooth Valuation Functions and Determinancy with Infinitely Lived Consumers. **AU** Kehoe, Timothy J.; Levine, David K.; Romer, Paul M.

Levy, Mickey D.

TI Shadow Open Market Committee Policy Statement and Position Papers. **AU** Brunner, Karl; Levy, Mickey D.; Jordan, Jarry L.; Rasche, Robert H.

TI Shadow Open Market Committee Policy Statement and Position Papers. **AU** Brunner, Karl; Levy, Mickey D.; Jordan, Jerry L.; Rasche, Robert H.; Tumlir, Jan.

TI Shadow Open Market Committee Policy Statement and Position Papers. **AU** Jordan, Jerry L.; Poole, William; Levy, Mickey D.; Rasche, Robert H.; Heinemann, H. Erich.

Lewis, Jeffrey D.

TI A Bibliography of Computable General Equilibrium (CGE) Models Applied to Developing Countries. **AU** Devarajan, Shantayanan; Lewis, Jeffrey D.; Robinson, Sherman.

Lewis, Karen K.

PD December 1985. **TI** Risk Aversion and the Effectiveness of Sterilised Foreign Exchange Market Intervention. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 367; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 33. **PR** $2.00. **JE** 431, 026. **KW** Risk Aversion. Sterilised Intervention. Exchange Rate.

AB This paper derives the relationship between risk aversion and the effectiveness of sterilised intervention. It shows that the effectiveness of intervention depends positively upon the risk aversion of the private sector. At higher levels of risk aversion, investors place a stronger weight upon hedge relationships that will reduce the variance on asset returns arising from exchange rate and inflation rate uncertainty. Intervention thus has a stronger effect upon the exchange rate the higher the risk aversion. Furthermore, the model highlights the potential time-varying nature of this relationship. An estimation method is developed and implemented that identifies the covariance relationships of the model. Unlike other such methods, it allows for asset market disturbances and uncertainty from other factors additional to nominal exchange rate movements. The parameter of risk aversion is estimated for six currencies using this method. Conditional upon the covariances of exchange rate and inflation rate forecast errors, the parameter of risk aversion is found to be low relative to the levels required for effective intervention.

PD March 1986. **TI** Testing for the Effectiveness of Sterilised Foreign Exchange Market Intervention Using A Structural Multi-Lateral Asset Market Approach. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 372; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 42. **PR** $2.00. **JE** 431. **KW** Portfolio Balance Model. Structural Asset Market Model. Exchange Rate. Sterilised Intervention.

AB This paper estimates a structural asset market model using five currencies for the purpose of examining the effectiveness of sterilised intervention through a portfolio balance channel. The approach used in this paper differs from other structural studies in two fundamental ways. First, while in previous studies the portfolio is limited to domestic assets relative to a composite foreign asset, the portfolio model analysed in this paper decomposes the foreign asset by currency. Second, a more precise estimate of the asset market parameters is obtained by exploiting the cross-equation correlation that arises from this decomposition. The estimated results offer weak support for the portfolio model. The low signal-to-noise ratio in the measure of the expected future exchange is suggested as a potential reason for the weak evidence.

Lewis, Tracy R.

TI On the Profitability of Interruptable Supply. **AU** Loury, Glenn; Lewis, Tracy R.

Liberty, Susan B.

PD April 1985. **TI** Labor Union Contract Negotiations and Accounting Choices. **AU** Liberty, Susan B.; Zimmerman, Jerold L. **AA** University of Rochester. **SR** University of Rochester Managerial Economics Research Center Working Paper: 85-03; Graduate School of Management, University of Rochester, Rochester, NY 14627. **PG** 39. **PR** No Charge. **JE** 831, 832, 541. **KW** Accounting. Trade Unions. Collective Bargaining. Accounting Earnings.

AB This paper examines the hypothesis that managers reduce reported earnings during labor contract negotiations and increase them after contracts are signed. The accounting earnings of 105 unionised companies over the period 1968-1981 are examined. A series of empirical tests fails to find the hypothesized relation. In fact, the sample provides some evidence that earnings are higher during contract talks and lower following contract signings. Such a pattern likely results from real production effects induced by labor talks and higher wages arising from the new contracts.

Lien, Donald

TI Selecting the Best Linear Regression Model: A Classical Approach. **AU** Vuong, Quang H.; Lien, Donald.

Lim, Joseph

PD 1985. **TI** The New Structuralist Critique of the Monetarist Theory of Inflation: The Case of the Philippines. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-21; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 44. **PR** No Charge. **JE** 121, 134, 311. **KW** Philippines. Inflation. Monetarism. Cost-Push. Bottlenecks. New Structuralists.

AB This paper summarizes the monetarist theory of inflation in developing countries and the contradictary "new structuralist" theory, and presents statistical results from the Philippine economy.

Lindsey, Lawrence B.

PD April 1986. **TI** Capital Gains: Rates Realizations and Revenues. **AA** National Bureau of Economic Research. **SR** National Bureau of Economic Research Working Paper: 1893; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 323. **KW** Capital Gains Tax Rates. Capital Gains Realisations. Tax Revenues.

AB This paper examines the effect of capital gains tax rates on the level of capital gains realisations and the resulting amount of tax revenues. It concludes that capital gains tax revenues are maximised at a rate at the current 20 percent rate or lower, with a central estimate of 16 percent. Some of any gain in revenue due to a rate reduction is likely to be temporary, but the data suggest that even in the long run about 5.4 percent more capital gains will be realised for every one percentage point reduction in the capital gains tax rate. The study uses detailed tabulation data of personal income tax returns for the period 1965-82. It carefully estimates the effect of a number of tax provisions on the marginal tax rate on capital gains. These include the Alternative Tax Computation, Additional Minimum Tax, Maximum Tax on Earned Income, and the Alternative Minimum Tax. In many cases these special provisions had unintended consequences. Household wealth data is used to estimate the stock of unrealised capital gains in taxpayer's portfolios. The study finds a significant difference between tradeable assets such as real estate and common stock, and non-traded forms of household wealth such as cash and checking accounts. As expected, capital gains realizations closely track changes in traded wealth but are inversely related to changes in non-traded wealth.

Litzenberger, Robert

TI Empirical Tests of the Consumption-Oriented CAPM. **AU** Breeden, Douglas T.; Gibbons, Michael R.; Litzenberger, Robert.

Los Cornelis, A.

PD March 1986. **TI** Collinearity Analysis of A Simple Money Demand Equation. **AA** Federal Reserve Bank of New York. **SR** Federal Reserve Bank of New York Research Paper: 8604; Research Department - Room 901, Federal Reserve Bank of New York, 33 Liberty Street, New York, NY 10045. **PG** 35. **PR** No Charge. **JE** 311, 212. **KW** Collinear Data. Econometric Methodology. Missing Money. Money Demand Equation. Structural Instability.

AB A new approach to the analysis of collinear economic data series may help to resolve the debate between the classical (Hendry) and the Bayesian (Leamer) school of empirical econometric methodology. The approach found its origin in Frisch's (1934) statistical "confluence" analysis. It provides new insights in the classical topics of multicollinearity, errors-in-variables models and robust estimation, and the relationship between economic theory and collinear historical data. The proposed collinearity analysis is applied to a very simple classical (M1) money demand equation. From this analysis it is concluded that such a relationship indeed existed throughout the past twenty years and that the estimated income and interest elasticities exhibit the signs postulated by the theory, although their exact value cannot be ascertained. Also, the interest rate elasticity appears to have increased in size between the late 1960s and the late 1970s. Goldfeld's (1976) question of "missing money" may not be answerable because of too much noise. But the most surprising result is that the coefficient values of the money demand equation appear to have been quite certain in recent years: the solution set of these values has only a very small volume.

Loungani, Prakash

PD January 1986. **TI** Oil Price Shocks and the Dispersion Hypothesis, 1900-1980. **AA** Department of Economics, University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 33; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 21. **PR** No Charge. **JE** 824, 131, 226. **KW** Employment Growth Dispersion. Dispersion Hypothesis. Oil Shocks. Unemployment.

AB Recent research by David Lilien shows that a significant fraction of aggregate unemployment can be 'explained' by the dispersion of employment growth across industries. This paper presents two new results in this area. First, it is shown that a significant fraction of the variation in Lilien's dispersion index is due to the differential impact of oil shocks across industries. Second, and more important, it is shown that, once the dispersion in employment growth due to oil shocks is accounted for, the residual dispersion has no explanatory power for unemployment.

Loury, Glenn

PD November 1985. **TI** On the Profitability of Interruptable Supply. **AU** Loury, Glenn; Lewis, Tracy R. **AA** Loury: Harvard University. Lewis: University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-02; Department of Economics, University of British Columbia, 997 1873 East Mall, Vancouver, B.C. CANADA V6T 1Y2. **PG** 15. **PR** $0.20 per page Canadian to other than educational institutions. **JE** 022. **KW** Supply Embargoes. Supply Disruptions.

AB This note considers the profitability of deliberately induced supply embargoes. Employing the supply disruption model of Loury (1983) we find that the result of random supply disruptions is, in effect, the same as if the monopolist were charging higher than normal prices during periods in which the market is not operating. From this analysis we are able to establish the following: (1) If the monopolist is unconstrained in the choice of the price he charges, then interrupting supply is never profitable. (2) When there are exogenous random supply disruptions, then under general conditions the monopolist will charge a price which is strictly lower than the single period profit maximizing price during periods in which the market is operating. (3) A monopolist who is price constrained (say by regulation, or perhaps by the tariff policies of its trading partners) may find supply disruptions to be profitable.

Lovasz, Laslo

TI Polyhedra Results for Antimatroids. **AU** Korte, Bernhard; Lovass, Laslo.

TI On Submodularity in Greedoids and a Counterexample. **AU** Korte, Bernhard; Lovass, Laslo.

Lubiw, Anna

TI Bipartition Systems and How to Partition Polygons. **AU** Edmonds, Jack; Lubiw, Anna.

Luterbacher, Urs

TI Conflicts, Arms Races, and War: A Synthetic Approach. **AU** Lambelet, Jean Christian; Luterbacher, Urs.

Macauley, Molly K.

TI No Free Launch: Analysis of Space Transportation Pricing. **AU** Toman, Michael A.; Macauley, Molly K.

MacDonald, Glenn M.

PD July 1985. **TI** A Positive Analysis of Multiproduct Firms in Market Equilibrium. **AU** MacDonald, Glenn M.; Slivinski, Alan D. **AA** MacDonald: University of Western Ontario and Economics Research Center/NORC. Slivinski: University of Western Ontario and University of Rochester. **SR** Rochester Center for Economic Research Working Paper: 16; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 42. **PR** No Charge. **JE** 022. **KW** Multiproduct Firms. Diversification. Specialisation.

AB An economy in which firms may choose to produce two goods (diversification) or just one (specialisation) is studied. Parameterising costs along the fixed/variable distinction most familiar from Viner's work, a complete characterisation of the model's equilibrium is provided; this characterisation may be summarised in a simple diagram. The ease with which the model may be manipulated makes it a useful tool for analysis of a wide variety of issues pertaining to environments permitting multiproduct firms. This facility is illustrated through derivation of a diverse set of predictions concerning the manner in which changes in the underlying exogenous features of the economy affect the pattern of diversification and specialisation, as well as through explicit treatment of several extensions.

PD June 1986. **TI** Job Mobility and the Information Content of Equilibrium Wages: Part I. **AA** Centre for Decision Sciences and Econometrics, University of Western Ontario; Rochester Center for Economic Research, and Economics Research Center/NORC. **SR** University of Rochester Center for Economic Research Discussion Paper: 44; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 40. **PR** No Charge. **JE** 021, 823. **KW** Job Mobility. Wages. Contingent Claims Model.

AB In this part a simple complete contingent claims general equilibrium model is presented. The economy is constructed so as to yield agent-specific uncertainty -- in particular, concerning the productive attributes of workers -- which generates intertemporal job mobility in equilibrium. It is first shown that although the model is quite general in many respects, it has one very strong testable implication: all workers earning a given wage at some point in time have the same probability of job mobility; and this probability is not influenced by age, tenure or present job, etc. Since the model does not even impose restrictions sufficient to imply standard mobility "facts" -- for example, the simple correlation between labor market experience and job mobility -- there is a sense in which this prediction is the job matching approach's most fundamental.

PD June 1986. **TI** An Operational Theory of Monopoly Union - Competitive Firm Interaction. **AU** MacDonald, Glenn M.; Robinson, Chris. **AA** MacDonald: Centre for Decision Sciences and Econometrics, University of Western Ontario, Rockester Center for Economic Research, and Economics Research Center/NORC. Robinson: Centre for Decision Sciences and Econometrics, University of Western Ontario, and Economics Research Center/NORC. **SR** University of Rochester Center for Economic Research Discussion Paper: 43; Department of Economics, University of Rochester, Rochester, NY 14627. **PR** No Charge. **JE** 831. **KW** Union. Collective Bargaining. Monopoly Unionism.

AB In recent years there has been an increased interest in the study of labor unions in the labor economics literature. Unfortunately this work has suffered from two shortcomings. First, the work has been highly fragmented with no unified model of unions emerging. Second, very few testable propositions have been established. In this paper, we make some headway in remedying these deficiencies. We develop an equilibrium model of the interaction of workers, firms, consumers and a union. The essential departure of this model from previous work is that unions are assumed to use resources in their dealings with firms and workers. Thus it may not be optimal for all firms in an industry to be unionised. The existence of incomplete coverage in an industry enables us to generate a sharp set of predictions and suggests empirically refutable tests of the model.

MacKinnon, James G.

PD March 27, 1986. **TI** Are Price Equations Really Money Demand Equations on Their Heads?. **AU** MacKinnon, James G.; Milbourne, Ross D. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 646; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 33. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 311. **KW** Buffer Stock Hypothesis. Money Supply Shocks. Money Demand Equations.

AB It is often argued that the dependent variable in money demand functions is really the price level, the money stock itself being exogenous. A recent approach which stresses this theme is the "buffer stock" hypothesis, in which money supply shocks explicitly appear in the demand for money function, because prices and interest rates do not adjust rapidly enough to bring about short-run equilibrium in the money market. Although this approach has been adopted by a number of authors, it has not been subjected to much econometric testing. In this paper we outline the economic and econometric issues involved in testing the exogenous money/buffer stock hypothesis, and subject it to a variety of tests using three different data sets. None of our results supports the hypothesis. Fundamental restrictions are rejected at very high levels of significance, and a reasonably good money demand equation is seen to be badly misspecified if interpreted as a price equation.

MacLeod, Bentley

PD March 26, 1986. **TI** Implicit Contracts, Incentive Compatibility, and Involuntary Unemployment. **AU** MacLeod, Bentley; Malcomson, James M. **AA** MacLeod: Queen's University. Malcomson: University of Southampton. **SR** Queen's Institute for Economic Research Discussion Paper: 585R; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 51. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 026, 821. **KW** Unemployment. Employment Contracts. General Equilibrium.
AB This paper characterizes all the outcomes supportable by implicit employment contracts of the most general form when employees' performance is not public information. A strictly positive economic surplus must result from employment, the form of contract depending on how this surplus is divided between firm and employee. In a general equilibrium formulation with more workers than job vacancies, the surplus goes to employed workers giving them strictly higher utility than unemployed workers who are, therefore, involuntarily unemployed. With more job vacancies than workers, the surplus goes to firms with workers, giving them strictly positive profit despite there being unfilled vacancies.

PD April 1986. **TI** Behavior and the Organization of the Firm. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 648; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 22. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 511, 022. **KW** Teams. Organisations.
AB In this paper a new way of distinguishing between cooperative and non-cooperative organisations is introduced. This distinction is based on well known solution concepts and is applied to the problem of organising production teams in a firm. Our first result demonstrates that income-sharing cooperative firms are not necessarily inefficient as suggested in the work of Alchian and Demsetz (1972) and Holmstrom (1982). Secondly it is shown that if a capitalist firm is interpreted as a non-cooperative organisation, then it must be less efficient than corresponding cooperative organizations due to the additional monitoring of workers needed to stop shirking. Finally, an informal discussion is presented explaining why, despite their apparent advantages, one does not observe more cooperative firms in practice.

PD April 1986. **TI** Entry, Sunk Costs and Market Structure. **AA** Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 649; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 21. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 022, 611. **KW** Sunk Costs. Market Structure. Dynamic Games. Entry Deterrence.
AB Typically, models that study the role of sunk costs suppose that incumbent firms face entry by a single firm each period. In this paper the set of equilibrium market structures that result when all firms are free to enter or exit and set prices each period is studied. The effect of sunk costs on the market structure is examined and it is shown that differing types of sunk costs can have quite different effects on market structure. Costs that are sunk due to the existence of product specific capital do not in general deter entry. Further it is found, contrary to the arguments of Baumol, Panzar and Willig (1982), that the freedom to enter and leave a market does not suggest that firms will earn zero profits in equilibrium.

Magill, M. J. P.

PD 1985. **TI** Allocation of Aggregate and Individual Risks Through Financial Markets. **AU** Magill, M. J. P.; Shafer, W. J. **AA** University of Southern California. **SR** CEPREMAP Discussion Paper: 8525; CEPREMAP, 142, rue du Chevaleret, 75013 Paris, FRANCE. **PG** 39. **PR** 10 ff. **JE** 020, 313. **KW** Risks. Financial Markets. Information. Contingent Commodity Equilibria. Futures.
AB We present a canonical pure exchange model of an economy with aggregate and individual risks. We show that the economy always has a basic contingent commodity equilibrium in which prices depend only on aggregate risks. We introduce an information structure and a number which expressed the maximum rate at which information is revealed in any time period (the branching number). We show that if the information structure associated with the aggregate risks is such that the branching number is not greater than the number of trading opportunities in futures (the number of commodities) then generically each basic contingent commodity equilibrium allocation can be achieved as an equilibrium allocation on a system of spot and futures markets for the underlying commodities and insurance markets for the individual risks.

Magnus, Jan R.

TI A Note on Instrumental Variables and Maximum Likelihood Estimation Procedures. **AU** Holly, Alberto; Magnus, Jan R.

Mahjoub, A. R.

TI Compositions in the Acyclic Subdigraph Polytope. **AU** Barahona, F.; Mahjoub, A. R.

TI On a Composition of Independence Systems by Circuit-Identification. **AU** Euler, R.; Mahjoub, A. R.

Malcomson, James M.

TI Implicit Contracts, Incentive Compatibility, and Involuntary Unemployment. **AU** MacLeod, Bentley; Malcomson, James M.

Margaritis, Dimitris

PD February 1986. **TI** Least Squares Learning and Convergence to Rational Expectations. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-03; Department of

Economics, University of British Columbia, 997 1873 East Mall, Vancouver, B.C. CANADA V6T 1Y2. **PG** 15. **PR** $0.20 per page Canadian to other than educational institutions. **JE** 211. **KW** Rational Expectations Equilibrium. Convergence. Learning. Least Squares.

AB The convergence with probability one to the rational expectations equilibrium is investigated for a discrete time stochastic model in conjunction with least squares estimation. The resulting learning process is given by a system of nonlinear time varying stochastic difference equations. Its convergence analysis is reduced to the stability analysis of an associated system of time invariant deterministic ordinary differential equations. An important feature of the analysis is that in contrast to standard statistical estimation problems, it can account for the feedback from forecasts to outcomes over time. It is shown that the possible convergence points of the process are only the stable points of the differential equation and that the situation can converge almost surely to the rational expectations equilibrium.

