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.)

Abowd, John M.

PD February 1986. **TI** On the Covariance Structure of Earnings and Hours Changes. **AU** Abowd, John M.; Card, David. **AA** Abowd: Department of Economics, MIT. Card: Department of Economics, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1832; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 60. **PR** $2.00. **JE** 824. **KW** Changes in Earnings. Changes in Hours. Life-Cycle Labor Supply Model. Fixed-Wage Labor Contract Model.

AB This paper presents an empirical analysis of changes in individual earnings and hours over time. Using longitudinal data from three panel surveys, we catalogue the main features of the covariance structure of changes in earnings and hours. We then present an interpretation of these features in terms of both a life-cycle labor supply model and a fixed-wage labor contract model. Our major findings are: (1) there is a remarkable similarity in the covariance structure of earnings and hours changes across the three surveys; and (2) apart from simple measurement error, the major component of variance in earnings and hours affects earnings and hours equi-proportionately.

PD February 1986. **TI** Intertemporal Labor Supply and Long Term Employment Contracts. **AU** Abowd, John M.; Card, David. **AA** Abowd: Department of Economics, MIT. Card: Department of Economics, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1831; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 43. **PR** $2.00. **JE** 824. **KW** Dynamic Labor Supply Model. Symmetric Information Contracting Model.

AB In this paper we compare the implications of a symmetric information contracting model and a dynamic labor supply model for changes in individual earnings and hours over time. The critical distinction between these models is whether earnings represent optimal consumption or payment for current labor services. We devélop a simple test between labor supply and contracting models based on the relative variability of earnings and hours with respect to changes in productivity. If earnings represent consumption then changes in productivity generate smaller changes in earnings than hours. The opposite is true in the labor supply model. We apply our test to longitudinal data on male household heads from the Panel Study of Income Dynamics and the National Longitudinal Survey of Older Men, focusing on individuals who do not change employers during the survey period. Neither model fits the data well. In both surveys, however, the contribution of changes in productivity to changes in earnings is greater than the contribution to changes in hours. The data are more consistent with a labor supply interpretation, although the estimated labor supply elasticities suggest that changes in hours occur at fixed wage rates.

Abraham, Katharine G.

PD January 1986. **TI** Job Duration, Seniority, and Earnings. **AU** Abraham, Katharine G.; Farber, Henry S. **AA** Abraham: The Brookings Institution. Farber: Department of Economics, Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 1819; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 63. **PR** $2.00. **JE** 824. **KW** Job Duration. Seniority. Implicit Contracts.

AB The stylized fact that seniority and earnings in a cross-section are positively related, even after controlling for total labor market experience, has served as the basis for theoretical analyses of implicit labor contracts suggesting that workers post bonds in the form of deferred compensation in order to ensure their continued performance at an adequate level. An alternative interpretation is that good workers or workers in good jobs or good matches both earn more throughout the job and have longer job durations. Another stylized fact, that labor market experience and earnings in a cross section are positively related, has been taken as evidence of the importance of general human capital accumulation. An alternative interpretation of this evidence is that workers with more experience have had more time to find good jobs and/or good matches, resulting in higher earnings. Earnings functions are estimated including a measure of the completed duration of jobs in order to distinguish between the competing hypotheses regarding both seniority and experience. These yield three main results. First, workers in longer jobs earn significantly more in every year of the job than do workers in shorter jobs. Second, controlling for completed job duration eliminates most of the apparent return to seniority found in standard cross-section models. Thus, it appears that implicit contracts that provide for workers posting bonds through deferred wage payments are less important than has been believed. Third, for blue collar workers there is evidence that a part of the small observed (cross-sectional) return to labor market experience is due to sorting of workers into better jobs over time. There is no evidence of sorting for white collar workers.

Abreu, Dilip

PD October 1984. **TI** Optimal Cartel Equilibria with Imperfect Monitoring. **AU** Abreu, Dilip; Pearce, David; Stacchetti, Ennio. **AA** Abreu: Harvard University. Pearce: Yale University. Stacchetti: Stanford University. **SR** Yale Cowles Foundation Discussion Paper: 726; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 27. **PR** No Charge. **JE** 611, 026. **KW** Optimal Symmetric Cartel Equilibria. Cartels. Imperfect Monitoring.

AB There exist optimal symmetric equilibria in the Green-Porter model '5,'8 having an elementary intertemporal structure. Such an equilibrium is described entirely by two subsets of price space and two quantities, the only production levels used by firms in any contingency. The central technique employed in the analysis is the reduction of the repeated game to a family of static games.

PD December 1985. **TI** Extremal Equilibira of Oligopolistic Supergames. **AA** Harvard University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences Technical Report (Economics Series): 475; Institute for Mathematical Studies in the Social Sciences, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 62. **PR** $4.00. **JE** 022, 611. **KW** Oligopolistic Supergames. Optimal Punishments. Asymmetric Pareto Optimal Paths.

AB General propositions established in Abreu '1983 are applied to the analysis of optimal punishments and constrained Pareto optimal paths of symmetric oligopolistic supergames. A remarkably simple two-dimensional stick-and-carrot characterization of optimal symmetric punishments is obtained. An analogous result holds for the general case of asymmetric punishments, motivating the study of asymmetric Pareto optimal paths. The latter turns out to have a highly non-stationary dynamic structure which sometimes entail intertemporal reversals of relative payoffs between firms.

Adams, Gerard F.

PD October 1985. **TI** Commodity Models in the LINK Model: A Summary. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Division Paper: 85-28; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 15. **PR** $1.00. **JE** 112. **KW** Commodity Models. Linkages to Other Countries.

AB Primary commodity exports -- the quantities and prices of sugar, rice, rubber exports, for example -- are an important source of earnings for the less developed countries. Models of commodity markets and of the linkages from these markets to the producing and consuming countries have an important place in econometric models of the world economy and of the Asean country region. Integrating commodity models into a world model system allows us to trace out the impact of policy in the industrial countries and the impact of shocks in commodity markets on the consuming and the producing country economies. It is also a basis for evaluating alternative policy measures to stabilize these markets or to offset market fluctuations. This paper describes how commodity market models have been introduced into the Asean Link System, ELSA.

Aizenman, Joshua

PD January 1986. **TI** Sectorial Wages and the Real Exchange Rate. **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: 1801; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 35. **PR** $2.00. **JE** 821, 431. **KW** Sectorial Wages. Exogenous Real Shock. Optimal Sectorial Wage-Indexation Rules. Real Exchange Rates.

AB Consider a multi-sector economy subject to an exogenous demand shock that alters the equilibrium structure of relative prices. How should the structure of sectorial wages adjust in response to such a shock? This question is addressed in the context of a multi-sector model of an open-economy producing internationally tradable and non-tradable goods. In order to focus on intersectorial wage structure without abandoning the competitive neoclassical paradigm we assume that workers differ from each other in their absolute and relative skills. Such differences result in equilibrium wage differentials which are affected by the exogenous real shock. Cost of negotiations result in labor market contracts which set nominal wages in advance of the realization of the stochastic shocks. The analysis provides formulae for the optimal sectorial wage-indexation rules. The optimal rules alter both the absolute and the relative structure of sectorial nominal wages. We examine the dependence of the optimal wage adjustments on the degree of heterogeneity of the skill distribution and on the degree to which the economy is open to international trade; we also study the effects of various shocks and policies on the real exchange rate, real wages and the distribution of income.

Albert, Vicky

PD April 1986. **TI** What's to Be GAINed: Welfare in California Since 1971. **AU** Albert, Vicky; Wiseman, Michael. **AA** Wiseman: Department of Economics, University of California at Berkeley. Albert: School of Social Welfare, University of California, Berkeley. **SR** University of California Berkeley Institute of Business and Economic Research, Research Papers in Economics: 86-10; Institute of Business and Economic Research, 156 Barrows Hall, University of California at Berkeley, Berkeley, CA 94720. **PG** 42. **PR** $5.00. **JE** 911, 914. **KW** Greater Avenues for Independence (GAIN) Plan. California AFDC. "Workfare". AFDC.

AB California is implementing an elaborate system of job search, training, and child care assistance for adult AFDC recipients called the Greater Avenues for Independence (GAIN) plan. This paper reviews the California AFDC system on the eve (July, 1985) of GAIN. The conclusions are: (1) The moderate increase in welfare dependency in the state since 1972 is wholly attributable to the influx of refugees. (2) In part because of regulations changes brought about by the Omnibus Budget Reconciliation Act of 1981, employment rates among single recipient adults have declined. The rate of case closure has also gone down. (3) This decline in turnover has diminished OBRA effects. The 1984 caseload in the AFDC-FG (mostly single-parent) program was only about 2 percent smaller than would have been predicted. The challenge is to find ways to use GAIN to accelerate adjustment of refugees and to reverse the decline in termination rates.

Aliprantis, C. D.

PD March 1986. **TI** Edgeworth Equilibria in Production Economies. **AU** Aliprantis, C. D.; Brown, D. J.; Burkinshaw, O. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 784; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 41. **PR** No Charge. **JE** 021. **KW** Edgeworth Equilibrium. Riesz Spaces. Production Economies.

AB An Edgeworth equilibrium is an allocation that belongs to the core of every n-fold replica of the economy. In '2 we studied in the setting of Riesz spaces the properties of Edgeworth equilibria for pure exchange economies with infinite dimensional commodity spaces. In this work, we study the same problem for economies with production. Under some relatively mild conditions we establish (among other things) that: 1. Edgeworth equilibria exist; 2. Every Edgeworth equilibrium is a quasiequilibrium; and 3. An allocation is an Edgeworth equilibrium if and only if it can be "decentralized" by a price system.

Altonji, Joseph G.

PD August 1985. **TI** Hours-Wage Tradeoffs and Job Mobility. **AU** Altonji, Joseph G.; Paxson, Christina H. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 301; Department of Economics, Columbia University, New York, NY 10027. **PG** 30. **PR** $5.00. **JE** 824, 823, 821. **KW** Hours Constraints. Hours-Wage Tradeoffs. Job Mobility.

AB The paper examines how hours constraints affect the decision to change jobs and the patterns of hours-wage tradeoffs which result from job changes. We analyze job mobility in a labor market in which work hours on a given job are inflexible and it is costly for workers to locate and move to alternative jobs. Costs of mobility and imperfect information about job offers will prevent a worker from adjusting hours by costlessly moving to jobs which offer wage-hours combinations on his or her labor supply schedule. Consequently, workers will trade off wage gains for hours adjustments in making job changes. Specifically, we show that the partial effect of a positive change in hours by job changers who were overemployed (underemployed) on their prior job is to increase (reduce) the size of the wage gain required to induce a quit. The partial effect of a positive change in hours by job changers who are overemployed (underemployed) on their new job is to increase (reduce) the size of the wage gain associated with the quit. We test these propositions through an empirical study of the relationship between the wage change and interactions among the change in hours and indicators of overemployment and underemployment on the old job and the new job. Despite the limitation imposed by small sample sizes and lack of information on the magnitude of hours constraints, our results are supportive of the theory.

PD January 1986. **TI** Variation in Employment Growth in Canada: The Role of External, National, Regional and Industrial Factors. **AU** Altonji, Joseph G.; Ham, John C. **AA** Altonji: Department of Economics, Columbia University. Ham: Industrial Relations Section, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1816; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 71. **PR** $2.00. **JE** 824. **KW** Employment Fluctuations. Shocks. Variance of Employment.

AB This paper presents a method for assessing the impact of external, national, and sectoral shocks on Canadian employment fluctuations at the national, industry, and provincial levels. Special attention is given to the contribution of sectoral shocks to aggregate employment fluctuations. Shocks which initially affect specific industries and provinces can induce aggregate fluctuations not only because national employment is the sum of employment in various sectors but also because of feedback across sectors. The analysis is based on an econometric model relating employment growth in each province and industry to the current and lagged change in United States output, the lags of employment growth at the national, industry, and provincial levels, a Canadian national shock, and shocks affecting specific industries, specific provinces, and specific province-industry pairs. The model is estimated using annual data on Canadian employment at the province-industry level. The results suggest that United States shocks are responsible for two-thirds of the steady-state variance in the growth of Canadian national employment, while the Canadian national shock accounts for approximately one quarter of this variance. Taken together, industry specific, province specific and province-industry specific shocks account for about one-tenth of the variance of Canadian national employment growth. Although United States shocks are the dominant influence on aggregate employment growth in Canada, sectoral shocks account for about thirty percent of the variance in national employment due to Canadian sources. Estimates of the contribution of United States, Canadian national, industry, and provincial shocks to the variance of employment in specific industries and provinces are also provided.

Amihud, Yakov

PD March 1985. **TI** The Case Against a Mandatory Delay Period and Other Constraining Rules in Tender Offers. **AA** New York University and Tel Aviv University. **SR** New York University Salomon Brothers Center Working Paper: 343; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 38. **PR** $2.00. **JE** 522. **KW** Takeovers. Tender Offers. Greenmail. Lockups.

AB Recently there has been a public debate on the desirability of imposing constraining rules on some activities associated with takeovers. The Williams Act and the current sentiments among some legislators, regulators and academicians are in favor of impeding takeovers by imposing a mandatory delay period following the tender offer. This paper is intended to contribute to this debate, suggesting that the results sought by the proposed rules (and by some which are already in place) can be achieved by market forces without legislative intervention. If stockholders so wish, they can protect themselves against the malaise of speedy takeovers and minority-discriminating tender offers by instituting appropriate takeover defensive measures in their company's charter, or by choosing to invest in firms with such "home-made" protection. Observing that both theory and empirical evidence show that impeding takeovers is not beneficial to all stockholders (neither to society as a whole), I suggest to reject propositions to impede takeovers by an auctioneering rule, and to repeal the Williams Act which prescribes such a delay. I further suggest that market-based arrangements can come in lieu of other rules construed to limit management resistance to takeovers, greenmail and lock-ups.

Amir, Rabah

PD May 1985. **TI** A Characterization of Globally Optimal Paths in the Non-Classical Growth Model. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 754; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 33. **PR** No Charge. **JE** 111. **KW** Non-Convex Dynamic Optimization. Optimality.

AB We show that the monotonicity property of optimal paths (or, equivalently, the uniform boundedness of the marginal propensity of consumption by unity) is a necessary condition for local (as well as for global) optimality, and is also sufficient for local optimality, but not for global optimality. We also show that the well-known properties of the value function -- continuity and monotonicity -- are sufficient (along with the above conditions) to guarantee global optimality. In other words, if at any stock level, a local non-global maximizer is selected, a discontinuity in the value function will be observed. We suggest that the previous literature on this problem has not distinguished between local and global maxima, and consequently has not attempted to derive conditions that uniquely characterize global optimality. This is the major aim of this paper, and we hope to have provided some insight towards a systematic approach to non-convex dynamic optimization.

Ando, Albert

PD September 1984. **TI** Reappraisal of the Phillips Curve and Direct Effects of Money Supply on Inflation: A Test. **AU** Ando, Albert; Kennickell, Arthur. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-11; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 37. **PR** $1.00. **JE** 023, 134, 311. **KW** Wage Patterns. Money Effects. Price Level.

AB This paper attempts to provide some evidence on two closely related issues. The first is the question of how well or how badly a typical non-monetarist econometric structure can account for the pattern of the levels of wages and prices in the United States from the late 1960s to the early 1980s. The second is whether or not an econometric structure such as this fails to capture effects of the quantity of money on movements of the price level. This second question is in turn closely related to the issue of whether or not a significant increase in the money supply, regardless of other conditions such as the level of the unemployment rate, should be inflationary.

PD May 1985. **TI** The Corporate Cost of Capital in Japan and the United States: A Comparison. **AU** Ando, Albert; Averbach, Alan. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-20; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 42. **PR** $1.00. **JE** 123, 323, 313. **KW** Corporate Capital Costs. Return to Capital. Corporate Taxation.

AB This paper presents evidence about the costs of corporate capital in Japan and the United States for a sample of large companies, and evaluates a variety of hypotheses about why the cost might be lower in Japan. We find that the before-tax return to capital in Japan appears slightly lower than in the United States when corrected book measures of earnings are used, but that this result would be reversed if market returns to Japanese equity were used in place of corrected earnings to measure the cost of equity. To whatever extent the cost of capital may actually be lower in Japan, we show that this is unlikely to be due either to a lower overall corporate tax burden or the particular tax advantages of corporate borrowing.

PD June 1985. **TI** The Savings of Japanese Households: A Micro Study Based on Data from the National Survey of Family Income and Expenditure, 1974 and 1979. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-21; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 137. **PR** $1.00. **JE** 921. **KW** Savings Behavior. Life-Cycle Theory. Japan.

AB In the study reported in this monograph, it will be shown that the savings behavior of a majority of Japanese households can be described by a modified, less strict life cycle theory, although there obviously is a substantial minority of households who do not fit in the mold of the life cycle theory. We shall describe in this monograph types of characteristics of households which determine whether or not a household behaves in accordance with the life cycle theory, and then try to quantitatively describe the savings behavior of each type of household. When a household is not following the life cycle pattern, we will nevertheless find it useful to begin with the life cycle theory, and describe its behavior as specific deviations from the life cycle pattern.

PD August 1985. **TI** How Much (or Little) Life Cycle is there in Micro Data? Cases of United States and Japan. **AU** Ando, Albert; Kennickell, Arthur. **AA** Ando: Department of Economics, University of Pennsylvania. Kennickell: Board of Governors of the Federal Reserve System. **SR** University of Pennsylvania Econometrics

Discussion Paper: 85-23; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 90. **PR** $1.00. **JE** 229, 921. **KW** Life Cycle Theory. Savings Behavior. Asset Accumulation.

AB Following King and Dicks-Mireaux, we have found somewhat more informally descriptive characterization of the age profile of asset accumulation and decumulation to be more successful than attempts at estimating more formal optimizing models. In this paper, we present a summary of results that we have obtained so far for the United States and for Japan. Somewhat surprisingly, there appears to be only a partial support for the life cycle theory as traditionally perceived in Japan, and even less support in the United States. On the other hand, the behavior we do observe at the micro level seems consistent with the characteristics of aggregate data, thus suggesting that the power of aggregate data to distinguish between the life cycle theory and its alternatives appears to be even weaker than we had previously thought. We begin with a brief review of older historical evidence in the United States. We then present very briefly some of our attempts to utilize more elegant and formal formulations in dealing with the United States data, whose results were mostly disappointing. We conclude with less formal results, both for the United States and for Japan, which we believe are more informative for our purposes. In the process, the nature of sampling procedures generating most available micro data and potential biases introduced by them are shown to be critical, and we consider a number of alternative methods for dealing with them.

Andrews, Donald W. K.

PD August 1985. **TI** A Note on the Unbiasedness of Feasible GLS, Quasi-Maximum Likelihood, Robust Adaptive, and Spectral Estimators of the Linear Model. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 734R; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 30. **PR** No Charge. **JE** 211. **KW** Unbiasedness. Linear Model. Parameter Estimators.

AB This note presents a set of conditions on the defining functions of regression parameter estimators of the linear model. These conditions guarantee that the estimators are symmetrically distributed about the true parameter value, and hence are median unbiased, provided the conditional distribution of the vector of errors is symmetric given the matrix of regressors. The symmetry result holds even if the regression parameters are subject to linear restrictions. If the estimators possess one or more moments, then the symmetry result also implies mean unbiasedness. Similar conditions are provided that establish the property of origin (or shift) equivariance for the estimators. Common feasible GLS, quasi-ML, robust, adaptive, and spectral estimators are seen easily to satisfy the requisite conditions.

PD September 1985. **TI** Random Cell Chi-Square Diagnostic Tests for Econometric Models: II. Theory. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 763; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 63. **PR** No Charge. **JE** 211, 212. **KW** Specification Test. Goodness-of-Fit Test. Chi-Square.

AB This paper and its forerunner, Andrews '4, extend the Pearson chi-square testing method to non-dynamic parametric econometric models, in particular, to models with covariates. Andrews '4 introduces the test and discusses a wide variety of applications. The present paper establishes the asymptotic distribution of the test statistic under the null and local alternatives, and derives conditions for consistency and complete consistency of the test. These results are attained by extending recent probabilistic results for the weak convergence of empirical processes indexed by sets. The chi-square test that is introduced can be used to test goodness-of-fit of a parametric model, as well as to test particular aspects of the parametric model that are of interest. In the event of rejection of the null hypothesis, the test provides information concerning the direction of departure from the null.

PD September 1985. **TI** Random Cell Chi-Square Diagnostic Tests for Econometric Models: Introduction and Application. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 762; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 60. **PR** No Charge. **JE** 211, 212. **KW** Specification Test. Goodness-of-Fit Test. Chi-Square Testing Method.

AB This paper and its sequel, Andrews '4, extend the Pearson chi-square testing method to non-dynamic parametric econometric models, in particular, models with covariates. The present paper introduces the test and discusses a wide variety of applications. Andrews '4 establishes the asymptotic properties of the test, by extending recent probabilistic results for the weak convergence of empirical processes indexed by sets. The chi-square test that is introduced can be used to test goodness-of-fit of a parametric model, as well as to test particular aspects of the parametric model that are of interest. In the event of rejection of the null hypothesis of correct specification, the test provides information concerning the direction of departure from the null. The results allow for estimation of the parameters of the model by quite general methods. The cells used to construct the test statistic may be random and can be specified in a general form.

PD September 1985. **TI** Asymptotic Results for Estimators of Moore-Penrose Inverted Matrices and for Generalized Wald Tests. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 761; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 11. **PR** No Charge. **JE** 211. **KW** G-Inverse Quadratic Form. Moore-Penrose Inverse.

AB This note presents (i) necessary and sufficient conditions for the consistency of estimators of Moore-Penrose inverted matrices, and (ii) sufficient conditions for convergence to a chi-square distribution of quadratic forms based on g-inverted weighting matrices. The latter results are needed to establish asymptotic significance levels and local power properties of generalized Wald tests (i.e., Wald tests with singular covariance matrices). Included in this class of tests are Hausman specification tests and various goodness of fit tests, among others. The results are relevant to procedures currently in the literature, since they illustrate that some results stated in the literature hold only under more restrictive assumptions than those given.

Arnott, Richard J.

PD March 5, 1986. **TI** The Welfare Economics of Moral Hazard. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 635; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 50. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 026, 024. **KW** Welfare Economics. Moral Hazard.

AB This paper shows that, except in certain limiting cases, competitive equilibrium with moral hazard is constrained inefficient. The first section compares the competitive equilibrium and the constrained social optimum in a fairly general model, and identifies six types of market failure. Each of the subsequent sections focuses on a particular market failure.

Ashenfelter, Orley

PD February 1986. **TI** Why Have Unemployment Rates in Canada and the United States Diverged? **AU** Ashenfelter, Orley; Card, David. **AA** Department of Economics, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1840; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 30. **PR** $2.00. **JE** 123, 824. **KW** Unemployment Rates. Regulatory Rigidity. Minimum Wages. Unemployment Insurance. Unionization.

AB Throughout the post-war period, United States and Canadian unemployment rates moved in tandem, but this historical link apparently ended in 1982. During the past three years, Canadian unemployment rates have been some three percentage points higher than their United States analogues, and this gap shows no sign of diminishing. This paper is an empirical evaluation of a variety of explanations for this new unemployment gap. We first show that the demographic and industrial composition of the two countries is remarkably similar, so that no simple mechanical hypothesis explains the basic puzzle. It is also evident that the increase in Canadian unemployment relative to United States unemployment cannot be fully attributed to output movements. We find that the gap between actual and predicted Canadian output, based on United States output, has fallen dramatically since 1982 while the unemployment gap has widened. We also find that unemployment in Canada was 2 to 3 percentage points higher in 1983 and 1984 than predicted by Canadian output. We have investigated a variety of hypotheses to explain the slow growth of employment in Canada after 1982. These hypotheses attribute the slow growth of employment to rigidities in the labor market that raise employers' costs and restrict the flow of workers between sectors. The evidence does not support the notion that the growth in relative unemployment in Canada is due to differences in the regulation of the labor market in the two countries. Minimum wage laws and unemployment benefits are fairly similar in Canada and the United States, and neither has changed relative to the other in the last decade. Unionization rates have increased in Canada relative to United States since 1970. Most of this divergence occured before 1980, however, and does not seem to have created an unemployment gap prior to 1980. Finally, the hypothesis that differential real wage rates are a major determinant of relative employment in the United States and Canada is soundly rejected by the data. Real wage rates have been essentially uncorrelated with employment movements within each country and between the two countries.

Ashley, Richard

PD August 1984. **TI** Shrinkage Estimators with General Loss Functions: An Application of Stochastic Dominance Theory. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E84-08-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 29. **PR** No Charge. **JE** 211. **KW** Shrinkage Estimator. Loss Function.

AB If the loss function is squared error, the shrinkage estimator of an unbiased point estimator b is optimal in that it minimizes the expected loss. Such optimal shrinkage estimators would be more widely used were it not for the fact that the squared error loss function assumption is obviously quite arbitrary. Here stochastic dominance theory is used to analyze shrinkage estimators over two non-arbitrary classes of loss functions: the class of all loss functions which are non-decreasing in error magnitude and the class of all loss functions which are, in addition, convex. Asymmetric loss functions are considered also. Analytic results are obtained for general b distributions which are symmetrically truncated; these provide insight into the role played by the tails of the distribution in the inadmissibility of the unbiased estimator, b. Numerical results are obtained for symmetric loss functions and gaussian b. Minimum MSE estimation techniques are approximately valid over a far wider class of loss functions than the squared error loss function. An illustrative application to recent macroeconomic forecasts is given.

PD December 1985. **TI** Linear Versus Nonlinear Macroeconomies: A Statistical Test. **AU** Ashley, Richard; Patterson, Douglas. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-12-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 24. **PR** No Charge. **JE** 023. **KW** Linear Stochastic Dynamics. Nonlinear Deterministic Dynamics. Stock Market Index. Industrial Production Index.

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

Asikoglu, Yaman

PD March 11, 1986. **TI** Macroeconomic Interdependence and Policy Coordination Between Europe and the United States: A Game-Theoretical Approach. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 631; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 55. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 423, 023. **KW** Macroeconomic Interdependence. Policy Coordination. Cooperative Equilibrium. Noncooperative Equilibrium. Monetary-Fiscal Policy Mix.

AB The purpose of this paper is to analyze the nature of macroeconomic interdependence between the United States and the E.E.C. countries, and to examine the implications of the cooperative and noncooperative approaches to formulating domestic monetary and fiscal policies. There is considerable evidence that labor markets in the United States and Europe behave differently: while nominal wages are sticky in the United States, real wages are sticky in Europe. In contrast to the existing studies, which model Europe and the United States symmetrically, we emphasize the asymmetries in the labor markets and explore their implications for interdependence and policy coordination. Another difference of this paper from the existing literature is that it considers the cases where both monetary and fiscal policies are used as strategy variables in addition to the cases where either of them is used. This extension enables us to discuss, game theoretically, the consequences of different monetary-fiscal policy mixes adopted by each economy, and to demonstrate that the incentives of both parties to cooperate depend on the policy instrument(s) chosen as the strategy variable(s). Finally, we suggest some rules of the international policy game that help move the noncooperative equilibrium closer to the cooperative outcome.

Atkinson, Anthony B.

PD February 1985. **TI** Social Security, Taxation and the Working Population Over the Next Ten Years. **AA** Suntory Toyota/International Centre for Economics and Related Disciplines, London School of Economics and Political Science. **SR** London School of Economics Suntory Toyota International Centre for Economics and Related Disciplines ESRC Programme Discussion Paper: 81; Suntory Toyota International Centre for Economics and Related Disciplines, London School of Economics and Political Science, 10 Portugal Street, London WC2A 2HD. **PG** 52. **PR** No Charge. **JE** 915. **KW** Social Security. Taxation. Welfare State.

AB The British Government presents the medium-term future of the welfare state as a straight choice between higher benefits and lower taxes. This paper argues that this is an over-simplification and examines in detail some of the various options for changes in tax and benefit policy. It is particularly concerned with the impact on working families, investigating the effects on net incomes and marginal rates of tax. The overall distribution is studied, as is that within the family.

Auerbach, Alan

PD January 1986. **TI** Tax Reform, Investment, and the Value of the Firm. **AU** Auerbach, Alan; 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: 1803; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 54. **PR** $2.00. **JE** 522, 323. **KW** Corporate Asset Taxation. Investment. Tax Reforms.

AB The taxation of corporate assets is well understood to influence investment and firm valuation. This paper explores the consequences of postwar United States tax changes in a dynamic model which incorporates costs of adjustment and investor expectations of future tax reforms and macroeconomic variability. When viewed in a dynamic context, the tax code can have very different incentives than those implied by the usual static analysis. Simulation results suggest that investment is sensitive to future tax changes and business-cycle movements. The paper also illustrates the implications of this analysis for the design of tax reforms.

Averbach, Alan

TI The Corporate Cost of Capital in Japan and the United States: A Comparison. **AU** Ando, Albert; Averbach, Alan.

Baldwin, Robert E.

PD January 1986. **TI** The New Protectionism: A Response to Shifts in National Economic Power. **AA** Department of Economics, University of Wisconsin at Madison. **SR** National Bureau of Economic Research Working Paper: 1823; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 30. **PR** $2.00. **JE** 422, 421. **KW** Protectionism. Trade.

AB The new protectionism threatening the international trading regime is related to significant structural changes in world production that have brought about a decline in the dominant economic position of the United States, a concomitant rise of the European Community and Japan to international economic prominence, and the emergence of a highly competitive group of newly industrializing countries. For the United States, the adjustment process has been difficult. Government and business leaders have gradually adopted the view that unfair foreign trading practices are the main cause of the country's competitive problems. By focussing on a more vigorous enforcement of United States statutes and GATT rules on fair trade, they are able to press for import protection and still maintain that they support the type of open trading regime the United States did so much to establish after World War II. While it is possible that particular protectionism will continue to spread and lead to an essentially closed international trading order, a more sanguine outcome, supported of the three major trading powers, seems possible. This is the emergence of a regime characterized by more trade-distorting government interventions than at the height of American hegemonic influence and by the existence of a significant group of industries receiving government assistance. However, while new industries will be added to this group, assistance will be withdrawn from others as they lose political influence so that on balance the list need not increase over time or, if it does, only very slowly. Such a regime will not yield the growth and efficiency benefits of an open trading system, but at least it will not lead to the disasterous economic and political consequences brought about by the trading order that prevailed in the 1930's.

Banks, Jeffrey S.

PD March 1986. **TI** An Experimental Analysis of Public Goods Provision Mechanisms with and without Unanimity. **AU** Banks, Jeffrey S.; Plott, Charles R.; Porter, David P. **AA** Plott and Banks: California Institute of Technology. Porter: Jet Propulsion Laboratory. **SR** Caltech Social Science Working Paper: 595; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 57. **PR** No Charge. **JE** 022, 024. **KW** Public Goods Mechanisms. Experimental Analysis. Unanimity.

AB The paper reports on an experimental investigation of four methods of allocating public goods. The two basic processes studied are direct contribution and a public goods auction process. Both of these processes are studied with and without an additional unanimity feature. The results suggest that the auction process outperforms direct contribution. The effect of unanimity is to decrease the efficiency of both processes. Much of the paper is focused on an analysis of these results.

PD March 7, 1986. **TI** Endogenous Agenda Formation in Three-Person Committees. **AU** Banks, Jeffrey S.; Gasmi, Farid. **AA** Division of Humanities and Social Sciences, California Institute of Technology. **SR** Caltech Social Science Working Paper: 603; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 30. **PR** No Charge. **JE** 025, 026. **KW** Endogenous Agendas. Stackelberg Equilibrium.

AB This paper analyzes a 3-person voting game in which two or three players have the ability to choose alternatives to be considered. Once the set of possible alternatives and the structure of the voting procedure are known, the players can solve for the outcome. Thus, the actual choice over outcomes takes place in the choice of alternatives to be voted on, i.e., the agenda. An equilibrium to this agenda-formation game is shown to exist under different assumptions about the information relative to the order of the players in the voting game. Further, this equilibrium is computed and found to possess certain features which are attractive from a normative point of view.

Baron, David P.

PD August 1984. **TI** Regulation, Asymmetric Information, and Auditing. **AU** Baron, David P.; Besanko, David. **AA** Bell Communications Research, Incorporated. **SR** Bell Communications Research Economics Discussion Paper: 5; Room 2Q-338, Bell Communications Research Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PR** No Charge. **JE** 613. **KW** Regulation. Regulator Auditing Strategy.

AB This paper analyzes a model of a regulated firm that is better informed about its cost function than is the regulator. By auditing at a cost, however, the regulator is assumed to be able to observe the realized cost of the firm. If the regulator "finds" that the firm had misrepresented its costs at the time at which prices were set, it can order a refund to consumers. In the optimal policy the regulator audits when the firm reports for pricing purposes that its costs will be high and orders a refund when the audit finds that realized costs are lower than anticipated given the original report. For an important case, a separation result obtains indicating that the initial pricing decision is independent of the auditing decision. The auditing decision, however, depends on the price that was initially set. The optimal auditing strategy is characterized and the nature of the welfare gains are identified. The methodology used in the analysis involves the characterization of an equilibrium of a revelation game with an ex post observable.

Basu, Parantap

PD December 1985. **TI** An Adjustment Cost Model of Asset Pricing. **AA** Department of Economics, University of California, Santa Barbara. **SR** University of California Santa Barbara Working Paper in Economics: 262; Department of Economics, University of California Santa Barbara, Santa Barbara, CA 93106. **PG** 16. **PR** No Charge. **JE** 313. **KW** Asset Pricing. Adjustment Costs. Risk Premium.

AB The effect of adjustment cost on important financial variables is examined within a dynamic general equilibrium model involving a representative agent. The results highlight the role of adjustment cost in causing an intertemporal substitution in consumption which determines in an important way the prices of risky assets, real interest rates and risk premia.

Baumgardner, James R.

PD February 1986. **TI** Physician's Services and the Division of Labor across Local Markets. **AA** Department of Economics, Duke University. **SR** Duke Working Papers in Economics: 86-09; Working Papers Series, Department of Economics, Duke University, Durham, NC 27706. **PG** 70. **PR** No Charge. **JE** 913, 812, 821. **KW** Physicians. Division of Labor. Specialization.

AB This paper reports empirical evidence of systematic cross-locale variation in the degree of division of labor among physicians. A theoretical model -- based on an individual producer's tradeoff between increasing returns and falling marginal revenue within each activity -- motivates the empirical tests. At two levels of aggregation, specialization is correlated with local demand shifters for medical services. At the individual level, we find systematic differences in the range of procedures performed within specialty classes. General practitioners working fewer hours, practicing in more populated counties, or practicing in more elderly counties produce a narrower range of procedures.

Beckerman, Wilfred

PD April 1986. **TI** Disaggregative Versus Aggregative Wage Equations. **AU** Beckerman, Wilfred; Jenkinson, Tim. **AA** Beckerman: Balliol College, Oxford. Jenkinson: Merton College, Oxford. **SR** Oxford Applied

Economics Discussion Paper: 5; Institute of Economics and Statistics, Saint Cross Building, Manor Road, Oxford OX1 3UL, ENGLAND. **PG** 24. **PR** No Charge. **JE** 824, 134. **KW** Wages. Disaggregation. Manufacturing Industry. Inflation.

AB This is a follow-up to an earlier article (Economic Journal, March 1986) showing that most of the inflation slowdown 1980-82 in the OECD countries should be attributed to falling commodity prices, and that rising unemployment had little direct impact on wage inflation. This result was obtained, however, using aggregative national data for wages, unemployment and other relevant variables. It is now found that a highly significant relationship between unemployment and real wages is found at the disaggregative level in Britain, and that whilst this is consistent with the absence of any impact of unemployment on aggregative real wages, it must imply, theoretically, an impact on aggregative nominal wages. Various possible reasons are put forward to explain why the estimation of the unemployment-nominal wage relationship with aggregate data is a hit-or-miss affair and why even when apparently significant results are obtained the coefficients are unstable. In addition to the particular result in question, it is suggested that the disaggregative approach may constitute a method of circumventing otherwise insuperable collinearity that may be applicable in other areas.

Behrman, Jere R.

PD February 1985. **TI** Birth Order, Schooling, and Earnings. **AU** Behrman, Jere R.; Taubman, Paul. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-30; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 22. **PR** $1.00. **JE** 851, 912, 824. **KW** Birth Order. Earnings Possibility Frontier. Schooling.

AB Birth-order effects are posited by many to affect earnings and schooling. We show how such effects can be interpreted to shift either the earnings possibility frontier for siblings or parental preferences. We find empirical evidence for birth-order impacts on (age-adjusted) schooling and on earnings for young United States adults, though the latter is not robust for all specifications. The examination of intrahousehold allocations suggests that these birth-order differences occur despite parental preferences or prices by birth order favoring later born, apparently because of stronger endowment effects that favor the first-born.

PD March 1985. **TI** Equity Versus Productivity in the Supply of Public Services. **AU** Behrman, Jere R.; Craig, Steven G. **AA** Behrman: Department of Economics, University of Pennsylvania. Craig: Department of Economics, University of Houston. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-31; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 32. **PR** $1.00. **JE** 324. **KW** Local Government Choice. Local Public Sector. Public Service Distribution.

AB This paper develops and tests a methodology for examining the distribution of a publicly-provided good within a local jurisdiction, thus extending and operationalizing the local government choice framework first suggested, to our knowledge, by Carl S. Shoup. The distribution of goods provided by the local public sector traditionally has been ignored in most models of local government behavior. But casual observation suggests that the distribution of public services may be as important as the level of aggregate city expenditure to the city decision makers. This study of public service distribution yields important new insights into the activity of the local public sector.

PD July 1985. **TI** A Comparison and Testing of Two Fertile Ideas. **AU** Behrman, Jere R.; Taubman, Paul. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-32; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 22. **PR** $1.00. **JE** 841, 851. **KW** Economics of Fertility.

AB The two most important recent strands in the economics of fertility have been developed by Becker and Easterlin. Becker earlier emphasized changing shadow prices for child quantity and quality and, more recently, intergenerational serially-correlated endowments, all with given preferences. Easterlin has focused on endogenous intergenerational preferences. Some demographers have suggested that the Becker and Easterlin approaches are converging and may not be identified from each other. We demonstrate that while the Becker endowment and Easterlin taste models can be expressed in terms of the same variables, it is possible to identify statistically each of the models because of (1) different restrictions on coefficients in a single-equation, two-generation model and (2) different signs in a latent variable system that uses information from individuals, siblings, and cousins. Becker's model does better in the first test, but Easterlin's does better in the second.

PD August 1985. **TI** Do Parents Favor Boys?. **AU** Behrman, Jere R.; Pollak, Robert A.; Taubman, Paul. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-33; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 37. **PR** $1.00. **JE** 851, 841. **KW** Parental Human Capital Investments.

AB The Behrman-Pollak-Taubman preference model of parental human capital investments in their children is generalized to incorporate the expected earnings of the child's spouse as well as the child's own earnings. Using a new data set on families with both female and male adult siblings, this paper investigates whether parental preferences favor girls or favor boys in the sense that they value identical expected outcomes more highly for one sex than the other. It finds that expected spouse earnings and unequal concern significantly improve the BPT model and that parental preferences slightly favor girls.

PD September 1985. **TI** Investments in Schooling in Two Generations in a Developing Country: The Roles of Family Background and School Supply. **AU** Behrman, Jere R.; Wolfe, Barbara L. **AA** Behrman: Department of

Economics, University of Pennsylvania. Wolfe: University of Wisconson, Madison. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-35; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 26. **PR** $1.00. **JE** 912, 121. **KW** Nicaragua. School Supply. Unobserved Family Background. Schooling.
AB Family background and school supply underlie the demand and supply for schooling, but are usually ignored in empirical estimates. These considerations are investigated for two generations in Nicaragua, using unique data on adult sisters and their offspring to identify inter- versus intrafamilial effects and to control for unobserved family background. The results suggest that the standard interpretations are misleading: (1) Unobserved family background and school-supply factors are important in schooling determination. (2) Omission of these factors leads to overestimates of impacts of parental schooling and family size. (3) Both parental schooling and family size primarily represent unobserved family background and school supply in standard estimates.

PD November 1985. **TI** The Equity-Productivity Tradeoff: Public School Resources in Brazil. **AU** Behrman, Jere R.; Birdsall, Nancy. **AA** Behrman: Department of Economics, University of Pennsylvania. Birdsall: The World Bank. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-37; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 25. **PR** $1.00. **JE** 912, 121. **KW** Brazil. Public Resource Allocation. Productivity-Equity Tradeoff.
AB In this paper we model and estimate the equity-productivity tradeoff implicit in the geographical allocation of public resources to primary and secondary schooling in a major developing country, Brazil. While an equity-productivity tradeoff in the allocation over space of schooling resources has been recognized by some, we know of no previous efforts to quantify the nature of this tradeoff. We do so by estimating the critical parameters of the implicit welfare function which governs the allocation of public resources by Brazilian society among its citizens. Our method, which we apply using data across 50 geographical areas in Brazil, provides us with an estimate of the amount of inequality aversion implicit in society's allocation of public resources to schooling across these areas. This estimate suggests that this welfare function is neither utilitarian with a pure productivity concern nor Rawlsian with a pure distributional concern. Instead, there is an important productivity-equity tradeoff, with somewhat more emphasis on productivity than on equity.

PD January 1986. **TI** Imperfect Assortative Mating, Unobserved Human Capital and Earnings Determinants for Brazilian Males. **AU** Behrman, Jere R.; Birdsall, Nancy. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 86-1; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 19. **PR** $1.00. **JE** 851, 824, 912. **KW** Brazil. Assortative Mating on Schooling. Earnings Function.
AB Most earnings function studies focus on the impact of investment in the schooling of an individual on that individual's subsequent own earnings in the tradition of Becker (1975) and Mincer (1974). A few studies using special data on adult siblings or on cognitive abilities have found that control for usually unobserved characteristics leads to a significantly different understanding of the schooling-earnings relation. However most data sets do not have information with which to control for such characteristics. In this paper we propose a simple and easily-constructable (at least for many data sets) representation of some of these usually unobserved individual characteristics: imperfect assortative mating on schooling as represented by the difference between the schooling level that would be expected given the schooling of the individual's spouse and the individual's actual schooling. Many studies emphasize the importance of assortative mating in understanding behavior, with assortative mating on schooling usually most emphasized. Empirically, correlations between schooling levels of spouses are considerable, but less than perfect in many societies. If imperfect assortative mating on schooling is due to random noise, of course, there would be no information useful for earnings function analysis in our proposed variable. If imperfect assortative mating is due partially, however, to schooling being an imperfect indicator of total human capital on which sorting actually is occuring, our proposed variable may add to our understanding of earnings determinants by helping to control for unobserved components of human capital. How important such a control is is an empirical question. Therefore we present some estimates for Brazilian males to illustrate our proposed approach and to investigate its relevance in a particular context.

Bencivenga, Valerie R.

PD August 1985. **TI** Motives for Bilateral OECD Aid to Developing Countries. **AA** Department of Economics, University of California, Santa Barbara. **SR** University of California Santa Barbara Department of Economics Working Papers: 256; Department of Economics, University of California at Santa Barbara, Santa Barbara, CA 93106. **PG** 47. **PR** No Charge. **JE** 443. **KW** Bilateral Foreign Aid. International Aid. OECD.
AB This study analyzes the motives underlying the distribution of bilateral foreign aid by members of the Development Assistance Committee of the OECD to the independent less-developed countries in the 1970's. The model assumes that national foreign aid policy reflects the donor's perceived national interests, and attempts to discern evidence of donor motives in the observed distributions of aid. Possible motives for providing assistance suggest characteristics of LDCs that may have been considered by donors in their choices of recipients and allocations of grants and loans. Four decisions are estimated for each of the DAC donors in each year from 1969 to 1977 (data permitting), using probit and tobit models. Estimated coefficients of the LDC characteristics permit inferences about the importance of development, political, and economic goals in the aid policies of the OECD donors, and how their motives have evolved over time.

PD October 1985. **TI** Explaining the Foreign Aid Policies of the OECD Donors. **AA** Department of Economics, University of California, Santa Barbara.

SR University of California Santa Barbara Department of Economics Working Papers: 257; Department of Economics, University of California at Santa Barbara, Santa Barbara, CA 93106. **PG** 65. **PR** No Charge. **JE** 443. **KW** Bilateral Foreign Aid. International Aid. OECD.

AB This study analyzes determinants of the bilateral foreign aid policies of the OECD donors. The econometric model utilizes limited dependent variables within a random coefficients framework. The model assumes that aid policy reflects a donor's perceived national interests, and explains summary measures of aid policy using features of the economy that determine national interests. The summary measures are coefficients of less-developed country characteristics in equations explaining choices of recipients and allocations of aid. The coefficients indicate the importance of development, political, and economic motives for providing aid. The coefficients of the donor characteristics permit inferences about hypotheses connecting features of an industrialized nation with international policy.

Bernanke, Ben

PD February 1986. **TI** Alternative Explanations of the Money-Income Correlation. **AA** Woodrow Wilson School, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1842; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 46. **PR** $2.00. **JE** 131, 310. **KW** Price Shocks. Financial Market Imperfections. Real Business Cycle. Money-Income Relation.

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.

PD February 1986. **TI** Banking and Macroeconomic Equilibrium. **AU** Bernanke, Ben; Gertler, Mark. **AA** Bernanke: Woodrow Wilson School, Princeton University. Gertler: University of Wisconsin-Madison. **SR** Princeton Woodrow Wilson School Discussion Papers in Economics: 108; Woodrow Wilson School, Princeton University, Princeton, NJ 08544. **PG** 32. **PR** No Charge. **JE** 131, 314, 311. **KW** Financial Intermediation. Monetary Policy.

AB The paper attempts to provide a step towards understanding the role of financial intermediaries ("banks") in aggregate economic activity. We first develop a model of the intermediary sector which is highly simplified, but rich enough to motivate several special features of banks. Of particular importance in our model is the assumption that banks are more efficient than the public in evaluating and auditing certain information-intensive loan projects. Banks are also assumed to have private information about their investments, which motivates the heavy reliance of banks on debt rather than equity finance and their need for buffer stock capital. We embed this intermediary sector in a broader macroeconomic framework, which includes consumers and a non-banking investment sector. Mainly because banks have superior access to some investments, factors affecting the size or efficiency of banking will also have an impact on the aggregate economy. Among the factors affecting intermediation, we show, are the adequacy of bank capital, the riskiness of bank investments, and the costs of bank monitoring. We argue that our model is potentially useful for understanding the macroeconomic effects of phenomena such as financial crises, disintermediation, banking regulation, and certain types of monetary policy.

Bernhardt, Dan

TI Multiperiod Wage Contracts and Productivity Profiles. **AU** Timmis, Jerry; Bernhardt, Dan.

PD February 27, 1986. **TI** Money and Loans. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 643; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 45. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 021, 023, 300. **KW** Money. Loans. Time Consistency. Incentive Compatibility.

AB The conditions under which money is essential to support a Pareto optimum, those where loan mechanisms suffice, and those such that both are essential are examined. The economy is characterized by infinitely lived agents who expect to want to trade with each agent infinitely often in the future, but face an immediate temporal absence of a coincidence of wants. Loans and/or money are necessary to facilitate exchange. In a large economy with a limited communication technology, the expected consequences to reneging are insufficient for the repayment of the utility maximizing level of loans to be time consistent. In contrast, redeemability of money is not associated with a particular agent so money has no time consistency problems. Consequently, in large economies money is essential. If, additionally, individual Clower constraints bind, loans and money are both essential.

Besanko, David

TI Regulation, Asymmetric Information, and Auditing. **AU** Baron, David P.; Besanko, David.

Bevan, D. L.

PD April 1986. **TI** Consequences of a Commodity Boom in a Controlled Economy: Accumulation and Redistribution in Kenya, 1975-83. **AU** Bevan, D. L.; Collier, P.; Gunning, J. W. **AA** Unit for the Study of African Economics, Institute of Economics and Statistics, Oxford. **SR** Oxford Applied Economics Discussion Paper: 6; Institute of Economics and Statistics, Saint Cross Building, Manor Road, Oxford OX1 3UL, ENGLAND. **PG** 43. **PR** No Charge. **JE** 023, 121, 422. **KW** Distribution. Import Controls. Kenya. Dutch

Disease. Income Transfers.
AB The coffee boom of 1976-79 provided Kenya with a large temporary windfall. Even in an unregulated economy the resulting extra capital formation out of transient income would have temporarily raised the relative price of domestically produced capital goods, generating income transfers. In fact, the choices of Kenyan agents were constrained by controls over asset markets and imports, and a theory is developed of how these controls distort asset choices and amplify income transfers. Using both National Accounts data and a CGE simulation model the asset formation and distributional consequence of the boom are explored for the period 1975-83.

Bhagwati, Jagdish N.

PD 1985. **TI** Trade in Services and Developing Countries. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 307; Department of Economics, Columbia University, New York, NY 10027. **PG** 64. **PR** $5.00. **JE** 020, 635. **KW** Services. Tradeable Goods. Trade in Services.
AB It is useful, as a point of departure for my main theme, to reflect more closely on why services have been traditionally regarded as synonymous with nontraded goods. Such an exercise serves to throw light on the reasons why trade in services, as distinct from goods, poses new and difficult problems. I shall take this opportunity also to digress at the outset on the empirical and theoretical puzzles and problems that preoccupied economists when they thought of services as nontraded goods, turning later to the shifting concerns that arise now that services are considered tradeable instead.

PD October 1985. **TI** The Global Correspondence Principle: A Generalization. **AU** Bhagwati, Jagdish N.; Brecher, Richard A.; Hatta, Tatsuo. **AA** Bhagwati: Columbia University. Brecher: Carleton University. Hatta: Johns Hopkins University. **SR** Columbia Department of Economics Working Paper: 306; Department of Economics, Columbia University, New York, NY 10027. **PG** 26. **PR** $5.00. **JE** 021. **KW** Global Correspondence Principle. Income Transfer.
AB In this paper, first we shall analyze the global response of price to a shift in any parameter (not necessarily a transfer payment) within the two-good general-equilibrium model. Then, more remarkably, we shall establish that the corresponding responses of also nonprice variables, such as welfare, are qualitatively independent of both the magnitude of adjustment and the question of local stability. This result extends the Global Correspondence Principle to cover variables other than price. The extension enables us to prove that, in a two-agent two-good world, a transfer of income always improves the recipient's welfare -- regardless of whether the initial equilibrium is stable, and irrespective of the magnitude of the transfer. In this way we generalize Samuelson's (1947) well-know proposition that the recipient's welfare improves provided that the initial equilibrium is stable. To take another example, our analysis can also be utilized to show that local stability can be dropped from Bhagwati's (1958) well-known set of conditions for immiserizing growth.