Mariano, Roberto S.

PD June 1985. **TI** Forecasting Monthly Inflation in the Philippines. **AA** University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-18; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 104. **PR** No Charge. **JE** 134, 132, 121. **KW** Philippines. Inflation Forecasting.

AB Our objective is to forecast inflation. To do so, we take an eclectic approach and go through an empirical process to identify those factors, among those suggested by these theories, that serve as good indicators for likely movements in prices in the Philippines. The main ingredient in our forecasting procedure is a regression equation which explains monthly CPI levels in terms of its own past values (up to a lag of two months), the average wholesale posted price of petroleum products as determined by the Board of Energy, a peso-denominated tariff-adjusted import price index for non-fuel imports, a United States dollar black market premium, a peso-denominated export price index, total domestic liquidity relative to real output, the legislated minimum wage and cost-of-living allowance, changes in the price ceilings on food items imposed by the Price Stabilisation Council, and the effective rate on 91-day treasury bills.

Marini, Giancarlo

PD February 1986. **TI** Interest Rate Rules, Price Level Determincy and Stabilisation Policy. **AA** Economics Department, London School of Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 242; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 19. **PR** No Charge. **JE** 023, 311, 133. **KW** Interest Rate. Stabilisation Policy.

AB In new classical, decentralised macromodels with an economy-wide financial market, nominal interest rate rules are not only compatible with price level determinancy, but can also perfectly stabilise output about its full information value. This result implies that stabilisation policy effectiveness does not hinge on the existence of additional signals other than the locally perceived price levels. In particular, a unique, closed-loop solution to the signal extraction problem is only possible under an interest rate regime and not when monetary rules are adopted instead.

Markandya, Anil

PD 1985. **TI** Medium-Term Planning in Oil-Based Economies: A Case Study of Kuwait. **AU** Markandya, Anil; Pemberton, Malcolm. **AA** University College London. **SR** University College London Discussion Paper: 85-22; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PR** 1.50 pounds sterling. **JE** 133, 023. **KW** Kuwait. Oil-Based Economy. Medium-Term Planning. Planning Objectives.

AB In this paper, we demonstrate quite convincingly that, in an oil-based economy such as Kuwait, it could be highly misleading to plan for the medium-term on the basis of point forecasts of the price and output of oil. The volatility of this market has been such that what was considered reasonable a few years ago is now extremely improbable. We suggest here that a better strategy is to formulate an objective such as a given per capita rate of growth, subject to some constraints such as the level of foreign assets or the level of the foreign population; and then see what will be required in terms of the domestic instruments to achieve this objective under a variety of assumptions about the external conditions facing the economy. Among the instruments we have considered are Government expenditure (consumption and investment), domestic energy prices and, to a small extent, the participation rate of foreign workers. All of these can play a significant role and the greater the number of instruments, the less widely will each need to change in response to a change in the external factors facing the economy. Further instruments can, and should, therefore be considered.

TI The Costs of Natural Resource Depletion in Low Income Developing Countries. **AU** Pearce, David W.; Markandya, Anil.

Marquez, Jaime

PD January 1986. **TI** International Policy Coordination and Growth Prospects of Developing Countries: An Optimal Control Application. **AU** Marquez, Jaime; Pauly, Peter. **AA** Marquez: Federal Reserve Board. Pauly: University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 86-1; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 22. **PR** No Charge. **JE** 423, 133, 111. **KW** Worldwide Recovery. Regional Balance of Power. International Policy Coordination.

AB This paper estimates the gains from implementing cooperative policies among the North, the South, and OPEC. This is accomplished by applying optimal control to an econometric model of a three region world economy. The results suggest that while a worldwide recovery is feasible, not all regions benefit equally from it. Motivated by these findings, the paper also examines how a shift in the regional balance of power in favor of the South improves their growth prospects.

PD April 1986. **TI** Can Debtor Countries Service Their Debts? Income and Price Elasticities for Exports of Developing Countries. **AU** Marques, Jaime; McNeilly, Caryl. **AA** Marques: Board of Governors of the Federal Reserve System. McNeilly: Princeton University. **SR** Board of Governors of the Federal Reserve System International Finance Discussion Paper: 277; International Finance Division, Board of Governors of the Federal Reserve System, Washington, DC 20551. **PG** 49. **PR** No Charge. **JE** 443, 421, 121. **KW** Debtor Countries. Imports. Import Elasticities.

AB Interest in income and price elasticities for international trade has increased recently because of the debt crisis that many developing countries are experiencing. Estimates of income elasticities of import demand, however, range from a low of 1.3 to a high of 4.7. Such differences have important implications for debtor and creditor countries alike. Using quarterly data for the period 1973-1981, this paper estimates income and price elasticities for non-oil imports of five major industrial countries from non-OPEC developing countries. The empirical results suggest that the income elasticity is closer to 1 than to 4.

Marston, Richard C.

PD March 1985. **TI** Macroeconomic Stabilization Through Taxation and Indexation: The Use of Firm-Specific Information. **AU** Marston, Richard C.; Turnovsky, Stephen J. **AA** Turnovsky: University of Illinois. Marston: University of Pennsylvania. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-20; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 30. **PR** No Charge. **JE** 133, 023. **KW** Macro Stabilisation. Firm-Specific Productivity Disturbances. Wage Contracts. Firm Taxation. Wage Indexation Rule.

AB This paper considers two alternative approaches to stabilising an economy with firm-specific productivity disturbances. The first uses wage contracts tying wages in each firm to these disturbances as well as the price level. The second uses a tax on firms which modifies their supply behavior together with a simple wage indexation rule tying wages to prices alone. Both these schemes are viable as long as the firm-specific disturbance is known to all agents. If the firm alone observes the productivity disturbance, under either scheme it has an incentive to misrepresent current conditions. However, a combination of these two schemes is both welfare maximizing and incentive compatible.

Mayer, Thomas

PD June 10, 1986. **TI** Replacing the Fomc by a Pc. **AA** University of California, Davis. **SR** University of California at Davis Research Program in Applied Macroeconomics and Macro Policy: 38; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 24. **PR** No Charge. **JE** 311. **KW** Stable Money Growth. Monetary Rule. Monetarist Policy.

AB This paper first discusses the viability of a monetary growth-rate rule at a time when velocity is no longer growing at a stable rate. It advocates a modified rule which has the growth rate of money equal to a constant minus the growth rate of velocity in the previous period.

McCallum, Bennett T.

PD April 1986. **TI** The Optimal Inflation Rate in an Overlapping Generations Economy with Land. **AA** Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** National Bureau of Economic Research Working Paper: 1892; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 134, 021, 023. **KW** Optimal Inflation Rate. Chicago Rule. Monetary Growth. Land. Capital Overaccumulation.

AB This paper is concerned with the optimal inflation rate in an overlapping-generations economy in which (i) aggregate output is constrained by a standard neoclassical production function with diminishing marginal products for both capital and labor and (ii) the transaction-facilitating services of money are represented by means of a money-in-the-utility-function specification. With monetary injections provided by lump-sum transfers, the famous Chicago Rule prescription for monetary growth is necessary for Pareto optimality but a competitive equilibrium may fail to be Pareto optimal with that rule in force because of capital overaccumulation. The latter possibility does not exist, however, if the economy includes an asset that is productive and non-reproducible -- i.e., if the economy is one with land. As this conclusion is independent of the monetary aspects of the model, it is argued that the possibility of capital overaccumulation should not be regarded as a matter of theoretical concern, even in the absence of government debt, intergenerational altruism, and social security systems or other "social contrivances.".

McNeilly, Caryl

TI Can Debtor Countries Service Their Debts? Income and Price Elasticities for Exports of Developing Countries. **AU** Marques, Jaime; McNeilly, Caryl.

Meghir, Costas

TI Lambda - Constant and Alternative Empirical Models of Life-Cycle Behaviour Under Uncertainty. **AU** Blundell, Richard W.; Fry, Vanessa; Meghir, Costas.

PD July 1985. **TI** The Comparative Statics of Consumer Demand Under Uncertainty. **AA** University College London. **SR** University College London Discussion Paper: 85-21; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PR** 1.50 pounds sterling. **JE** 026, 022. **KW** Consumer Demand. Uncertainty. Stochastic Slutzky Substitution Matrix. Intertemporal Separability. Life-Cycle Models.

AB In this paper we develop a methodology for analysing multi-period models of consumer demand under uncertainty. We show how a dual to the lifetime expected utility maximisation problem can be formulated and hence how comparative static results can be derived using a similar approach to the one used in static demand analysis. In this manner we provide a simple derivation of the stochastic equivalent of the Slutsky substitution matrix. Furthermore we discuss sufficient conditions for the existence of demand functions under uncertainty. We then proceed to analise the effects of additive and weak intertemporal separability and discuss some issues that arise in the empirical implementation of life-cycle models of consumer demand.

TI Engel Curve Estimation with Individual Data. **AU** Blundell, Richard W.; Meghir, Costas.

TI Unemployment, Labor Force Participation and Hours of Work. **AU** Blundell, Richard W.; Ham, John; Meghir, Costas.

Mehta, Ghanshyam

PD January 1985. **TI** Some General Theorems on The Existence Of Continuous Utility Functions. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A6; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 18. **PR** No Charge. **JE** 021, 022. **KW** Continuous Utility Functions.

AB This paper gives some general theorems on the existence of continuous utility functions.

PD January 1985. **TI** Existence Of Fixed Points, Equilibria and Maximal Elements in Topological Vector Spaces. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A5; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 16. **PR** No Charge. **JE** 213. **KW** Tarafdar Theorem. Browder Fixed Point Theorem.

AB This paper provides a generalisation of the Browder and Tarafdar theorems.

PD January 1985. **TI** On A Theorem of Fleischer. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A4; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 6. **PR** No Charge. **JE** 213. **KW** Normal Topological Spaces. Not Linearly Ordered Spaces.

AB Fleischer proved that a linearly ordered set that is separable in its order topology and has countably many jumps is order-isomorphic to a subset of the real numbers. The object of this paper is to extend Fleischer's result and to prove it in a different way. The proof of the theorem is based on Nachbin's extension to ordered topological spaces of Uryson's separation theorem in normal topological spaces.

Melitz, Jacques

PD February 1986. **TI** The Prospect of a Depreciating Dollar and Possible Tension Inside the European Monetary System. **AA** Institut National de la Statistique et des Etudes Economiques (I.N.S.E.E.). **SR** Board of Governors of the Federal Reserve System International Finance Discussion Paper: 279; International Finance Division, Board of Governors of the Federal Reserve System, Washington, DC 20551. **PG** 33. **PR** No Charge. **JE** 432, 133, 122, 023. **KW** Cooperative Equilibrium. Dollar Depreciation. European Monetary System. Exchange Rate. Nash Equilibrium. Open Economy. Policy Coordination.

AB This paper analyses the possibility of increased tensions in the European Monetary System (EMS) as a result of the recent dollar depreciation. The analysis employs a static, fairly stylised macroeconomic model in which the EMS is characterized as a means of achieving a cooperative outcome even though policymakers in member countries weigh output-inflation tradeoffs differently. Compared with the Nash (noncooperative) equilibrium, such cooperation is shown to have been welfare-improving for member countries before the depreciation of the dollar began. However, the inflationary consequences of the dollar depreciation in Europe give rise to the possibility that even if there is an optimal realignment afterwards, the members will not be able to achieve a better output-inflation tradeoff within the EMS than outside of it.

Mendelson, Haim

TI Asset Pricing and the Bid-Ask Spread. **AU** Amihud, Yakov; Mendelson, Haim.

Merrick, John J. Jr

PD April 1986. **TI** International Expected Real Interest Rates: New Tests of the Party Hypothesis and V.S. Fiscal Policy Effects. **AU** Merrick, John J. Jr; Saunders, Anthony. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 373; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 34. **PR** $2.00. **JE** 321, 430. **KW** United States Fiscal Policy. Real Interest Rates. Internation Expected Real Interest Rate Parity Hypothesis. Budget Deficit.

AB This paper investigates both the correlation among expected real interest rates across countries and also the links between international expected real interest rates and United States fiscal policy variables. We introduce and analyse the cross-sectional mean of international ex-post real interest rates as an estimator for the mean international expected real interest rate. Consistent with the results of previous studies, our tests strongly reject the international expected real interest rate parity hypothesis. Further, our investigation also reveals that United States budget deficits have no independent effects on international expected real interest rates given the impact of United States government defense spending. Finally, the evidence suggests that forces other than United States fiscal policy account for the rise in international expected real interest rates in the post-1980 period.

PD April 1986. **TI** Volume Determination in Stock and Stock Index Futures Market: An Analysis of Arbitrage and Volatility Effects. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 374; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 34. **PR** $2.00. **JE** 313. **KW** Arbitrage. Trading Volume. Stock Market. Stock Index Futures Market. Volatility. Arbitrage Mispricing.

AB This paper focuses on the implications of arbitrage activity for the determination of trading volume in both stock and stock index futures markets. Specifically, we

https://doi.org/10.1017/S0951007900000322 Published online by Cambridge University Press

examine non-spot month data for evidence as to whether "program trading" by arbitrageurs is an important determinant of trading volume in these markets. We document significant bidirectional relationships between near contract arbitrage mispricings and (cash) stock market volume. However, the tests also reveal that the relationship between arbitrage mispricings and cash market volume is much less important than that between volatility and volume. Furthermore, we find much stronger evidence that return volatility predicts subsequent arbitrage mispricing than we do that such mispricings predict subsequent volatility.

Mertens, Jean Francois

PD January 1986. **TI** Localization of the Degree on Lower-Dimensional Sets. **AA** Centre for Operations Research and Econometrics, Universite Catholique de Louvain. **SR** Universite Catholique de Louvain Centre for Operations Research and Econometrics Discussion Paper: 8605; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 13. **PR** No Charge. **JE** 213. **KW** Essential Mappings.

AB We show the restriction of an essential mapping to the inverse image of a simplex of arbitrary dimension is still essential.

Metz, Achim

TI On the Use of Optimal Matchings for Solving the Integer Matching Problem. **AU** Derigs, Ulrich; Metz, Achim.

TI An In-Core/Out-of-Core Method for Solving Large Scale Assignment Problems. **AU** Derigs, Ulrich; Metz, Achim

Milbourne, Ross D.

TI Are Price Equations Really Money Demand Equations on Their Heads?. **AU** MacKinnon, James G.; Milbourne, Ross D.

Mincer, Jacob

PD April 1986. **TI** Wage Changes in Job Changes. **AA** Department of Economics, Columbia University. **SR** National Bureau of Economic Research Working Paper: 1907; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 823, 824. **KW** Wage Changes. Job Changes.

AB This is a study of short and longer-run wage gains observed in moving from one job (firm) to the next. Short-run wage gains are defined as wage changes over the survey year bracketing the move minus the opportunity cost of moving. The latter is measured by wage growth of a subgroup of stayers whose mobility behavior and other characteristics are the same as of the current period movers. Longer-run wage gains are defined as the difference in wages between two successive jobs at the same tenure levels, net of experience, again net of opportunity costs. Wage gains of movers are generally positive, except for layoffs of older workers. A large part of the gain is due to the lesser wage growth on the job of movers compared to (all) stayers. This is consistent with below average amounts of on the job training observed for movers compared to all workers. Wage gains of quits exceed those of layoffs, despite similar wage levels and wage growth on the preceding job. Wage gains of older movers are smaller compared to gains of younger movers, both in quits and in layoffs. Differences in search conditions and in the nature of separations help to explain these findings.

Mishkin, Frederic S.

PD May 1986. **TI** United States Macroeconomic Policy and Performance in the 1980s: An Overview. **AA** Columbia University; National Bureau of Economic Research. **SR** Columbia First Boston Series in Money, Economics and Finance Working Paper: FB-86-23; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 35. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 300, 132, 133. **KW** Macroeconomic Policy. Monetary Policy.

AB This paper provides an overview of United States macroeconomic policy and performance in the 1980s by first outlining the behavior of key economic variables and then discussing the policies that have affected these variables. After gaining some insight into the interaction between these policies and macroeconomic performance, it then goes on to examine where macro policy and the United States economy may be heading in the next several years.

Molho, Lazaros E.

PD March 1986. **TI** Interest Rates, Saving, and Investment in Developing Countries: A Re-examination of the McKinnon-Shaw Hypotheses. **AA** International Monetary Fund. **SR** International Monetary Fund Departmental Memoranda/Staff Paper: (33)1/4; International Monetary Fund, Washington D.C. 20431. **PG** 27. **PR** No Charge. **JE** 311, 023. **KW** Interest Rates. Saving. Investment. Developing Countries. Complementarity Hypothesis.

AB The paper highlights the intertemporal aspects of the McKinnon-Shaw propositions and shows that these propositions constitute complementary rather than competing theories, by developing a three-period model of the individual's investment-saving decision in a financially repressed economy. The model shows that McKinnon's complementarity hypothesis -- that investment is positively related to deposit rates -- is inherently intertemporal, with current deposits serving as a conduit for future investment. This suggests that aggregate saving, investment, and money holding are affected by interest rates with a complex and possibly long lag that has been disregarded in theoretical and empirical studies.

Monfort, A.

TI Generalized Residuals. **AU** Gourieroux, C.; Monfort, A.; Renault, A.; Trognon, A.

Montgomery, Edward

PD April 1986. **TI** Cross-Industry Differences in Race and Gender Wage Differential. **AU** Montgomery, Edward; Wascher, William. **AA** Board of Governors of the Federal Reserve System. **SR** Board of Governors of the Federal Reserve System Economic Activity Section Working Paper: 59; Economic Activity Section, Board of Governors of the Federal Reserve System, Washington, D.C. 20551. **PG** 19. **PR** No Charge. **JE** 824, 826, 851. **KW** Wage Differentials. Industry Employment Shifts. Discrimination. Manufacturing. Services.

AB This paper examines the sise and origin of race and gender wage differentials in the manufacturing and service industries. In particular, we address the hypothesis that relative employment shifts away from manufacturing and toward services will lead to a polarisation in the distribution of income. The results indicate that there are substantial sex and race wage differentials in both the manufacturing and service sectors, but that differences in the way comparable workers are rewarded are larger in manufacturing. Nevertheless, our results also indicate that women and minorities may not be made better off by changes in relative employment patterns because all workers seem to receive a substantial premium for working in the manufacturing sector.

PD May 1986. **TI** Creative Destruction and the Behavior of Productivity Over the Business Cycle. **AU** Montgomery, Edward; Wascher, William. **AA** Board of Governors of the Federal Reserve System. **SR** Board of Governors of the Federal Reserve System Economic Activity Section Working Paper: 60; Economic Activity Section, Board of Governors of the Federal Reserve System, Washington, D.C. 20551. **PG** 12. **PR** No Charge. **JE** 226, 825, 621. **KW** Productivity. Innovation. Technological Change.

AB This paper assesses the importance of Schumpeter's theory of creative destruction in cyclical movements in aggregate productivity measures. In particular, we develop and test a model of short-run variations in productivity which explicitly incorporates the forces underlying "creative destruction:" the birth and death of firms due to the diffusion of new technology into the production process. The results support the relevance of business failures and formations to productivity behavior, both in terms of the rate at which employers adjust the stock of labor to aggregate demand shocks and in affecting the average level of productivity.

Montiel, Peter

PD March 1986. **TI** Long-Run Equilibrium in a Keynesian Model of a Small Open Economy. **AA** Development Research Department, The World Bank. **SR** International Monetary Fund Departmental Memoranda/Staff Paper: (33)1/2; International Monetary Fund, Washington, D.C. 20431. **PG** 32. **PR** No Charge. **JE** 431. **KW** Keynesian/Global Monetarist Synthesis. Monetary Approach to Balance of Payments. Balance of Payments.

AB This paper analyses the long-run properties of a Keynesian model of a small open economy. In the long run, the model exhibits familiar "global monetarist" features, including the temporary nature of balance of payments deficits, an "offset coefficient" of -1 on changes in the stock of domestic credit, and the dependence of the effects of devaluation on the nature of the accompanying monetary policy. Because the real exchange rate is endogenous in the long run, however, fiscal policy can affect the long-run balance of payments and stock of reserves even in the absence of changes in domestic credit.

Montrucchio, Luigi

TI On the Indeterminacy of Capital Accumulation Paths. **AU** Boldrin, Michele; Montrucchio, Luigi.

Mookherjee, Dilip

TI Portfolio Choice in Research and Development. **AU** Bhattacharya, Sudipto; Mookherjee, Dilip.

PD May 1986. **TI** Dynamic Price Games With Learning-by-Doing. **AU** Mookherjee, Dilip; Ray, Debraj. **AA** Mookherjee: Stanford University. Ray: Stanford University and Indian Statistical Institute, New Delhi. **SR** Stanford Graduate School of Business Research Paper: 884; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. **PG** 42. **PR** No Charge. **JE** 611. **KW** Learning-by-Doing. Price Supergames. Industry Concentration. Tacit Collusion.

AB We analyse the implications of learning-by-doing and within-period scale economies for the viability of market sharing through tacit price collusion. It is shown that for low interest rates learning effects do not reduce the prospects of profitable price collusion and market sharing, while scale economies do. However for high interest rates, learning effects may lead one firm with an initial advantage to inevitably monopolise the market forever; the co-existence of scale economies leads to this result even when all potential firms are ex ante symmetric. In the context of a model of cartel formation with free entry, implications for market concentration, and of government subsidization of entry, are subsequently discussed.

Moreland, K.

TI Budget Sise Effects on the Optimal Linear Income Tax. **AU** Garfinkel, I.; Moreland, K.; Sadka, E.

Morrison, Catherine

PD March 1986. **TI** Productivity Growth and Changes in the Terms of Trade in Japan and the United States. **AU** Morrison, Catherine; Diewert, W. Erwin. **AA** Morrison: Department of Economics, Tufts University. Diewert: Department of Economics, University of British Columbia. **SR** National Bureau of Economic Research Working Paper: 1848; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 123, 226. **KW** Domestic Productivity. Terms of Trade.

AB In this paper we employ a recently proposed procedure (Diewert and Morrison '1985) for adjusting real domestic product and productivity for changes in a country's terms of trade. We apply this procedure to a comparison of two major industrialized countries, the United States and Japan. The approach is based on assessing the impact on, alternatively, production or final sales to domestic purchasers, of changes in terms of trade and the balance of payments deficit in a consistent accounting framework. This treatment of international trade allows for comparative statics analysis based only on production theory. The comparison is carried out for a relatively open economy, Japan, with an economy that may not be as vulnerable to terms of trade changes, the

United States, for the years 1967 to 1982.

Morrison, Thomas K.

TI World Non-Oil Primary Commodity Markets: A Medium-Term Framework of Analysis. **AU** Chu, Ke young; Morrison, Thomas K.

Mouchart, Michel

PD January 1986. **TI** On the Sigma-Algebraic Realisation Problem. **AU** Mouchart, Michel; Rolin, Jean Marie. **AA** Centre for Operations Research and Econometrics, Universite Catholique de Louvain. **SR** Universite Catholique de Louvain Centre for Operations Research and Econometrics Discussion Paper: 8604; Centre for Operations Research And Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 19. **PR** No Charge. **JE** 213. **KW** Conditional Independence. Weak Identification. Strong identification. Minimal Splitting. Sigma-Algebras.

AB Given two sigma-algebras M1 and M2, necessary and sufficient conditions are given for a sigma-algebra M3 to minimally make M1 and M2 conditionally independent. Representations in terms of projections among sigma-algebras are derived from those conditions. A constructive algorithm is sketched. The concepts of weak and strong identification among sigma-algebras are shown to be a crucial tool; in particular, minimal splitting is in-between.

Moulin, Herve

PD February 1986. **TI** A Core Selection for Pricing a Single Output Monopoly. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E86-02-01; Working Paper Coordinator, Department of Economics, Sandy Hall, Blacksburg, VA 24061. **PG** 28. **PR** No Charge. **JE** 024, 026, 022. **KW** Core. Natural Monopoly. Technological Monotonicity.

AB We consider a single output production economy where all coalitions of agents have access to the technology. Under increasing returns to scale the corresponding cooperative game (without side payments) is convex, hence has a large core. A core selection obtains by taking the lowest price of output relative to input such that the corresponding vector of indirect utilities is feasible. We call it the equal indirect utility pricing rule. It satisfies technological monotonicity: when the production possibility set expands, no agent faces a utility loss. Together technological monotonicity and the core property characterise the equal indirect utility rule. A similar characterisation holds when returns to scale are decreasing.

PD February 3, 1986. **TI** Public Ownership of the External World vs. Private Ownership of Self. **AU** Moulin, Herve; Roemer, John E. **AA** Moulin: Virginia Polytechnic Institute and State University. Roemer: University of California, Davis. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E86-02-03; Working Paper Coordinator, Department of Economics Sandy Hall, Blacksburg, VA 24061. **PG** 42. **PR** No Charge. **JE** 022, 024, 025, 052. **KW** Private Ownership. Public Ownership. Allocation Mechanism. Technological Monotonicity. Property Rights. Socialism. Neo-Lockeanism.

AB Liberal political philosophy, represented classically by Locke and today by libertarians, defends great inequality of economic outcome on the basis that people own themselves, and are entitled to establish private property in the external world by virtue of that self-ownership. Contemporary non-libertarian political philosophers, such as J. Rawls and R. Dworkin, achieve their relatively egalitarian conclusion by effectively denying self-ownership as a premise. An alternative challenge to liberalism, which does not take the radical starting point of denying self-ownership, is to declare that while certain rights to benefit by virtue of superior skill should be protected (a degree of self-ownership), productive assets in the external world should be viewed as publicly owned, and not privately appropriable. What allocation mechanisms on a space of possible economies satisfy axioms which are necessary to guarantee both private ownership of self and public or joint ownership of the external world? We propose an axiomatic method for modelling problems in political philosophy of this sort, and answer the question posed for a simple model. The result shows that the degree of inequality defended by neo-Lockeanism can be challenged without denying, a priori, self-ownership, its relatively attractive postulate.

TI Public Ownership of the External World and Private Ownership of Self. **AU** Roemer, John E.; Moulin, Herve.

Nadiri, M. Ishaq

PD March 1986. **TI** Comparison and Analysis of Productivity Growth and Research and Development Investment in the Electrical Machinery Industries of the United States and Japan. **AU** Nadiri, M. Ishaq; Prucha, Ingmar R. **AA** Nadiri: National Bureau of Economic Research, New York. Prucha: Department of Economics, University of Maryland at College Park. **SR** National Bureau of Economic Research Working Paper: 1850; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 123, 631, 621. **KW** Electrical Machinery Industry. Productivity Growth. Production Structure. Technological Change. Research and Development.

AB This paper presents a comparative analysis of productivity growth in the United States and Japanese electrical machinery industries in the postwar period. This industry has experienced rapid growth in output and productivity and high rates of capital formation in both countries. A substantial amount of Research and Development resources of the total manufacturing sectors in both countries is concentrated in the electrical machinery industry. Also, this industry has an active export orientation in both countries. The analysis of the paper is based on dynamic factor demand models describing the production structure and the behavior of factor inputs as well as the determinants of productivity growth in the United States and Japanese electrical machinery industry. The analysis shows that the production structure of the industry in both countries is characterised by increasing returns to scale; the responsiveness of factors of production to changes in factor prices; and the existence of a pattern of substitution and complementarity among the inputs. The main sources of productivity growth are: growth in materials; technical change; and capital accumulation. R&D expenditures have also contributed significantly to growth of labor and productivity while the most important source of total factor productivity in this industry for both countries has been the scale effect followed by changes in technical progress.

Neumann, Manfred J. M.

TI Instability versus Dynamics: A Study in West German Demand for Money. **AU** von Hagen, Jurgen; Neumann, Manfred J. M.

Newell, Andrew

PD September 1985. **TI** Wages and Employment in the O.E.C.D. Countries. **AU** Newell, Andrew; Symons, James S. V. **AA** Newell: London School of Economics. Symons: University College London. **SR** University College London Discussion Paper: 85-24; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 60. **PR** No Charge. **JE** 824. **KW** Unemployment. OECD Unemployment. Wage Increases. Strike Activity.

AB A model of the labour market is developed for each of 16 O.E.C.D. economies, incorporating long-run market-clearing, but short-run real wage rigidity. These models are then used to explain the increase in the O.E.C.D. unemployment from 1950 to 1981. The conclusions are: (i) The general upward drift of unemployment in the O.E.C.D. in the 1970s is explained by a wage explosion over that period. (ii) Nothing is strongly associated with this explosion except perhaps world strike activity. (iii) The rise in the real wage has been exacerbated by the transient effects of the OPEC episodes and tax increases. The principal distinguishing characteristic of unemployment performance across countries lies in how rapidly the product wage can be reduced following the creation of unemployment. If unemployment exerts a powerful negative effect on the real wage, the empirical analysis suggests that an economy will not suffer from prolonged unemployment.

Newey, Whitney K.

PD April 1986. **TI** A Simple, Positive Semi-Definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix. **AU** Newey, Whitney K.; West, Kenneth D. **AA** Newey: Department of Economics, Princeton University. West: Woodrow Wilson School, Princeton University. **SR** National Bureau of Economic Research Technical Paper: 55; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 211. **KW** Covariance Matrix. Consistency.

AB This paper describes a simple method of calculating a heteroskedasticity and autocorrelation consistent covariance matrix that is positive semi-definite by construction. It also establishes consistency of the estimated covariance matrix under fairly general conditions.

Nordhaus, William D.

PD May 1986. **TI** Resources, Technology, and Development: Will the Table Be Bare When Poor Countries Get There?. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 793; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 21. **PR** No Charge. **JE** 111, 721, 621. **KW** Natural Resources. Economic Growth. Technology. Resource Depletion.

AB This paper discusses the net effect of these two economic forces on developing countries: Is the drag to economic advance from dwindling resources outweighed by the accompanying technological advances? Or will the potential scarcity of resources during the next century on balance weigh down the pace of economic progress?.

Norgaard, Richard B.

PD June 12, 1986. **TI** Bureaucracy, Systems Management, and the Mythology of Science. **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: 398; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 37. **PR** $5.55. **JE** 512, 511. **KW** Bureaucracy. Systems Management. Myths.

AB Bureaucracy is perhaps the most universal, successful, and abhorred aspect of modernization. Many scholars have documented bureaucracy's meteoric rise. Many have tried to explain its pernicious particulars. Only a few have pursued the paradox of our repugnance for an evolutionary success. This essay explores the paradox. The argument intermingles with various branches of the existing literature on organization theory but is itself rooted in the epistemological clash between our belief in objective knowledge and our long-standing use of cultural knowledge. I argue that both bureaucracy's success and our abhorrence are rooted in the incongruities between our beliefs about science and the cultural context in which most social decisions are made.

Oi, Walter Y.

PD May 12, 1986. **TI** Employment Relations in Dual Labor Markets (It's Nice Work If You Can Get It). **AA** Department of Economics, University of Rochester. **SR** University of Rochester Department of Economics Discussion Paper: 40; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 47. **PR** $3.00. **JE** 824. **KW** Monitoring Cost Hypothesis. Dual Labor Markets. Job Tenure. Efficiency Wages. Compensating Differences for Team Production.

AB In this paper I examine various models that might help explain some of the empirical regularities of labor markets, such as the observation that wages are higher and job tenure longer in larger firms.

Okuguchi, Koji

PD January 1985. **TI** Equilibrium Prices in the Bertrand and Cournot Oligopolies. **AA** Department of Economics, Tokyo Metropolitan University. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A3; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 21. **PR** No Charge. **JE** 021,

022, 611. **KW** Bertrand Oligopoly Prices. Cournot Oligopoly Prices.
AB The equilibrium prices of a price adjusting Bertrand oligopoly and those corresponding to a quantity-adjusting Cournot equilibrium outputs are compared. In duopoly, the positivity of the Jacobian matrix of the demand functions ensures that the Cournot equilibrium prices are always higher than the Bertrand equilibrium prices. In oligopoly, if all firms have linear demand and cost functions, the Cournot equilibrium prices are not lower than the Bertrand ones. The meaningful condition for the comparison of the two equilibrium prices can be derived even if the nonlinearity is involved in the cost and/or demand functions. The relation of this condition to the global stability condition for the Bertrand equilibrium prices is noted.

Oswald, Andrew J.
PD February 1986. **TI** Wage Determination and Recession: A Report on Recent Work. **AA** Centre for Labour Economics, London School of Economics. **SR** London School of Economics Centre for Labour Economics Discussion Paper: 243; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 26. **PR** No Charge. **JE** 824. **KW** Wages. Unemployment. Union Models. Unemployment Elasticity of Real Wages.
AB The paper discusses recent work on the economics of wage determination and recession. Although economists still do not understand the labour market terribly well, there are now a number of econometric studies which suggest that the unemployment elasticity of real wages is approximately -0.1. This means that, when aggregate unemployment doubles, the real wage tends to fall by, other things constant, 10 per cent. The paper also discusses recent tests of union models.

Pauly, Peter
TI Import Surcharges, United States Deficits, and the World Economy. **AU** Klein, Lawrence R.; Pauly, Peter; Peterson, Christian E.

TI International Policy Coordination and Growth Prospects of Developing Countries: An Optimal Control Application. **AU** Marques, Jaime; Pauly, Peter.

Paxson, Christina H.
TI Job Characteristics and Hours of Work. **AU** Altonji, Joseph G.; Paxson, Christina H.

Pearce, David W.
PD 1985. **TI** The Costs of Natural Resource Depletion in Low Income Developing Countries. **AU** Pearce, David W.; Markandya, Anil. **AA** University College London. **SR** University College London Discussion Paper: 85-23; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 48. **PR** UKL 1.50. **JE** 721, 121, 112. **KW** Natural Resources. Developing Countries. Marginal Opportunity Cost. Deforestation.
AB The paper develops a methodology for evaluating the true money cost of the non-sustainable use of renewable resources in poor developing countries. Over-harvesting, over-grazing, and over-cutting give rise to the 'mining' of renewable resources. To the marginal cost of harvesting must therefore be added the user cost component due to non-sustainable practice. In addition, natural resource systems in developing countries are more interdependent than in developed economies. Deforestation can therefore give rise to soil erosion, wind damage to crops, loss of fodder for livestock, sedimentation of rivers, estuaries and hydro-reservoirs. Thus various forms of external costs, including magnified disaster costs (e.g. floods), need to be added to harvesting and user costs to obtain an estimate of marginal opportunity cost. The implications for shadow pricing of resources are considered. This is the first in a series of papers on natural resource problems in developing countries.

TI Toward a Theory of Discounted Repeated Games with Imperfect Monitoring. **AU** Abrev, Pilip; Pearce, David W.; Stacchetti, Ennio.

Pemberton, Malcolm
TI Medium-Term Planning in Oil-Based Economies: A Case Study of Kuwait. **AU** Markandya, Anil; Pemberton, Malcolm.

Perry, Motty
TI Strategic Delay in Bargaining. **AU** Admati, Anat R.; Perry, Motty.

Persson, Torsten
PD August 1985. **TI** International Borrowing and Time-Consistent Fiscal Policy. **AU** Persson, Torsten; Svensson, Lars E. O. **AA** Persson; Svensson: Institute for International Economic Studies. **SR** University of Rochester Center for Economic Research Working Paper: 22; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 29. **PR** No Charge. **JE** 321, 443. **KW** Fiscal Policy. Time-Consistency. Optimal Policy. Commitment.
AB The paper discusses optimality and time consistency of fiscal policy in an open economy without money and capital. For a large open economy it is shown that the optimal policy under commitment can be made time consistent under discretion, if each government chooses an adequate maturity structure for the national and international debt. For a small open economy the optimal policy under commitment cannot be made time-consistent. The general result is that each government requires at least as many "effective" debt instruments as the number of (explicit and implicit) tax rates chosen, in order to ensure time-consistent policy of its successor.

Pesando, James E.
PD March 1986. **TI** The October 1979 Change in the Monetary Exchange Regime: Its Impact on the "Forecastability" of Interest Rates. **AU** Pesando, James E.; Plourde, Andre. **AA** Institute for Policy Analysis, University of Toronto. **SR** National Bureau of Economic Research Working Paper: 1874; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 132, 311.

KW Forecasting Interest Rates. Monetary Regime Shift. Time-Varying Term Premium.
AB Subsequent to the October 1979 shift in monetary policy in the United States, interest rates in North America not only reached unprecedented levels, but also exhibited unprecedented volatility. This paper shows that the anticipated quarterly changes in long-term rates associated with the rational expectations model have remained small during this post-shift period. Recorded forecasts of long-term interest rates in Canada continue to prove inferior to the no-change prediction of the martingale model. The "perverse" relationship between the slope of the yield curve and the subsequent movement in long-term rates exists in the Canadian data, but is of only modest value in a forecasting context. The excess return on long-term bonds implicit in the recorded forecasts of the level of interest rates varies sharply, yet there is no evidence that forecasters have identified a predictable component of a time-varying term premium.

Peterson, Christian E.

TI Import Surcharges, United States Deficits, and the World Economy. **AU** Klein, Lawrence R.; Pauly, Peter; Peterson, Christian E.

Pfleiderer, Paul

TI Viable Allocations of Information in Financial Markets. **AU** Admati, Anat R.; Pfleiderer, Paul.

Phelps, Charles E.

PD March 26, 1986. **TI** Large-Scale Tax Reform: The Example of Employer-Paid Health Insurance Premiums. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 37; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 50. **PR** No Charge. **JE** 323, 913. **KW** Tax Reform. Health Insurance.
AB This study assesses the consequences of altering the favorable tax treatment of health insurance, and addresses the question of why it seems so politically difficult to accomplish this type of reform. To summarise the results briefly in anticipation of the detail, this study finds: (1) Special tax treatment of health insurance (compared with full taxation) has increased the aggregate health insurance premiums by at least 40 per cent for every year since Medicare was introduced, and by at least 50 per cent for every year in the last decade. This added insurance coverage has surely induced substantial extra demand for medical care, probably with little if any incremental gain in health outcomes for the United States population. (2) Major tax reform -- at the extreme, elimination of the tax preference -- would greatly affect the profitability and employment in the health insurance industry, and would markedly affect also the wealth and employment of many providers of medical care. (3) Even if the tax revenue effects of a broadened tax base were offset by a reduced marginal tax rate, so as to produce no net tax revenue gain, strong patterns of winners and losers would emerge among workers in various industries. (4) The magnitude of welfare gains from reducing overinsurance (in aggregate and for most individuals) are probably swamped by the extent of wealth redistribution generated by this tax reform. Therefore, political decisions regarding this reform will likely depend on these redistributive issues, rather than upon the potential benefit as defined in classical welfare economics. Thus, unless a low-cost and politically efficient redistributive scheme could be devised to accompany this large change in the tax code, it seems unlikely that the Congress would adopt this type of major tax reform.