PD March 1986. **TI** Investing Abroad. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 319; Department of Economics, Columbia University, New York, NY 10027. **PG** 50. **PR** $5.00. **JE** 441. **KW** Direct Foreign Investment. Globalization of Economic Activity.
AB Direct foreign investment, or DFI as I shall call it, has grown energetically in the postwar period. The net direct investment outflow from the OECD countries rose fourfold to over $13 billion annually between 1965 and 1980. The stock of DFI abroad, on the other hand, had increased nearly threefold within a decade to over $300 billion by 1980. DFI has also diversified in its sectoral composition over this period, away from the historical preponderance of raw materials and extractive industries, to manufactures and then again, in recent years, to services. The sectoral shifts are manifest particularly in the estimates of the stock of United States DFI in the developing countries: in 1976, only 18 per cent of this total was in extractive industries whereas the share of services had risen to 43 per cent. The resulting "globalization" of economic activity has emerged as an important new reality. It reflects the interplay of "natural" market forces with policy changes, both in developing and developed countries, during the postwar period. Recently, new forces have emerged that serve to invigorate and strenghten these trends towards more DFI and globalization. Important consequences for economic analysis and policymaking are also becoming manifest. These causes and consequences of DFI, in their major outline, are what I propose to address.

Bhargava, Alok

PD September 1984. **TI** Wald Tests and Systems of Stochastic Equations. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-2; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 34. **PR** $1.00. **JE** 211, 921. **KW** Wald Test. Stochastic Equation Systems. Dynamic Earnings Function.
AB This paper derives expressions for the variance covariance matrix of the estimated paramters in the structural form as well as those in the variance matrix of a system of stochastic equations which can be evaluated using the usual likelihood function that has been concentrated with respect to the variance matrix parameters. The results are then extended to the case where the distribution function is possibly misspecified and it is again shown possible to work with the concentrated likelihood function thus enabling the use of robust test procedures in systems of linear simultaneous equations. Finally, the methods are illustrated by the means of an empirical example where we investigate several aspects of the error structure affecting a dynamic earnings function using the Michigan Panel Survey of Income Dynamics.

PD March 1985. **TI** On the Specification of Regression Models in Seasonal Differences. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-3; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 29. **PR** $1.00. **JE** 211, 921. **KW** Seasonal Autocorrelation. Anderson Approximations. Most Powerful Invariant Tests. Durbin-Watson-Wallis Type Bounds Tests. Macroeconometrics. Consumer's Expenditure.

AB This paper considers the null hypothesis that the errors on a regression equation estimated using seasonal data follow a seasonal random walk. Lower and upper bounds are tabulated in the monthly and quarterly data cases for the generalization of the test statistics proposed by Sargan and Bhargava (1983). The case where separate intercept terms are not included in the model are next considered and we advocate the use of some alternative statistics and develop the appropriate bounds tests. Finally, the null hypothesis that the quarterly series of consumers' expenditure in the United Kingdom follows a random walk is investigated in some detail.

Bick, Avi

PD July 1985. **TI** Producing Derivative Assets with Forward Contracts. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 355; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 30. **PR** $2.00. **JE** 313. **KW** Derivative Security. Forward Contract. Arbitrage.

AB This paper shows how a derivative security can be duplicated by a forward strategy, and hence priced by arbitrage in terms of the forward price.

PD July 1985. **TI** Risk-Neutral Valuation in Pricing-By-Arbitrage Models. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 354; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 25. **PR** $2.00. **JE** 313. **KW** Options Pricing. Cox-Ross Argument.

AB A generalized "Cox-Ross argument" is proved and demonstrated.

Biglaiser, Gary

PD April 1986. **TI** Asymmetries in the Labor Market. **AA** University of California San Diego. **SR** University of California at San Diego Department of Economics Discussion Paper: 86-8; Department of Economics, D-008, University of California at San Diego, La Jolla, CA 92093. **PG** 14. **PR** $2.00; checks payable to University of California Regents. **JE** 821, 026. **KW** Asymmetric Information. Labor Market.

AB The purpose of this paper is to develop a framework in which different firms have different (asymmetric) information concerning individual workers' abilities, based on past performances. This model is based on a simplified version of Harris and Holmstrom (1982). Harris and Holmstrom look at a competitive labor market in which all information concerning a worker's ability based on past performances is common knowledge (symmetric information), and characterize equilibrium contracts. They show that a downwardly rigid wage is a feature of an optimal contract. I show that if asymmetric information is introduced into their model, then the downward rigid wage contract is not optimal and the informational asymmetry increases the welfare of workers.

Birdsall, Nancy

TI The Equity-Productivity Tradeoff: Public School Resources in Brazil. **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.

Bloom, David E.

PD February 1986. **TI** Empirical Models of Arbitrator Behavior Under Conventional Arbitration. **AA** Department of Economics, Harvard University. **SR** National Bureau of Economic Research Working Paper: 1841; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 18. **PR** $2.00. **JE** 832. **KW** Arbitration. Arbitrator Behavior. Conventional Arbitration.

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

PD February 1986. **TI** Population Growth, Labor Supply, and Employment in Developing Countries. **AU** Bloom, David E.; Freeman, Richard B. **AA** Department of Economics, Harvard University. **SR** National Bureau of Economic Research Working Paper: 1837; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 71. **PR** $2.00. **JE** 813, 841. **KW** Population Growth. Labor Force. Labor Force Participation Rates.

AB This paper examines the nature and magnitude of the principal effects of population growth on labor supply and employment in the developing economies of the world. On the supply side of labor markets, we discuss key features of the interrelations between population growth and the labor force. These include the lags between population growth and labor force participation; the independent effects on labor supply of accelerated population growth due to changes in fertility, mortality, and migration; patterns and trends in labor force participation rates; and gender differences in labor supply behavior. On the demand side, we describe and analyze the nature of labor markets in developing economies and attempt to identify the key factors that condition their labor absorption capacity. Descriptive statistics on the characteristics of developing country labor markets and on the relationships between population growth, labor supply, employment shifts, and growth of output per worker are presented and discussed. The key result of our analysis is that, despite the unprecedented magnitude of population growth and the existence of imperfections in labor markets, developing economies tended to shift between 1960 and 1980, from low-productivity agriculture to the higher productivity service and industrial sectors and, albeit with some exceptions, to raise real income per capita. With respect to their prospects for the remainder of this century, we also conclude that Malthusian disasters will not necessarily be the result of forecasted population growth, provided the developing economies can generate human and physical capital investments of comparable relative magnitudes to the past two decades. However, on the basis of past history, the middle-income developing countries are likely to perform better in this respect than the low-income countries, some of whom may need considerable help if they are to absorb increased population while shifting labor to more productive sectors and raising output per worker.

PD February 1986. **TI** The "Youth Problem": Age or Generational Crowding. **AU** Bloom, David E.; Freeman, Richard B. **AA** Bloom: Department of Economics, Harvard University. Freeman: National Bureau of Economic Research, Cambridge, MA. **SR** National Bureau of Economic Research Working Paper: 1829; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 66. **PR** $2.00. **JE** 813, 826. **KW** Youth Cohorts. Generational Crowding. Baby-boom.

AB On the basis of a multi-country empirical analysis of patterns of cohort size, earnings, unemployment, and the distribution of young workers across industries, we have four main sets of findings to report. First, the baby-boom was not uniformly experienced across OECD economies in terms of either its timing or magnitude. While some countries, such as Canada, the United States, and Belgium had large increases in the youth share of the population from 1965 to 1980, others, notably Japan and Switzerland, had large decreases. Second, our empirical results indicate that large cohort size tends to have a negative effect on the "expected relative earnings" of the cohort, where expected relative earnings is defined as the product of the earnings and the employment-to-labor force ratio of a young cohort relative to the same product for an older cohort. There is, moreover, a marked trade-off between the relative earnings effect and the relative employment effect with large cohort sizes reducing relative earnings in some countries and reducing relative employment in others. Third, at least for the United States, the relatively low wages and high unemployment of the "unlucky cohorts" tend to converge to the patterns that would have resulted had the cohorts been more "normal" in size, with the convergence occurring within a decade or so. Fourth, our results show that baby-boom cohorts were absorbed in the United States and other OECD economies quite evenly across a wide range of industries. This finding contradicts the popular belief that large youth cohorts were absorbed primarily through expansion of those industries that have been traditionally youth-intensive.

Blundell, Richard

PD September 1984. **TI** A Labour Supply Model for the Simulation of Tax and Benefit Reforms. **AU** Blundell, Richard; Meghir, Costas; Symons, Elizabeth; Walker, Ian. **AA** Blundell and Meghir: University College London. Symons and Walker: University of Manchester. **SR** University College London Discussion Paper: 84-13; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 52. **PR** No Charge. **JE** 323, 813, 821. **KW** Labor Supply Model. United Kingdom Tax Reform.

AB The aim of this paper has been to develop a model of labour supply for the analysis of reforms to the United Kingdom tax/benefit system. In order to illustrate the importance of allowing for the behavioural effects of tax reforms we consider the effects of four tax reforms on the behaviour of six hypothetical households. Despite the relatively conservative elasticities found in estimation, the discrete changes caused by the reforms result in often sizeable labour responses. These in turn imply that the changes in net incomes resulting from the reforms are typically rather different from what one would have calculated had one not allowed for behavioural responses. The individual welfare changes are found to be bounded below by the net income change holding labour supply constant and can be significantly higher. Thus, the problem that a fixed labour supply simulation tends to underestimate the gains and overstate the losses could be significant.

TI An Exogeneity Test for a Simultaneous Equation Tobit Model With an Application to Labour Supply. **AU** Smith, Richard J.; Blundell, Richard.

PD March 1985. **TI** Alternative Specifications of Labour Supply and the Simulation of Tax Reforms. **AU** Blundell, Richard; Meghir, Costas; Symons, Elizabeth; Walker, Ian. **AA** Blundell and Meghir: University College London. Symons and Walker: University of Manchester. **SR** University College London Discussion Paper: 85-07; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 31. **PR** No Charge. **JE** 813, 323. **KW** Tax Benefit Reforms. Labor Supply. Welfare Effects.

AB This paper outlines the working of a general routine for simulating the labour supply and welfare effects of tax benefit reforms using data for a large sample of households. The sensitivity of two illustrative reforms to the specification of the labour supply are examined. The different specifications relate to differing degrees of flexibility in the substitution effects allowed between goods and time. In particular, a comparison is made between a data coherent non-additive specification and the commonly used additive LES model which is clearly rejected by the data. Even for a rather conservative reform considered here, use of the additive model which severely restricts the shape of the labour supply equation is shown to produce some misleading results. The more radical reform, designed to highlight the model differences, gives more dramatic evidence of the extent to which simple models can mislead. Although the more flexible model increases the complexity of simulation, efficient algorithms are described here that make the use of flexible models in simulation both feasible and clearly worthwhile.

PD March 1985. **TI** Selection Criteria for a Microeconometric Model of Labour Supply. **AU** Blundell, Richard; Meghir, Costas. **AA** University College London. **SR** University College London Discussion Paper: 85-01; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 34. **PR** No Charge. **JE** 824, 229, 813. **KW** Labor Supply Model. Selection Criteria.

AB In this paper we develop a list of selection criteria for the specification of a female labour supply model for micro-data. We look at both economic and statistical criteria in assessing various models paying particular attention to the flexibility of the economic model and the stochastic specification of unobservable factors. Using these criteria a model is selected from a sample of UK FES data.

Bordo, Michael D.

PD January 1986. **TI** Explorations in Monetary History: A Survey of the Literature. **AA** Department of Economics, University of South Carolina. **SR** National Bureau of Economic Research Working Paper: 1821; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 102. **PR** $2.00. **JE** 311, 223, 041. **KW** Monetary History. Great Depression. Neutrality. Monetary Statistics.

AB Monetary economists have long been interested in economic history as a laboratory for the testing of theory. This paper surveys recent work in monetary history within the context of the modern quantity theory of money and the new classical macroeconomics. Topics surveyed include: the development of historical monetary statistics and the determinants of money supply and money demand; historical uses of Granger-Sims causality tests of the relationships between money, prices, and output; historical studies of the secular behavior of velocity; the Great Depression; financial crises; historical evidence for the long-run and short-run neutrality of money; and the domestic and international aspects of monetary standards. The paper concludes with an evaluation and an agenda for future research.

Braid, Ralph M.

PD January 1986. **TI** Optimal Spatial Growth of Employment and Residences. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 310; Department of Economics, Columbia University, New York, NY 10027. **PG** 20. **PR** $5.00. **JE** 931. **KW** Urban Growth. Employment Location Patterns. Residence Location Patterns.

AB This paper examines the location patterns of employment and residences in an urban area characterized by irreversible land use commitments and smoothly growing population. It is assumed that all output is shipped to the center of the urban area and that workers have commuting costs of getting to work. The optimal solution, which is also the equilibrium solution, minimizes the present discounted value of aggregate shipping costs plus commuting costs over time. The residential area expands outwards over time, but a constant fraction of the land is always reserved for future employment development.

PD January 1986. **TI** Retail Competition Along Intersecting Roadways. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 309; Department of Economics, Columbia University, New York, NY 10027. **PG** 15. **PR** $5.00. **JE** 941, 931. **KW** Spatial Retail Competition.

AB This paper examines zero profit equilibrium in spatial retail competition in a rural city located along intersecting roadways. It is shown that all stores charge the same price, except the store at the central intersection, but that the spacing of the stores is highly irregular.

Branson, William H.

PD December 1985. **TI** Expectations and the Recession of 1982. **AU** Branson, William H.; Fraga, Armino; Johnson, Robert A. **AA** Branson and Fraga: Princeton University. Johnson: Board of Governors of the Federal Reserve System. **SR** Board of Governors of the Federal Reserve System International Finance Discussion Papers: 272; Federal Reserve Board, 20th and C Streets, N.W., Washington, D.C. 20551. **PG** 57. **PR** No Charge. **JE** 431, 023, 321. **KW** Exchange Rate. Open Economy Macroeconomics. Fiscal Policy. Economic Recovery Tax Act. Recession. Anticipatory Recession.

AB The Economic Recovery Tax Act of 1981 provides a clear example of an announced change in macroeconomic policy. This paper argues that forward looking asset markets anticipated the accumulation of government bonds, the rise of real interest rates, and the rise in the foreign exchange value of the dollar that would result from the expected future fiscal deficits. The resulting jump in interest rates and the exchange rate in turn produced an 'anticipatory recession' in late 1981 and 1982 in interest sensitive sectors and later, both export and import competing sectors where depressed prior to the onset of fiscal stimulus.

Brecher, Richard A.

TI The Global Correspondence Principle: A Generalization. **AU** Bhagwati, Jagdish N.; Brecher, Richard A.; Hatta, Tatsuo.

Brenner, Menachem

PD July 1985. **TI** Ex-dividend and Dividend Announcement Effects in the Stock Returns of Firms Initiating Dividend Payments. **AU** Brenner, Menachem; Penman, Stephen H. **AA** Brenner: Hebrew University. Penman: University of California, Berkeley. **SR** New York University Salomon Brothers Center Working Paper: 356; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 33. **PR** $2.00. **JE** 313. **KW** Dividends. Stock Returns. Ex-Dividend Effects.

AB This paper investigates the stock returns of firms paying dividends for the first time in order to ascertain whether dividend payments are associated with mean return premiums. By comparing returns before and after the initial dividend payment we are able to assess whether dividend premia are provided by the market only in periods when stocks go ex-dividend or are realized over longer periods of time outside ex-dividend periods. By using weekly returns we are able to control for information effects while examining ex-dividend effects. These are issues raised in the recent controversy between Miller and Scholes and Litzenberger and Ramaswamy.

Brown, Bryan W.

TI Measures of Deterministic Bias in Nonlinear Simultaneous Systems. **AU** Mariano, Roberto S.; Brown, Bryan W.

PD April 1985. **TI** Asymptotic Behavior of Predictors in Dynamic Nonlinear Simultaneous Systems. **AU** Brown, Bryan W.; Mariano, Roberto S. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-4; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 27. **PR** $1.00. **JE** 211. **KW** Dynamic Nonlinear Simultaneous Systems. Asymptotic Properties. Predictors. Deterministic Predictors.

AB The behavior of one-period-ahead and multi-period-ahead predictors for a dynamic nonlinear simultaneous system are examined in this paper. Conditional on past endogenous information used in the predictions, the large-sample asymptotic behavior of the deterministic, closed-form, Monte Carlo stochastic, and the residual-based predictors is analyzed. Asymptotic expansions akin to those used for static nonlinear systems are developed and lead to findings which parallel results obtained earlier for the static case. The deterministic predictor in a nonlinear dynamic model is asymptotically biased while the other predictors mentioned above are asymptotically unbiased. The Monte Carlo and residual-based predictors are both inefficient relative to the (infeasible) closed-form predictor but the inefficiency of the Monte Carlo procedure can be made arbitrarily small with sufficiently numerous replications. For one-period-ahead prediction the residual-based predictor is asymptotically efficient relative to the Monte Carlo, as in the static case, when the number of sample period residuals exceeds the number of Monte Carlo replications. For m-period-ahead prediction a similar result holds, except that the effective number of sample period residuals available for use with the residual-based predictor is T/m where T denotes sample size. Thus, unless modified, the residual-based predictor will suffer a deterioration in precision as the forecast horizon is increased. A sampling experiment is conducted to examine the relative small sample performance of the predictors. With few exceptions, the small sample behavior concurs with the asymptotic results.

TI Reduced Variance Prediction in Nonlinear Simultaneous Systems. **AU** Mariano, Roberto S.; Brown, Bryan W.

TI Finite-Sample Properties of Predictors in Nonlinear Systems: Some Initial Results. **AU** Mariano, Roberto S.; Brown, Bryan W.

TI Stochastic Prediction in Dynamic Nonlinear Econometric Systems. **AU** Mariano, Roberto S.; Brown, Bryan W.

Brown, D. J.

TI Edgeworth Equilibria in Production Economies. **AU** Aliprantis, C. D.; Brown, D. J.; Burkinshaw, O.

Bruno, Michael

PD January 1986. **TI** Generating a Sharp Disinflation: Israel 1985. **AA** Maurice Falk Institute, The Hebrew University of Jerusalem. **SR** National Bureau of Economic Research Working Paper: 1822; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 47. **PR** $2.00. **JE** 134, 122, 133. **KW** Israel. Disinflation. Stabilization.

AB On July 1 the Israeli government adopted a comprehensive emergency program for stabilization and recovery which has had dramatic consequences, at least in the very short-run. Within a few months inflation was down to 1-2 percent a month, foreign exchange reserves were rising rapidly and in spite of rather harsh contractionary fiscal and monetary policy measures average unemployment did not rise by more than 2 percentage points above the pre-July level. This paper deals with the background to the acute crisis of the Israeli economy and the conceptual underpinnings of the stabilization plan and with the first six months of its implementation. Apart from the more conventional fiscal and monetary policy measures, with partial deindexation, special emphasis is put on stabilization of the exchange rate, as a central nominal anchor for the price system, along with a wage policy package. Further budget restraint as well as wage moderation are considered the key for continued success of the stabilization effort. Both of these conditions will be tested in the new fiscal year starting April 1986.

Buiter, Willem H.

PD February 1986. **TI** Borrowing to Defend the Exchange Rate and the Timing and Magnitude of Speculative Attacks. **AA** Department of Economics, Yale University. **SR** National Bureau of Economic Research Working Paper: 1844; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 33. **PR** $2.00. **JE** 431. **KW** Exchange Rate Regime. Collapsing Managed Exchange Rate Regime. Foreign Exchange Reserves. Borrowing. Bond Sale. Speculative Attacks.

AB The paper extends the recent literature on collapsing managed exchange rate regimes by allowing explicitly for the government budget constraint and the interest cost of servicing the public debt. The policy experiment that is analysed is the decision by a government to replenish its stock of foreign exchange reserve through a once-off open market sale of bonds. Without a fundamental fiscal correction (i.e. a decision to reduce the primary (non-interest) deficit by an amount equal to the increase in the interest cost of servicing the debt) the consequences are as follows. In a deterministic model, the timing of the speculative attack is brought forward (delayed) if the borrowing takes place long before (close to) the date at which without borrowing the collapse would have occurred. The magnitude of the attack (the final loss of reserves) always increases because of borrowing. In a stochastic model, borrowing reduces the probability of an early collapse and increases the likelihood of a later collapse. Under mild conditions, the expected length of the time interval until the collapse occurs is increased by borrowing.

PD February 1986. **TI** Macroeconomic Responses by Developing Countries to Changes in External Economic Conditions. **AA** Department of Economics, Yale University. **SR** National Bureau of Economic Research Working Paper: 1836; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 56. **PR** $2.00. **JE** 023, 132, 122. **KW** Stabilization Policies. Developing Countries. Macro Policy.

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.

Burgelman, Robert A.

PD March 17, 1986. **TI** An Evolutionary Perspective on Strategy-Making in Organizations: Theory, Comparative Analysis, Research Directions. **AA** Graduate School of Business, Stanford University. **SR** Stanford Graduate School of Business Research Paper: 876; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. **PG** 54. **PR** No Charge. **JE** 511. **KW** Firm Evolution. Strategy. Strategic Behavior. Strategic Management.

AB This paper proposes that the strategic process in large, diversified organizations constitutes an internalized and contrived evolutionary mechanism nested in the external environmental context. The paper elaborates this argument and shows how it allows to integrate strategic management with organizational ecological theory and with other major paradigms in organization theory. Considering the direct and intervening effects of the environmental context on the strategic process, the paper suggests that inertia, adaptation, renewal, and transformation are the result of both environmental determinism and strategic choice and that different parts of the strategic process deal with environmental determinism and strategic choice. From the evolutionary perspective presented here, there is no real paradox in the view that old organizations are both more likely to manifest strategic and structural inertia and to have higher probabilities of survival. The comparative analysis of the evolutionary model presented in this paper and of the one proposed by Japanese theorists suggests that the distinction between induced and autonomous parts in the strategic process allows to clarify further the strong adaptive orientations of Japanese strategy-making and to examine its capacity to manage increasing pressurs for strategic renewal. More research would be useful to establish the magnitude of various rates associated with the internal evolutionary mechanisms determining an organization's capacities for adaptation and renewal. The capacity for strategic renewal seems least well understood in the current organizational literature and would benefit most from efforts to elucidate the functioning of experimentation-and-selection processes internal to the organization.

Burkinshaw, O.

TI Edgeworth Equilibria in Production Economies. **AU** Aliprantis, C. D.; Brown, D. J.; Burkinshaw, O.

Calvo, Guillermo A.

PD March 1985. **TI** Optimal Time-Consistent Fiscal Policy with Uncertain Lifetimes. **AU** Calvo, Guillermo A.; Obstfeld, Maurice. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 282; Department of Economics, Columbia University, New York, NY 10027. **PG** 28. **PR** $5.00. **JE** 321, 024, 111. **KW** Fiscal Policy. Social Preferences. Optimal Fiscal Policy.

AB This paper studies optimal fiscal policy in an economy where heterogeneous agents with uncertain lifetimes coexist. We show that some plausible social welfare functions lead to time-inconsistent optimal plans, and we suggest restrictions on social preferences that avoid the problem. The normative prescriptions of a time-consistent utilitarian planner generalize the "two-part Golden Rule" suggested by Samuelson, and imply aggregate dynamics similar to those arising in the Cass-Koopmans-Ramsey optimal growth framework. We characterize lump-sum transfer schemes that allow the optimal allocation to be decentralized as the competitive equilibrium of an economy with actuarially fair annuities. The lump-sum transfers that accomplish this decentralization are age dependent in general.

Campbell, John Y.

PD January 1986. **TI** Money Announcements, the Demand for Bank Reserves and the Behavior of the Federal Funds Rate Within the Statement Week. **AA** Department of Economics, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1806; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 20. **PR** $2.00. **JE** 311, 313. **KW** Federal Funds Rate. Aggregate Reserve Demand Announcements. Aggregate Information Hypothesis.

AB The effect of money stock announcements on the

Federal funds rate has been attributed informally to the information conveyed by the announcements about aggregate reserve demand. This "Aggregate Information Hypothesis" explains the effect without reference to Federal Reserve intervention in the funds market. In this paper I provide a formal model of the Aggregate Information Hypothesis under lagged reserve accounting. The model relies on imperfect information in the funds market, and on imperfect bank arbitrage of reserve demand between days of the week. Some stylized facts are presented about funds rate behavior in the period 1980-1983.

PD January 1986. **TI** Does Saving Anticipate Declining Labor Income? An Alternative Test of the Permanent Income Hypothesis. **AA** Department of Economics, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1805; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 40. **PR** $2.00. **JE** 824. **KW** Saving. Permanent Income Hypothesis.
AB The permanent income hypothesis implies that people save because they rationally expect their labor income to decline; they save "for a rainy day". It follows that saving should be at least as good a predictor of declines in labor income as any other forecast that can be constructed from publicly available information. The paper tests this hitherto ignored implication of the permanent income hypothesis, using quarterly aggregate data for the period 1953-84 in the United States. A vector autoregression for saving and changes in labor income is used to generate an unrestricted forecast of declines in labor income. In the VAR, saving Granger causes labor income changes as one would expect if the Permanent Income Hypothesis is true. The mean of the unrestricted forecast is far from the mean of saving, but the dynamics of the two series are quite similar. The paper presents both formal test statistics and an informal evaluation of the "fit" of the permanent income hypothesis. By contrast with most of the recent literature, the results here are valid when income is nonstationary.

Card, David

PD February 1986. **TI** The Impact of Deregulation on the Employment and Wages of Airline Mechanics. **AA** Department of Economics, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1847; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 26. **PR** $2.00. **JE** 613, 824, 615, 635. **KW** Airline Mechanics. Deregulation.
AB This paper describes the effects of deregulation on negotiated wage rates and employment levels of aircraft mechanics in the scheduled airline industry. Firm-specific data for the incumbent trunk airlines show relatively small changes in real wage rates since deregulation, and only recent increases in interfirm wage differentials. Employment growth rates, on the other hand, have varied widely among the incumbents, and between the incumbent trunks and the local service and new-entrant airlines. The data suggest that deregulation resulted in a transfer of 5000-7000 maintenance jobs from the incumbent trunks to the smaller airlines. This shift in employment reduced mechanics' earnings in the industry by as much as 5 percent.

TI Why Have Unemployment Rates in Canada and the United States Diverged? **AU** Ashenfelter, Orley; Card, David.

TI On the Covariance Structure of Earnings and Hours Changes. **AU** Abowd, John M.; Card, David.

TI Intertemporal Labor Supply and Long Term Employment Contracts. **AU** Abowd, John M.; Card, David.

Carlton, Dennis W.

PD January 1986. **TI** The Rigidity of Prices. **AA** Graduate School of Business, University of Chicago. **SR** National Bureau of Economic Research Working Paper: 1813; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 60. **PR** $2.00. **JE** 227, 022. **KW** Resource Allocation. Price Rigidity. Non-Price Rationing.
AB This paper presents evidence on the amount of price rigidity that exists in individual transaction prices. Using the Stigler-Kindahl data, I examine the behavior of individual buyers' prices for certain products used in manufacturing. My most important findings are: 1. The degree of price rigidity in many industries is significant. It is not unusual in some industries for prices to individual buyers to remain unchanged for several years. 2. Even for what appear to be homogeneous commodities, the correlation of price changes across buyers is very low. 3. There is no evidence that there is an asymmetry in price rigidity. In particular, prices are not rigid downward. 4. The fixed costs of changing price at least to some buyers seem trivial. There are plenty of instances where small price changes occur. 5. The level of industry concentration is strongly correlated with rigid prices. The more concentrated the industry, the longer is the average spell of price rigidity. 6. There appears to be a relationship between price rigidity, size of price change, and the length of time a buyer and seller deal with each other. I interpret the findings as evidence that it is erroneous to focus attention on price as the exclusive mechanism to allocate resources. Nonprice rationing is not a fiction; it is a reality of business and may be the efficient response to economic uncertainty.

Carraro, Carlo

PD March 10, 1986. **TI** Regression and Kalman Filter Methods for Time-varying Econometric Models. **AA** Universita Degli Studi Di Venezia, Venezia, Italy. **SR** Princeton Econometric Research Program Memoranda: 320; Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 58. **PR** $2.50. **JE** 211. **KW** Time-Varying Parameters. Kalman Filter. Innovation Correlation. Identification. Smoothing. System Theory.
AB This paper analyses and generalizes two methods for estimating time-varying parameter models: the regression method and the Kalman filter-innovation correlation method. Identification conditions for the unknown parameters of a general time-varying model are provided and the two methods are shown to imply the same identification conditions. Furthermore, an explicit estimator is derived for all the parameters of the model,

including the initial values of the time-varying parameters and the covariance matrices of the model. The properties of the estimates are also analysed. Finally, the relationship between observability and identifiability of the time-varying parameters is explored by using the smoothing equations.

PD March 10, 1986. **TI** Hierarchical Games for Macroeconomic Policy Analysis. **AA** Universita Degli Studi Di Venezia, Venezia, Italy. **SR** Princeton Econometric Research Program Memoranda: 319; Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 40. **PR** $2.00. **JE** 026, 213, 023. **KW** Game Theory. Stackelberg Solution. Sequential Equilibrium. Optimal Announcements. Dynamic Models.

AB This paper analyses a new solution of non-cooperative games, i.e. the Closed Loop Stackelberg solution, which is shown to be very useful for macroeconomic policy analysis. The main features of the Closed Loop Stackelberg (CLS) solution are examined and it is shown that only if a certain degree of uncertainty is introduced into the model, can the CLS strategy be made credible. Furthermore, the relationship between the CLS strategy and other solutions of the game are explored and conditions for the optimality and time-consistency of the CLS strategy are provided.

Catephores, George

TI Anti-Say's Law Versus Say's Law: A Change in Paradigm. **AU** Morishima, Michio; Catephores, George.

Cecchetti, Stephen G.

PD July 1985. **TI** Testing Short Run Neutrality. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 351; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 21. **PR** $2.00. **JE** 311. **KW** Short Run Neutrality of Money. Neutrality Test. Anticipated Money.

AB This paper derives and implements a test of the short run neutrality of money that is robust to two sources of specification error not considered in previous studies. The test is derived under the maintained hypothesis that the econometrician incorrectly specifies the information set used by agents in the economy to form expectations and that the effect of unanticipated money on deviations of output from the natural rate varies over time. Standard techniques for testing whether anticipated money affects output are invalid when either of these two assumptions is violated. The test is based on the following observation. If unanticipated money does not affect output at a lag longer than n periods, then for anticipated money to be neutral the expectation of output conditional on information prior to n must be the natural rate of output. If it is not, that is evidence against short run neutrality. The test is applied to quarterly data for the United States and the results indicate that anticipated money help predict deviations of output from the natural rate and consequently are not neutral.

Chew, Soo Hong

PD January 1986. **TI** A Correspondence Theorem between Expected Utility and Smooth Utility. **AU** Chew, Soo Hong; Epstein, L.; Zilcha, I. **AA** Chew: The Johns Hopkins University. Epstein: University of Toronto. Zilcha: Department of Economics, Tel-Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Papers: 1-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 15. **PR** No Charge. **JE** 026, 511, 022. **KW** Expected Utility. Smooth Utility. Non-Linear Preferences. Portfolio Diversification. Optimal Insurance Design. Optimal Stochastic Growth.

AB We establish a correspondence theorem which translates any appropriate theorem in expected utility analysis into a theorem in a generalized (nonlinear) preference framework. This result is applied to three areas in economics of uncertainty: Optimal insurance design; optimal stochastic growth and portfolio diversification.

Chichilnisky, Graciela

PD August 1985. **TI** The Management of Trade With Economies of Scale. **AU** Chichilnisky, Graciela; Heal, Geoffrey. **AA** Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-85-39; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 33. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 411, 024. **KW** Increasing Returns. Economies of Scale. Trade Policy. Trade Management.

AB This paper bridges the gap between the general equilibrium literature on the optimality of regulation in a closed non-convex economy, and the literature on the welfare aspects of trade with increasing returns. In a model of two trading economies producing with increasing returns, we review the welfare properties of four alternative equilibrium concepts. These correspond to different international trading regimes. We show that in general balance and gains from trade will not be established by free trade, and that alternative trade policies are needed.

Chick, Victoria

PD September 1983. **TI** Time and the Wage-Unit in the Method of the General Theory: History and Equilibrium. **AA** University College London. **SR** University College London Discussion Paper: 84-14; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 26. **PR** No Charge. **JE** 031. **KW** Keynes. Keynes' General Theory. Wage-Unit.

AB The purpose of this paper is to assert and support analytically a proposition about the implicit method of Keynes's General Theory (CW, VII). The proposition is that the device of the wage-unit is much more than a convenient way of approximating output without using a price-deflator: the wage-unit is fundamental in creating a theory of output, employment and prices which, although using the technique of static analysis, nevertheless belongs amongst examples of economic theorising in historical time. It is this fact which divides Keynes's analysis sharply from neoclassical theories of the same macroeconomic variables. The body of the paper will be occupied with showing exactly how the wage-unit allows a combination of static method and historical time, but we first put the problem in its methodological setting.

Chopra, Ajai

PD December 1985. **TI** The Speed of Adjustment of the Inflation Rate in Developing Countries: A Study of Inertia. **AA** International Monetary Fund. **SR** International Monetary Fund Departmental Memoranda/Staff Papers: 32(4); International Monetary Fund, Washington D.C. 20431. **PG** 41. **PR** No Charge. **JE** 134, 121, 131, 023. **KW** Inflation. Economic Fluctuations. Macroeconomic Policy. Developing Countries.

AB The paper empirically addresses whether inflation adjusts rapidly or sluggishly to changes in nominal aggregate demand and presents a reduced-form equation for the inflation rate. The hypothesis that inflation responds instantaneously and equiproportionately to an anticipated change in nominal aggregate demand is tested against the alternative hypothesis that inflation responds gradually in the short run and fully in the long run to nominal aggregate demand disturbances, whether anticipated or not. Estimates from 13 developing countries support the view that inflation may persist because of inertia, even if the anti-inflationary demand policy is anticipated.

Chou, Chien

PD October 1985. **TI** On Finitely Repeated Games and Pseudo-Nash Equilibria. **AU** Chou, Chien; Geanakoplos, John. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 777; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 28. **PR** No Charge. **JE** 026. **KW** Pseudo-Nash Equilibrium. Arbitrary Last Period Play. Overlapping Generations Economies. Radner's Definition. "Crazy Equilibrium".

AB In this paper we propose a pseudo-Nash equilibrium for N-person games in which very simply we allow play in the last period to be arbitrary, but otherwise it must conform to the (perfect) Nash optimality criterion.

Clarida, Richard H.

PD October 1983. **TI** Current Account, Exchange Rate, and Monetary Dynamics in a Stochastic Equilibrium Model. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 694; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 27. **PR** No Charge. **JE** 431, 023. **KW** Current Account. Monetary Shocks.

AB We construct a simple stochastic open-economy macro-economic model from the decision rules of rational, optimizing agents, solving explicitly for the relationship between the model's deep parameters, and the variance-covariance matrix of equilibrium returns on domestic and foreign assets. We use the model to study the dynamic relationship between exchange rate changes and current account flows in response to domestic monetary shocks, to establish the conditions under which exchange rate depreciations accompany current account deficits, and to investigate the link between time preference, risk aversion, and the dynamic exchange rate and current account response to monetary disturbances. The model generates current account time series which exhibit persistent deviations from balance, even for the special case in which domestic and foreign shocks are purely transitory.

PD March 1984. **TI** The Behavior of United States Short-Term Interest Rates Since October 1979. **AU** Clarida, Richard H.; Friedman, Benjamin M. **AA** Clarida: Department of Economics, Yale University. Friedman: Department of Economics, Harvard University. **SR** Yale Cowles Foundation Discussion Paper: 695; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PR** No Charge. **JE** 311. **KW** Short Term Interest Rates.

AB Short-term interest rates in the United States have been "too high" since October 1979 in the sense that both unconditional and conditional forecasts, based on an estimated vector autoregression model summarizing the prior experience, underpredict short-term interest rates during this period. Although a non-structural model cannot directly answer the question of why this has been so, comparisons of alternative conditional forecasts point to the post-October 1979 relationship between the growth of real income and the growth of real money balances as closely connected to the level and pattern of short-term interest rates. This finding is consistent with the authors' earlier conclusion, based on analysis of a small structural macroeconometric model, that the high average level of interest rates has been due to a combination of slow growth of (nominal) money supply and continuing price inflation, which together have kept real balances small in relation to prevailing levels of economic activity.

Clark, Peter K.

PD March 1986. **TI** The Cyclical Component of United States Economic Activity. **AA** Graduate School of Business, Stanford University. **SR** Stanford Graduate School of Business Research Paper: 875; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. **PG** 33. **PR** \$2.50. **JE** 131, 132. **KW** Economic Activity. Unobserved Components Model. Kalman Filter. Stationary Cyclical Component.

AB Quarterly data on the two most important indicators of economic activity in the United States, Gross National Product in constant dollars (real GNP) and the index of industrial production (IP) are examined for evidence of a stationary cyclical component. The framework for this analysis is an unobserved components or "state space" model which, depending on its coefficients, allows the trend component of output to be either an irregular random walk with drift, as advocated by Nelson and Plosser, or a smoother series whose growth rate moves slowly over time.

Coats, R. Morris

TI An Instrumental Variables Approach to Income Redistribution. **AU** Tideman, T. Nicolaus; Coats, R. Morris.

Collier, P.

TI Consequences of a Commodity Boom in a Controlled Economy: Accumulation and Redistribution in Kenya, 1975-83. **AU** Bevan, D. L.; Collier, P.; Gunning, J. W.

Cooper, Russell

PD July 1985. **TI** Coordinating Coordination Failures in Keynesian Models. **AU** Cooper, Russell; John, Andrew. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 745R; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 36. **PR** No Charge. **JE** 023. **KW** Coordination. Multipliers. Strategic Complementarity. Keynesian.

AB This paper focuses on the importance of strategic complementarity in agents' payoff functions as a basis for macroeconomic coordination failures. We first analyze an abstract game and find that inefficient equilibria and a multiplier process may arise in the presence of strategic complementarities (essentially positively sloped reaction curves). We then place additional economic content on the analysis of this game by considering strategic complementarities arising from production functions, matching technologies and commodity demand functions in a multi-sector economy.

Cowell, Frank A.

PD August 1985. **TI** The Economics of Tax Evasion: A Survey. **AA** Department of Economics, London School of Economics and Political Science. **SR** London School of Economics Suntory Toyota International Centre for Economics and Related Disciplines ESRC Programme Discussion Paper: 80; Suntory Toyota International Centre for Economics and Related Disciplines, London School of Economics and Political Science, 10 Portugal Street, London WC2A 2HD. **PG** 59. **PR** No Charge. **JE** 026, 323. **KW** Tax Evasion. Income-Tax. Enforcement. Tax Avoidance.

AB Tax evasion arouses a mixture of outrage, curiousity and admiration, and in recent years has increasingly stimulated the interest of both public opinion and economists. The paper provides a review and assessment of the considerable theoretical and empirical literature, especially that of the last ten years. Concentration is on theory but the different ways of measuring the black economy are described and a bibliography of estimates for thirteen countries is provided together with the methods used. The theoretical analysis concentrates on the positive side of the decision to evade as an example of choice under uncertainty, and on the normative as a government choosing penalties and enforcement in terms of a cost-benefit calculation. The paper concludes that the theoretical literature has provided valuable insights and that it is hard to understand policy using simply the cost-benefit calculus. Principles of equity seem to underlie the reasons why one does not, in practice, observe swingeing fines to guarantee enforcement. On the empirical side it is suggested that there may be scope for the experimental approach using subjects in controlled environments with hypothetical examples, privately conducted interviews and the release by authorities of tax investigations, along the lines of the United States Internal Revenue Service.

Cox, W. Michael

PD August 1984. **TI** Insulating Policies for Large and Small Countries. **AU** Cox, W. Michael; McTaggart, Douglas. **AA** Cox: Federal Reserve Bank of Dallas. McTaggart: Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E 84-08-07; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 26. **PR** No Charge. **JE** 023, 423. **KW** Foreign Shocks. Insulation.

AB In this paper we investigate policies for the large and small country that provide complete insulation from foreign real and monetary disturbances. We find that when there exist two channels of transmission, the integrated commodity and capital markets, using only exchange rate policies does not provide complete insulation. However, floating the exchange rate and pursuing a specific interest rate target does. In terms of output variability however, insulating policies may be undesirable.

Craig, Steven G.

TI Equity Versus Productivity in the Supply of Public Services. **AU** Behrman, Jere R.; Craig, Steven G.

Craine, Roger

PD March 1986. **TI** Neoclassical Model = Tobin's q = Marginal q: The Theory of Optimal Investment. **AA** Department of Economics, University of California at Berkeley. **SR** University of California Berkeley Institute of Business and Economic Research, Research Papers in Economics: 86-9; Institute of Business and Economic Research, 156 Barrows Hall, University of California at Berkeley, Berkeley, CA 94720. **PG** 34. **PR** $4.00. **JE** 023, 022, 522. **KW** Neoclassical Model of Investment. Tobin's q. Marginal q. Investment Theory.

AB There are three popular "theories" of investment -- the neoclassical model, Tobin's q, and marginal q. I show that in a simple Arrow-Debreu general equilibrium model with risk, the three investment rules yield the same Pareto-efficient decision. The investment rules are alternative, but equivalent, representations of the theory of optimal investment. The neoclassical rule and marginal q can be obtained by manipulating the firm's first-order conditions. Marginal q expresses the neoclassical flow condition in a present value form. Tobin's investment rule comes from combining Tobin's definition of q with the condition that no arbitrage profit opportunities exist in equilibrium. In Section 3 I illustrate and compare the rules in a deterministic environment. Since the original derivations used deterministic models, the rules in Section 3 look familiar. Section 3 is self-contained.

Crawford, David L.

PD August 1985. **TI** Order and Inference in Qualitative Response Models. **AU** Crawford, David L.; Pollak, Robert A. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-25; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 38. **PR** $1.00. **JE** 211. **KW** Qualitative Response Models. Order. Multinomial Logit. Multinomial Probit.

AB Qualitative response models relate the probability of choosing each alternative from a set of basic alternatives to a vector of exogenous variables. In this paper we examine the meaning of order and the problem of inference in such models. Although most researchers agree that some qualitative response models are ordered (e.g., multinomial probit) and others are not (e.g., multinomial logit), there is widespread confusion over the meaning and implications of order. Amemiya (1975, 1981) has presented examples of ordered and unordered qualitative response models, but has failed to provide a clear, rigorous definition. We formalize two notions of order in qualitative response models, defining both as properties of the functions relating the probabilities of choosing each basic alternative to the exogenous variables. We introduce and examine two new special cases of the multinomial logit model, each exhibiting one type of order, and we show that the multinomial probit model exhibits both types of order.

Cullity, John P.

PD June 1985. **TI** Forecasting Industrial Production in Major Industrial Countries. **AA** Graduate School of Business, Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-86-09; 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** 132. **KW** Forecasting Accuracy. Output. Blue Chip Economic Worldscan.

AB Blue Chip Economic Worldscan provides monthly forecasts of year-to-year changes in industrial production for major countries. Forty prominent forecasters regularly participate in its survey. A consensus forecast is generated from the individual forecasts for each country. For three of the four countries studied, the consensus forecasts were more accurate than a majority of the individual forecasters. There is little support for the proposition that those who forecast relatively well in one country are able to do this in other countries. The Worldscan consensus forecasts were more accurate than those of the OECD over predictive spans of a year to a year-and-a-half.

TI New Layoff Rate Scores Well as Leading Indicator. **AU** Moore, Geoffrey H.; Cullity, John P.

Cumby, R. E.

PD February 1985. **TI** Testing for Market Timing Ability: A Unified Framework for Forecast Evaluation. **AU** Cumby, R. E.; Modest, D. M. **AA** Cumby: New York University. Modest: Columbia University. **SR** New York University Salomon Brothers Center Working Paper: 342; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 30. **PR** $2.00. **JE** 132, 431. **KW** Market Timing Ability. Evaluating Forecasts. Investment Advisors.

AB This paper proposes a test of the market timing ability of investment advisors that is valid under very general assumptions about the distribution of market returns. The test is applied to a group of foreign exchange advisory services, and we obtain results that differ dramatically from those obtained using previously suggested tests.

Cunha, Antonio

TI Services Agencies in Swiss Regional Dynamics: Polycentric Decentralisation in Question. **AU** Racine, Jean Bernard; Cunha, Antonio.

Danthine, Jean Pierre

PD June 1984. **TI** A Note on the Effects of Capital Income Taxation on the Dynamics of a Competitive Economy. **AU** Danthine, Jean Pierre; Donaldson, John B. **AA** Danthine: Universite de Lausanne. Donaldson: Columbia University. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8404; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 14. **PR** No Charge. **JE** 323. **KW** Taxation. Changing Tax Rates.

AB In this paper we investigate the effect of changing capital income tax rates on the time path of a competitive economy in an uncertain environment.

PD August 1984. **TI** Government Policies and the Stock Market: Lessons from a Small Exchange Model. **AU** Danthine, Jean Pierre; Donaldson, John B. **AA** Danthine: Universite de Lausanne. Donaldson: Columbia University. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8406; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 36. **PR** No Charge. **JE** 311, 313, 321. **KW** Money Growth Rate. Financial Markets. Common Stocks. Government Sector.

AB Changes in government monetary and fiscal policies are widely perceived as affecting the financial markets. In particular, investors are concerned to understand how (1) changes in the money growth rate and (2) changes in the proportion of national income going to the government sector affect the pricing of common stocks. Yet, to date, there are no models which examine these issues in a general equilibrium setting. It is the objective of this paper to begin to remedy this omission. Our setting is that of an exchange economy similar to Lucas (1978) but one in which agents have the opportunity to hold both money balances and common stocks as assets.

PD March 1985. **TI** Investment in Information Acquisition. **AU** Danthine, Jean Pierre; Magill, Michael J. P. **AA** Danthine: Universite de Lausanne. Magill: University of Southern California. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8503; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 7. **PR** No Charge. **JE** 026, 020. **KW** Information. Optimal Real Investment.

AB This paper presents a simple model in which a community must decide on the amount of real investment and investment in information so as to maximise the expected utility of consumption over two periods. It is shown that under conditions involving the product of the elasticity of the marginal utility of consumption and the elasticity of the production function optimal real investment is either a monotone function of the information or is independent of it. In the former case information is of value and it is optimal to invest a positive amount in information acquisition: in the latter case information has no value and society devotes no resources to information acquisition.

PD February 1986. **TI** Fiscal and Monetary Policies in a Non-stochastic Long-run Macroeconomic Model. **AU** Danthine, Jean Pierre; Donaldson, John B. **AA** Danthine: DEEP, University of Lausanne. Donaldson: Columbia University. **SR** Universite de Lausanne, Cahiers de Recherches Economiques: 8604; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 23. **PR** No Charge. **JE** 311, 023, 322. **KW** Money. Growth. Crowding-out.
AB In this paper we analyse in detail a discrete time version of the well-known Sidrauski (1967) model of money and growth. In addition to the superneutrality of money result which has given this model special prominence, it provides answers to a number of important macroeconomic questions which stand in sharp contradiction to those provided by standard static models. In our view it constitutes a useful introduction to the unique view of the world offered by dynamic optimizing models. The model supports the following statements: a) An increase in government spending perfectly crowds out private consumption; b) The mode of financing public expenditures does not affect the steady state values of the real variables; c) Tax financing of public spending is preferred to money creation financing of the same level of public spending; d) An increase in the rate of money creation may not, in the steady state, generate more revenues for the government; e) An increase in government spending has a negative welfare effect above and beyond that resulting from the displacement of private consumption; and f) The optimal fiscal policy must be one of an excess of tax receipts over expenditures.

Davidson, Carl

PD February 1986. **TI** Search, Unemployment, and the Production of Jobs. **AU** Davidson, Carl; Martin, Lawrence; Matusz, Steven. **AA** Department of Economics, Michigan State University. **SR** Michigan State Econometrics and Economic Theory Workshop Series: 8510; Department of Economics, Michigan State University, East Lansing, MI 48824. **PG** 42. **PR** No Charge. **JE** 821, 021. **KW** Search. Unemployment. General Equilibrium. Allocative Efficiency. Productive Efficiency.
AB We analyze a two sector general equilibrium model where factor markets are frictionless in one sector, so that the duration of unemployment is zero, while idle factors of production must actively search each other out in order to produce in the other sector. We show that jobs themselves have value in excess of current production. Since the value of jobs is ignored in competitive equilibrium, the economy is generally allocatively inefficient, producing too little of the search good. The economy is also usually productively inefficient; constrained by the given search technology, more of both goods could be produced. Finally, the implications of allocative and productive inefficiency for optimal unemployment work against each other. Equilibrium unemployment may be either too high or too low.

Davidson, Russell

PD February 26, 1986. **TI** Testing the Specification of Econometric Models in Regression and Non-Regression Directions. **AU** Davidson, Russell; MacKinnon, James G. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 642; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 38. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 211. **KW** Non-Centrality Parameter. Power. Data Generating Process. Asymptotic Test Power.
AB The asymptotic power of a statistical test depends on the model being tested, the (implicit) alternative against which the test is constructed, and the process which actually generated the data. The exact way in which it does so is examined for several classes of models and tests. First, we analyze the power of tests of nonlinear regression models in regression directions, i.e. tests which are equivalent to tests for omitted variables. Next, we consider the power of heteroskedasticity-robust variants of these tests. Finally, we examine the power of very general tests in the context of a very general class of models.