Phillips, Peter C. B.

TI Best Median Unbiased Estimation in Linear Regression With Bounded Asymmetric Loss functions. **AU** Andrews, Donald W. K.; Phillips, Peter C. B.

Phlips, Louis

PD January 1986. **TI** A Dynamic Oligopoly Model With Demand Inertia and Inventories. **AU** Phlips, Louis; Richard, Jean Francois. **AA** Centre for Operations Research and Econometrics, Universite Catholique de Louvain. **SR** Universite Catholique de Louvain Centre for Operations Research and Econometrics Discussion Paper: 8603; Centre for Operations Research and Econometrics, Universite Catholique de Louvain, Voie du Roman Pays, 34, B-1348 Louvain-la-Neuve, BELGIUM. **PG** 36. **PR** No Charge. **JE** 022. **KW** Inventories. Dynamic Oligopoly Models. Price Evolution. Interest Rate.
AB The introduction of inventories into the dynamic oligopoly model with demand inertia constructed by Selten (1965) leads to subgame perfect equilibria which imply that the players use an intertemporal price discrimination rule. Analytical solutions are obtained under parameter constancy and algorithms are provided for the case where coefficients change over time. A number of provocative results emerge from a simulation of this enlarged Selten model. The rate of interest is seen to play an essential role in the accumulation of inventories and the evolution over time of industrial prices.

Pigato, Miria Antonia

PD March 24, 1986. **TI** On Monetary Control: A Critique of Monetary Base Control in the United Kingdom. **AA** University College London. **SR** University College London Discussion Paper: 86-03; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PR** 1.50 pounds sterling. **JE** 311. **KW** Money Multiplier. Money Supply. Causation. Monetary Base Control.
AB This paper presents an empirical investigation of the stability and causal structure of the money multiplier in the United Kingdom in the period 1971-1981. Granger and Sims tests are used to analyse the causality relationships between money supply and monetary base. We found no evidence of unidirectional causality running either from the money supply to the monetary base or the other way round. We found empirical evidence of large fluctuations in the rate of growth of the money supply and in the variables which contributed to its growth. The main political consequence of this analysis is that it might be very difficult for monetary authorities to predict the behaviour of the multiplier in the short run.

PD March 24, 1986. **TI** Monetary Control in the Context of a Banking System Practising Liability

Management: The Case of the United Kingdom 1971-1981. **AA** University College London. **SR** University College London Discussion Paper: 86-04; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PR** 1.50 pounds sterling. **JE** 311, 312. **KW** Short Term Monetary Policy. Liability Management.

AB The paper is devoted to the analysis of bank liability management in the United Kingdom and its relevance for short term monetary policy. It is shown that the effectiveness of monetary policy can be seriously undermined when the banking system reacts with changes in the deposit rate to changes in the interest rate on government securities. Moreover it is argued that the problems faced by the British monetary authorities during the 1970s in controlling money supply and aggregate demand were fundamentally due to the failure in evaluating the importance of bank liability management.

Pines, D.

TI Housing Prices and Tenure Choice in a Rational Expectations General Equilibrium Model with Production Risk. **AU** Eldor, R.; Pines, D.

Plourde, Andre

TI The October 1979 Change in the Monetary Exchange Regime: Its Impact on the "Forecastability" of Interest Rates. **AU** Pesando, James E.; Plourde, Andre.

Poole, William

TI Shadow Open Market Committee Policy Statement and Position Papers. **AU** Jordan, Jerry L.; Poole, William; Levy, Mickey D.; Rasche, Robert H.; Heinemann, H. Erich.

Poterba, James M.

PD March 1986. **TI** How Burdonsome are Capital Gains Taxes?. **AA** Department of Economics, MIT. **SR** National Bureau of Economic Research Working Paper: 1871; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 323. **KW** Capital Gains Taxes.

AB Several recent and provocative studies have described portfolio trading strategies which permit investors to avoid all taxes on capital gains and to shelter a substantial part of their ordinary income as well. Other studies adopt the more traditional view that the capital gains tax raises the effective tax burden on capital income. This paper uses capital gain realization data from the 1982 IRS Individual Tax Model in an effort to distinguish between these views. It shows that for about one-fifth of the investors who realize gains or losses, the ordinary income loss-offset limitations are binding constraints. Since additional gain realizations do not affect these investors' current tax liability, they may be effectively untaxed on capital gains. Another significant group escapes taxation by not reporting realised gains. However, the largest group of investors trades in a less elaborate and more honest manner, realising and reporting gains without offsetting losses. The capital gains tax may reduce the after-tax return earned by these investors.

TI Tax Loss Carryforwards and Corporate Tax Incentives. **AU** Auerbach, Alan J.; Poterba, James M.

Pound, John

TI Survey Evidence on Diffusion of Interest Among Institutional Investors. **AU** Shiller, Robert J.; Pound, John.

TI Survey Evidence on Diffusion of Interest Among Institutional Investors. **AU** Shiller, Robert J.; Pound, John.

Prescott, Edward C.

PD February 1986. **TI** Theory Ahead of Business Cycle Measurement. **AA** Federal Reserve Bank of Minneapolis Research Department. **SR** Federal Reserve Bank of Minneapolis Staff Report: 102; Research Department, Federal Reserve Bank of Minneapolis, 250 Marquette Avenue, Minneapolis, MN 55480. **PG** 49. **PR** No Charge. **JE** 023, 131, 111. **KW** Business Cycles. Fluctuations. Growth.

AB Recent developments in business cycle theory are reviewed. The principal finding is that the growth model, which was developed to account for the secular patterns in important economic aggregates, displays the business cycle phenomena once it incorporates the observed randomness in the rate of technological advance. The amplitudes and serial correlation properties of fluctuations in output and employment that the growth model predicts match those historically experienced in the United States. Further, the model continues to display the growth facts it was developed to explain.

PD April 1986. **TI** Dynamic Coalitions, Growth, and the Firm. **AU** Prescott, Edward C.; Boyd, John H. **AA** Federal Reserve Bank of Minneapolis Research Department. **SR** Federal Reserve Bank of Minneapolis Staff Report: 100; Research Department, Federal Reserve Bank of Minneapolis, 250 Marquette Avenue, Minneapolis, MN 55480. **PG** 25. **PR** No Charge. **JE** 111, 611, 621. **KW** Growth. The Firm. Dynamic Coalitions. Endogenous Technological Change.

AB The implications of a dynamic coalition production technology are explored. With this technology, coalitions produce the current period consumption good as well as coalition-specific capital which is embodied in young coalition members. The equilibrium allocation is efficient and displays constant growth rates, even though exogenous technological change is not a feature of the environment. Unlike the neoclassical growth model, policies which influence agents' investment-consumption decisions affect not only the level of output, but also its constant growth rate. In addition to these growth entailments, the theory has equally important industrial organization implications. Specifically, in equilibrium there is no tendency for coalition (firm) size to regress to the mean or for the distribution of coalition sizes to become more disparate.

Promel, Hans

PD November 1985. **TI** Some Remarks on Natural Orders for Combinatorial Cubes. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85398-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND.

PG 13. PR No Charge. JE 213. KW Canonizing Ordering Theorem. Combinatorial Cubes.

AB In this note, a new combinatorial interpretation of the natural linear orders on combinatorial cubes over finite sets A is given. This allows us to simplify the proof of the canonizing ordering theorem for combinatorial cubes 'J. Nesetril, H.J. Promel, V. Rodl, B. Voigt. J. Combin. Theory Series A 40 (1985), 394-408 considerably. Moreover, we obtain an extension of this theorem in case where the determinant of A = 2, which can be interpreted as a characterisation theorem for natural partial orders on Boolean lattices.

PD December 1985. TI Graham-Rothschild Parameter Sets. AU Promel, Hans; Voigt, B. AA Promel: University of Bonn. Voigt: University of Bielefeld. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85403-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 40. PR No Charge. JE 213. KW Ramseys Theorem. Combinatorial Structure. Graham-Rothschild. Parameter Sets.

AB In their, by now classical, paper 'Ramsey's theorem for n-parameter sets' (Trans. Amer. Math. Soc. 159 (1971), 257-291) Graham and Rothschild introduced a combinatorial structure which turned out be central in Ramsey theory. In this paper we survey the developments related to the structure of Graham-Rothschild parameter sets.

PD January 1986. TI Counting Unlabeled Structures. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 86409-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 12. PR No Charge. JE 213. KW Finite Labeled Structure.

AB In this note we prove that whenever C is an infinite class of finite labeled structures provided with one binary relation such that C is closed under isomorphisms and (induced) substructures and C is rich enough (in a quantitative sense) then almost all structures in C are rigid, i.e., have no nontrivial automorphism. Applying this result to well-known results for labeled graphs we derive, for example, that almost every unlabeled K(l+1)-free graph is already l-colorable, and we obtain 0 - 1 laws for the classes of unlabeled K(l+1)-free graphs. It is worth while to note that a special case of our result states that almost all partial orders are rigid. As a consequence of this and the Kleitman-Rothschild (1975) theorem we get an asymptotic formula for the number of unlabeled partial orders.

Prucha, Ingmar R.

TI Comparison and Analysis of Productivity Growth and Research and Development Investment in the Electrical Machinery Industries of the United States and Japan. AU Nadiri, M. Ishaq; Prucha, Ingmar R.

Puffert, Douglas J.

TI Social Security: A Financial Appraisal Across and Within Generations. AU Boskin, Michael J.; Kotlikoff, Laurence J.; Puffert, Douglas J.; Shoven, John B.

TI Social Security: A Financial Appraisal Across and Within Generations. AU Boskin, Michael J.; Kotlikoff, Laurence J.; Puffert, Douglas J.; Shoven, John B.

Quandt, Richard E.

PD March 27, 1985. TI Estimation in Disequilibrium Models with Aggregation. AA Department of Economics, Princeton University. SR Princeton Financial Research Center Memorandum: 68; Financial Research Center, Department of Economics, Princeton University, Princeton, NJ 08544. PG 29. PR $2.00. JE 211. KW Disequilibrium. Aggregation. Monte Carlo Methods. Nonlinear Least Squares. Maximum Likelihood.

AB When an aggregate disequilibrium is the result of disequilibrium in several submarkets, the usual maximum likelihood estimation, which is based on the ruin of aggregate demand and supply, represents a misspecification. The present paper compares ML with several nonlinear least squares methods that are appropriate for this situation. Monte Carlo experiments suggest that ML is robust with respect to the misspecification and may be preferable to the nonlinear least squares methods in some situations.

Rasche, Robert H.

TI Shadow Open Market Committee Policy Statement and Position Papers. AU Brunner, Karl; Levy, Mickey D.; Jordan, Jarry L.; Rasche, Robert H.

TI Shadow Open Market Committee Policy Statement and Position Papers. AU Brunner, Karl; Levy, Mickey D.; Jordan, Jerry L.; Rasche, Robert H.; Tumlir, Jan.

TI Shadow Open Market Committee Policy Statement and Position Papers. AU Brunner, Karl; Levy, Mickey D.; Jordan, Jerry L.; Rasche, Robert H.; Tumlir, Jan.

TI Shadow Open Market Committee Policy Statement and Position Papers. AU Jordan, Jerry L.; Poole, William; Levy, Mickey D.; Rasche, Robert H.; Heinemann, H. Erich.

TI Shadow Open Market Committee Policy Statement and Position Papers. AU Jordan, Jerry L.; Poole, William; Levy, Mickey D.; Rasche, Robert H.; Heinemann, H. Erich.

Ravenscraft, David J.

PD April 1986. TI Life After Takeover. AU Ravenscraft, David J.; Scherer, F. M. AA Ravenscraft: Federal Trade Commission. Scherer: Swarthmore College. SR Federal Trade Commission Bureau of Economics Working Paper: 139; Bureau of Economics, Federal Trade Commission, 6th and Pennsylvania Avenue NW, Washington, DC 20580. PG 15. PR No Charge. JE 520, 611. KW Takeover. Tender Offer. Merger.

AB The economic consequences of tender offer takeovers are investigated by analysing the profitability of enterprises acquired between 1950 and 1974 by Federal Trade Commission Line of Business sample corporations as a direct or indirect (e.g., "white knight") result of tender offers. In the two years before tender offer, 77 target companies' profitability differed insignificantly from all-manufacturing norms. Eight years on average after takeover, the acquired lines of business had operating income / assets percentages 2.94 points below the values for non-tender lines with similar industry bases and market shares. The difference is statistically significant. Further analysis shows that most of the targets' post-takeover profit deficiency stemmed from asset writeups following from the payment of takeover premiums. However, there is also no evidence that on average the acquiring companies raised their targets' baseline operating profitability, measured before takeover-related accounting adjustments.

Ray, Debraj

TI Dynamic Price Games With Learning-by-Doing. **AU** Mookherjee, Dilip; Ray, Debraj.

Razin, Assaf

TI The Limited Viability of Dual Exchange-Rate Regimes. **AU** Frenkel, Jacob A.; Razin, Assaf.

Redish, Angela

TI Currency Depreciation in Early Modern England and France. **AU** Glassman, Debra; Redish, Angela.

Reishus, David

TI Taxes and the Merger Decision: An Empirical Analysis. **AU** Auerbach, Alan J.; Reishus, David.

Reiss, Peter C.

TI Entry in Monopoly Markets. **AU** Bresnahan, Timothy F.; Reiss, Peter C.

Renault, A.

TI Generalised Residuals. **AU** Gourieroux, C.; Monfort, A.; Renault, A.; Trognon, A.

Richard, Jean Francois

TI A Dynamic Oligopoly Model With Demand Inertia and Inventories. **AU** Phlips, Louis; Richard, Jean Francois.

Ricketts, Martin

PD March 1984. **TI** Principal and Agent, Risk-Sharing and Incentives: A Simple Diagrammatic Exposition. **AA** University of Buckingham. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: 8604-0436; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 31. **PR** No Charge. **JE** 022, 026. **KW** Principal-Agent Theory. Risk Sharing. Incentives.

AB In recent years much theoretical work has been devoted to the problem of principal and agent (e.g., Harris and Raviv, 1978; Holmstrom 1979; and Shavell, 1979). The result has been both great theoretical insight and the opportunity to apply some of the new ideas to the analysis of such problems as the nature of contracts of employment, the structure of hierarchical organisations, the working of insurance markets, the "division of ownership from control," the monitoring of government regulations, and so forth. The purpose of this paper is to use some familiar diagrammatic tools to illustrate the main results of the principal-agent theory.

Roberds, William

PD March 1986. **TI** Models of Policy Under Stochastic Replanning. **AA** Federal Reserve Bank of Minneapolis Research Department. **SR** Federal Reserve Bank of Minneapolis Staff Report: 104; Research Department, Federal Reserve Bank of Minneapolis, 250 Marquette Avenue, Minneapolis, MN 55480. **PG** 45. **PR** No Charge. **JE** 133. **KW** Macroeconomic Stabilization. Administration Turnover.

AB This paper considers a policy environment in which policy is not set by a single policymaker, but by a sequence of policymaking administrations. Administration turnover is determined by a simple random process. The consequences of administration turnover are traced through for two versions of a linear rational expectations model, and numerical simulations of various policy environments are presented.

Roberts, John

PD May 1986. **TI** Involuntary Unemployment and Imperfect Competition: A Game Theoretic Macro Model. **AA** Graduate School of Business, Stanford University. **SR** Stanford Graduate School of Business Research Paper: 880; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. **PG** 26. **PR** No Charge. **JE** 021, 023, 026. **KW** Involuntary Unemployment. Imperfect Competition. Effective Demand. Coordination Failures.

AB This paper considers a game-theoretic, non-Walrasian, general equilibrium model of price determination, production, and exchange. In this game, firms first select prices and wages, consumers/workers then make input supply and output demand offers, and finally firms select the fractions of these to accept. Equilibrium (pure strategy, subgame perfect Nash equilibrium) involves each agent's acting optimally from each point forward while correctly recognizing the results of taking any given course of action. In particular, firms correctly forecast the quantity responses to different prices and wages. It is shown that with a particular structure of preferences, endowments and technology, if an equilibrium exists with positive levels of economic activity, then there exists another equilibrium at the same prices and wages with lower levels of activity. The latter equilibrium corresponds to involuntary unemployment. This unemployment arises because of a failure of excess demand. Given the prices and wages, no firm expects enough demand to justify greater hiring. Thus, employment, income and demand are low, and the pessimistic expectations are confirmed. Further, expectations are such that price and wage changes do not appear profitable, and, by the nature of equilibrium, these expectations are correct.

Roberts, Judith

TI The Efficiency of the Supply of Public Education. **AU** Bergstrom, Ted; Rubinfeld, Daniel; Roberts, Judith; Shapiro, Perry.

Robinson, Chris

TI An Operational Theory of Monopoly Union -

Competitive Firm Interaction. **AU** MacDonald, Glenn M.; Robinson, Chris.

Robinson, Sherman

TI A Bibliography of Computable General Equilibrium (CGE) Models Applied to Developing Countries. **AU** Devarajan, Shantayanan; Lewis, Jeffrey D.; Robinson, Sherman.

PD June 12, 1986. **TI** Multisectoral Models of Developing Countries: A Survey. **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: 401; 207 Giannini Hall, University of California, Berkeley, CA 94720. **PG** 91. **PR** $13.65. **JE** 121. **KW** Multisectoral Models. Developing Countries. Computable General Equilibrium Model. Social Accounting. Input-Output. Neoclassical Structuralist Models. CGE Model.

AB This survey focusses on multisectoral, economywide models of developing countries developed in the last ten to fifteen years.

Roe, Terry

PD May 15, 1986. **TI** Import Elasticity with Government Intervention: A Time Series Cross Section Analysis of Seventy-Two Countries. **AU** Roe, Terry; Shane, Mathew; Vo, De Huu. **AA** Department of Agricultural and Applied Economics, University of Minnesota. **SR** University of Minnesota Economic Development Center Bulletin: 86-2; Department of Economics, 1035 Management and Economics, University of Minnesota Minneapolis, MN 55455. **PG** 32. **PR** No Charge. **JE** 227, 421. **KW** Import Elasticity. Government Intervention. International Trade. Wheat Market. Rice Market.

AB The impact of government intervention on the behavior of a country's import market is investigated by focusing on the departure this intervention induces between excess and import demand functions. A formal model of government behavior is posited where government preferences are embodied in a country's import demand function. This function is related to its corresponding excess demand function through the domestic price to border price transmission elasticity. A pooled cross section data on 72 countries is used to estimate these functions for wheat and rice. The results suggest that import demand elasticities are larger than their corresponding excess demand elasticities and that price transmission elasticities are less than unity. Differences in elasticities over time, regions and levels of nominal protection are also reported.

Roemer, John E.

TI Public Ownership of the External World vs. Private Ownership of Self. **AU** Moulin, Herve; Roemer, John E.

PD May 19, 1986. **TI** Public Ownership of the External World and Private Ownership of Self. **AU** Roemer, John E.; Moulin, Herve. **AA** Roemer: Department of Economics, University of California, Davis. Moulin: Virginia Polytechnic Institute and State University. **SR** University of California at Davis Economics Department Working Paper: 275; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 39. **PR** No Charge. **JE** 025, 052. **KW** Property Rights. Neo-Lockeanism. Socialism. Self-Ownership.