De Beyer, Jr

PD April 1986. **TI** The Role of Occupation in the Determination of Wages. **AU** De Beyer, Jr; Knight, J. B. **AA** De Beyer: Trinity College, Oxford; Knight: Institute of Economics and Statistics, Oxford. **SR** Oxford Applied Economics Discussion Paper: 7; Institute of Economics and Statistics, Saint Cross Building, Manor Road, Oxford OX1 3UL, ENGLAND. **PG** 42. **PR** No Charge. **JE** 811, 812, 824, 121. **KW** Human Capital Theory. Occupational Attainment. Wage Determination. Kenya. Education.
AB The role of occupation in the determination of wages is examined by means of two micro-data sets for Kenya and Tanzania, in which workers are classified into skill-based occupational groups. An "occupational production function" model is developed, to which occupation-specific skill formation is central. Evidence, in the form of occupation-specific wage functions and occupational attainment functions, is adduced in support of the model and its predictions. The introduction of occupation improves understanding of how the labour market operates and of how it responds to educational expansion. In East Africa, and quite likely elsewhere, occupation should be cast to play a role on centre stage and not remain an understudy in the wings.

Deacon, Robert T.

PD October 1985. **TI** The Welfare Costs of Rationing by Waiting. **AU** Deacon, Robert T.; Sonstelie, Jon. **AA** Department of Economics, University of California, Santa Barbara. **SR** University of California Santa Barbara Department of Economics Working Papers: 258; Department of Economics, University of California at Santa Barbara, Santa Barbara, CA 93106. **PG** 34. **PR** No Charge. **JE** 024, 022. **KW** Rationing by Waiting. Gasoline Price Controls. Queues.
AB In the case we analyze, queues cause consumers to compete by increasing amounts bought per trip to the

market. As we demonstrate, such individually rational adjustments only increase the welfare cost of rationing by waiting, and thus are socially self-defeating. Our theoretical analysis is applied to the case of a price control on gasoline. This application was motivated by a peculiar episode in which federal regulations temporarily constrained a few stations to sell gasoline at below-equilibrium prices. As expected, queues formed at these outlets. By surveying motorists at both high- and low-price stations we obtained information that permits us to estimate the welfare cost of a market-wide ceiling on gasoline prices.

Demski, Joel S.

PD July 1985. **TI** Entry in Regulated Industries: An Information-Based Perspective. **AU** Demski, Joel S.; Sappington, David E. M.; Spiller, Pablo T. **AA** Bell Communications Research, Incorporated. **SR** Bell Communications Research Economics Discussion Paper: 9; Room 2Q-382, Bell Communications Research Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PR** No Charge. **JE** 611, 613. **KW** Regulation. Entry in Regulated Industries. Optimal Entry Policy. Optimal Auditing Policy.

AB We examine how entry into an industry is optimally structured by a regulator. One reason entry may be permitted is to limit the rents an incumbent firm might otherwise command from its private technological information. Entry also provides an alternative source of production. This latter role of entry creates important differences between the optimal entry policy and the optimal auditing policy. These distinctions are examined in detail. We find that entry may occur more or less often than auditing, and that entry may be permitted even when it is common knowledge that the entrant's production costs exceed those of the incumbent. Also, regulated prices can be either higher or lower under entry than under auditing.

PD August 1985. **TI** Delegated Expertise. **AU** Demski, Joel S.; Sappington, David E. M. **AA** Bell Communications Research, Incorporated. **SR** Bell Communications Research Economics Discussion Paper: 6; Room 2Q-382, Bell Communications Research Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PR** No Charge. **JE** 026. **KW** Information. Contracting. Delegated Expertise.

AB Contracting with an expert is the focus of this paper. We define expertise in terms of private information that is both personally costly to acquire and prohibitively costly to communicate. These factors lead to moral hazard concerns with regard to the acquisition and use of information. Several features of the model are emphasized. First, though the expert has no natural aversion to productive effort, aversion may be induced to better control her incentives to acquire information. Second, we explore the implications of severed communication channels. Further, we demonstrate that truthful communication of potentially valuable information to the expert may not be in the interest of the organization because the expert cannot commit herself against using the information for her private gain.

PD November 1985. **TI** Line-Item Reporting, Factor Acquisition, and Subcontracting. **AU** Demski, Joel S.; Sappington, David E. M. **AA** Bell Communications Research, Incorporated. **SR** Bell Communications Research Economics Discussion Paper: 8; Room 2Q-382, Bell Communications Research Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PR** No Charge. **JE** 022. **KW** Line-Item Reporting. Subcontracting. Factor Acquisition.

AB We examine the role of line-item reporting in two principal-agent regimes: (1) where factor acquisition is centrally controlled; and (2) when factor acquisition and subcontracting arrangements are delegated to an informed agent. Line-item reporting can provide additional information about the agent's own effort or use of the acquired factor of production. However, strict gains are not guaranteed by the presence of additional information. Line-item reporting can also limit "recontracting" among subcontractors.

Desai, Padma

PD October 1985. **TI** Weather and Recent Soviet Grain Yields. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 304; Department of Economics, Columbia University, New York, NY 10027. **PG** 37. **PR** $5.00. **JE** 124, 131. **KW** Soviet Grain Yield. Weather Variability.

AB Among the major conclusions of the paper regarding the role of weather in Soviet grain yield are the following: First, there is no association of weather between the west and the east of the Soviet grain belt: the correlation coefficient r between the series of weighted weather variabilities of the oblasts in the west and the east is statistically not significant. Second, weather worsens in the southeasterly direction of the grain belt. This conclusion is based on the estimated relative contribution of weather fluctuations to oblast yield variation. The covariance between yield and each weather variable in the weather-yield model is weighted by the estimated parameter of the weather variable and the weighted sum is divided by the yield variance explained by the model. The larger the covariance ratio, the worse the weather. These ratios show a rising trend when the oblasts are ranked with chances of worsening weather in the southeasterly direction of the grain belt thus confirming the deterioration of weather in that direction. Third, the weather covariance ratio for aggregate yield is 52 percent implying that 52 percent of the explained yield variance is accounted for by weather fluctuations with the remaining 48 percent accounted for by input variations. Measured this way, the contribution of fluctuating weather to yield variation is only slightly higher than that of varying inputs. Finally, the weather variability of grain yield and output of the four years from 1979 to 1982 with poor harvests is small to negligible. Indeed, if the weather were average, grain output of the four years would have gone up by only 12.9 million tons. Overall, the analysis and results of the paper provide a modest view of the role of weather in Soviet yield performance.

Detemple, Jerome B.

PD November 1985. **TI** Optimal Inventories and Reputation. **AU** Detemple, Jerome B.; Steinberg, Richard. **AA** Detemple: Columbia University. Steinberg: ATT Bell Laboratories. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-86-03; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 8. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 022, 522. **KW** Inventory. Intertemporal Reputation Effects. Reputation.

AB It is well-known that a firm producing a storable commodity will smooth the time profile of production relative to sales if marginal production costs are increasing. An alternative explanation for holding inventory is provided by Schutte under the assumption that distribution costs are convex. In his framework, production is instantaneous but serving demand directly from current production is costly; he also assumes that costs are incurred whenever goods held in inventory at the beginning of the period are returned unsold to ending inventory. Kotler '1983 indicates that a major marketing concern is in providing a high level of customer service and that consequently inventory policy is a tool in the demand-creation and demand-satisfaction process. The present paper develops this idea by providing an explanation for the holding of inventory based on the existence of intertemporal reputation effects, where the holding of inventory enhances the reputation of the firm and thus leads to increases in future demand. We show that within this framework a firm with linear production costs will hold inventory despite the consideration of discounting.

Diebold, Francis X.

PD October 1984. **TI** Evidence on the Small Sample Properties of Some Asympototically Equivalent Tests for Autoregressive Conditional Heteroscedasticity. **AU** Diebold, Francis X.; Pauly, Peter. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-13; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 24. **PR** $1.00. **JE** 211. **KW** Autoregressive Conditional Heteroskedasticity. ARCH. Small Sample Properties.

AB In this note we report on a Monte Carlo study designed to resolve a problem in testing for ARCH: two asymptotically equivalent tests are available, but their small sample properties are unknown. Furthermore, one of the test statistics is easily calculated, while computation of the other is somewhat more tedious. One would like to use the simpler test, if it compares favorably with the other in finite samples.

PD January 1985. **TI** Endogenous Risk in a Portfolio Balance Rational Expectations Model of the Deutschemark-Dollar Rate. **AU** Diebold, Francis X.; Pauly, Peter. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-17; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 29. **PR** $1.00. **JE** 431. **KW** Risk Premium. Foreign Exchange Risk Premium. Autoregressive Conditional Heteroskedasticity. ARCH.

AB The purpose of this paper is to present, in a time varying framework, a model of the foreign exchange risk premium. In the context of a simplified version of a rational-expectations portfolio-balance model the risk premium is specified as a linear function of past forecast error variances. The ARCH (autoregressive conditional heteroskedasticity) model recently proposed by Engle (1982) provides a convenient framework for such an analysis. Estimates using monthly data for the Deutschemark-Dollar rate lend some support to the hypothesis of a time varying risk premium, if approximated in this particular form.

PD May 1985. **TI** Structural Change and the Combination of Forecasts. **AU** Diebold, Francis X.; Pauly, Peter. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-19; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 39. **PR** $1.00. **JE** 211, 132. **KW** Forecasting. Structural Change. ARCH. Time-Varying Coefficients. Autoregressive Conditional Heteroskedasticity.

AB In this paper we follow the suggestion of Granger-Ramanathan '1984 and develop time-varying coefficient methods of combining forecasts. This enables us to solve many of the problems of forecasting under conditions of structural change. We first propose a weighted least squares approach, which closely parallels (but is more general than) the "moving sample" approach used to combine forecasts in the variance-covariance framework. We next propose two systematically varying parameter models, one with deterministically varying weights and one with stochastically varying weights. Methods of discriminating between the various models are discussed, and the properties of the models are compared and illustrated.

PD August 1985. **TI** The Time Series Properties of Pre-EMS and EMS Exchange Rates. **AU** Diebold, Francis X.; Pauly, Peter. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-24; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 70. **PR** $1.00. **JE** 431. **KW** ARCH. Autoregressive Conditional Heteroskedasticity. Exchange Rates. Exchange Rate Volatility. EMS.

AB Using tests for unit roots, serial correlation, and conditional heteroskedasticity, we find that the stochastic structure of the percentage changes in both the FF/DM and LIRA/DM rates is well described by low order autoregressions with ARCH disturbances. While this assertion is valid for both the Pre-EMS and EMS periods, we present strong evidence indicating a structural shift between periods. In other words, the structural form remains unchanged, but its explicit parameterization changes dramatically. We also find via formal hypothesis testing that a multivariate model, which explicitly allows for contemporaneous correlation between exchange rate innovations, is necessary for fully efficient parameter estimation and dynamic realism. Significant ARCH effects are found in both the conditional variances and covariances over both subperiods, and likelihood ratio tests

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indicated substantial structural change between the subperiods. The conditional variances of exchange rate innovations is used as a natural and economically meaningful measure of exchange rate volatility, and it is found that it decreased substantially for both rates in the EMS period. Furthermore, the Franc enjoyed a relatively higher volatility decrease with the move to the EMS. Finally, the innovation covariance is shown to decrease between the Pre-EMS and EMS periods.

Don, F. J. Henk

PD July 1985. **TI** Solving Large Sparse Systems of Equations. **AU** Don, F. J. Henk; Gallo, Giampiero M. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-22; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 22. **PR** $1.00. **JE** 213. **KW** Solving Systems of Equations. Newton Algorithm. Gauss-Seidel Algorithm.

AB Comparative studies of Gauss-Seidel and Newton-type algorithms for solving large sparse systems of equations are reported by Nepomiastchy and Ravelli (1978), Gabay et al. (1980) and Norman, Lasdon and Hsin (1983). The first two favor Newton's method, the third favors Gauss-Seidel. Apart from working on different test models, their setups differ in the implementation of both schemes. This paper studies the performance of both methods on ten different econometric models of varying size and complexity. First the choice of implementation (equation reordering, updating rules for Newton's Jacobian) is studied on a relatively small model. Qualitative and quantitative feedback criteria are considered, and an efficient reordering algorithm is discussed. Of the ten models considered, the selected Newton method is almost uniformly cheaper, generally reducing the number of iterations by more than 30 per cent. A final section draws attention to the possible extra gains of Newton's method in evaluating multipliers for policy analysis.

Donaldson, John B.

TI A Note on the Effects of Capital Income Taxation on the Dynamics of a Competitive Economy. **AU** Danthine, Jean Pierre; Donaldson, John B.

TI Government Policies and the Stock Market: Lessons from a Small Exchange Model. **AU** Danthine, Jean Pierre; Donaldson, John B.

TI On the Superneutrality of Money in a Stochastic Dynamic Macroeconomic Model. **AU** Panthine, Jean Pierre; Donaldson, John B.; Smith, Lance.

TI Fiscal and Monetary Policies in a Non-stochastic Long-run Macroeconomic Model. **AU** Danthine, Jean Pierre; Donaldson, John B.

dOrey, Vasco

TI Monetary Policies in Interdependent Economies with Stochastic Disturbances: A Strategic Approach. **AU** Turnovsky, Stephen; dOrey, Vasco.

Dornbusch, Rudiger

PD January 1986. **TI** Stopping Hyperinflations Past and Present. **AU** Dornbusch, Rudiger; Fischer, Stanley. **AA** Department of Economics, MIT. **SR** National Bureau of Economic Research Working Paper: 1810; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 69. **PR** $2.00. **JE** 133, 134. **KW** Hyperinflation. Inflation Stabilization.

AB We examine four successful stabilizations from high inflation -Germany in 1923, Austria in 1922, Poland 1924-27, Italy 1947 -- and the two ongoing attempted stabilizations in Israel and Argentina, with the aim of identifying general lessons from those episodes. The key issues in a stabilization are the budget, the exchange rate, and money. Budget deficits were significantly reduced in each case, but were not in all cases completely removed. The exchange rate was pegged in each case, though in all but the Italian case, each stabilization was also preceded by at least one episode in which attempted stabilization through exchange rate pegging was unsuccessful. As pointed out by Sargent and others, money growth rates were high after each stabilization, suggesting that any stabilization that strictly controls the growth of money will produce serious recession. A common feature of stabilizations is a period of extremely high real interest rates. The modern attempts differ from earlier ones in using wage and price controls. They differ also in that the Argentinian and Israeli economies were in far better shape in 1985 than the classical hyperinflationary economies.

Drazen, Allan

PD January 1986. **TI** Inflation and Wage Dispersion. **AU** Drazen, Allan; Hamermesh, Daniel S. **AA** Drazen: Department of Economics; Tel Aviv University. Hamermesh: Department of Economics, Michigan State University. **SR** National Bureau of Economic Research Working Paper: 1811; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 14. **PR** $2.00. **JE** 134, 631, 824. **KW** Inflation. Wage Dispersion.

AB A large body of empirical work has demonstrated that higher inflation, especially when it is unexpected, leads to greater dispersion in the distribution of price changes across subaggregates. A sparse and more recent literature suggests exactly the opposite effects on the distribution of wage changes. This study first reconciles these apparently opposite results using a model in which shocks to the economy can affect both wages and prices and the demand for indexing. If the positive effect of shocks on the demand for indexing is sufficiently large, the dispersion of changes in wages or prices will be reduced even though the shocks' direct effect is to increase this dispersion. Implicitly from the evidence, this offset is large enough in wage-setting, but not so large in price determination. Additional evidence on the relationship between inflation and the dispersion of wage changes is provided by empirical work for 14 Israeli manufacturing industries, 1956-82. The results suggest that in Israel, just as in the United States (on which previous work has been conducted) with its much less rapid and variable inflation, dispersion also decreased with unexpected price inflation.

Drazen, Allen

PD February 1986. **TI** Testing for Inefficiency in Government Agencies: The Case of the Internal Revenue Service. **AA** Department of Economics, Tel-Aviv University. **SR** Tel-Aviv Foerder Institute for Economic Research Working Paper: 10-86; Department of Economics, Tel-Aviv University, Ramat Aviv 69978, Tel-Aviv, ISRAEL. **PG** 27. **PR** No Charge. **JE** 320. **KW** Internal Revenue Service. Government Inefficiency. Tax Collection Costs. Bureaucracy.

AB It is often argued that government agencies are inefficiently large and maximize budgets. We test for inefficiency, defined as too high input per unit output, on the part of the United States Internal Revenue Service. The aggregate collection and expenditure data do not give support for budget maximization for the period prior to World War I. In contrast, a number of pieces of evidence suggest budget maximization and inefficiency for the period after World War I, and, especially, after World War II.

Dreze, Jean

PD August 1985. **TI** The Theory of Cost-Benefit Analysis. **AU** Dreze, Jean; Stern, Nicholas. **AA** Department of Economics, London School of Economics and Political Science. **SR** London School of Economics Suntory Toyota International Centre for Economics and Related Disciplines ESRC Programme Discussion Paper: 85; Suntory Toyota International Centre for Economics and Related Disciplines, London School of Economics and Political Science, 10 Portugal Street, London WC2A 2HD. **PG** 140. **PR** No Charge. **JE** 024, 322, 614. **KW** Cost-Benefit Analysis.

AB It is shown how shadow prices can be used to detect welfare improvements arising from a project in an economy with imperfections of various kinds. The analysis provides a framework for the discussion of marginal changes in government policy in general and shadow prices for investment planning are linked closely to the choice of government policies elsewhere, particularly concerning taxes, trade, and the regulation of industry. The subject is integrated with 'second best' theory in that consequences for households are explicitly studied and evaluated. The emphasis throughout is on formulating, and understanding the theoretical basis of, operational rules. Simple practical rules which are very general are not available but a number can be derived if one can make certain assumptions on the structure of the economy and the choice of government policy.

Durlauf, Steven D.

TI Empirical Tests of the Rationality of Economic Forecasters: A Fixed Horizons Approach. **AU** Nordhaus, William; Durlauf, Steven D.

TI Multiple Time Series Regression with Integrated Processes. **AU** Phillips, Peter C. B.; Durlauf, Steven D.

Dynarski, Mark

PD March 14, 1986. **TI** New Evidence on the Cyclical Behavior of Unemployment Durations. **AU** Dynarski, Mark; Sheffrin, Steven. **AA** Department of Economics, University of California, Davis. **SR** University of California Davis Research Program in Applied Macroeconomics and Macro Policy: 36; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 38. **PR** No Charge. **JE** 131, 824, 826. **KW** Unemployment Duration. Panel Data. Cyclical Unemployment. Proportional Hazard Model.

AB In this paper we address two issues in the unemployment debate. The first issue is proper measurement of unemployment duration. Because previous researchers have relied on the Current Population Survey for their data, technical difficulties in measuring unemployment from that source have led to uncertainty about how much unemployment is short or long duration in nature. By using previously unexploited data from the Panel Study of Income Dynamics we present additional evidence as to the key empirical magnitudes in the debate. The second issue we address is the nature of cyclical unemployment. Very little is actually known about the incidence and duration of unemployment spells for different groups over the business cycle. The Panel allows us to identify workers flowing into or out of the pool of unemployed workers every month; hence we examine the changing composition of the pool of unemployed workers in detail. Using a proportional hazard model of unemployment duration we test the importance of worker demographic characteristics versus the overall macro environment in determining how long a worker remains unemployed. Our results indicate that the probability of leaving unemployment is not affected significantly by the overall unemployment rate, but monthly fixed effects are important.

Economides, Nicholas

PD February 1985. **TI** The Division of Markets is Limited by the Extent of Liquidity. **AU** Economides, Nicholas; Siow, Aloysius. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 279; Department of Economics, Columbia University, New York, NY 10027. **PG** 24. **PR** $5.00. **JE** 022, 021. **KW** Liquidity. Number of Markets.

AB This paper studies the role of lack of liquidity as an endogenous trading friction in limiting the number of markets in a competitive economy. Each agent in the economy, faced with uncertain endowments, prefers to trade in a market with high liquidity rather than less. Liquidity at a market can only be increased by increasing the number of traders at that market. The traders are spatially separated so that as more traders go to a particular market, they are incurring increasing transportation cost. Given this tradeoff between liquidity and transportation cost, not all agents in the economy will go to the same market. This paper considers two kinds of competitive market structures. The first assumes that traders may participate in markets without charge (as in standard Walrasian markets). The second structure assumes that it is costly to operate a market which means that the "auctioneer" must be paid for providing market services. The basic positive results are that even without fixed cost, liquidity considerations will limit the number of markets in a competitive economy. The welfare implications of the competitive division of markets in this economy are ambiguous. Since liquidity is an externality, there may be too little liquidity in equilibrium because each agent acts only in his own self interest. Then there are too many markets to be efficient. On the other hand, liquidity is self reinforcing. Given an existing equilibrium, new markets may find it impossible to open because nobody wants to use a new market with low liquidity. There may be too few markets to be efficient and new markets do not open.

PD January 1986. **TI** Advertising and Maximal Product Differentiation. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 316; Department of Economics, Columbia University, New York, NY 10027. **PG** 8. **PR** $5.00. **JE** 531, 611. **KW** Advertising. Product Differentiation.

AB We construct a model of advertising in a duopoly for locationally differentiated products as modelled by Hotelling (1929). We analyse the impact of advertising (which is formally equivalent to a quality feature) on the choices of the varieties produced. We show that in a sequential game of variety choice and subsequent advertising and price choice there can exist a maximal product differentiation perfect equilibrium. This result does not change when the last stage of the game (advertising and price choice) is broken into a price choice stage preceded by an advertising choice stage. Although profits are higher at the three stage game which allows pre-commitment in advertising, total surplus is lower at the two stage game where advertising and price are chosen at once.

PD January 1986. **TI** Advertising in the Circular Model of Differentiated Products. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 315; Department of Economics, Columbia University, New York, NY 10027. **PG** 11. **PR** $5.00. **JE** 531. **KW** Advertising.

AB We introduce advertising in the circular model of differentiated products. We analyze two games. The three-stage game has entry in the first stage, location in the second, and advertising and price choice in the third. The four-stage game replaces the advertising and price subgame of the three-stage game with two stages, advertising choice followed by price choice. We find that advertising commitment in the four-stage game allows firms to support the same prices as in the no-commitment three-stage game with lower advertising expenditure. This induces entry so that in the perfect equilibrium there is less advertising per firm and in total in the four-stage pre-commitment game than in the three-stage one. This is despite the fact that there is a larger number of firms (brands) at the equilibrium of the four-stage game. In relation to optimality both games result in higher diversity and under-provision of advertising with bigger divergence from optimality observed in the four-stage pre-commitment game.

Eldor, R.

PD January 1986. **TI** The Futures Price of a Commodity in Fixed Supply. **AU** Eldor, R.; Pines, D. **AA** Eldor: Tel-Aviv University. Pines: Tel-Aviv University and the University of Western Ontario. **SR** Tel Aviv Foerder Institute for Economic Research Working Paper: 3-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel-Aviv, Israel. **PG** 10. **PR** No Charge. **JE** 932, 313. **KW** Futures Prices. Normal Backwardation. Hedging. Housing Prices.

AB This note shows that in a general equilibrium model of homogeneous population with production risk, the futures price of a commodity which is in fixed supply is always below the expected futures spot price (e.g. normal backwardation). It also shows that the difference between the futures price and the expected spot price increases as the representative individual's risk aversion rises. An important application of this model is to the housing market since houses are in fixed supply in the short run and buying a house is like holding a long position in a forward contract. Therefore, if population is homogeneous houses are not a good consumption hedge and housing prices are below expected rental prices.

Epstein, L.

TI A Correspondence Theorem between Expected Utility and Smooth Utility. **AU** Chew, Soo Hong; Epstein, L.; Zilcha, I.

Evans, George W.

PD November 1985. **TI** Selection Criteria for Models with Nonuniqueness. **AA** Stanford University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences Technical Report (Economics Series): 481; Institute for Mathematical Studies in the Social Sciences, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 18. **PR** $4.00. **JE** 023. **KW** Nonuniqueness. Uniqueness. Selection Criteria. Stability. Expectational Stability. Minimal State Set. Multiple Equilibria. Rational Expectations Models.

AB Three objections are considered to the use of McCallum's rules for picking the minimal state set solution in rational expectations models with multiple equilibria. It is shown that these difficulties can be resolved using the concept of expectational stability as a selection criterion.

PD November 1985. **TI** The Algebra of ARMA Processes and the Structure of ARMA Solutions to a General Linear Model with Rational Expectations. **AA** Stanford University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences Technical Report (Economic Series): 476; Institute for Mathematical Studies in the Social Sciences, Encina Hall, Fourth Floor, Stanford University, Stanford, CA 94305. **PG** 33. **PR** $4.00. **JE** 211. **KW** ARMA Processes. Algebra. Rational Expectations. Linear Model.

AB For an ARMA process x sub t the permitted linear relationship between the conditional expectations (expected value at time t of x at time t+s, for fixed t and variable s) are shown to be dictated by the form of the AR polynomial associated with the unique representation of minimal AR degree. These results are used to characterize parametrically the set of all stationary and nonstationary ARMA solutions to a general univariate linear rational expectations model allowing for terms of the form expectation at t-i of x at t+s as well as for lags and serially correlated disturbances. The dimension of this solution space is obtained and the results are illustrated with special cases and examples.

Fair, Ray C.

PD January 1986. **TI** Estimated Macroeconomic Effects of Deficit Targeting. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** National Bureau of Economic Research Working Paper: 1814; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 25. **PR** $2.00. **JE** 023. **KW** Deficit Targeting. Fair's Macro Model. Price Shocks.

AB Some macroeconomic effects of deficit targeting are estimated in this paper using my United States econometric model. The response of the economy to real and price shocks is examined in a number of cases. Each case corresponds to a particular assumption about fiscal policy and a particular assumption about monetary policy. Estimates are also presented of the size of the government spending cuts that are needed to meet a given deficit goal under different assumptions about monetary policy.

Farber, Henry S.

TI Job Duration, Seniority, and Earnings. **AU** Abraham, Katharine G.; Farber, Henry S.

Fenn, P.

PD March 1984. **TI** A Positive Economic Theory of Regulatory Enforcement. **AU** Fenn, P.; Veljanovski, C. G. **AA** Veljanovski: University College London. Fenn: Wolfson College, Oxford. **SR** University College London Discussion Paper: 84-16; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 38. **PR** No Charge. **JE** 613. **KW** Regulation. Regulatory Enforcement.

AB A positive economic model of regulatory enforcement is developed which permits the agency to use both legal and informal methods to gain compliance with the law. The paper attempts to fill a gap in the economic literature on regulation by developing a model of enforcement. It also provides a theoretical framework for the recent empirical work of political scientists and sociologists on enforcement practices.

Ferson, Wayne E.

PD January 1985. **TI** Nonstationarity and Stage-of-the-Business-Cycle Effects in Consumption-Based Asset Pricing Relations. **AU** Ferson, Wayne E.; Merrick, John J. Jr. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 336; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 40. **PR** $2.00. **JE** 313, 131. **KW** Consumption Based Asset Pricing Model. Asset Returns. Aggregate Consumption.

AB Empirical tests of stochastic Euler equations relating financial asset returns and aggregate consumption typically reject a joint hypothesis. The joint hypothesis includes a specific representation of aggregate preferences, interior optimality and joint stationarity of consumption growth and real returns with a vector of instrumental variables. This paper presents evidence that the maintained assumptions of previous studies fail for post-war United States quarterly and monthly data. Departures from stationarity over stages of the business cycle and over calendar time are documented. Employing a model which controls for some of these nonstationarities, this study finds no strong evidence against the consumption-based asset pricing model in nonrecession periods. The model is rejected when recession data are included. The evidence is consistent with market imperfections inducing consumption-constrained behavior that can be detected in aggregate consumption and treasury bill return data during recessions.

Findlay, Ronald

PD November 1985. **TI** Racial Discrimination, Dualistic Labor Markets and Foreign Investment. **AU** Findlay, Ronald; Lundahl, Mats. **AA** Findlay: Department of Economics, Columbia University. Lundahl: Lund University. **SR** Columbia Department of Economics Working Paper: 308; Department of Economics, Columbia University, New York, NY 10027. **PG** 21. **PR** $5.00. **JE** 826, 917. **KW** Racial Discrimination. Dual Labor Market.

AB The key feature of the approach taken here to racial discrimination is the application of a "dualistic" model a la Lewis (1954) to the problem, treating a highly stylized "South Africa" as consisting of a capital-abundant "white" sector and a reservoir of "black" labor in the "homelands" or "Bantustans" as they are called, with politically restricted mobility of labor between the "black" and "white" sectors of the economy. The essence of Apartheid, in terms of this approach, lies in the restrictions that regulate this system so as to maximize the welfare of the "white" sector, or some politically dominant segment of it. This view is entirely consistent with that of Olson (1982) with white labor being the particular "distributional coalition", in his terminology, that is responsible for this outcome.

Fischer, Stanley

TI Stopping Hyperinflations Past and Present. **AU** Dornbusch, Rudiger; Fischer, Stanley.

PD January 1986. **TI** 1944, 1963 and 1985: Modiglianiesque Macro Models. **AA** MIT. **SR** National Bureau of Economic Research Working Paper: 1797; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 40. **PR** $2.00. **JE** 023, 041. **KW** Modigliani, Franco. Keynesian Model. Modern Macroeconomics.

AB In 1944 Franco Modigliani published a famous article summarizing the Keynesian model; in 1963 he extended the 1944 framework. This paper, written for a conference in honor of Modigliani, asks how the earlier papers would be modified in the light of recent developments in macroeconomics. The attempt is not to summarize modern macroeconomics, but rather to describe the structure modern macroeconomists should have in mind in thinking about the way the economy and macroeconomic policy work. The paper argues that the basic structure of the 1963 model still stands, with modifications. The 1985 version is an extended Phillips-curve-augmented IS-LM model. The major modifications to the 1963 model are in the treatment of the Phillips curve and aggregate supply, in the analysis of expectations, and in the openness of the economy.

Fisher, Gordon

PD February 25, 1986. **TI** Least Squares Theory and the Hausman Specification Test. **AU** Fisher, Gordon; Smith, Richard J. **AA** Fisher: Queen's University. Smith: Manchester University. **SR** Queen's Institute for Economic Research Discussion Paper: 641; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 26. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 211. **KW** Linear Hypothesis. Least Squares Geometry. Lagrange Multiplier Test. Wald Test. Hausman Test. Specification Error. Equivalence Conditions.

AB The geometry of least squares is exploited to develop an exact test of the Hausman (1978) type of a linear hypothesis. This leads to necessary and sufficient conditions for the equivalence of Hausman and classical tests. This geometrical theory is then extended to the general problem of specification testing, revealing new perspectives and a synthesis of a wide range of existing results.

Fishlow, Albert

PD February 1986. **TI** A Tale of Two Presidents: The Political Economy of Brazilian Adjustment to the Oil Shocks. **AA** Department of Economics, University of California, Berkeley. **SR** University of California Berkeley Working Papers in Economics: 202; Department of Economics, University of California at Berkeley, Berkeley, CA 94720. **PG** 70. **PR** No Charge. **JE** 121. **KW** Brazil, 1974-85. Macro-Economic Adjustment. Economic Policy.

AB This paper examines the evolution of Brazilian economic policy in response to a changing international economic environment from 1974 to 1985. It considers the political objectives underlying policy formulation as well as the special structural and institutional characteristics of the Brazilian economy in an effort to understand better the style of Brazilian adjustment. The special circumstances of an excessive Brazilian commitment to rapid growth led to accumulation of external debt and increased vulnerability. At the same time, the Brazilian state became progressively weaker in its capacity to guide the adjustment process. The outcome was a policy increasingly dominated by the short term need to generate export surpluses, to the prejudice of internal equilibrium.

Fogel, Robert W.

PD January 1986. **TI** Nutrition and the Decline in Mortality Since 1700: Some Additional Preliminary Findings. **AA** Center for Population Economics, University of Chicago. **SR** National Bureau of Economic Research Working Paper: 1802; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 042, 841. **KW** Nutrition. Per Capita Income Estimates. Effect of Toxic Substances. Mortality Rates. Infant Mortality.

AB This paper is an extensive revision and expansion of Working Paper No. 1402. It centers on a new time series of life expectations in the United States since 1720, which has been constructed from the National Bureau of Economic Research/Center for Population Economics pilot sample of genealogies. Native-born Americans achieved remarkably long life expectations toward the end of the eighteenth century but then experienced a 70-year decline. A new rise began late in the 1850s but it was not until 1930 that the Americans again achieved the level of life expectation that was attained c.1790. Second, time series on average adult stature of national populations in North America and Europe are used as indexes of nutritional status (not diet alone but diet net of prior claims). These series are shown to be highly correlated with the series on e sub 10 and other measures of mortality. It is estimated that improvements in nutritional status may have accounted for as much as four-tenths of the secular decline in mortality rates, but nearly all of this effect was concentrated in the reduction of infant mortality. Additional results include an assessment of the effect of toxic substances on the mortality rates of the English peerage; an estimate of the distribution of shortfalls in English supplies of food between 1540 and 1871, which reveals that famines were due primarily to social misallocations of food rather than to large declines in supply; and adjustments of conventional estimates of United States per capita income for the increase in mortality, which reduce the rate of economic growth between 1790 and 1860 by nearly 40 percent.

Fraga, Armino

TI Expectations and the Recession of 1982. **AU** Branson, William H.; Fraga, Armino; Johnson, Robert A.

Freeman, Richard B.

TI Population Growth, Labor Supply, and Employment in Developing Countries. **AU** Bloom, David E.; Freeman, Richard B.

TI The "Youth Problem": Age or Generational Crowding. **AU** Bloom, David E.; Freeman, Richard B.

Frenkel, Jacob A.

TI Sectorial Wages and the Real Exchange Rate. **AU** Aizenman, Joshua; Frenkel, Jacob A.

PD January 1986. **TI** The International Transmission and Effects of Fiscal Policies. **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: 1799; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 11. **PR** $2.00. **JE** 321. **KW** International Transmission of Fiscal Policy. Fiscal Policy.

AB In recent years the world economy has been subject to large and unsynchronized changes in fiscal policies, high and volatile real rates of interest, large fluctuations in real exchange rates, and significant variations in private-sector spending. This paper reviews some of the key facts characterizing the effects of fiscal policies during the first half of the 1980s and provides a simple analytical framework suitable for the interpretation of these facts. The analytical framework builds on a two-country model of the world economy which is applied to the analysis of the transmission and effects of various changes in the time profile of taxes and of government spending. Generally, the predictions of the model concerning the relation among the inter-country patterns of consumption, long and short-term real rates of interest, real exchange rates and fiscal policies are consistent with the stylized facts.

Friedman, Benjamin M.

TI The Behavior of United States Short-Term Interest Rates Since October 1979. **AU** Clarida, Richard H.; Friedman, Benjamin M.

PD January 1986. **TI** Implications of the United States Net Capital Inflow. **AA** Department of Economics, Harvard University. **SR** National Bureau of Economic Research Working Paper: 1804; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 30. **PR** $2.00. **JE** 431, 311, 321. **KW** Foreign Capital Inflow. Fiscal Policy. Capital Formation. Export-Import Balance. Money Policy.

AB The rapidly growing net inflow of capital from abroad, mirroring the extraordinary deterioration of the United States export-import balance, has played a major role in equilibrating overall saving and investment in the United States in the face of unprecedentedly large and persistent federal government budget deficits during the 1980s. As a result of this capital inflow, the share of United States financial assets held by foreign investors is also growing rapidly. If the inflow continues, the increasing relative importance of foreign investors will in general change the equilibrium price and yield relationships determined in United States markets. In particular, because foreign investors, on average, hold far less of their portfolios in long-term debt instruments than do American investors, the increasing share of foreign ownership of United States financial assets is likely to raise the expected return premium on long-term debt, and hence to shift the composition of United States financial activity away from capital formation. Nevertheless, the foreign capital inflow -- and with it the United States export-import balance -- may change in response to a variety of possible influences, including United States fiscal and monetary policies. Empirical estimates based on reduced-form equations indicate that a tightening of United States fiscal policy would significantly stimulate United States capital formation, and would shrink the United States capital inflow (that is, improve the United States export-import balance) by even more. Analogous estimates indicate that an easing of United States money policy would also significantly stimulate capital formation and shrink the capital inflow, but with the relative magnitudes of the two effects approximately reversed.

Friedman, James W.

PD September 1985. **TI** A Positive Approach to Noncooperative Games. **AU** Friedman, James W.; Rosenthal, Robert W. **AA** Friedman: University of North Carolina at Chapel Hill. Rosenthal: State University of New York at Stony Brook. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E84-09-04; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061. **PG** 32. **PR** No Charge. **JE** 026. **KW** Noncooperative Games. Steady State.

AB Population steady states are defined for noncooperative games played repeatedly by individuals drawn from large populations. These steady states balance the tendencies of immigration to and emigration from strategies according to certain simple measures of their relative performances. Approximate values for these steady states are computed for some examples and appear intuitively more plausible as descriptors of play than do Nash equilibria.

Gallo, Giampiero M.

TI Solving Large Sparse Systems of Equations. **AU** Don, F. J. Henk; Gallo, Giampiero M.

Galor, Oded

PD February 1984. **TI** Intertemporal Allocations and the Transfer Paradox. **AU** Galor, Oded; Polemarchakis, Heraklis M. **AA** Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-84-02 (revised); 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** 021, 024, 411. **KW** Transfer Paradox.

AB The transfer paradox may occur in a world with only two countries at a dynamically stable intertemporal competitive equilibrium. In a framework of overlapping generations with production and investment, a transfer of income may immeserize the recipient while enriching the donor. Away from the golden rule, a transfer may result in a Pareto improvement.

Gasmi, Farid

TI Endogenous Agenda Formation in Three-Person Committees. **AU** Banks, Jeffrey S.; Gasmi, Farid.

Geanakoplos, John

TI On Finitely Repeated Games and Pseudo-Nash Equilibria. **AU** Chou, Chien; Geanakoplos, John.

PD October 11, 1985. **TI** Real Indeterminacy with Financial Assets. **AU** Geanakoplos, John; Mas, Colell Andreu. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 770R; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 14. **PR** No Charge. **JE** 313. **KW** Complete Markets Hypothesis. Real Indeterminacy.

AB The purpose of this paper, which takes up after D. Cass (1984a, 1984b), is to find the degree of real indeterminacy inherent in models with purely financial assets. We solve the problem for the case where there are enough traders (precisely, the number of traders is larger than the number of bonds) and the asset returns structure is in general position. We find that if the number of bonds is non-zero and fewer than the number of states then, generically, the number of dimensions of real indeterminacy is S-1, one less than the number of states. There is something of a surprise in the above result, namely the dimension of real indeterminacy does not depend on the number of bonds (except in the two limit cases). Indeed, one initial conjecture was S-B. This points to an intriguing qualitative discontinuity at the complete market configuration. If markets are financially complete then the model is determinate. Let just one bond be missing and the model becomes highly indeterminate. Thus, in this sense, the complete markets hypothesis lacks robustness.

Gertler, Mark

TI Banking and Macroeconomic Equilibrium. **AU** Bernanke, Ben; Gertler, Mark.

Giavazzi, Francesco

PD October 1985. **TI** European Currency Experience. **AU** Giavazzi, Francesco; Giovannini, Alberto. **AA** Giavazzi: University of Venice, Italy. Giovannini: Columbia Business School. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-85-43; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 68. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 423, 431, 432, 441. **KW** Portfolio Models. Capital Controls. Optimal Currency Areas. European Monetary System. Bilateral Exchange Rates. International Financial Markets.

AB This paper discusses the empirical evidence on bilateral exchange rates in Europe and their relative movements vis-a'-vis the dollar. The paper documents the often mentioned regularity whereby when the dollar appreciates, the Deutsche Mark tends to depreciate vis-a'-vis other European currencies. Next, possible explanations of this empirical regularity are evaluated. Numerical illustrations show that the observed behavior of exchange rates could be approximated by dynamic portfolio models for the period preceding the European Monetary System. Neither static, nor dynamic portfolio models can reproduce correlations of exchange rates as observed during the European Monetary System period. The role of capital controls is also studied. It is shown that capital controls have very important effects in international financial markets: they endogenously give rise to market thinness, they make sterilized foreign exchange market operations more effective, and, finally, they might go some way in explaining the empirical regularity mentioned above. The paper concludes with an analysis of the costs and benefits of asymmetric exchange rate movements vis-a'-vis the dollar within a managed exchange rates system like the EMS. The standard optimal currency area arguments are extended to take into account the benefits from coordination. It is demonstrated that in some cases fixing European bilateral rates has the advantage of avoiding the losses due to lack of coordination. However, the present system is such that member countries have decided not to give up their monetary sovereignty, by instituting international capital controls. Unfortunately, capital controls by themselves are one of the causes of asymmetric exchange rate movements.

Gilbert, Christopher L.

PD April 1986. **TI** The Development of British Econometrics 1945-85. **AA** Institute of Economics and Statistics, Oxford. **SR** Oxford Applied Economics Discussion Paper Series: 8; Institute of Economics and Statistics, Saint Cross Building Manor Road, Oxford OX1 3UL. **PG** 56. **PR** No Charge. **JE** 031, 212. **KW** Econometrics. History Of Economic Thought. Great Britain.

AB In the immediate postwar decade, work in the Department of Applied Economics at Cambridge was instrumental in establishing the now standard regression model as the major statistical tool in applied economics. Subsequently, the focus of British econometrics shifted to the London School of Economics. Modern British time series econometric practice, which differs sharply from standard practice in the United States, evolved through the interaction of the Cowles tradition, time series (statistics) methods, and classical control theory. This has resulted in a shift of emphasis away from estimation and towards issues of dynamic specification and model selection.

Gilbert, Richard J.

PD June 1984. **TI** Holes in the Backstop: Optimal Contracts and the Saga of the United States Synthetic Fuels Corporation. **AA** University of California, Berkeley. **SR** University of California Berkeley Institute of Business and Economic Research, Research Papers in Economics: 84-5; Institute of Business and Economic Research, 156 Barrows Hall, University of California at Berkeley, Berkeley, CA 94720. **PG** 22. **PR** $3.00. **JE** 722, 723. **KW** Synthetic Fuels. Synfuels Industry. Incentive-Compatible Contracts. United States Synthetic Fuels Corporation.

AB Cost-effectiveness of the United States Synthetic Fuels Corporation is evaluated. The initial funding of $15 billion is found to be unjustified as a means to increase the production of oil and gas; however, it is suggested that the program could succeed in providing information about the commercial potential of synthetic fuel technologies. To this end, how could a subsidy program be designed to encourage the demonstration of those technologies which have the highest information value? A detailed technical analysis considers insurance, adverse selection, incentive-compatible contracts and option values.

Gilles, Christian

TI Money and Redistribution: Revisionist Notes on a Problem of Samuelson. **AU** Marshall, John M.; Sonstelie, Jon; Gilles, Christian.

PD September 1985. **TI** On the Invariance of Policy Shifts. **AA** Department of Economics, University of California, Santa Barbara. **SR** University of California Santa Barbara Department of Economics Working Papers: 261; Department of Economics, University of California at Santa Barbara, Santa Barbara, CA 93106. **PG** 18. **PR** No Charge. **JE** 023, 310, 320. **KW** Economic Policy Shifts.

AB We provide sufficient conditions for a policy shift to leave the equilibrium unaffected, in a fairly general model. These conditions are much simpler, and their function more easily understandable, than others that have appeared previously in the literature. This is because our definition of an invariant policy shift is of the Modigliani-Miller type, and is weaker than definitions used elsewhere, for example in Wallace '1981 or Chamley and Polemarchakis '1984.

PD September 1985. TI The Local Expectations Hypothesis: A Discrete-Time Exposition. AU Gilles, Christian; LeRoy, Stephan F. AA Department of Economics, University of California, Santa Barbara. SR University of California Santa Barbara Department of Economics Working Papers: 260; Department of Economics, University of California at Santa Barbara, Santa Barbara, CA 93106. PG 8. PR No Charge. JE 313, 311. KW Term Structure of Interest Rates. Local Expectations Hypothesis. Risk Neutrality.

AB Cox, Ingersoll and Ross (1981) (hereafter CIR) distinguished various forms of the expectations hypothesis of the term structure of interest rates. They proved that, with one exception, these are consistent with general equilibrium only in the trivial case in which interest rates are nonrandom. The exception is the Local Expectations Hypothesis (hereafter LEH). Because of this non-existence result, those who regard the expectations hypothesis as a natural starting point in investigating the term structure of interest rates are motivated to understand under what restrictions the LEH is valid. In our experience, many readers of CIR's paper -- particularly those not conversant with stochastic calculus -- have difficulty following CIR's discussion. Such readers may find it easier to work through an analysis of the LEH in a more familiar discrete time framework. This paper provides such an exposition.

Gilson, Ronald J.

PD February 1986. TI Taxation and the Dynamics of Corporate Control: The Uncertain Case for Tax Motivated Acquisitions. AU Gilson, Ronald J.; Scholes, Myron S.; Wolfson, Mark A. AA Wolfson: Stanford Graduate School of Business. Gilson and Scholes: Stanford Law School. SR Stanford Graduate School of Business Research Paper: 873; Graduate School of Business, Stanford University, Stanford, CA 94305-2391. PG 78. PR No Charge. JE 611, 520. KW Corporate Acquisitions. Tax Gains. Tax Motivated Acquisitions.

AB We develop an analytic framework to examine the familiar claim that the tax system favors corporate acquisitions. The framework is then applied to the three most commonly identified sources of tax gains from acquisitions: the change in asset basis available through taxable acquisitions; the faster use of net operating losses available through nontaxable acquisitions; and the tax deduction available for interest paid on funds borrowed to finance acquisitions. To isolate the role of tax rules, consideration of each of the three sources of tax gains begins with examination of acquisitions and the related alternatives in a perfect market. In such a setting, the alternatives are found to weakly dominate acquisitions as a means of achieving tax gains. We then take one step closer to the real world, relaxing the perfect market assumption to introduce transaction and other information costs. These costs sometimes reinforce and sometimes weaken the perfect market results. The analysis also suggests that, at least with respect to change in basis from acquisitions, the availability of a tax gain may do more than create an incentive to engage in socially wasteful transactions that achieve only tax gains but consume real resources. It appears that in a setting of imperfect information, the provision of a tax gain from asset transfers may operate as a subsidy to mitigate the problem of underinvestment in search for enhanced operating efficiencies. After consideration of the net gains to acquisitions, examination of whether these gains explain the size of acquisition premiums leads to a negative conclusion, in large part because tax gains are anticipated.

Giovannini, Alberto

TI European Currency Experience. AU Giavazzi, Francesco; Giovannini, Alberto.

PD January 1986. TI Interest Rates and Risk Premia in the Stock Market and in the Foreign Exchange Market. AU Giovannini, Alberto; Jorion, Phillipe. AA Graduate School of Business, Columbia University. SR Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-86-10; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. PG 29. PR $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). JE 521, 441. KW Risk Premia. Heteroskedasticity. Capital Asset Pricing Models. Foreign Exchange Market. Stock Market.

AB This paper documents common empirical regularities which characterize returns in the United States stock market and in the foreign exchange market. The most important findings are that conditional distributions of returns are heteroskedastic, that increases in conditional variances are associated with higher nominal interest rates, and that conditional expectations are correlated with nominal interest rates. Next, the paper shows the implications of the findings for empirical tests of asset pricing models. First, we perform numerical calculations to show that, contrary to Frankel's '1985 claim, the static capital asset pricing model could be reconciled with the observed large fluctuations of foreign exchange rates risk premia, if the time variation of conditional variances is explicitly accounted for. Second, we compare tests of the overidentifying restrictions of the latent variables capital asset pricing model employed by Hansen and Hodrick '1983 under two assumptions: (i) that, as in Hansen and Hodrick, betas are constant; (ii) that betas are time varying, and are correlated with nominal interest rates. We find that the model is rejected under the first assumption, but not under the second.

Girardin, Michel

TI Business Cycles in Switzerland (1967-1984): Intrinsic Characteristics and Comparison with the United States Economy. AU Panthine, Jean Pierre; Girardin, Michel.

Goodman, David

PD December 1984. TI Social Change in Brazil Since 1945: Rural Economy and Society. AA University College London. SR University College London Discussion Paper: 85-03; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. PG 71. PR No Charge. JE 718. KW Brazil. Agrarian Social Structure. Family Farm. Agro-Industrial Capitals.

AB This survey of Brazilian agrarian debates emphasises the changing formulations of agrarian social structures and their integration in the post-war process of capitalist accumulation. These analyses include the articulation

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model, the classic internal differentiation process of the 'Junker road', and differing conceptualisations of the capitalised family farm and the nature of its subordination to agro-industrial capitals. These perspectives elucidate post-war structural change in rural economy and society, particularly the transformations set in train by the 'industrialisation' of the agricultural production process under the aegis of 'conservative modernisation' strategies.

PD March 1985. **TI** Agriculture. **AA** University College London. **SR** University College London Discussion Paper: 85-04; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 59. **PR** No Charge. **JE** 716. **KW** Brazil. Commercial Farms.

AB This paper examines the emergence and characteristics of a rather elusive, though arguably increasing, form of production in Brazil: capitalised, technologically advanced, commercial farms based on family enterprise.

Green, Jerry R.

PD March 1985. **TI** Posterior Implementability in a Two-Person Decision Problem. **AU** Green, Jerry R.; Laffont, Jean Jacques. **AA** Green: Harvard University. Laffont: Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8502; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 43. **PR** No Charge. **JE** 026, 025. **KW** Bayesian Implementable Decision Rules. Two-Person Decision Problem. Social Decision Rules.

AB When a decision rule is implemented using a Bayesian incentive compatible mechanism in which the messages are publically observable, the players' information is augmented by their observation of each others' strategies. In this paper we study the set of Bayesian implementable decision rules which have the further property that the information conveyed in the process of their implementation does not invalidate the optimality of the players' strategies. We call such rules posterior implementable. We concentrate on a two-person decision problem, and, for this problem, we obtain a complete characterization of the set of posterior implementable decision rules. A posterior implementable social decision rule can take essentially two values and is based on an at most countable number of messages for each player. The set of posterior social decision rules can be described as fixed points of mappings on Euclidean spaces whose dimensions are two less than the number of messages used by the different players. As a consequence this set is generally at most countable.

Grossman, Gene M.

PD March 1986. **TI** Counterfeit-Product Trade. **AU** Grossman, Gene M.; Shapiro, Carl. **AA** Woodrow Wilson School, Princeton University. **SR** Princeton Woodrow Wilson School Discussion Papers in Economics: 107; Woodrow Wilson School, Princeton University, Princeton, NJ 08544. **PG** 34. **PR** No Charge. **JE** 411. **KW** Counterfeiting. Trademarks. Reputations.

AB We analyze 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 characterize 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 policy regarding the disposition of counterfeit goods that are confiscated at the border.