AB Liberal political philosophy, represented classically by Locke and today by libertarians, defends great inequality of economic outcome on the basis that people own themselves, and are entitled to establish private property in the external world by virtue of that self-ownership. Contemporary non-libertarian political philosophers, such as J. Rawls and R. Dworkin, achieve their relatively egalitarian conclusion by effectively denying self-ownership as a premise. An alternative challenge to liberalism, which does not take the radical starting point of denying self-ownership, is to declare that while certain rights to benefit by virtue of superior skill should be protected (a degree of self-ownership), productive assets in the external world be viewed as publicly owned, and not privately appropriable. What allocation mechanisms on a space of possible economies satisfy axioms which are necessary to guarantee both private ownership of self and public or joint ownership of the external world? We propose an axiomatic method for modelling problems in political philosophy of this sort, and answer the question posed for a simple model. The result shows that the degree of inequality defended by neo-Lockeanism can be challenged without denying, a priori, self-ownership, its relatively attractive postulate.

Roley, V. Vance

PD March 1986. **TI** United States Monetary Policy Regimes and United States-Japan Financial Relationships. **AA** Graduate School of Business Administration, University of Washington. **SR** National Bureau of Economic Research Working Paper: 1858; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 431, 311, 432. **KW** Monetary Regime Shifts. International Financial Markets. Liberalisation.

AB This paper examines the pervasiveness of the effects of United States monetary policy regime shifts and unanticipated changes in money on international financial markets. Four potential regimes from October 1977 to May 1985 are examined in terms of the response of yen-denominated securities in the Tokyo market to United States money surprises. The rationality of the responses in domestic and foreign onshore financial markets is further examined by testing whether the responses of dollar-denominated securities, yen-dominated securities, the spot yen/dollar exchange rate, and the forward yen/dollar exchange rate violate covered interest parity. The use of yen-denominated assets and the yen/dollar exchange rate allows further tests of the effects of the liberalization of restrictions on capital mobility in Japan since the late 1970s on market efficiency.

TI News from the United States and Japan: Which Moves the Yen/Dollar Exchange Rate?. **AU** Ito, Takatoshi; Roley, V. Vance.

Rolin, Jean Marie

TI On the Sigma-Algebraic Realization Problem. **AU** Mouchart, Michel; Rolin, Jean Marie.

Rolnick, Arthur J.

PD October 1985. **TI** Explaining the Demand for Free Bank Notes. **AU** Rolnick, Arthur J.; Weber, Warren E. **AA** Federal Reserve Bank of Minneapolis, Research Department. **SR** Federal Reserve Bank of Minneapolis Staff Report: 97; Research Department, Federal Reserve Bank of Minneapolis, 250 Marquette Avenue, Minneapolis, MN 55480. **PG** 39. **PR** No Charge. **JE** 314, 042. **KW** Free Banking. Bank Notes.

AB This paper explains why the risky notes of banks established during the Free Banking Era (1837-63) were demanded even when relatively safe specie (gold and silver coin) was an alternative. Free bank notes were demanded because they were priced to reflect the expected value of their backing. The empirical evidence supports this explanation. Specifically, in New York, Wisconsin, and Indiana the expected value of backing was sufficient for free bank notes to circulate at par, which they did. In Minnesota the backing for notes was very poor: they exchanged well below par, being treated as small-denomination securities.

Romer, Paul M.

PD February 1984. **TI** Monotonically Decreasing Natural Resource Prices Under Perfect Foresight. **AU** Romer, Paul M.; Sasaki, Hiroo. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 19; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 42. **PR** No Charge. **JE** 721. **KW** Resource Extraction. Exhaustible Resources. Natural Resource Prices.

AB This paper presents a simple, competitive equilibrium model of exhaustible resource extraction in which the price can remain constant or decline monotonically for all time. It is driven by technological change that results from the accumulation of knowledge by forward looking, cost minimising firms. Because of the characteristics of knowledge, the technology exhibits both externalities and increasing returns. A new existence result and a feasible procedure for calculating sub-optimal dynamic equilibria are established. Results from the computation of a sample equilibrium are also presented.

PD May 1985. **TI** Cake Eating, Chattering, and Jumps: Existence Results for Variational Problems. **AA** Department of Economics, University of Rochester. **SR** University of Rochester Department of Economics Discussion Paper: 13; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 21. **PR** No Charge. **JE** 213. **KW** Variational Problems. Chattering. Cake Eating. Infinite Dimensional Optimization.

AB This paper establishes a simple existence result for solutions to variational problems of the form: integral from zero to infinity of G(x, dx, ddx, t)dt where d represents the derivative with respect to time. The key assumptions are that G have an integrable upper bound, that it satisfy a growth condition and that it be concave as a function of the highest order derivative in the problem, other arguments held constant. The discussion illustrates why three well known types of problems fail to have solutions. For two of these -- chattering and cake eating -- extended solution concepts are contrasted with simple modifications that restore the existence of a conventional solution. In a third case -- state variables with jumps -- the source of the difficulty is fundamental. For these problems a natural extended solution, analogous to the extension from probability density functions to general distribution functions is suggested.

PD October 1985. **TI** Increasing Returns and Long Run Growth. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 27; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 50. **PR** No Charge. **JE** 111, 621. **KW** Knowledge. Endogenous Technological Change. Technological Change. Long Run Growth. Increasing Returns.

AB This paper presents a fully specified model of long run growth in which knowledge is assumed to be an input in production that has increasing marginal productivity. It is essentially a competitive equilibrium model with endogenous technological change. In contrast to models based on diminishing returns, growth rates can be increasing over time; the effects of small disturbances can be amplified by the actions of private agents; large countries may always grow faster than small countries. Long run evidence is offered in support of the empirical relevance of these possibilities.

TI Smooth Valuation Functions and Determinancy with Infinitely Lived Consumers. **AU** Kehoe, Timothy J.; Levine, David K.; Romer, Paul M.

Ross, Stephen A.

TI A Test of the Efficiency of a Given Portfolio. **AU** Gibbons, Michael R.; Ross, Stephen A.; Shanken, Jay.

Rothwell, Geoffrey S.

PD April 1, 1986. **TI** A Note on Allowed and Realized Rates of Return in the Electric Utility Industry. **AU** Rothwell, Geoffrey S.; Eastman, Kelly A. **AA** Rothwell: California Institute of Technology. Eastman: The Brookings Institute. **SR** Caltech Social Science Working Paper: ; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 20. **PR** No Charge. **JE** 613. **KW** Allowed Rate of Return. Cost of Capital. Capital Asset Pricing Model. AFUDC.

AB Most empirical investigations of electric utility behavior use the realised rate of return as a proxy for the allowed rate of return. We examine the validity of this assumption and investigate the relationship of the allowed and realized rates to the cost of capital between 1973 and 1982. We use two measures of the cost of capital: one based on returns to book equity, the other derived from a market price of equity. While realized and allowed rates were generally higher than the book measure throughout the period, both of the rates of return were less than the market price of capital after 1979. We also find firms did not earn their allowed rate of return after 1974. Therefore, the use of the realized rate as a proxy for the allowed rate in empirical models will lead to biased parameter estimates. To help correct this bias, we give data for allowed rates.

Rubinfeld, Daniel

TI The Efficiency of the Supply of Public Education. **AU** Bergstrom, Ted; Rubinfeld, Daniel; Roberts, Judith; Shapiro, Perry.

Rubinstein, Ariel

PD March 1986. **TI** Middlemen. **AA** Hebrew University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: 485; Institute for Mathematical Studies in the Social Sciences, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 25. **PR** $4.00. **JE** 022. **KW** Intermediation. Middlemen. Trading Procedures. Matching Models.

AB We study a model of a market with three types of agents: sellers, buyers and middlemen. Transactions can take place directly between buyers and sellers or indirectly through the middlemen, who buy from sellers in order to sell to buyers and profit in the process. The analysis focuses on steady state situations in which the numbers of agents of the different types are constant over time, and hence the trading opportunities that each agent has are also constant over time. The main contribution of this paper is in that it provides a framework for analyzing the activity of middlemen and the endogenous determination of the extent of that activity. It offers some insights into the relations between the nature of the trading procedure and the distribution of the gains from trade in the class of models considered.

Sadka, E.

TI Budget Size Effects on the Optimal Linear Income Tax. **AU** Garfinkel, I.; Moreland, K.; Sadka, E.

Sadoulet, Elisabeth

TI Rural Labor in Latin America. **AU** de Janvry, Alain; Sadoulet, Elisabeth; Wilcox, Linda.

Safra, Zvi

PD February 1986. **TI** Strategic Reallocations of Endowments. **AA** Department of Economics, Tel-Aviv University. **SR** Tel-Aviv Foerder Institute for Economic Research Working Paper: 8-86; Department of Economics, Tel-Aviv University, Ramat Aviv 69978, Tel-Aviv, ISRAEL. **PG** 8. **PR** No Charge. **JE** 021, 024, 411. **KW** Strategic Behavior. Manipulation. Endowments.

AB In the framework of pure exchange economies agents may find it advantageous to change their endowments holdings and to increase their utilities by acting competitively with the new endowment vectors. This kind of strategic behavior is surveyed here and some of the main known results are explained.

PD February 1986. **TI** Firm's Hedging Behavior without the Expected Utility Hypothesis. **AU** Safra, Zvi; Zilcha, I. **AA** Department of Economics, Tel-Aviv University. **SR** Tel-Aviv Foerder Institute for Economic Research Working Paper: 4-86; Department of Economics, Tel-Aviv University, Ramat Aviv 69978, Tel-Aviv, ISRAEL. **PG** 8. **PR** No Charge. **JE** 022, 026. **KW** Firm Hedging. Non-Expected Utility.

AB In this note we analyse the behavior of a competitive firm under price uncertainty and in the presence of a futures market. We show that the 'Separation property', i.e., the independence of the firm's production level and the stochastic price's distribution, holds even if the firm maximizes non-expected utility functional and is not risk averse. Secondly, we show that its behavior in the futures market is the same as in the classical environment even if one asks for a weaker notion of risk averseness. Finally, we briefly analyze the state-dependent case.

PD March 1986. **TI** Dynamic Consistency in English Auctions and Expected Utility Theory. **AU** Safra, Zvi; Karni, Edi. **AA** Department of Economics, Tel-Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 13-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 12. **PR** No Charge. **JE** 022, 026. **KW** Dynamic Consistency. Expected Utility. Auction Theory. English Auctions.

AB This paper explores the relationship between dynamically consistent behavior and expected utility maximization in the context of English auctions. The main result of the paper is the equivalence among those two notions. It is also shown that dynamic consistent decision makers have dominant bidding strategies and that these strategies are preference revealing.

Sah, Raaj Kumar

PD May 1985. **TI** Price Scissors and the Structure of the Economy. **AU** Sah, Raaj Kumar; Stiglitz, Joseph E. **AA** Sah: Yale University. Stiglitz: Princeton University. **SR** University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 85-23; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. **PG** 45. **PR** No Charge. **JE** 045, 112, 713. **KW** Price Scissors. Economic Development. Terms of Trade. Agricultural Sector.

AB A basic problem faced by most economies at early stages of their development is how best to raise the investible surplus for rapid accumulation: to what extend should the burden be placed on those in the agricultural sector (by lowering the price of their output relative to the industrial products), and to what extent should the burden be borne by industrial workers. This question was central to the early Soviet state (where it was debated as the problem of price scissors) and it is central to many of today's LDCs, whether socialist or not. The answer depends in an important way on the salient features of the economy; among the features of the economy which we emphasize here are: the trade environment faced by the economy, the mechanisms which determine wages and earnings, and the effects of wages and prices on the productivity of workers. Under alternative representations of these features, we analyze the consequences of changing the terms of trade (on peasants, on industrial workers, and on the investible surplus) and identify several intuitive properties of the optimal terms of trade. We examine two other issues which have remained controversial. The first issue concerns the effect of changes in the terms of trade on the intrasectoral distribution within agriculture (for example, on the welfare of landless workers versus that of landlords). We delineate simple conditions to determine who gains and who loses. The second issue concerns which agricultural inputs and outputs should be taxed, and which should be subsidized. We present powerful rules for reform in the prices of cash crops and production inputs. These rules are Pareto improving (that is, everyone in the society becomes better off); moreover, they are highly parsimonious with respect to the information required to implement them. We also use the insights obtained in our analysis to interpret certain aspects of the Soviet industrialization debate (1924-28), and the subsequent collectivization of agriculture.

Salda, Anne C. M.

PD December 1985. **TI** The International Monetary Fund, 1984: A Selected Bibliography. **AA** International Monetary Fund. **SR** International Monetary Fund Departmental Memoranda/Staff Paper: (32)Suppl.; International Monetary Fund, Washington D.C. 20431. **PG** 40. **PR** No Charge. **JE** 310, 400, 011. **KW** International Monetary Fund. International Economic Institutions.

AB The selected international references in this annotated bibliography cover books, pamphlets, reports, and periodical articles issued in 1984 that describe the functions, organisation, and activities of the International Monetary Fund. The bibliography is part of a series ongoing since 1951. Publications on the various aspects of international economics are included only when they contain material relating specifically to the Fund. Although most of the Fund's official publications are listed, this bibliography is not intended to be a complete record of such publications.

Samuelson, Larry

TI Sequential Research and the Adoption of Innovations. **AU** Bhattacharya, Sudipto; Chatterjee, Kalyan; Samuelson, Larry.

Sasaki, Hiroo

TI Monotonically Decreasing Natural Resource Prices Under Perfect Foresight. **AU** Romer, Paul M.; Sasaki, Hiroo.

Saunders, Anthony

TI International Expected Real Interest Rates: New Tests of the Party Hypothesis and V.S. Fiscal Policy Effects. **AU** Merrick, John J. Jr; Saunders, Anthony.

Scherer, F. M.

TI Life After Takeover. **AU** Ravenscraft, David J.; Scherer, F. M.

Schiller, Robert J.

TI Cointegration in Tests of Present Value Models. **AU** Campbell, John Y.; Schiller, Robert J.

Schinasi, Garry J.

PD April 1986. **TI** Taxation of Capital Gains on Foreign Exchange Transactions and the Non-Neutrality of Changes in Anticipated Inflation. **AA** Division of International Finance, Federal Reserve Board. **SR** Board of Governors of the Federal Reserve System International Finance Discussion Paper: 280; Division of International Finance, Board of Governors of the Federal Reserve System, Washington, DC 20551. **PG** 14. **PR** No Charge. **JE** 323, 431, 441. **KW** Taxation. Capital Gains. Non-Neutrality. Foreign Exchange. Purchasing Power Parity.

AB In a two-country world with perfect capital markets and no taxes, the existence of purchasing power parity is fully consistent with interest parity and the equalization of real interest rates across countries. In such a world, changes in anticipated inflation in either country will not alter the world equilibrium real interest rate. If asset returns are taxed, the existence of taxes may drive a wedge between real after-tax interest rates, and changes in anticipated inflation may create arbitrage opportunities, thereby creating capital flows between countries and thereby altering equilibrium interest-rate differentials. The purpose of this paper is twofold. First, the paper demonstrates that the source of the wedge between real rates is not the existence of a tax on interest income (as argued in the literature on this subject) but instead the implicit assumption that capital gains are taxed as if they were interest income. Second, the paper attempts to clarify the conditions under which the basic proposition first argued by Howard and Johnson (1982) holds "exactly" (rather than as an approximation) -- the proposition that in a world in which interest income is taxed, both purchasing power parity and equalization of real after-tax interest-rates (or constancy of the real after-tax interest-rate differential) cannot hold simultaneously. Furthermore, cases in which real returns are taxed are also considered.

Schmidt, Wolfgang

PD August 1985. **TI** Greedoids and Searches in Directed Graphs. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85388; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 18. **PR** No Charge. **JE** 213. **KW** Directed Branching Greedoids.

AB Let (V, D) be an directed graph and let Po be in V. Define F='X subset of D:X is a branching rooted at Po. Then (D, F) is called a directed branching greedoid. Greedoids were introduced and studied in great detail by B. Korte and L. Lovass. We give a characterisation of directed branching greedoids.

PD November 1985. **TI** A Min-Max Theorem for Greedoids. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85396-OR; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 12. **PR** No Charge. **JE** 213. **KW** Matroids. Greedoids. Nonsubclusive Set Systems.

AB Greedoids can be considered as generalisations of matroids to nonsubclusive set systems. We give necessary and sufficient conditions for a special family of greedoids to contain k mutually disjoint bases.

PD November 1985. **TI** A Characterisation of Undirected Branching Greedoids. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85387; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 35. **PR** No Charge.

JE 213. KW Graphic Matroids.
AB Undirected branching greedoids are defined by rooted trees of a graph. We give a minor criterion for these greedoids.

Schonfeld, Peter

PD August 1985. TI A Note on C. R. Rao's Wider Definition BLUE in the General Gauss-Markov Model. AU Schonfeld, Peter; Werner, Hans. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: B 5; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 20. PR No Charge. JE 211. KW Extended BLUES. Gauss-Markov Model.
AB In this paper a completely general and statistically conventional approach to the theory of extended BLUEs is presented. The relationship of the present approach to C. R. Rao's approach '1973 is also discussed.

PD August 1985. TI A Survey of Multidimensional Scaling Methods in Econometrics. AA University of Bonn. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: B 4; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 15. PR No Charge. JE 211, 212. KW Multidimensional Scaling. Nonparametric.
AB Hitherto multidimensional scaling (MDS) has not been applied to econometric data too frequently. It appears, however, that there are promising applications of MDS in econometrics. This survey is mainly devoted to communicate recent experiences and results obtained in a research project at the University of Bonn. Particular emphasis is on joint MDS and unfolding techniques and on the non-metric case.

Schrader, Rainer

TI On Simplical Decomposition in Combinatorial Structures. AU Faigle, Ulrich; Goecke, Oskar; Schrader, Rainer.

TI Setup Minimisation Techniques for Comparability Graphs. AU Faigle, Ulrich; Schrader, Rainer.

TI On the Computational Complexity of the Order Polynomial. AU Faigle, Ulrich; Schrader, Rainer.

TI Interval Orders without Odd Crowns are Defect Optimal. AU Faigle, Ulrich; Schrader, Rainer.

Schwartz, Eduardo

TI Integration versus Segmentation in the Canadian Stock Market. AU Jorion, Philippe; Schwartz, Eduardo.

Schwert, G. William

PD August 1985. TI The Time Series Behavior of Real Interest Rates. AA University of Rochester. SR University of Rochester Center for Research in Government Policy and Business Working Paper: GPB 85-9; Graduate School of Management, University of Rochester, Rochester, NY 14627. PG 10. PR No Charge. JE 313, 134, 311. KW Inflation. Interest Rates. Money Supply Targeting.
AB This paper analyses the time series behavior of short-term real interest rates from 1918-83, with particular attention to the period around October, 1979 when the Federal Reserve announced that it would focus on money supply targets in formulating its policy decisions. Like the paper by Huizinga and Mishkin '1985, the results in this paper document an apparent change in the behavior of real rates in late 1979. However, the magnitude of the estimated change is sensitive to the assumed model for the real rate. Analysis of the behavior of real rates during 1920, when the Fed raised its discount rate by large amounts, does not suggest a change in the statistical process for real rates, contrary to the results of Huizinga and Mishkin. Despite the coincidence of timing in the 1979 change in real rates, there does not seem to be a direct effect of monetary policy variables on the behavior of real rates. This raises questions about the role of monetary policy in causing the change in real rates.