Gunning, J. W.

TI Consequences of a Commodity Boom in a Controlled Economy: Accumulation and Redistribution in Kenya, 1975-83. **AU** Bevan, D. L.; Collier, P.; Gunning, J. W.

Hahm, Sangmoon

PD January 1985. **TI** Effects of Noisy-Shocks on Equilibrium Information Lags and the Optimal Monetary Policy. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-01-02; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 27. **PR** No Charge. **JE** 026, 311. **KW** Information Lag. Household Welfare. Monetary Policy.

AB Most rational expectations models assume that there is an economy-wide information lag on some state variables. With this rigid information lag feature, these models predict a certain invariance in the level of a household's information gathering activities relative to fluctuations in the price level. In this paper, we utilize Grossman and Stiglitz's idea of informational equilibria in a Samuelson-Lucas overlapping generations model to see how a change in the degree of price fluctuation affects a household's information gathering behavior. We also discuss which equilibrium information lag is optimal given the degree of price fluctuations. Finally, under an expected utility criterion, we study which monetary policy maximizes a typical household's welfare with a special attention to a k-percent money growth rule.

PD November 1985. **TI** Determination of Optimal Information Lag: A Search Theoretic Example. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E 84-10-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 31. **PR** No Charge. **JE** 026. **KW** Information Lag.

AB This paper is an attempt to develop a model of an information lag in an optimizing framework. Specifically, we utilize a search model in a continuous time framework such that we can easily calculate the length of a household's optimal information lag. We show why and under which conditions this search setup is optimal and how the length of the optimal information lag varies with a change in the cost of transaction, discount rate, frequency of price changes, fluctuation of the price level, or the degree of risk aversion.

Ham, John C.

TI Variation in Employment Growth in Canada: The Role of External, National, Regional and Industrial Factors. **AU** Altonji, Joseph G.; Ham, John C.

Hamermesh, Daniel S.

TI Inflation and Wage Dispersion. **AU** Drazen, Allan; Hamermesh, Daniel S.

PD February 1986. **TI** Plant Closings, Labor Demand and the Value of the Firm. **AA** Department of Economics, Michigan State University. **SR** National Bureau of Economic Research Working Paper: 1839; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** $2.00. **JE** 851, 022. **KW** Firm-Specific Human Capital. Plant Closings.

AB This study postulates an internal labor market in which workers accumulate firm-specific human capital that raises the value of the firm and insulates it to some extent from the vagaries of product demand that might result in its closing. Negative product-market shocks reduce wage growth and increase the probability of the firm closing. The model also predicts a U-shaped relation between the probability of the plant closing and the length of a worker's tenure, a proxy for firm-specific human investment. PSID data for 1977 through 1981 are used to produce weighted-probit estimates of the parameters of an equation describing the probability of displacement. The results support most of the predictions of the model, but similarly specified equations describing the probability of permanent layoff indicate that a theory of plant closings must differ from that of layoffs. The parameter estimates are used to infer an analogue to the firm's elasticity of demand for labor and to deduce the wage reduction necessary to avoid an increase in the probability of a plant closing when a negative demand shock occurs.

Hammond, Peter J.

PD May 1985. **TI** Mass-Economics with Vital Small Coalitions; The F-Core Approach. **AU** Hammond, Peter J.; Kaneko, Mamoru; Wooders, Myrna Holtz. **AA** Hammond: Stanford University. Kaneko: University of Tsukuba. Wooders: University of Toronto. **SR** Yale Cowles Foundation Discussion Paper: 752; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 31. **PR** No Charge. **JE** 021. **KW** Continuum Economies. Finite Coalitions. Core Equivalence. Equilibrium Existence.

AB A mass-economy is one with many, many agents where each agent is negligible and each trading group is also negligible with respect to the mass-economy. Feasible allocations are those which are virtually attainable by trades only among members of coalitions contained in feasible ("measure-consistent") partitions of the agent set. A feasible allocation is in the core, called the f-core, if it cannot be improved upon by any finite coalition. We show that in a private goods economy with indivisibilities and without externalities, the f-core, the A-core (Aumann's core concept) and the Walrasian allocations coincide. In the presence of widespread externalities, the f-core and the Walrasian allocations coincide but the definition of the A-core is problematic. The conceptual significance of these results will be discussed.

Hardouvelis, Gikas A.

PD September 1985. **TI** Economic News, Exchange Rates and Interest Rates. **AA** Department of Economics, Barnard College, Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-86-12; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 31. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 431, 311, 313. **KW** Macroeconomic News. Exchange Rates. Interest Rates. Federal Reserve.

AB The paper examines the response of exchange rates and interest rates to the new information contained in the first announcement of fifteen United States macroeconomic series during the post-October 1979 time period. Markets respond primarily to monetary news and in anticipation of a future change in real interest rates rather than the expected rate of inflation. But the response to inflation news reveals that markets retained doubts about the Fed's long-run anti-inflation policy. News about the trade deficit and the state of the business cycle are also important.

PD September 1985. **TI** Reserves Announcements and Interest Rates: Does Monetary Policy Matter?. **AA** Department of Economics, Barnard College, Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-86-11; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 25. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 311. **KW** Reserves. Announcements. Interest Rates. Liquidity Effect. Term Structure of Interest Rates.

AB The paper provides evidence on the perceived existence of the textbook liquidity effect. The analysis is based on the response of the term structure of interest rates to the weekly Federal Reserve announcements of bank reserves during the post-October 1979 time period. It is shown that unanticipated changes in the mix between borrowed and non-borrowed reserves cause interest rates to change after the announcement because they provide a signal of a future change in the supply of money.

PD February 1986. **TI** Macroeconomic Information and Stock Prices. **AA** Department of Economics, Barnard College, Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-86-13; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 14. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 313, 311. **KW** Monetary Announcements. Stock Prices. Federal Reserve. Regime Changes.

AB The paper analyzes the response of stock prices to the announcements of fifteen representative macroeconomic variables. Stock prices respond primarily to announcements of monetary variables. Stocks of financial companies are the most sensitive to monetary news. Implicit in the stock price reactions are the market perceptions that the Federal Reserve plays an important role in future macroeconomic developments. The post-October 1982 change in the operating target of the Federal Reserve did not affect the stock price responses substantially, although it did affect the corresponding responses of short-term interest rates.

Harrigan, Kathryn Rudie

PD September 1985. **TI** Special Report on the Use of Joint Ventures. **AA** Graduate School of Business, Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-86-02; 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** 514, 611. **KW** Joint Ventures. Strategy.

AB The changing use of joint ventures (and other cooperative arrangements) by United States firms is profiled in this report on (1) why firms are cooperating with greater frequency now than ever before and (2) what firms can do to improve their use of this strategy option. Briefly, firms should enter joint ventures with realistic expectations of their benefits and realistic appraisals of what they can offer to potential partners if they hope to cooperate effectively.

PD September 1985. **TI** Why Joint Ventures Fail. **AA** Graduate School of Business, Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-86-01; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 36. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 514, 611. **KW** Joint Ventures. Strategy. Cooperation. Coordination. Industry Structure.

AB A framework (that was tested by interviewing managers who use joint ventures) sketches how mis-matches among parties to inter-firm cooperation can cause its failure. Problem sources include venture-to-industry mis-matches, partner-to-partner mis-matches, and venture-to-parent mis-matches in management systems, among others.

Hatta, Tatsuo

TI The Global Correspondence Principle: A Generalization. **AU** Bhagwati, Jagdish N.; Brecher, Richard A.; Hatta, Tatsuo.

Havrilesky, Thomas

PD March 14, 1986. **TI** Three Monetary and Fiscal Policy Myths. **AA** Department of Economics, Duke University. **SR** Duke Working Papers in Economics: 86-03; Working Papers Series, Department of Economics, Duke University, Durham, NC 27706. **PG** 28. **PR** No Charge. **JE** 311, 321. **KW** Federal Reserve. Monetary Policy. Fiscal Policy.

AB Over the years the standard view of monetary and fiscal policy has been dominated by three myths. The first is that monetary and fiscal policy systematically attempt to maximize social welfare; the second is that the Federal Reserve is an independent, politically neutral institution; and the third is that fiscal and monetary policymakers manipulate their instruments so as to affect state-of-the-economy variables in temporally consistent ways. Unlike the first and second myths, the third myth is alive and well. This paper provides a discussion of these three myths.

Hawawini, Gabriel

PD January 1985. **TI** Random Market-Price-of-Risk in Single-Variable CAPM. **AU** Hawawini, Gabriel; Vora, Ashok. **AA** Hawawini: INSEAD. Vora: Baruch College of the City University of New York. **SR** New York University Salomon Brothers Center Working Paper: 339; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 8. **PR** $2.00. **JE** 313. **KW** CAPM. Capital Asset Pricing Model. Systematic Risk.

AB The standard single-variable CAPM of Sharpe (1964) and Lintner (1965) will show that the market price of systematic risk is random. An inherent misspecification exists in the single-variable CAPM since researchers have demonstrated that other variables - besides the systematic risk - influence the return provided by a security.

PD January 1985. **TI** Systematic Risk Estimation and the Investment Horizon: Some Further Comments. **AU** Hawawini, Gabriel; Vora, Ashok. **AA** Hawawini: INSEAD. Vora: Baruch College of the City University of New York. **SR** New York University Salomon Brothers Center Working Paper: 338; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 13. **PR** $2.00. **JE** 313. **KW** Nonsynchronous Trading Bias. Investment Horizon. Beta Coefficient.

AB In a recent paper Hawawini and Vora (H&V) (1981, p. 636) show that "the changes in the beta coefficient of a stock induced by changes in the investment horizon seem to follow a random walk rather than display the systematic increase or decrease predicted by Levhari and Levy (L&L) (1977)". Wood and McInish (W&M) in their comment examine whether nonsynchronous trading has confounded the empirical tests of the L&L's proposition (L&L (1977, 1981)) and the alternative proposition suggested by H&V. W&M conclude that "while results concerning the validity of L&L hypothesis were mixed, the ability of nonsynchronous trading bias to obfuscate tests of this hypothesis was clearly demonstrated". In this note we show that W&M's results are not "mixed" but clearly refute L&L's hypothesis. We also show that the nonsynchronous trading can bias the submonthly results but the supermonthly results do not suffer from a significant bias.

PD July 1985. **TI** Financial Innovation and Incentive Schemes to Accelerate the Development of Capital Markets: The Case of France. **AA** INSEAD. **SR** New York University Salomon Brothers Center Working Paper: 357; 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. **KW** France. Capital Markets. Financial Innovation.

AB After a brief presentation of the general features of the French capital markets we turn to the examination of the process of financial innovation. An understanding of this process should facilitate the formulation of effective incentive schemes to accelerate the development of capital markets. This exercise will also provide a framework for the analysis of the recent developments which took place in the French capital markets over the last 6 years. We conclude with an evaluation of the French experience.

Heady, Christopher

PD 1984. **TI** Optimal Taxation With Induced Migration. **AA** University College London. **SR** University College London Discussion Paper: 84-09; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 29. **PR** No Charge. **JE** 323, 823. **KW** Optimal Taxation. Internal Migration. Diamond-Mirlees Model. Harris-Todaro Model.

AB This paper addresses the issue of optimal taxation in an economy with induced internal migration. It extends the Diamond-Mirrlees model, in that households base their decisions on observed quantities as well as consumer prices, and the work of Bhagwati and Srinivasan on the Harris-Todaro model, by considering the costs of raising revenue to pay for policies. It shows how the tax rules and Bhagwati-Srinivasan's wage subsidy policy have to be modified. Also it shows that concern for income distribution does not necessarily counteract a presumption in favour of placing heavy tax burdens on unsuccessful migrants.

PD 1984. **TI** A Diagrammatic Approach to Optimal Commodity Taxation. **AA** University College London. **SR** University College London Discussion Paper: 84-08; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 23. **PR** No Charge. **JE** 022, 323. **KW** Ramsey Tax Rule. Optimal Commodity Taxation.

AB This paper presents a diagrammatic analysis of the Ramsey tax problem with the aim of making the theory easier to understand. In particular it provides an intuitive justification for the Ramsey tax rule, something that has so far been missing from the literature. The analysis rests on the idea that commodity taxes can be improved if there is scope for inducing consumers to participate further in taxed activities. The Ramsey rule is shown to be satisfied when no such scope exists.

PD June 1984. **TI** A Computational Approach to Optimum Public Policies. **AU** Heady, Christopher; Mitra, Pradeep. **AA** Heady: University College London. Mitra: The World Bank. **SR** University College London Discussion Paper: 84-18; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 52. **PR** No Charge. **JE** 323. **KW** Optimal Taxes. Restricted Tax Powers. Scarf's Algorithm. Public Production. Tax Restrictions.

AB This paper describes and illustrates the use of an algorithm that computes optimal taxes and public production in an economy where the government's tax powers are restricted. The special features of the optimal restricted tax problem required the solution of problems that have not arisen in previous applications of Scarf's algorithm. Indeed, these problems could only be dealt with properly by developing two versions of the algorithm that can be used together. This paper outlines the economic model and explains its special features. The two versions of the algorithm are then described and their convergence properties established. The combined use of the two versions of the algorithm is illustrated in a problem that involves the choice between public and private control of production and shows that domestic tax restrictions can make inefficient public production desirable.

PD March 1985. **TI** The Quantitative Analysis of Optimal Public Policy. **AU** Heady, Christopher; Mitra, Pradeep. **AA** Heady: University College London. Mitra: The World Bank. **SR** University College London Discussion Paper: 85-12; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 43. **PR** No Charge. **JE** 321, 323, 422. **KW** Optimal Public Policy. Taxation. Public Investment. Trade Intervention. Income Inequality.

AB The purpose of this paper is to present an overview of the authors' work on optimal public policy. This work has been concerned with developing a quantitative framework for the analysis of policy both by extending the theory and using numerical analysis to elucidate the theory's implications. We have studied policy issues in the following areas: (1) Taxation and Pricing (2) Public Investment (3) Trade Intervention The study of policy in these areas is interesting because of the perceived inadequacies of a completely laissez faire government. There are of course many such inadequacies stemming from a variety of sources, such as non-competitive markets, externalities, public goods and income inequality. Our work has concentrated on a concern for income inequality as a motive for active government policy and, in order to achieve this concentration, has assumed that no other market imperfections are present. However our methodology can be readily extended to include other market failures.

PD March 1985. **TI** Alternative Theories of Wages in Less Developed Countries: An Empirical Test. **AA** University College London. **SR** University College London Discussion Paper: 85-11; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 17. **PR** No Charge. **JE** 824, 121. **KW** Industrial Wage Determination. Less Developed Countries.

AB This paper develops a methodology for distinguishing empirically between different theories of industrial wage determination in less developed countries. This problem is particularly interesting as the theories are usually set up in terms of variables that are not directly observable. Thus the theories had to be re-cast in a form that yielded predictions in terms of observable variables. An interesting by-product of this analysis is an example of the policy relevance of the difference between the theories.

Heal, Geoffrey

TI The Management of Trade With Economies of Scale.
AU Chichilnisky, Graciela; Heal, Geoffrey.

PD October 1985. **TI** Stable Disequilibrium Prices.

AA Graduate School of Business, Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-85-40; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 18. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 021. **KW** Stability. Disequilibrium. Fixed Prices. Increasing Returns. Walrasian Price Adjustment.

AB The paper establishes conditions for the existence of a set of prices which are stable and at which markets do not clear. This is done by analyzing a Walrasian price adjustment process for a general equilibrium economy with economies of scale.

Heckman, James J.

PD August 1985. **TI** An Investigation of the Labor Market Earnings of Panamanian Males: Evaluating Sources of Inequality. **AU** Heckman, James J.; Hotz, V. Joseph. **AA** University of Chicago. **SR** NORC Program in Quantitative Economic Analysis Discussion Paper: 85-15; Economics Research Center / NORC, 6030 S. Ellis, Chicago, IL 60637. **PG** 43. **PR** $2.00; send requests to Librarian, Economics Research Center/NORC. **JE** 824, 121. **KW** Panama. Labor Market Earnings. Inequality. Labor Market Segmentation. Dual Labor Market.

AB This paper presents empirical evidence on the determinants of labor market earnings and inequality for males in Panama. Using newly available microdata from the United Nations sponsored Socioeconomic Survey of Panama conducted in 1983, we estimate earnings equations using the measurement framework developed by Mincer (1974) and widely used in studies of the determinants of earnings. We compare our estimates for Panama with those for other countries at various stages of economic development. The primary focus of this paper is to examine empirical evidence on two aspects of inequality in less developed economies, namely labor market segmentation and social stratification. While we present several tests of the segmentation hypothesis, including several of the dual labor market hypothesis, we discuss the inherent problems of interpreting such tests. We also present evidence on the importance of family background in the determination of earnings and educational attainment for Panamanian males and compare it with that for the United States.

Hines, James R. Jr

TI Tax Reform, Investment, and the Value of the Firm. **AU** Auerbach, Alan; Hines, James R. Jr.

Ho, Thomas S. Y.

PD March 1985. **TI** Duration, Futures Pricing and Immunization with Interest Rate Futures. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 344; Salomon Brothers Center, Graduate School of Business Administration, New york University, 100 Trinity Place, New York, NY 10006. **PG** 28. **PR** $2.00. **JE** 311, 313. **KW** Interest Rate Futures. Immunization Strategy.

AB This paper develops an immunization strategy using interest rate futures in an arbitrage-free interest rate movement framework. Also, this paper derives a generalization of MaCauley's duration measure and a closed-form solution of an interest rate futures pricing model. The paper extends the current literature on immunization in two significant ways. First, it deals with a hedging strategy in an arbitrage-free context, and therefore the analytical framework can be extended to immunization strategies involving other interest-rate contingent claims. Second, it provides a theoretical framework to study asset-liability management using interest-rate futures. Finally, the model provides several empirically testable hypotheses.

PD May 1985. **TI** Term Structure Movements and the Pricing of Corporate Bond Provisions. **AU** Ho, Thomas S. Y.; Lee, Sang Bin. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 349; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 57. **PR** $2.00. **JE** 311, 313. **KW** Interest Rate Movements. Interest Rate Contingent Claims. Corporate Bond Provisions. Term Structure.

AB This paper's contribution to the fixed-income securities pricing literature is twofold. First, we present a theoretical model of interest rate movements that can be used to study interest rate contingent claims. In this paper, we use this framework to study corporate bond provisions. But the same framework can be used to study other fixed-income securities or interest rate contingent claims. Second, we provide a theoretical model of the value of corporate bond provisions. Such a model enables us to better understand the behavior of bond provisions and hence the pricing of corporate bonds.

PD May 1985. **TI** Pricing of Corporate Bond Provisions an Empirical Evidence. **AU** Ho, Thomas S. Y.; Lee, Sang Bin. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 346; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 43. **PR** $2.00. **JE** 313. **KW** Call Provisions. Sinking Fund Provisions. Corporate Bonds.

AB The purpose of this paper is to empirically investigate the pricing of call and sinking fund provisions on corporate bonds. Our approach differs from previous studies in several ways. First, our paper studies the combined impact of the provisions on the bonds as well as the impact of each provision. In contrast, previous literature tends to study the provisions in isolation. Our approach is important, because nearly all corporate bonds have sinking fund and call provisions, and their combined effect can differ significantly from the effect of each component. Second, our empirical study is model specific. Our analysis is based on the Ho and Lee '1985 model of these provisions. This approach enables us to be more precise in our description of the empirical results.

PD May 1985. **TI** Interest Rate Futures Options and Interest Rate Options. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 345; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 31.

PR $2.00. JE 313, 311. KW Interest Rate Options. Interest Rate Futures' Options. Eurodollar Futures Options.

AB This paper derives pricing models for interest rate options and interest rate futures options. The models utilize the arbitrage-free interest rate movements model of Ho and Lee '9. In their model, they take the initial term structure as given, and for the subsequent periods, they only require the bond prices to move relative to each other in an arbitrage-free manner. Viewing the interest rate options as contingent claims to the underlying bonds, I derive the closed form solutions for the option prices. These models, being sufficiently simple, can be used to empirically investigate the pricing of bond options. In this paper, I also study empirically the pricing of Eurodollar futures options. The results show that the model has significant explanatory power and, on average, has smaller estimation errors than Black's model. The results suggest that the model can be used to price options relative to each other, even though they may have different expiration dates and striking prices.

Holly, Alberto

PD May 1985. TI Some Useful Equivalence Properties of Hausman's Test. AU Holly, Alberto; Monfort, Alain. AA Holly: Universite de Lausanne. Monfort: INSEE. SR Universite de Lausanne Cahiers de Recherches Economiques: 8505; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. PG 10. PR No Charge. JE 211. KW Hausman Test.

AB This paper describes in general terms situations in which apparently different expressions for Hausman's test statistic are actually either asymptotically equivalent or numerically equal. It also describes, in the most general possible way, cases where quadratic forms based on linear combinations of the constrained and unconstrained estimators of all the unknown parameters of a model are asymptotically equivalent to the classical test statistics. The theoretical results presented in this paper are illustrated with an example.

PD June 1985. TI Testing for Exogeneity: A Survey. AA Universite de Lausanne. SR Universite de Lausanne, Cahiers de Recherches Economiques: 8506; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. PG 29. PR No Charge. JE 211. KW Exogeneity.

AB In this paper I would like to give a general exposition of the exogeneity test problem. For this purpose, I will use a general instrumental variables framework with which one can associate a maximum likelihood framework. Within these two frameworks, one can describe most of the exogeneity test procedures suggested in the literature, indicate the possible relations among them and derive their statistical properties. At the outset, I would like to emphasize that this paper is meant to be a pedagogical note on the exogeneity test problem. It doesn't contain new results, but it is hoped that this (personal) survey will contribute towards a better understanding of this problem.

Holmstrom, Bengt

PD November 1984. TI Managerial Incentives and Capital Management. AU Holmstrom, Bengt; Ricart, I. Costa Joan E. AA Holmstrom: Cowles Foundation for Research in Economics, Yale University. Ricart I Costa: Navarra University, Spain. SR Yale Cowles Foundation Discussion Paper: 729; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. PG 52. PR No Charge. JE 026, 851, 512. KW Incentives. Managerial Incentives. Capital Budgeting.

AB In Holmstrom (1982) an example is given, which shows that a manager's concern for the value of his human capital will lead to a natural incongruity in risk-preferences between himself and the owners, even when no effort considerations are involved. In this paper we present a formal model of this channel of incongruity based on learning about managerial talent. We also explore the nature of an optimal incentive contract in the case where the manager may withhold but not misrepresent information about investment returns. The optimal contract is an option on the manager's human capital value with a possible bonus for investing. The optimal investment rule accepts fewer investments than under full information, which is to say the hurdle rate exceeds the cost of capital -- a commonly observed real world feature. Another phenomenon the model helps explain is the extensive use of capital budgeting and rationing schemes in place of linear or non-linear price decentralization, which are shown to be less efficient modes of allocation.

Holtz, Eakin Douglas

PD December 1985. TI Unobserved Tastes and the Determination of Municipal Services. AA Department of Economics, Columbia University. SR Columbia Department of Economics Working Paper: 311; Department of Economics, Columbia University, New York, NY 10027. PG 24. PR $5.00. JE 324. KW Local Government Spending. Municipal Services.

AB There is by now a large literature of empirical studies of the determination of the level of spending by local governments; the majority assuming that the median voters' preferences determine the observed mix of public and private outputs in the sample. Adopting this framework, this paper examines the possibility that tastes differ across jurisdictions in such a way as to lead to inconsistent parameter estimates in cross-sectional regressions. Heterogeneity is introduced by positing the existence of jurisdiction-specific differences in tastes for government services. Using panel data, the parameters of the local spending equation may be estimated in two ways: using the variation in means across jurisdictions or by exploiting the variation over time within each jurisdiction. In the absence of important jurisdiction-specific effects, the estimates will (adjusted for sampling variation) coincide. A test developed by Hausman and Taylor '1981 is used to test the assumption of homogeneous tastes. The primary finding is that the two types of estimation typically lead to significantly different estimates of the demand parameters. In the absence of other errors in specification, this provides evidence for jurisdiction-specific idiosyncracies which significantly affect the level of municipal services. Studies which either ignore or cannot control for (e.g. those using a single cross-section of data) these factors will be subject to unknown biases. The corrected estimates show little sensitivity to the tax price of public output, but slightly greater sensitivity to median income than indicated by previous research. Additionally, the estimates indicate that municipal services correspond less closely to the characteristics of private goods than other estimates have shown.

PD February 1986. **TI** Testing for Individual Effects in Dynamic Models Using Panel Data. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 317; Department of Economics, Columbia University, New York, NY 10027. **PG** 13. **PR** $5.00. **JE** 211. **KW** Panel Data. Individual Effects. Dynamic Models.

AB This note presents a simple, linear test for individual effects in dynamic models using panel data. It builds upon the techniques of Holtz-Eakin, Newey, and Rosen (HNR) '1985 for estimating vector autoregressions using panel data. HNR present estimation and testing procedures given that the data under analysis contain individual-specific effects which are unobserved by the econometrician. Here, the procedure is expanded to provide a test for the importance of individual effects in any sample and, thus, to disentangle the possible sources of correlation over time in panel data.

Hotz, V. Joseph

TI An Investigation of the Labor Market Earnings of Panamanian Males: Evaluating Sources of Inequality. **AU** Heckman, James J.; Hotz, V. Joseph

Hsieh, D. A.