TI Expected Stock Returns and Volatility. AU French, Kenneth R.; Schwert, G. William; Stambaugh, Robert F.

PD November 1985. TI Effects of Model Specification on Tests for Unit Roots. AA University of Rochester. SR University of Rochester Center for Research in Government Policy and Business Working Paper: GPB 85-10; Graduate School of Management, University of Rochester, Rochester, NY 14627. PG 19. PR No Charge. JE 211, 313, 134. KW Stationarity. Unit Roots. Inflation. Volatility. Autoregressive-Integrated-Moving Average models.
AB Tests for unit roots in autoregressive models have become quite popular in the empirical macroeconomics literature in recent years. These statistics test whether a particular economic time series is stationary. This paper shows that unit root tests derived for pure autoregressive processes have much different sampling distributions when the true process is a mixed autoregressive-integrated-moving average (ARIMA) process. Monte Carlo experiments are used to illustrate the errors that can arise from using a high order autoregressive process to approximate a mixed ARIMA process in conducting these tests.

Sebo, Andras

PD July 1985. TI A Very Short Proof of Seymours Theorem on T-Joins. AA University of Budapest. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85383; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 3. PR No Charge. JE 213. KW Seymours Theorem.
AB A very short proof of Seymour's theorem, stating that in bipartite graphs the minimum cardinality of a t-join is equal to the maximum cardinality of an edge-disjoint packing of t-cuts, is given.

TI Total Dual Integrality Implies Local Strong Unimodularity. AU Gerards, Albertus; Sebo, Andras.

PD September 1985. TI The Schrijver System of Odd Join Polyhedra. AA University of Budapest. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85394; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 17. PR No Charge.

JE 213. KW TDI Defining System. Matching Polyhedra.
AB First a new minimax theorem is proved for t-joins which involves only integers. It is observed then that the new minimax theorem yields a TDI defining system of t-join polyhedra (i.e. Chinese postman polyhedra). Finally the minimal TDI defining system (Schrijver-system) of t-join polyhedra is deduced, and its relation to binary clutters with the max-flow-min-cut property is pointed out.

Seora, Da Motta R.

PD 1985. TI A Social cost-Benefit Study of Ethanol production in Brasil. AA University College London (Visitor). SR University College London Discussion Paper: 86-02; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. PR 1.50 pounds sterling. JE 024, 723, 632. KW Ethanol. Social Cost of Ethanol. Brazil. Gasoline.
AB This paper presents an assessment of the social viability of The Brasilian National Alcohol Programme. First, we estimate national parameter values for Brasil following the Little-Mirrlees methods. Based on these estimates, we develop alternative appraisal procedures to determine the social cost of ethanol. The main data base is given by the breakdown of the cost of production of ethanol for the 1981/1982 crop year in three states, namely Sao Paulo, Pernambuco and Goias. The first two states are traditional procedures, whereas Goias provides an indication of the Programme's viability in areas where sugarcane production has only recently been expanded. Our results suggest that the current social cost of ethanol, even in Sao Paulo the most efficient producer, is above the cost of either importing or exporting gasoline. Finally, we undertake a sensitivity analysis based on the probable medium and long term development of the Programme, including trends in both cost effectiveness and the behaviour of international oil prices. Our estimates indicate that the social viability of the PROALCOOL will only be achieved by the middle of the next decade. However, the shadow pricing framework cannot give a definitive answer to the question of future viability without relying on key assumptions about the future development of the economy, international oil prices and technological progress.

Shaban, Radwan Ali

PD January 1986. TI Testing Between Competing Models of Sharecropping. AA University of Pennsylvania. SR University of Pennsylvania Center for Analysis of Developing Economies (CADE) Working Paper: 86-6; Department of Economics, McNeil 160/CR, 3718 Locust Walk, University of Pennsylvania, Philadelphia, PA 19104-6297. PG 43. PR No Charge. JE 717, 716. KW Sharecropping. Marshallian Productive Inefficiency. Agricultural Tenancy.
AB The "Marshallian" approach assumes a prohibitively high cost of monitoring the tenant's activities while the "monitoring" approach argues that landlords stipulate and effectively monitor sharecroppers' activities. I present new evidence using detailed data collected from 8 Indian villages. Most tenants own some land of their own; this provides a controlled environment in studying the impact of contractual arrangements. The differences in input and output intensities on owned minus sharecropped land of the same household are found to be sizable and significant, suggesting a rejection of the monitoring approach and supporting the notion of the "Marshallian productive inefficiency" of sharecropping.

Shafer, W. J.

TI Allocation of Aggregate and Individual Risks Through Financial Markets. AU Magill, M. J. P.; Shafer, W. J.

Shane, Mathew

TI Import Elasticity with Government Intervention: A Time Series Cross Section Analysis of Seventy-Two Countries. AU Roe, Terry; Shane, Mathew; Vo, De Huu.

Shanken, Jay

TI A Test of the Efficiency of a Given Portfolio. AU Gibbons, Michael R.; Ross, Stephen A.; Shanken, Jay.

Shapiro, Carl

TI Counterfeit-Product Trade. AU Grossman, Gene M.; Shapiro, Carl.

Shapiro, Matthew D.

PD April 1986. TI Capital Utilisation and Capital Accumulation: Theory and Evidence. AA Cowles Foundation for Research in Economics, Yale University. SR National Bureau of Economic Research Working Paper: 1900; National Bureau of Economic Research, 1050 Massachusetts Ave., Cambridge MA 02138. PR $2.00. JE 522. KW Capital Utilisation. Capital Accumulation.
AB A firm may acquire additional capital input by purchasing new capital or by increasing the utilisation of its current capital. The margin between capital accumulation and capital utilisation is studied in a model of dynamic factor demand where the firm chooses capital, labor, and their rates of utilisation. A direct measure of capital utilization -- the work week of capital -- is incorporated into the theory and estimates. The estimates imply that capital stock is costly to adjust while the work week of capital is essentially costless to adjust. The estimated response of the capital stock to changes in its price and in the required rate of return is more rapid than found in other estimates.

PD April 1986. TI The Dynamic Demand for Capital and Labor. AA Cowles Foundation for Research in Economics, Yale University. SR National Bureau of Economic Research Working Paper: 1899; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. PR $2.00. JE 821. KW Demand for Capital. Demand for Labor.
AB A model of the dynamically interrelated demand for capital and labor is specified and estimated. The estimates are of the first-order conditions of the firm's problem rather than of the closed-form decision rules. This use of the first-order conditions allows a random rate of return and a flexible specification of the technology. The estimates do not imply the very slow rates of adjustment

displayed in other, related estimates of the demand for capital. Because adjustment is estimated to be rapid, there is, contrary to the standard view, scope for factor-prices to affect investment at relatively high frequencies.

Shapiro, Perry

TI The Efficiency of the Supply of Public Education. **AU** Bergstrom, Ted; Rubinfeld, Daniel; Roberts, Judith; Shapiro, Perry.

Shiller, Robert J.

PD March 1986. **TI** Survey Evidence on Diffusion of Interest Among Institutional Investors. **AU** Shiller, Robert J.; Pound, John. **AA** Shiller: Yale University. Pound: Securities and Exchange Commission, Washington, D.C. **SR** National Bureau of Economic Research Working Paper: 1851; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 313, 026. **KW** Word-of-Mouth Communication. Stock Prices. Epidemic Models.

AB Contagion or epidemic models of financial markets are proposed in which interest in or attention to individual stocks is spread by word of mouth. The models give alternative interpretations of the random walk character of stock prices. A questionnaire survey of institutional investors was undertaken to ascertain the relevance of such models. Questions elicited what fraction of these investors were unsystematic and allowed themselves to be influenced by word-of-mouth communications or other salient stimuli. Rough indications of the infection rate and removal rate were produced. Investors in stocks whose price had recently increased dramatically to a high P/E ratio were contrasted with a control group of investors.

TI Cointegration and Tests of Present Value Models. **AU** Campbell, John Y.; Shiller, Robert J.

PD May 1986. **TI** Survey Evidence on Diffusion of Interest Among Institutional Investors. **AU** Shiller, Robert J.; Pound, John. **AA** Shiller: Yale University. Pound: Securities and Exchange Commission. **SR** Yale Cowles Foundation Discussion Paper: 794; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 25. **PR** No Charge. **JE** 313. **KW** Financial Markets. Stocks. Word-of-Mouth. Random Walk.

AB Contagion or epidemic models of financial markets are proposed in which interest in or attention to individual stocks is spread by word of mouth. The models give alternative interpretations of the random walk character of stock prices. A questionnaire survey of institutional investors was undertaken to ascertain the relevance of such models. Questions elicited what fraction of these investors were unsystematic and allowed themselves to be influenced by word-of-mouth communications or other salient stimuli. Rough indications of the infection rate and removal rate were produced. Investors in stocks whose price had recently increased dramatically to a high P/E ratio were contrasted with a control group of investors.

Shitovitz, Benyamin

TI A Simple Proof of the Equivalence Theorem for Oligopolistic Mixed Markets. **AU** Greenberg, Joseph; Shitovitz, Benyamin.

Shoven, John B.

TI Social Security: A Financial Appraisal Across and Within Generations. **AU** Boskin, Michael J.; Kotlikoff, Laurence J.; Puffert, Douglas J.; Shoven, John B.

Shubik, Martin

TI Issues Arising in Management And Control of Naval Forces. **AU** Bracken, Paul; Shubik, Martin.

PD April 1986. **TI** Defense Economics And Economic Warfare Revisited. **AU** Shubik, Martin; Verkerke, J. Hoult. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 789; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 39. **PR** No Charge. **JE** 114. **KW** Economics of Defense. Economic Warfare.

AB In this paper we paint with a broad brush. Our purpose is to present an overview, a status report, and by implication, an indication of what needs to be done at this time. We first provide a survey of topics in the economics of defense and in economic warfare, then we comment on some naval aspects of these topics.

Sibert, Anne

TI An Analysis of the Welfare Implications of Alternative Exchange Rate Regimes: An Intertemporal Model with an Application. **AU** Feltenstein, Andrew; Lebow, David; Sibert, Anne.

Singleton, Kenneth J.

PD April 1986. **TI** Asset Prices in a Time Series Model with Disparately Informed, Competitive Traders. **AA** Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** National Bureau of Economic Research Working Paper: 1897; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138. **PR** $2.00. **JE** 026, 313. **KW** Asset Prices. Imperfect Information.

AB This paper examines the time series properties of the price of a risky asset implied by a model in which competitive traders are heterogeneously informed about the underlying sources of uncertainty in the economy. Traders do not observe the shocks in the period they occur. However, traders are imperfectly and heterogeneously informed about these shocks for three reasons: (1) the shocks are serially correlated and hence partially forecastable from their past history, (2) each trader receives private signals about the current values of a subset of the shocks, and (3) the equilibrium price conveys information about the private signals and beliefs of other traders. Since prices convey information in this economy, traders will face an infinite regress problem in expectations associated with their desire to forecast the beliefs of others, the beliefs of others about average beliefs, etc. The equilibrium time series representation for the price of the risky security is deduced in various imperfect information environments. Then the volatility and autocorrelations of prices in this model are compared to the corresponding statistics for a model in which agents are homogeneously informed.

Skott, Peter

PD 1985. **TI** On General Equilibrium Theory and the Costs of Spurious Generality. **AA** University College London and University of Copenhagen. **SR** University College London Discussion Paper: 85-25; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PR** 1.50 pounds sterling. **JE** 021. **KW** Commodity Space Aggregation. Agent Aggregation. General Equilibrium Theory. Aggregation.

AB It is argued that the commodity and agent space generality of general equilibrium theory is illusory. Commodity space aggregation is unavoidable and agent aggregation is desirable: without the use of 'representative agents' preferences will not be stable. Furthermore, the emphasis in general equilibrium theory on choice theoretic foundations and commodity and agent disaggregation leads to a neglect of basic aspects of time and the passage of time; in the time dimension there is almost complete aggregation.

Slade, Margaret E.

PD February 1986. **TI** Disequilibrium Total-Factor-Productivity Measurement: A Monte-Carlo Assessment. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 86-07; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C. CANADA V6Y 1Y2. **PG** 35. **PR** **JE** 621, 226. **KW** Total-Factor-Productivity Indices. Disequilibrium. Technological Change.

AB The use of total-factor-productivity (TFP) indices to estimate rates of technical change is predicated on the assumption of equilibrium in all markets. Unfortunately, disequilibrium is a ubiquitous feature of the real world. It is therefore important to know what sort of errors are made when disequilibrium prevails but equilibrium is assumed. When we know how sensitive calculated TFP indices are to different sorts of misspecification, we will know when there is no simple alternative to econometric estimation. This paper reports the results of Monte-Carlo experiments designed to assess the ability of disequilibrium TFP indices to capture the properties of the underlying long-run technology as the features of this technology change. The experiments include varying the cost share of the fixed factor, the degree of substitutability among the fixed and variable factors, the degree of returns to scale of the long-run technology, and the variances of the market price of the fixed factor and of output.

Slivinski, Alan D.

TI A Positive Analysis of Multiproduct Firms in Market Equilibrium. **AU** MacDonald, Glenn M.; Slivinski, Alan D.

Smith, Richard

TI Estimation in the Simultaneous Equation Tobit Model. **AU** Blundell, Richard W.; Smith, Richard.

Snyder, Ralph D.

PD March 1986. **TI** A Canonical Form for Normally Distributed Time Series with an Application to Estimating Processes with Moving Average Disturbances. **AA** Department of Econometrics and O. R., Monash University. **SR** Monash Department of Econometrics and Operations Research Working Paper: 2/86; Department of Econometrics and Operations Research, Monash University, Clayton, Victoria 3168, AUSTRALIA. **PG** 13. **PR** No Charge. **JE** 211. **KW** Cholesky Decomposition. Linear Regression. Maximum Likelihood Estimation. Moving Average Processes. Normal Distribution.

AB The paper proposes a canonical form for normally distributed time series. It also considers a modification to the traditional definitions of autoregressive and moving average processes so that any linear model containing them as components automatically conforms to the canonical structure. It is established that the maximum likelihood estimates of its parameters can be found without the Cholesky decomposition or Kalman filtering procedures with subsequent savings in computational loads. It is also demonstrated that the special case of the modified form of the autoregressive-moving average process can accommodate nonstationary as well as stationary series without resorting to differencing.

Spiller, Pablo T.

TI Trade Liberalisation in Oligopolistic Industries: The Quota Case. **AU** Buffie, Edward F.; Spiller, Pablo T.

PD January 1986. **TI** On the Extent of the Market: Wholesale Gasoline in the Northeastern United States. **AU** Spiller, Pablo T.; Huang, Cliff J. **AA** Spiller: Stanford University. Huang: Vanderbilt University. **SR** Federal Trade Commission Bureau of Economics Working Paper: 135; Bureau of Economics, Federal Trade Commission, Washington, DC 20580. **PG** 25. **PR** No Charge. **JE** 611, 633. **KW** Arbitrage. Wholesale Gasoline. Extent of the Market. Market Boundaries.

AB This paper develops the classical view of the extent of markets by introducing explicitly in the analysis the concept of arbitrage costs. Arbitrage or transaction costs imply that market boundaries are essentially stochastic. While a set of products (or regions) may have binding arbitrage conditions (i.e. may be in the same "market") at a given point in time, they may not at another. Thus, in defining a "market", the probability that a set of agents (or regions) would have binding arbitrage conditions has to be assessed. This paper develops an econometric methodology to estimate the transaction costs required to arbitrage among a given set of products, as well as the probability that that set of products would be bound by binding arbitrage conditions. Finally, the methodology is applied to wholesale gasoline in the Northeastern part of the United States.

Stacchetti, Ennio

TI Toward a Theory of Discounted Repeated Games with Imperfect Monitoring. **AU** Abrev, Pilip; Pearce, David W.; Stacchetti, Ennio.

Stambaugh, Robert F.

TI Expected Stock Returns and Volatility. **AU** French, Kenneth R.; Schwert, G. William; Stambaugh, Robert F.

Steinberg, Richard

PD February 1984. **TI** Labor Economics and the Nonprofit Sector: A Literature Review. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E84-02-02; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 25. **PR** No Charge. **JE** 821, 636. **KW** Non Profit Firms. Labor Economics.
AB Very little is known about the economics of the nonprofit sector, as there are few data sets, and these are of recent vintage. Even less is known about the labor economics of the nonprofit sector, but the issues involved present a unique intellectual challenge which a few (foolhardy) economists have tried to meet. This paper reviews the few papers and highlights the many research gaps.

PD June 1985. **TI** The Revealed Objective Functions of Nonprofit Firms. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E84-01-03; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 40. **PR** No Charge. **JE** 636, 514. **KW** Nonprofit Firms. Objectives of Nonprofit Firms. Random Coefficient Model.
AB While the objectives underlying the behavior of nonprofit firms have often been asserted and, recently, derived from regulatory conditions, there is no empirical confirmation of these objectives. This paper proposes a way to infer the objective function underlying behavior by estimating the marginal return to fundraising. Panel data estimates, provided by the Hildreth-Houck random coefficient model, suggest that welfare, education, and arts firms are "service maximisers" while health and "other" firms are budget maximisers.

PD June 1985. **TI** Voluntary Donations and Public Expenditures. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E84-07-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 46. **PR** No Charge. **JE** 324, 325. **KW** Recreation Expenditure. Intergovernmental Transfer. Charitable Donations.
AB A number of services are provided alternately through intergovernmental transfers, local government taxes and expenditures, and private donations. The relation between exogenous government expenditures and donations is modelled as a competitive game and conclusions on the sign and magnitude of simple crowdout derived. Then local government is endogenized and predictions are made regarding the joint crowdout of local government and donations by intergovernmental transfers. Finally, it is estimated that 6.27 cent of a marginal intergovernmental transfer are devoted to recreation causing the present value of donations to recreation to fall by 8.08 cent, locally financed government spending on recreation to fall by 9.5 cent and user charges for recreation to fall by 1.2 cent.

PD August 1985. **TI** A Theory of Taxes and Charitable Donations. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E84-07-02; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 19. **PR** No Charge. **JE** 323. **KW** Taxes. Charitable Donations.
AB A number of studies have estimated the relation between taxes and donations, but few have specified the choice structure underlying this relation. This paper fills that gap, modelling the tax reactions of individual donors when the giving of others is an imperfect substitute for own donations and acts as a quantity constraint. In Nash equilibrium, donors respond to induced reactions of other donors as well as tax changes. Thus, cross-sectional estimates are inappropriate for policy simulations, exaggerating responses by up to a factor of 2.4. This casts doubt on the emerging consensus that charities are 'efficient' (in the sense that reduced increments to donations exceed the cost to the Treasury).

Stiglitz, Joseph E.

TI Price Scissors and the Structure of the Economy. **AU** Sah, Raaj Kumar; Stiglitz, Joseph E.

PD March 1986. **TI** The General Theory of Tax Avoidance. **AA** Department of Economics, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1868; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 323. **KW** Tax Avoidance. Tax Avoidance Schemes.
AB This paper outlines a general set of principles for tax avoidance. Most of at least the common tax avoidance schemes can be reinterpreted as making use of one or more of these principles. Four such methods are described. In a perfect capital market, these methods would enable the astute taxpayer to eliminate all taxation on capital income. The fact that the tax system raises revenue is attributed to lack of astuteness of the taxpayer and/or lack of perfection of the capital market. Accordingly, models which attempt to analyse the effects of taxation assuming rational, maximising taxpayers working within a perfect capital market may give misleading results. A full analysis of tax avoidance cannot be conducted within a partial equilibrium model; transactions which reduce one individual's tax liability may at the same time increase another's. We delineate tax avoidance schemes which reduce the aggregate tax liabilities of the participants. Much of the "general equilibrium" gain from tax avoidance arises from differences in tax rates, both across individuals and across classes of income. Our analysis is shown to have implications both for patterns of ownership of assets and the timing of transfers.

TI The Pure Theory of Country Risk. **AU** Eaton, Jonathan; Gersovitz, Mark; Stiglitz, Joseph E.

Stockman, Alan C.

PD September 1985. **TI** Exchange Controls, Capital Controls, and International Financial Markets. **AU** Stockman, Alan C.; Hernandez, D. Alejandro. **AA** Stockman; Hernandez D.: University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 25; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 31. **PR** No Charge. **JE** 441, 422. **KW** Exchange Controls. Asset Markets. International Financial Markets. Financial Market Restrictions. Foreign Currency.

AB This paper analyses the effects on prices and resource allocation of taxes and quantitative restrictions on international financial transactions. We employ a general-equilibrium rational-expectations model of two-country world economy to examine the connections between the effects of these taxes or quantitative restrictions and portfolio allocation on international financial markets. We study these issues in a model with complete asset markets, some of which may be restricted or taxed by governments. A key theme of the paper is that prospective changes in government policies affect portfolio allocations in such a way that, if these prospective policy changes subsequently occur, their effects on prices and resource allocation can be radically different than if financial markets had been seriously limited. We examine the effects of controls or taxation on purchases of foreign currency -- which we call exchange controls -- and controls or differential taxation on the income from foreign interest-bearing assets -- which we call capital controls. We show that the effects of exchange and capital controls depend critically on the availability of international financial markets in ways that have been largely overlooked. The results of the paper can also be applied to dual exchange rates (which amount to taxes on foreign-exchange transactions that depend upon the source or use of the foreign currency).

PD January 1986. **TI** Price Contracts, Output, and Monetary Disturbances. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 35; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 24. **PR** No Charge. **JE** 311, 023. **KW** Cash-in-Advance Constraint. Money. Nominal Money Balances. Contracts. Insurance Markets.

AB This paper develops a model in which money plays a critical role in transactions -- using a cash-in-advance constraint -- and in which households would like to insure against fluctuations in the real value of their nominal money balances. But explicit insurance markets to accomplish this task are unavailable. Contracts between buyers and sellers are shown to be a partial substitute for these insurance markets. Specifically, the paper presents an example with contracts that (a) specify nominal prices that do not vary in proportion to changes in the money supply, (b) involve variations in output when the money supply changes, and (c) dominate spot market equilibrium in terms of households' expected utility. In the example, a fall in the money supply produces a smaller percentage fall in nominal prices and a fall in output. Though prices are, in that sense, partly sticky in a downward direction, they are not sticky in an upward direction.

PD January 1986. **TI** Fiscal Policies and International Financial Markets. **AA** University of Rochester. **SR** University of Rochester Center for Economic Research Working Paper: 36; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 36. **PR** No Charge. **JE** 321, 441. **KW** Fiscal Policy. International Effects of Fiscal Policy. International Financial Markets.

AB This paper discusses the impact of sophisticated international financial markets on the effects of government policy. Specifically, this paper concentrates on the international effects of fiscal policies. One important question the paper does not address is the nature of the transition from a world with less developed to more developed international financial markets. Instead, the paper compares two worlds: one with and one without sophisticated international asset markets. The paper employs several models to make this comparison: the conclusion that these markets affect the results does not depend on a specific model of fiscal policy.

Strand, Jeff

PD March 1986. **TI** The Bankruptcy of Conventional Tax Timing Wisdom is Deeper Than Semantics: A Rejoinder to Professors Kaplan and Warren. **AA** University of Southern California and California Institute of Technology. **SR** Caltech Social Science Working Paper: 599; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 47. **PR** No Charge. **JE** 323. **KW** Taxation of Income from Capital. Timing and Taxation. Applied General Equilibrium Analysis. Haig-Simons Concept. Tax Base Theory. Tax Accounting. Time Value of Money and Taxation. Cash Flow Income Tax. Depreciation and Taxation. Cost Recovery and Taxation.

AB The Haig-Simons ideal is an important normative concept. But using it requires that one specify a method of measuring the value of changes in wealth. I use market value and present value, the concepts of value employed in modern finance theory. Professors Kaplow and Warren disagree with a result that I show follows from those concepts of value: That the Cash Flow Income Tax implements the Haig-Simons ideal in a non-general-equilibrium setting. But their critique is ineffective because they do not present an alternative concept of value and give reasons for using it in the definition of the Haig-Simons ideal instead of market value or present value. It is questionable whether such an alternative concept can be constructed that is also consistent with the idea of value contained in modern finance theory. Professors Kaplow and Warren generally agree with my position that it is important to take general equilibrium effects into account in assessing alternative tax policies. But their attempt to make a general equilibrium argument for the equivalence of the CFIT and yield exemption fails. In fact, using their approach reinforces the conclusion in my original article that the equivalence holds in a non-general-equilibrium setting only for breakeven transactions.

Sturmfels, Bernd

TI Coordinatization of Oriented Matroids. **AU** Bokowsky, Jurgen; Sturmfels, Bernd.

Sullivan, Daniel

TI Measuring the Effect of CETA Participation on Movements in and out of Employment. **AU** Card, David; Sullivan, Daniel.

Summers, Lawrence H.

TI Tax Incidence. **AU** Kotlikoff, Laurence J.;

https://doi.org/10.1017/S0951007900000322 Published online by Cambridge University Press

Summers, Lawrence H.

TI Notes on the Tax Treatment of Structures. AU Gordon, Roger H.; Hines, James R. Jr; Summers, Lawrence H.

Svensson, Lars E. O.

TI International Borrowing and Time-Consistent Fiscal Policy. AU Persson, Torsten; Svensson, Lars E. O.

PD September 1985. TI Sticky Goods Prices, Flexible Asset Prices, Monopolistic Competition and Monetary Policy. AA Institute for International Economic Studies, University of Stockholm. SR University of Rochester Center for Economic Research Working Paper: 32; Department of Economics, University of Rochester, Rochester, NY 14627. PG 32. PR No Charge. JE 641, 313, 311. KW Monetary Asset Pricing Models. Sticky Goods Prices. Capacity Utilisation. Resource Utilisation.

AB A monetary general equilibrium asset-pricing model with sticky goods prices is developed. Goods prices are set by monopolistically competitive firms that maximize stock market value. Equilibria with underutilization of resources, excess capacity, in some states result, in contrast to previous monetary asset-pricing models. The degree of competition affects capacity utilisation. Monetary policy can affect output and resource utilisation, in addition to real asset prices, depending upon the amount of information available to the monetary authority.

Symons, James S. V.

TI Wages and Employment in the O.E.C.D. Countries. AU Newell, Andrew; Symons, James S. V.

TI Bias in Regressions with a Lagged Dependent Variable. AU Grubb, David B.; Symons, James S. V.

Syslo, Maciej M.

PD July 1985. TI Remarks on Dillworth Partially Ordered Sets. AA University of Wroclaw. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85381; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 8. PR No Charge. JE 213. KW Dillworth Poset. Polynomial Time Algorithm.

AB Motivated by the jump number problem, we call a partially ordered set (poset) P a Dilworth poset (shortly, D-poset) if P admits a decomposition into the minimum number of chains which can be arranged in a linear extension of P. First, we note that every optimal linear extension of a D-poset is greedy. Then, we present a polynomial-time algorithm for recognizing D-posets in the class of posets whose greatest maximal sized anti-chains consist of maximal elements. Finally, we provide a simple argument that forbidden substructures are unlikely to exist for characterising D-posets.

Tardos, Eva

TI An Application of the Simultaneous Approximation in Combinatorial Optimisation. AU Frank, Andras; Tardos, Eva.

PD July 1985. TI Layered Augmenting Path Algorithms. AU Tardos, Eva; Tovey, Craig A.; Trick, Michael A. AA Tardos: University of Bonn. Tovey, Trick: University of Atlanta. SR Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 85385; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. PG 20. PR No Charge. JE 213. KW Augmenting Path Algorithm. Polymatroid.

AB Augmenting path algorithms, first introduced by Ford and Fulkerson '7, are widely used in optimization. Examples include Schonsleben's polymatroid intersection algorithm '15, the maximum polymatroidal network flow algorithm of Lawler and Martel '11, Frank's algorithm for the Edmonds-Giles polyhedron '8 and Cunningham's algorithm for testing membership in matroid polyhedra '2. Here we give an order of magnitude improvement for the above algorithms by using an approach analogous to that of Dinits' maximum flow algorithm '4.

Tassi, Philippe

TI La Robustesse Statistique - II: Les M,L,R-Estimateurs. AU Lecoutre, Jean Pierre; Tassi, Philippe; Trognon, Alain.

Tesfatsion, Leigh

TI Flexible Least Squares. AU Kalaba, Robert; Tesfatsion, Leigh.

Tirole, Jean

TI Using Cost Observation to Regulate Firms. AU Laffont, Jean Jacques; Tirole, Jean.

Toman, Michael A.

PD April 1986. TI No Free Launch: Analysis of Space Transportation Pricing. AU Toman, Michael A.; Macauley, Molly K. AA Energy and Materials Division, Resources for the Future. SR Resources for the Future Energy and Materials Division Discussion Paper: EM 86-02; Energy and Materials Division, Resources for the Future, 1616 P Street Northwest, Washington DC 20036, USA. PG 38. PR $5.00 (United States funds only). JE 614, 615. KW Outer Space. Intermodal Competition. Trade Policy. Marginal Cost Pricing.

AB This paper analyzes efficient pricing and use of the United States space shuttle in light of two heatedly debated policy concerns: intermodal, international competition from unmanned rockets, and tradeoffs between shuttle use for "commercial" and "public good" purposes. Addressing these issues requires extension of the simple marginal-cost pricing model. We nonetheless conclude that pricing "commercial" (and other rocket-adaptable) shuttle payloads at long-run marginal cost strikes the best practical balance among competing objectives, while "public-good" shuttle uses should be undertaken at least to the point where apparent marginal benefit equals marginal cost.

Tovey, Craig A.

TI Layered Augmenting Path Algorithms. AU Tardos, Eva; Tovey, Craig A.; Trick, Michael A.

Tracy, Joseph S.

PD March 1986. TI An Empirical Test of an

Asymmetric Information Model of Strikes. **AA** Department of Economics, Yale University. **SR** National Bureau of Economic Research Working Paper: 1870; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 026, 832. **KW** Bargaining. Economic Theory of Strikes. Asymmetric Information.

AB Recent developments in the theory of strategic bargaining demonstrate how informational asymmetries can lead to prolonged and costly bargaining. These models can be applied to contract negotiations between unions and firms yielding an economic theory of strikes. To date, however, few empirical tests of these models have been carried out. This paper presents some evidence supporting this view of strikes. A set of predictions concerning the incidence and unconditional duration of strikes is derived from a simple bargaining model where the union is uncertain about the firm's future profitability. These predictions are then tested on a micro data set of major United States contract negotiations which took place from 1973 to 1977.

Trick, Michael A.

TI Layered Augmenting Path Algorithms. **AU** Tardos, Eva; Tovey, Craig A.; Trick, Michael A.

Trognon, A.

TI Generalised Residuals. **AU** Gourieroux, C.; Monfort, A.; Renault, A.; Trognon, A.

Trognon, Alain

TI La Robustesse Statistique - II: Les M,L,R-Estimateurs. **AU** Lecoutre, Jean Pierre; Tassi, Philippe; Trognon, Alain.

Trotter, L. R. Jr

TI On Abstract Integral Dependence. **AU** Crystal, Donna; Trotter, L. R. Jr.

Tuma, Elias H.

PD May 13, 1986. **TI** Economics of War and Peace: Inevitability and Rational Behavior. **AA** Department of Economics, University of California at Davis. **SR** University of California at Davis Economics Department Working Paper: 276; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 25. **PR** No Charge. **JE** 112, 114. **KW** War. Development. Theory. Third World. Cold War.

AB It is proposed that war can be classified, among other criteria, by the level of expenditure as a percent of the GNP, ranging from a state of peace, which involves no expenditure, to the hot war in which expenditure may exceed 30 percent of GNP. Among the propositions treated are the following: War, once considered justified by any two conflicting parties, becomes inevitable; however, postponement may be possible, and is argued for on economic grounds. Cold war expenditure is argued against, especially in Third World countries which are underdeveloped, too poor, or too small to benefit in the global leadership game. Since cold war expenditure is expected to continue, efficient management is proposed, from the standpoint of a dependent underdeveloped Third World country, including the restructuring of the economy even at the expense of static comparative advantage benefits. Hypothetical and illustrative data are employed to support the arguments.

PD May 13, 1986. **TI** Technology Transfer and Economic Development Lessons of History. **AA** Department of Economics, University of California at Davis. **SR** University of California at Davis Economics Department Working Paper: 277; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 27. **PR** No Charge. **JE** 041, 112, 121. **KW** Technology. Development. History. Third World.

AB Economic development is largely a function of technological change. Technology transfer incurs a cost which has probably made it prohibitive for the Third World countries to take advantage of the backlog of technology available for transfer, which explains their continued underdevelopment and economic and technical dependence. The history of development and industrialization indicates that certain prerequisites must be satisfied for technology transfer and economic development to take place, including adoption of economic principles which may conflict with international trade theory, especially with comparative advantage. These points are argued in the context of five different scenarios which illustrate the obstacles to development facing the Third World today and ways to overcome them.

Tumlir, Jan

TI Shadow Open Market Committee Policy Statement and Position Papers. **AU** Brunner, Karl; Levy, Mickey D.; Jordan, Jerry L.; Rasche, Robert H.; Tumlir, Jan.

Turan, Gy

TI On the Complexity of Interval Orders and Semiorders. **AU** Faigle, Ulrich; Turan, Gy.

TI On the Complexity of Cutting-Plane Proofs. **AU** Cook, W.; Coullard, C. R.; Turan, Gy.

Turnovsky, Stephen J.

TI Macroeconomic Stabilisation Through Taxation and Indexation: The Use of Firm-Specific Information. **AU** Marston, Richard C.; Turnovsky, Stephen J.

PD March 1986. **TI** Optimal Tariffs in Consistent Conjectural Variations Equilibrium. **AA** Department of Economics, University of Illinois at Urbana-Champaign. **SR** National Bureau of Economic Research Working Paper: 1872; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 422, 411. **KW** Optimal Tariffs. Tariffs. Consistent Conjectural Variations Equilibrium.

AB This paper analyzes the determination of the optimal tariff under the assumption of Consistent Conjectural Variations (CCV). A general characterisation of the CCV equilibrium is given. We show that (i) there are, in general, a multiplicity of such equilibria, and (ii) under certain restrictions, the Cournot equilibrium, which is based on the assumption of no retaliation can also be a CCV equilibrium. By contrast, free trade is never a CCV equilibrium. Finally the CCV equilibrium is solved explicitly in a simple example.

Ueta, K.

PD 1985. **TI** Environmental Risk Management: Lead in Japan. **AA** University College London. **SR** University College London Discussion Paper: 85-27; Department of Economics, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PR** 1.50 pounds sterling. **JE** 722. **KW** Environmental Risk. Pollution. Lead Use. Recycling Lead.

AB This paper observes that where we are principally concerned with the management of pollution and environmental risks we should note that the redesign of pollution-management institutions is necessary in order for us to be able to anticipate adverse effects rather than merely react to existing, known effects. It is necessary to induce a system structure of metal use and disuse oriented towards recycling. To do so, it is necessary not only to do source separation collection but also to plan the recycling strategy through the establishment of an assessment methodology integrating and taking into consideration all of the benefits and losses of metal use in every phase of a metal's life cycle. It is very difficult to compare the environmental risks in each use because the source of a particular biological effect at a particular lead concentration cannot be divided according to use. The identification of environmental risks is not a matter of subjective research but of empirical research. Whether a particular effect or latent damage is an environmental risk depends at any given time on the state of our knowledge. We can, however, recognise the tendency that the potential environmental risks caused by unrecyclable lead use and disposal are increasing as compared to those caused by tetraethyl lead.

Vassilakis, Spyros

PD March 1986. **TI** Increasing Returns and Strategic Behavior I: The Worker-Employer Ratio. **AA** Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: 169; Department of Political Economy, Johns Hopkins University, Baltimore, MD 21218. **PG** 56. **PR** No Charge. **JE** 812, 826, 821. **KW** Occupation. Worker-Firm Ratio. Productivity.

AB This paper presents a game-theoretic model of an increasing returns economy where agents are allowed to choose their occupation. It is shown that as economy size tends to infinity, the worker-firm ratio, product per head, the real wage and the degree of increasing returns tend to infinity, the share of labor tends to 1 and the profit rate tends to zero. Pareto inefficiency of Cournot-Nash equilibria persists even in the limit in a class of smooth economies.

PD March 1986. **TI** On the Division of Labor. **AA** Johns Hopkins University. **SR** Johns Hopkins Department of Political Economy Working Paper: 168; Department of Political Economy, Johns Hopkins University, Baltimore, MD 21218. **PG** 30. **PR** No Charge. **JE** 512, 521, 813. **KW** Vertical Integration. Production Roundaboutness. Division of Labor.

AB Vertical integration and production roundaboutness are examined as two aspects of the division of labor, and their equilibrium levels are determined in a closed model with increasing returns. It is shown that (i) vertical integration is a decreasing, and production roundaboutness an increasing, function of the size of the economy; and (ii) replication of the economy does not eliminate Pareto inefficiency, which can be quite large even in the limit.

Venti, Steven F.

PD April 1986. **TI** Individual Retirement Accounts and Saving. **AU** Venti, Steven F.; Wise, David A. **AA** Venti: Department of Economics, Harvard University. Wise: JFK School of Government, Harvard University. **SR** National Bureau of Economic Research Working Paper: 1879; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 915, 023. **KW** Savings. Individual Retirement Accounts.

AB Increasing current Individual Retirement Account (IRA) limits would lead to substantial increases in tax-deferred saving according to evidence in the paper, based on the 1983 Survey of Consumer Finances. For example, the recent Treasury Plan would increase IRA contributions by about 30 percent. The primary focus of the paper, however, is the effect of limit increases on other saving. How much of the IRA increase would be offset by reduction in non-tax-deferred saving? The weight of the evidence suggests that very little of the increase would be offset by reduction in other financial assets, possibly 10 to 20 percent. The estimates suggest that 45 to 55 percent of the IRA increase would be funded by reduction in expenditure for other goods and services, and about 35 percent by reduced taxes. The analysis rests on a savings decision structure recognising the constraint that the IRA limit places on the allocation of current income; it is a constrained optimisation model with the IRA limit the principle constraint. The evidence also suggests substantial variation in saving behavior among segments of the population. In addition, it appears that IRAs do not serve as a substitute for private pension plans. Thus the legislative goal of disproportionately increasing retirement saving among persons without pension plans is apparently not being realized. But the more general goal of increasing general saving is.

Verkerke, J. Hoult

TI Defense Economics And Economic Warfare Revisited. **AU** Shubik, Martin; Verkerke, J. Hoult.

Vo, De Huu

TI Import Elasticity with Government Intervention: A Time Series Cross Section Analysis of Seventy-Two Countries. **AU** Roe, Terry; Shane, Mathew; Vo, De Huu.

Voigt, B.

TI Graham-Rothschild Parameter Sets. **AU** Promel, Hans; Voigt, B.

von Hagen, Jurgen

PD February 1986. **TI** Instability versus Dynamics: A Study in West German Demand for Money. **AU** von Hagen, Jurgen; Neumann, Manfred J. M. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A 44; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 26. **PR** No Charge. **JE** 223, 311. **KW** Money Demand Function. Level-

Cum-Stock Adjustment Model.
AB This study presents extensive empirical evidence in favor of a stable money demand function in Germany, over the period 1964-1984 tested against a variety of alternatives. Previous instability results are likely to stem from the conventional research strategy of straightforwardly estimating a level-cum-stock adjustment model. The research strategy of this paper, in contrast, has been to carefully single out an acceptable statistical representation of the data generating process by testing the validity of restrictions on it introduced in the specification of the empirical models.

Vuong, Quang H.

PD March 1986. **TI** Generalized Inverses and Asymptotic Properties of Wald Tests. **AA** California Institute of Technology. **SR** Caltech Social Science Working Paper: 607; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 21. **PR** No Charge. **JE** 211. **KW** Generalized Inverses. Wald Tests. Asymptotic Power.
AB We consider Wald tests based on consistent estimators of g-inverses of the asymptotic covariance matrix H of a statistic that is n(1/2)-asymptotically normal distributed under the null hypothesis. Under the null hypothesis and under any sequence of local alternatives in the column space of H, these tests are asymptotically equivalent for any choice of g-inverses. For sequences of local alternatives not in the column space of H and for a suitable choice of g-inverse, the asymptotic power of the corresponding Wald test can be made equal to zero or arbitrarily large. In particular, the test based on a consistent estimator of the Moore-Penrose inverse of H has zero asymptotic power against sequences of local alternatives in the orthogonal complement to the column space of H.

PD March 1986. **TI** Selecting the Best Linear Regression Model: A Classical Approach. **AU** Vuong, Quang H.; Lien, Donald. **AA** California Institute of Technology. **SR** Caltech Social Science Working Paper: 606; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 64. **PR** No Charge. **JE** 212. **KW** Model Selection. Linear Regression. Non-Nested Hypotheses.
AB In this paper, we apply the model selection approach based on Likelihood Ratio (LR) tests developed in Vuong (1985) to the problem of choosing between two normal linear regression models which are not nested in each other. First we compare our model selection procedure to other model selection criteria. Then we explicitly derive the procedure when the competing linear models are non-nested and neither one is correctly specified. Some simplifications are seen to arise when both models are contained in a larger correctly specified linear regression model, or when at least one competing linear model is correctly specified. A comparison of our model selection tests and previous non-nested hypothesis tests concludes the paper.

PD March 1986. **TI** Likelihood Ratio Tests for Model Selection and Non-Nested Hypotheses. **AA** California Institute of Technology. **SR** Caltech Social Science Working Paper: 605; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 76. **PR** No Charge. **JE** 211, 212. **KW** Likelihood Ratio Tests. Model Selection. Non-Nested Hypotheses.
AB In this paper, we propose a classical approach to model selection. Using the Kullback-Leibler Information measure, we propose simple and directional likelihood-ratio tests for discriminating and choosing between two competing models whether the models are non-nested, overlapping or nested and whether both, one, or neither is misspecified. As a prerequisite, we fully characterize the asymptotic distribution of the likelihood ratio statistic under the most general conditions.

Waldron, Jerome

TI Managerial Entrenchment and Greenmail Endogenous Solutions to Free Riding in the Market for Corporate Control. **AU** Diwan, Ishac; Waldron, Jerome; Weigelt, Keith.

Wales, T. J.

TI Normalized Quadratic Systems of Consumer Demand Functions. **AU** Diewert, W. Erwin; Wales, T. J.

Wallace, Neil

PD May 1985. **TI** Ricardian Equivalence and Money Dominated in Return: Are They Mutually Consistent Generally?. **AA** Federal Reserve Bank of Minneapolis Research Department. **SR** Federal Reserve Bank of Minneapolis Staff Report: 99; Research Department, Federal Reserve Bank of Minneapolis, 250 Marquette Avenue, Minneapolis, MN 55480. **PG** 23. **PR** No Charge. **JE** 023, 310. **KW** Money. Ricardian Equivalence. Open Market Operations.
AB Different conclusions about the effects of open market operations are reached even among economists using full employment and rational expectations models. I show that these differences can be attributed to different assumptions regarding the concept of the deficit that is held fixed for an open market operation, the diversity among agents, and the features generating money demand. With regard to those features, I argue that plausible ways of explaining the holding of low-return money preclude the kind of perfect credit markets needed to obtain Ricardian equivalence.

Walsh, Carl E.

TI Inside Money and Monetary Neutrality. **AU** Hartley, Peter R.; Walsh, Carl E.

Wanka, Alfred

TI Separation Theorems for Oriented Matroids. **AU** Bachem, Achim; Wanka, Alfred.

Warburton, Peter

TI The Market for Labour in Interwar Britain. **AU** Beenstock, Michael; Warburton, Peter.

Warshawsky, Mark

PD March 1986. **TI** The Fundamental Determinants of Aggregate Debt and Wealth. **AA** Board of Governors

of the Federal Reserve System, Washington, D.C. 20551. **SR** Board of Governors of the Federal Reserve System Economic Activity Section Working Paper: 58; Economic Activity Section, Board of Governors of the Federal Reserve System, Washington, D.C. 20551. **PG** 41. **PR** No Charge. **JE** 023, 224, 315. **KW** Life Cycle Hypothesis. Household Balance Sheet. Consumer Debt. Debt to Income Ratio. Aggregate Debt. Aggregate Wealth.
AB This paper presents a partial equilibrium model of the fundamental determinants of aggregate debt and wealth in the United States. The following are among the results of simulations of the theoretical model: 1) A significant, albeit modest, bequest motive is needed to explain the magnitude of the wealth to income ratio, thereby confirming the empirical simulation work of Kotlikoff and Summers (1981). 2) An increase in the real interest rate, assuming a positive bequest motive, causes the debt to income ratio to increase. 3) An increase in the real interest rate causes asset accumulation to increase. The increased amount of debt, however, leaves the net worth position unchanged. 4) A negative rate of time preference, that is, a preference for consumption in the future as opposed to the present, is required for the model to be consistent with observed debt and wealth measures, assuming reasonable values of other parameters. 5) Demographic considerations are important in the determination of the debt to income ratio while they play a smaller role in the determination of aggregate wealth.

Wascher, William

TI Cross-Industry Differences in Race and Gender Wage Differential. **AU** Montgomery, Edward; Wascher, William.

TI Creative Destruction and the Behavior of Productivity Over the Business Cycle. **AU** Montgomery, Edward; Wascher, William.

Waverman, Leonard

TI The Extent and Sources of Cost and Efficiency Differences Between United States and Japanese Automobile Producers. **AU** Fuss, Melvyn A.; Waverman, Leonard.

Webbink, Douglas W.

PD July 1985. **TI** Factors Affecting Steel Employment Besides Steel Imports. **AA** Bureau of Economics, Federal Trade Commission. **SR** Federal Trade Commission Bureau of Economics Working Paper: 128; Bureau of Economics, Federal Trade Commission, Washington, D.C. 20580. **PG** 27. **PR** No Charge. **JE** 631, 421. **KW** Steel Industry. Steel Imports.
AB An important current international trade issue is the extent to which the decline in production and hence employment in the United States steel industry has been caused by imports of foreign steel, as compared to other possible causes. In filings before the International Trade Commission and in hearings before Congressional Committees, the domestic steel producers and the steel unions have claimed that they are being substantially harmed by steel imports, that imports are a major cause of the decline in steel production and employment, and that import quotas are necessary to protect them. However, a variety of factors other than steel imports have had a substantial negative impact on steel production and employment in recent years. Among the most important of those factors is the increase in wages and fringe benefits paid to steel workers compared to wages and fringe benefits in other manufacturing industries. Other significant factors include fluctuations in the overall level of industrial production, the substitution of materials such as aluminum and plastic in place of steel in the production of automobiles, cans and buildings, the decrease in the average size and weight and hence steel content of domestic automobiles and the decline in the total production of United States automobiles. The purpose of this present paper is to study the impact of these various effects on domestic steel employment and to improve on an earlier study done by Gene Grossman.

Weber, Warren E.

PD September 1984. **TI** Output Variability in an Open-Economy Macro Model with Variance-Dependent Parameters. **AA** Research Department, Federal Reserve Bank of Minneapolis. **SR** Federal Reserve Bank of Minneapolis Staff Report: 94; Research Department, Federal Reserve Bank of Minneapolis 250 Marquette Avenue, Minneapolis, MN 55480. **PG** 28. **PR** No Charge. **JE** 431, 023, 131. **KW** Exchange Rate Systems. Signal Extraction. Output Variability.
AB This paper analyzes the variability of output under money supply and exchange rate rules in an open economy in which the slope of the aggregate supply curve depends on the variances of aggregate demand and market-specific innovations. It demonstrates that results regarding the dominance of one rule over the other when the slope of the aggregate supply curve is constant are reversed when the slope of the aggregate supply curve depends on the variances of innovations and these variances are sufficiently large.

PD September 1984. **TI** Output Variability in an Open-Economy Macro Model with Variance-Dependent Parameters. **AA** Federal Reserve Bank of Minneapolis. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E84-02-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 27. **PR** No Charge. **JE** 023, 311. **KW** Money Supply Rules. Exchange Rate Rules. Output Variability.
AB This paper analyzes the variability of output under money supply and exchange rate rules in an open economy in which the slope of the aggregate supply curve depends on the variances of aggregate demand and market-specific innovations. It demonstrates that results regarding the dominance of one rule over the other when the slope of the aggregate supply curve is constant are reversed when the slope of the aggregate supply curve depends on the variances of innovations and these variances are sufficiently large.

TI Explaining the Demand for Free Bank Notes. **AU** Rolnick, Arthur J.; Weber, Warren E.

TI Estimating Linear Filters with Errors in Variables Using the Hilbert Transform. **AU** Hinich, Melvin J.; Weber, Warren E.

Wegge, Leon L. F.

PD May 13, 1986. **TI** Armax(p,r,q)-Model Parameter Identifiability and Estimability. **AA** Department of Economics, University of California, Davis. **SR** University of California at Davis Economics Department Working Paper: 278; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 44. **PR** No Charge. **JE** 211. **KW** Armax(p,r,q)-Model. Identifiability. Mean Equivalent Parameter. Covariance Equivalent Parameter. Transformation. Estimability. Order Tests.

AB In this paper identifiability conditions are derived when the external information are the population means and autocovariances of lag order limited by the sample size. The conditions are compared to the literature on asymptotic identifiability. We first find the class of intertemporal transformations that constructs the family of observationally equivalent reduced form parameters. This is followed by the derivation of the rank conditions for identifiability of the reduced form parameter. Our results are algebraically complete and take the place of Hannan's minimality condition and his rank condition on the matrices of highest order. Structural parameter identifiability conditions are then obtained from combining the reduced form identifiability conditions with the conditions on the structural prior restrictions that guarantee a unique link between reduced form and structural form. Having conditions for identifiability that are based on a finite number of first and second moments has obvious advantages in suggesting estimators that are natural composites of the identifying function and the estimating function for the external information. The paper ends with displaying such a composite and with the demonstration that identifiability is equivalent to the existence of a family of estimators implicit in the system of population moment equations corresponding to this composite.

Weigelt, Keith

TI Managerial Entrenchment and Greenmail Endogenous Solutions to Free Riding in the Market for Corporate Control. **AU** Diwan, Ishac; Waldron, Jerome; Weigelt, Keith.

TI Rational Price Bubbles in Asset Markets: A Review of Theory and Evidence. **AU** Camerer, Colin; Weigelt, Keith.

Weitzman, Martin

TI Bonuses and Employment in Japan. **AU** Freeman, Richard B.; Weitzman, Martin.

Werner, Hans

TI A Note on C. R. Rao's Wider Definition BLUE in the General Gauss-Markov Model. **AU** Schonfeld, Peter; Werner, Hans.

Werner, Jan

PD February 1985. **TI** Arbitrage and the Existence of Competitive Equilibrium. **AA** University of Bonn. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: A2; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 39. **PR** No Charge. **JE** 021. **KW** Non-Arbitrage Prices. Competitive Equilibrium. Free Disposal Assumption.

AB The paper extends the classical Arrow-Debreu theory by introducing assets or securities as commodities. We are concerned with consumption sets which are not bounded below. We develop the notion of non-arbitrage prices. A price system admits no arbitrage opportunity for a consumer if every commodity bundle that always increases the utility of the consumer has a positive value. For a producer, a price system admits no arbitrage opportunity if every production plan that is technologically feasible at every production level has a negative profit. We show that the existence of a price system which admits no arbitrage opportunity for all consumers and producers is sufficient for the existence of an equilibrium. This result implies the existence of an equilibrium in the standard case of an economy (with production) with bounded below consumption sets without free disposal assumption.

West, Kenneth D.

TI A Simple, Positive Semi-Definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix. **AU** Newey, Whitney K.; West, Kenneth D.

Wettstein, D.

PD January 1986. **TI** Implementation Theory in Economies with Incomplete Information. **AA** Department of Economics, Tel-Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 7-86; Department of Economics, Tel Aviv University, Ramat Aviv, 69978, Tel-Aviv, ISRAEL. **PG** 23. **PR** No Charge. **JE** 024, 025, 026. **KW** Implementation. Incomplete Information. Bayesian Nash Equilibria.

AB This work studies necessary and sufficient conditions for a given Social Choice Correspondence (SCC) to be implementable. It is shown that monotonicity is a necessary condition for implementation; together with a Non Exclusivity of Information (NEI) assumption and some further technical assumptions it is also sufficient for implementation. The informational structure is modelled by an N-dimensional random variable with a known distribution where the specific realisation of the i-th component is observed only by the i-th individual. The NEI assumption amounts to requiring that any (N-1) coordinates of the random vector uniquely determine the remaining one; without loss of generality we assume that the coordinates must sum up to zero. The SCC is defined on the support of this random variable and the implementation itself is carried out by a continuous mechanism which is a desirable property lacking in many of the mechanisms proposed so far. This model generalizes the paper by Postlewaite and Schmeidler (1984) where the random variable assumed only finitely many values. The same type of a continuous mechanism could be used to implement SCCs in economic environments with complete information.

Wilcox, Linda

TI Rural Labor in Latin America. **AU** de Janvry, Alain; Sadoulet, Elisabeth; Wilcox, Linda.

Williams, Joseph

TI Efficient Signalling with Dividends and Investments. **AU** Ambarish, Ramasastry; John, Kose; Williams, Joseph.

Wise, David A.

TI Individual Retirement Accounts and Saving. **AU** Venti, Steven F.; Wise, David A.

Wolfe, John R.

TI Compensating Wage Differentials and the Duration of Wage Loss. **AU** Hamermesh, Daniel S.; Wolfe, John R.

Woo, Wing Thye

PD May 8, 1986. **TI** The Impact of United States Policy Mix on the Association of Southeast Asian Nations Economies, 1980-1984: The Neglected European-Japanese Connection. **AA** Department of Economics, University of California at Davis. **SR** University of California at Davis Research Program in Applied Macroeconomics and Macro Policy: 37; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 30. **PR** No Charge. **JE** 121, 023, 133, 431. **KW** Association of Southeast Asian Nations. Macroeconomic Interdependence. United States Policy Mix. European and Japanese Macro Policies. Southeast Asia.

AB The 1983 recovery of the United States economy increased the export earnings of the Southeast Asian countries. The United States recovery is largely the result of fiscal stimulus. This paper investigates the question of whether the elimination of the swingeing structural budget deficits would threaten the renewed Association of Southeast Asian Nations growth. I argue that ASEAN would benefit from the closing of the United States budget deficits because the present tight monetary and loose fiscal policies of the United States have caused the other major OECD countries to arrest their economic expansions. The appreciation of the United States dollar is a negative supply shock to the European and Japanese economies, and they have responded to the supply-side price pressures by lowering aggregate demand. My conclusion is that a change in the United States policy mix would enable the industrial countries and ASEAN to grow more rapidly. Furthermore, the resulting dollar depreciation would ease United States protectionist pressures against ASEAN exports.

Woroch, Glenn A.

PD July 1985. **TI** Regulatory Risk, Investment, and Welfare. **AA** Department of Economics, University of Rochester. **SR** Rochester Center for Economic Research Working Paper: 18; Department of Economics, University of Rochester, Rochester, NY 14627. **PG** 20. **PR** No Charge. **JE** 612, 613, 026. **KW** Rate-of-Return Regulation. Averch-Johnson Model. Policy Uncertainty. Price Regulation. Entry Regulation.

AB The allocative and distributional effects caused by uncertain regulatory constraints are evaluated. Three prominent forms of monopoly regulation are examined: constraints on rate of return, on price, and on competitive entry. The solution to the firm's profit maximization problem for the case when it must invest before the constraint is known is compared to the certainty case. Under plausible demand and cost conditions, rate-of-return risk depresses investment and expands employment. In particular, it may reverse the over-capitalisation that results from rate-base regulation. Presumably, by substituting variable inputs for irreversible capital the firm gains flexibility to respond to the policy uncertainty. Price and entry risk, however, are shown to lead to exactly the opposite conclusion when a few assumptions are added which, roughly speaking, imply that capital is used more intensively as output grows. As it happens, neither price nor entry risk has a definite effect on (expected) employment. Tests of these implications for investment behavior could be performed using a measure of regulatory risk extracted from market valuations of firms' securities. In terms of welfare implications, the firm is found to be averse to all three types of regulatory risk. Incidentally, the firm in the Averch-Johnson model of regulation is also shown to prefer a nonrandom allowed rate of return when all factors can be adjusted in response to the constraint. Finally, it is demonstrated that both price and entry risk raise expected consumer surplus, but only at the expense of strong assumptions.

Yoo, Byung Sam

TI Forecasting and Testing in Co-Integrated Systems. **AU** Engle, Robert F.; Yoo, Byung Sam.

Zilcha, I.

TI Firm's Hedging Behavior without the Expected Utility Hypothesis. **AU** Safra, Zvi; Zilcha, I.

Zimmerman, Jerold L.

TI Labor Union Contract Negotiations and Accounting Choices. **AU** Liberty, Susan B.; Zimmerman, Jerold L.

Zimmermann, Uwe

PD May 1985. **TI** Duality for Balanced Submodular Flows. **AA** University of Kaiserslautern. **SR** Universitat Bonn Sonderforschungsbereich 303 - Discussion Paper: 84.11; Sonderforschungsbereich 303 an der Universitat Bonn, Adenauerallee 24-42, D-5300 Bonn 1, DEUTSCHLAND. **PG** 18. **PR** No Charge. **JE** 213. **KW** Balanced Submodular Flows Optimisation. Polynomial Complexity.

AB Balanced submodular flows generalize balanced flows as introduced by Minoux '1976 in the discussion of reliability and security problems. We develop a dual method for optimisation in totally ordered sets which yields a genuinely polynomial method for solving maximum balanced flow problems. For solving maximum balanced submodular flow problems the same approach leads to a method of genuinely polynomial complexity modulo the complexity of submodular function minimization.