PD January 1986. **TI** Portfolio Implications of Empirical Rejections of the Expectations Hypothesis. **AU** Hsieh, D. A.; Leiderman, L. **AA** Hsieh: Graduate School of Business, University of Chicago. Leiderman: Department of Economics, Tel-Aviv University. **SR** Tel Aviv Foerder Institute for Economic Research Working Papers: 5-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel-Aviv, Israel. **PG** 17. **PR** No Charge. **JE** 431. **KW** Expectations Hypothesis. Term Structure. Interest Rates. Optimal Portfolio.

AB The purpose of this paper is to characterize a portfolio strategy that exploits the information conveyed by empirical rejections of the term-structure Expectations Hypothesis. After providing new evidence on such rejections, the analysis derives optimal portfolio positions across Treasury bills of 1 through 6 month maturities and gives a quantitative assessment of the implied risk/return tradeoffs.

Huizinga, John

PD August 1985. **TI** Monetary Policy Regime Shifts and the Unusual Behavior of Real Interest Rates. **AU** Huizinga, John; Mishkin, Frederic S. **AA** Huizinga: University of Chicago. Mishkin: Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-86-08; 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** 311, 133. **KW** Real Interest Rates. Monetary Policy Regime Shifts.

AB A striking phenomenon of the early 1980s is the climb in real interest rates to levels unprecedented in the post-World War II period. In order to understand this phenomenon, this paper investigates the nature and timing of shifts in the real rate process to determine if the recent unusual behavior of real rates is associated with monetary policy regime changes. We find that not only are there significant shifts in the stochastic process of real interest rates in October 1979 and October 1982 when the Federal Reserve altered its behavior, but these dates are also found to be the most likely breakpoints in the real rate process. When we analyze another monetary policy regime change with many similarities to that of October 1979, the sharp rises in the discount rate in 1920, we also reach a similar conclusion: there is a striking correspondence between the monetary policy regime change and the shift in the real rate process. Other studies have examined competing explanations for the recent unusual behavior of real interest rates -- e.g., budget deficits or favorable changes in business taxation. Although these competing explanations have met with mixed success, our evidence lends substantial support to the view that monetary policy regime changes have been and continue to be an important source of shifts in the behavior of real interest rates.

PD October 1985. **TI** How Robust Are the Results? A Reply. **AU** Huizinga, John; Mishkin, Frederic S. **AA** Huizinga: University of Chicago. Mishkin: Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-86-07; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 19. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 311, 133. **KW** Real Interest Rates. Monetary Policy Regime Shifts.

AB We welcome Bill Schwert's comment on our paper because it examines an issue that we consider to be crucial in analyzing any piece of empirical analysis: how robust are the results? Although we did devote a lot of attention to robustness in our analysis (which explains why the paper inundates the reader with footnotes), Schwert shows that an alternative specification for the stochastic process of real rates gives weaker results than the tests we conducted. There are four questions that Schwert's results raise. First, does Schwert's use of different sample periods and data than in our paper affect his conclusion that rejections of stability are much weaker than we found? This issue is especially important for the prewar tests because he fails to reject stability of the real rate process using his specification. Second, is Schwert correct in asserting that there is no strong reason to prefer our specification of the real rate process to his? Third, does a general specification that includes both Schwert's specification and our specification as special cases support our conclusion that there are strong rejections of the stability of the real rate process in 1920 and 1979? Finally, is there a potential problem with our inference due to nonstationary variables? We deal with each of these issues in turn.

Hurd, Michael D.

PD January 1986. **TI** Savings and Bequests.

AA Department of Economics, SUNY at Stony Brook. **SR** National Bureau of Economic Research Working Paper: 1826; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 48. **PR** $2.00. **JE** 918, 921. **KW** Saving Behavior. Bequests. Life Cycle Hypothesis. Bequest Motive.

AB Empirical studies have indicated that the elderly seem to accumulate wealth after retirement, and that the desire to leave bequests is an important determinent of saving behavior. Both kinds of results have cast doubt on the validity of the life cycle hypothesis of consumption. In the first part of this paper, a model of bequests is specified, and the implications for consumption and wealth trajectories are derived. The main result is that, even with a bequest motive, consumption generally decreases with age after retirement, and that wealth will also decrease for all but wealthy households. In the empirical part of the paper, wealth changes of retired households are reported over 10 years of panel data. Contrary to many results from cross-section data, the elderly do dissave: over 10 years the wealth of the elderly in the sample decreases by about 27 per cent real. A test for a bequest motive is proposed. There is no evidence whatsoever for a bequest motive.

Ichniowski, Casey

PD January 1986. **TI** Public Sector Union Growth and Bargaining Laws: A Proportional Hazards Approach with Time-Varying Treatments. **AA** Graduate School of Business, Columbia University. **SR** National Bureau of Economic Research Working Paper: 1809; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 29. **PR** $2.00. **JE** 831, 832. **KW** Unionization Rates. Public Sector. Union Growth. Collective Bargaining Policies.

AB This study uses a Cox proportional hazards model to estimate the relationship between state-level collective bargaining policies and union growth in the public sector. The proportional hazards analysis is performed with data on approximately eight hundred municipal police departments. The timing of unionization in these departments clearly indicates that unionization rarely precedes the enactment of a statute. Where bargaining laws have not been enacted, formal collective bargaining between municipalities and their police is virtually nonexistant. Moreover, the proportional hazards analysis that controls for the effects of other state-level and municipal-level covariates indicates that the bargaining laws and policies are the most important determinant of unionization among police. Among different types of bargaining policies, "duty-to-bargain" provisions lead to higher unionization rates than do statutes that permit, but do not require, employers to bargain with police. However, after controlling for the effects of other covariates, there appears to be no difference in the unionization rates between the states that have duty-to-bargain provisions along with an interest arbitration mechanism and those states that have duty-to-bargain provisions without such a dispute resolution mechanism.

PD January 1986. **TI** Public Sector Recognition Strikes: Illegal and Ill-Fated. **AA** Graduate School of Business, Columbia University. **SR** National Bureau of Economic Research Working Paper: 1808; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 22. **PR** $2.00. **JE** 831. **KW** Strike Activity. Non-Union Public Employees. Unionization. Recognition Strikes. Municipal Police Departments.

AB This study investigates the relationship between strike activity by nonunion public employees and unionization. Examining the strike activity and unionization rates of some 600 nonunion municipal police departments from 1972 to 1978, this study finds that recognition strikes are concentrated where bargaining laws provide little or no protection of bargaining rights for municipal police. However, these strikes do not increase the unionization propensities of these police departments.

PD January 1986. **TI** The Economic Performance of Survivors After Layoffs: A Plant-Level Study. **AA** Graduate School of Business, Columbia University. **SR** National Bureau of Economic Research Working Paper: 1807; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 19. **PR** $2.00. **JE** 824, 826. **KW** Worker Efficiency. Layoffs.

AB This study tests for the empirical relationship between layoffs and the economic performance of workers who remain after the layoffs. Previous studies performed in laboratory settings have often found increases in the efficiency of workers after layoffs. This analysis is the first to test for this relationship using operating data from a set of similar establishments. Within the framework of a modified Cobb-Douglas production function, layoffs do not influence subsequent productivity in the establishments in this study's sample. It is also suggested that the seniority systems governing layoffs and the high levels of capital intensity in these establishments may help explain the difference between the findings in the laboratory studies and those obtained in this analysis.

Ito, Takatoshi

PD February 1986. **TI** Why is There Tenure?. **AU** Ito, Takatoshi; Kahn, Charles. **AA** Ito: Department of Economics, University of Minnesota. Kahn: Department of Economics, University of Chicago. **SR** University of Minnesota Center for Economic Research Discussion Paper: 228; Department of Economics, 1035 Management and Economics, University of Minnesota, 271 19th Avenue South, Minneapolis, MN 55455. **PG** 39. **PR** No Charge. **JE** 020, 821. **KW** Tenure. Labor Contracts. Asymmetric Information.

AB Tenure is a one-sided contract in which an employer gives up a right to dismiss an employee. This paper demonstrates that arrangements for tenure can be regarded as a wage floor guaranteed to an employee in order to circumvent a moral hazard problem. The guarantee induces a risky human capital investment by the employee which yields payoffs to the employer. Besides assuming that human capital investment is not observable to the employer, our framework assumes the monetary value of the investment to the employer is not verifiable by the employee. Our first model uses risk aversion to generate the wage floor. The second model uses outside offers to create an environment in which the offer is explictly one sided. It demonstrates that job guarantees with a wage floor can play a productive incentive role despite the employee's use of threats of ex post quits to induce wage renegotiation.

Itoh, Motoshige

TI Content Protection and Oligopolistic Interactions. **AU** Krishna, Kala; Itoh, Motoshige.

Jaffe, Adam B.

PD January 1986. **TI** Technological Opportunity and Spillovers of R&D: Evidence from Firms' Patents, Profits and Market Value. **AA** Department of Economics, Harvard University. **SR** National Bureau of Economic Research Working Paper: 1815; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 33. **PR** $2.00. **JE** 621. **KW** R&D. Spillovers. Technology Space.

AB This paper presents evidence that firms' patents, profits and market value are systematically related to the "technological position" of firms' research programs. Further, firms are seen to "move" in technology space in response to the pattern of contemporaneous profits at different positions. These movements tend to erode excess returns. "Spillovers" of R&D are modelled by examining whether the R&D of neighboring firms in technology space has an observable impact on the firm's R&D success. Firms whose neighbors do much R&D produce more patents per dollar of their own R&D, with a positive interaction that gives high R&D firms the largest benefit from spillovers. In terms of profit and market value, however, there are both positive and negative effects of nearby firms' R&D. The net effect is positive for high R&D firms, but firms with R&D about one standard deviation below the mean are made worse off overall by the R&D of others.

Jenkinson, Tim

TI Disaggregative Versus Aggregative Wage Equations. **AU** Beckerman, Wilfred; Jenkinson, Tim.

John, Andrew

TI Coordinating Coordination Failures in Keynesian Models. **AU** Cooper, Russell; John, Andrew.

PD February 1986. **TI** The Share Economy: A Symposium. **AU** John, Andrew; Nordhaus, William. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 783; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 77. **PR** No Charge. **JE** 023. **KW** Share Economy. Stagflation. Weitzman, Martin.

AB In June 1985, the Yale Economics Department sponsored a half-day conference on Martin Weitzman's striking proposal that sharing should be introduced into compensation arrangements. His suggestions have received wide attention in the popular press and from economists, but the organizers believed that the suggestions were sufficiently novel and promising to warrant careful scrutiny from a wide range of points of view. The conference participants therefore examined the "share economy" from the vantage point of labor economics, capital theory, general equilibrium theory, and macroeconomics.

Johnson, George

PD January 1986. **TI** Work Rules, Featherbedding, and Pareto-Optimal Union-Management Bargaining. **AA** Institute of Public Policy Studies, University of Michigan at Ann Arbor. **SR** National Bureau of Economic Research Working Paper: 1820; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 32. **PR** $2.00. **JE** 832. **KW** Unions. Union Bargaining. Efficient Bargains. Featherbedding. Work Rules.

AB The recent literature on the economic behavior of unions is dominated by a controversy over whether or not bargaining is Pareto optimal. If unions care about employment as well as wages, efficient bargains between unions and management "should" involve both these variables rather than only wages. In fact, explicit bargaining over employment levels is virtually unknown. There is, however, implicit bargaining over employment in the form of rules concerning the labor/capital ratio, job assignment, work speeds, and the like. This paper examines a model of "semi-efficient" bargaining in which the union and the firm bargain over wages and various types of work rules. The results are compared to the outcomes that are associated with fully efficient bargaining (i.e., over wages and the level of employment) and bargaining solely over wages. Of particular interest is the case in which the union and the firm mutually consent to "featherbedding" agreements (requiring the hiring of workers with zero marginal product). The major conclusion of the paper is that the outcome of collective bargaining is different in the case of negotiations over work rules and wages than in both the cases of fully efficient bargaining and of bargaining solely over wages. In general, however, the outcome of this "partially efficient" bargaining process is closer to the outcome of bargaining solely over wages than to that associated with fully efficient bargaining over both wages and employment.

Johnson, Robert A.

TI Expectations and the Recession of 1982. **AU** Branson, William H.; Fraga, Armino; Johnson, Robert A.

Jorion, Phillipe

TI Interest Rates and Risk Premia in the Stock Market and in the Foreign Exchange Market. **AU** Giovannini, Alberto; Jorion, Phillipe.

Kahn, Charles

TI Why is There Tenure?. **AU** Ito, Takatoshi; Kahn, Charles.

Kambhu, John

PD January 1985. **TI** An Arms Race and Strategic Information Transmission. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 277; Department of Economics, Columbia University, New York, NY 10027. **PG** 30. **PR** $5.00. **JE** 114, 026. **KW** Arms Control. Arms Race. Information Concealment. Information Disclosure.

AB A prominent issue in discussions of arms control is that of verifiability. Can the other side's reporting be trusted? Is vital information being concealed? In light of this issue, it seems interesting to investigate incentives for concealment, and disclosure of private information in a strategic problem such as an arms race. To this end, in a formal model of an arms race -- albeit a simple one -- we ask whether there are incentives for a player to unilaterally disclose private information. We shall study unilateral disclosure, as opposed to disclosures that are part of a negotiated agreement, in order to focus on the most robust motives to reveal private information. Our principle result is that whether or not a player discloses private information depends on the likelihood of false reports being detected. If false reports are unlikely to be detected, this private information is never revealed. On the other hand, if verifiable reports can be made, then a player will wish to unilaterally disclose private information.

Kaneko, Mamoru

PD April 1985. **TI** An Axiomatization of Utility and Subjective Probability Based on Objective Probability. **AA** Institute of Socio-Economic Planning, University of Tsukuba, Japan. **SR** Yale Cowles Foundation Discussion Paper: 746; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 25. **PR** No Charge. **JE** 026, 022. **KW** Real-World Event. Auxiliary Event. Objective Probabilities. Subjective Probabilities. Von Neumann-Morgenstern Axioms.

AB This paper provides an axiomatic model based on an extraneous random device generating objective probabilities for the derivation of expected utilities and subjective probabilities. Four basic axioms fully determine a real-valued utility function and a finitely additive subjective probability measure. The restrictions of these axioms to lotteries depending only upon events of the random device yield the von Neumann-Morgenstern axioms.

TI Mass-Economics with Vital Small Coalitions; The F-Core Approach. **AU** Hammond, Peter J.; Kaneko, Mamoru; Wooders, Myrna Holtz.

Katz, Barbara Goody

PD June 1985. **TI** Modeling Demand as a Function of Uncertain Availability: A Welfare Analysis of the Supermarket Unavailability Rule. **AU** Katz, Barbara Goody; Nelson, Julianne. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 350; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 33. **PR** $2.00. **JE** 024, 022, 613. **KW** Uncertain Availability. Demand. Supermarket Unavailability Rule.

AB An expected utility maximizer faces the following choice: to pay the list price at a nearby seller for an item that is available with certainty or to travel to a more distant seller ("supermarket") where the availability of the commodity is uncertain but the product price is discounted. Should the consumer be faced with a stock-out, we assume that he purchases a perfect substitute which for convenience has a price identical to the list price of the desired commodity. The consumer's expected utility will depend on, among other factors, the probability with which his demand for the discounted good at the discounted price can be met. But this probability is also a determinant of that market demand. Thus we formulate a rational expectations equilibrium in which this probability is uniquely determined. This is possible since the uncertainty associated with the availability of a good causes a linkage between the quantity of the commodity demanded and the quantity of it supplied. We assume that the supermarket is risk neutral and has two decision variables: the quantity of the given commodity to supply and the discount from the list price to charge. We derive the conditions under which a discounting seller would have the incentive to allow a positive probability of a stock-out at the discounted price. We then consider in that context the implications of the imposition of the FTC's supermarket unavailability rule. We find that the rule constrains the behavior of the seller while presenting consumers with a probabilistic guarantee of product availability. We show first that there are a set of non-trivial circumstances under which expected consumer welfare is improved by the enforcement of the rule. In these situations, however, we also demonstrate that the decrease in the supermarket's expected profits plus the decrease in the nearby seller's expected profits outweigh the gains to consumers. Second, we show that when consumers are hurt by the rule, expected profits of the nearby seller increase. Yet the decrease in expected profits of the supermarket plus the decrease in expected consumer welfare swamp the increase in expected profits of the list price seller. Thus, although it is possible for consumers or the list price seller to benefit from the enforcement of the supermarket unavailability rule, in the aggregate its imposition is unambiguously welfare-decreasing.

Katz, Lawrence

PD January 1986. **TI** Layoffs, Recall and the Duration of Unemployment. **AA** School of Business Administration, University of California Berkeley. **SR** National Bureau of Economic Research Working Paper: 1825; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 47. **PR** $2.00. **JE** 821, 824. **KW** Unemployment Duration. Unemployment Insurance. New Job Finding Rate. Duration of Unemployment Insurance Benefits. Timing of Recalls.

AB This paper shows that the prospect of recall to previous employer is important for a significant number of the unemployed in the United States and that taking into account the possibility of recalls has important implications for the study of unemployment spell durations. A job search model that allows for recalls is shown to lead naturally to a competing risks specification of the distribution of layoff unemployment spell durations in which recall and the taking of a new job are alternate routes for leaving unemployment. A large sample of individual layoff unemployment spell observations derived from the Panel Study of Income Dynamics is analyzed. The common finding for samples containing individuals with nonnegligible recall prospects of an escape rate from unemployment that declines with spell duration is shown to almost entirely result from a declining recall rate. The apparent declining recall rate may be indicative of important uncontrolled heterogeneity rather than true negative duration dependence. Strong positive duration dependence in the new job finding rate is uncovered for Unemployment Insurance recipients. Factors raising the likelihood and value of recall appear to depress the new job finding rate. Substantial differences in the distribution of unemployment spell durations are found for UI recipients and nonrecipients. Large positive jumps in both the recall rate and new job finding rate are apparent around the point of UI benefits exhaustion for UI recipients. The results indicate that the potential duration of UI benefits plays an important role in the timing of recalls and of new job acceptances.

Katz, Michael L.

PD March 1985. **TI** The Welfare Effects of Third-Degree Price Discrimination in Intermediate Goods Markets. **AA** Department of Economics, Princeton University. **SR** Princeton Woodrow Wilson School Discussion Papers in Economics: 90; Woodrow Wilson School, Princeton University, Princeton, NJ 08544. **PG** 50. **PR** No Charge. **JE** 022, 612, 024. **KW** Price Discrimination. Robinson-Patman. Third-Degree Price Discrimination.

AB I examine an upstream monopolist who can practice third-degree price discrimination in selling an input to downstream firms. Discrimination is motivated by the fact that downstream firms differ in their abilities to integrate backward into supply of the input. I show that under reasonable specifications of equilibrium, price discrimination leads to all buyers facing higher input prices. In other cases, discrimination raises some prices and lowers others. I derive conditions under which total output and welfare fall due to discrimination. I also argue that in some markets a discriminating monopolist will not induce socially inefficient backward integration, while a nondiscriminating supplier would; in this way discrimination may raise welfare.

PD August 1985. **TI** A Welfare Analysis of Cost Information Sharing Among Oligopolists: Signalling Versus Direct Exchange. **AA** Department of Economics, Princeton University. **SR** Princeton Woodrow Wilson School Discussion Papers in Economics: 98; Woodrow Wilson School, Princeton University, Princeton, NJ 08544. **PG** 28. **PR** No Charge. **JE** 022, 611. **KW** Information Sharing. Trade Association. Signalling Game.

AB There is a growing literature on the effects of firms' sharing of demand or cost information among themselves. These models all are based on the assumption of a single production period. In the present paper, I use a model of cost information sharing to show that this (often unrealistic) assumption is central to the results obtained. When there are multiple periods of production, early output levels may be used as signals of costs if this information is not exchanged directly. Thus, in order to understand the social and private incentives for direct information transfer, one must examine the indirect transfer, or signalling, equilibrium. The present paper does so.

Kennickell, Arthur

TI Reappraisal of the Phillips Curve and Direct Effects of Money Supply on Inflation: A Test. **AU** Ando, Albert; Kennickell, Arthur.

TI How Much (or Little) Life Cycle is there in Micro Data? Cases of United States and Japan. **AU** Ando, Albert; Kennickell, Arthur.

Khan, Mohsin S.

PD December 1985. **TI** Foreign Borrowing and Capital Flight: A Formal Analysis. **AU** Khan, Mohsin S.; Ul, Haque Nadeem. **AA** Khan: Development Research Department, The World Bank. Ul Haque: International Relations Department, The World Bank. **SR** International Monetary Fund Departmental Memoranda/Staff Papers: 32(4); International Monetary Fund, Washington D.C. 20431. **PG** 23. **PR** No Charge. **JE** 441, 112. **KW** International Investment. International Capital Markets. Expropriation Risk. Developing Countries.

AB In recent years there has been a growing view that the large-scale foreign borrowing by a number of developing countries financed capital flight rather than productive investment. The purpose of the paper is to analyze this phenomenon in an intertemporal optimization framework by using the concept of an expropriation risk attached to domestic investment. To the extent that foreign liabilities carry an implicit or explicit government guarantee, investors faced with a possibility of a loss of domestic assets, either through nationalization or bankruptcy, would rationally utilize external financing for domestic investment while shifting domestic savings abroad.

King, Mervyn A.

PD August 1985. **TI** A Pigovian Rule for the Optimum Provision of Public Goods. **AA** Department of Economics, London School of Economics and Political Science. **SR** London School of Economics Suntory Toyota International Centre for Economics and Related Disciplines ESRC Programme Discussion Paper: 88; Suntory Toyota International Centre for Economics and Related Disciplines, London School of Economics and Political Science, 10 Portugal Street, London WC2A 2HD, ENGLAND. **PG** 31. **PR** No Charge. **JE** 022, 024, 322. **KW** Public Goods. Duality. Optimal Taxation.

AB The integrated treatment of optimal taxation and public expenditure presented here is based on the dual relationship between the prices of private goods and the quantities of public goods. In this paper we derive analogues of Roy's identity and the Slutsky equation for the case of public goods. The optimal provision of public goods and the level of taxation are shown to be dual problems. The conditions for optimum public good provision can be expressed as a modification of the Samuelson conditions with extra terms representing (a) the distortionary effects of taxes on the willingness to pay for the public good, and (b) distributional effects. The former catches Pigou's notion of the indirect damage caused by the need to finance public expenditure out of distortionary taxes, and we call this the "Pigou term". In certain cases a very simple benefit-cost ratio for public projects emerges that is equivalent to measuring benefits as if they were taxed.

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** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-18; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 44. **PR** $1.00. **JE** 422, 322. **KW** Project LINK. Import Surcharge. United States Trade. Policy Reactions.

AB It is the purpose of this study to evaluate systematically the effects of an import surcharge on the United States economy and on the world economy as a whole. The global econometric model system of Project LINK is used to simulate the direct impact of such a surcharge on United States trade and domestic performance, as well as the repercussions of such a policy all over the world. In particular, an attempt is made to assess the sensitivity of the basic results to alternative assumptions about domestic and foreign policy reactions.

Knight, J. B.

TI The Role of Occupation in the Determination of Wages. **AU** De Beyer, Jr; Knight, J. B.

Koda, Keiichi

PD December 1984. **TI** Existence of Monetary Equilibria in a Stationary Overlapping Generations Model With Intrageneration Diversity: A Note. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E84-12-04; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 16. **PR** No Charge. **JE** 023, 021. **KW** Fiat Currency. Monetary Equilibrium. Intragenerational Diversity.

AB It is well known that in overlapping generations (OG) models with fiat currency there need not exist monetary equilibria or equilibria in which fiat currency has value. In simple versions of the one-good OG model with and without storage, versions in which the environment is stationary and all agents are identical in tastes and endowments the following propositions hold 'Wallace (1980) and Cass, Okuno and Zilcha (1980): (A) A monetary equilibrium exists if and only if the rate of return that would obtain in the stationary monetary equilibrium exceeds the rate of return that prevails in the nonmonetary equilibrium. Further, (B) under the said condition a stationary monetary equilibrium exists. This paper shows that with intrageneration diversity, Proposition A and B no longer hold in general; only weaker results are obtained for such an environment. Yet, there are circumstances in which Proposition A and B prove valid. If the stationary, one-good, two-period-lived OG environment is such that there exists one and only one nonmonetary equilibrium, such results hold. In particular, this will be the case if the consumption good is storable and the return to storage is sufficiently high.

PD January 1986. **TI** Default Risk, The Rate of Interest, and Inflation. **AA** Department of Economics, Virginia Polytechnic Institute. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E86-01-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 33. **PR** No Charge. **JE** 311. **KW** Fisher Hypothesis. Anticipated Inflation. Default Risk. Interest Rate.

AB One reason why securities (private securities in particular) could bear positive nominal interest is that they are not safe from default risk. This paper analyzes the effect of anticipated inflation on the rate of interest when default risk is the only element that causes nominal interest to be positive. This is done using a version of Samuelson's overlapping generations model. It is shown that there is no a priori presumption in favor of even the weak-sense Fisher hypothesis.

Kotlikoff, Laurence J.

PD February 1986. **TI** The Contribution of Intergenerational Transfers to Total Wealth: A Reply. **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: 1827; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 24. **PR** $2.00. **JE** 023, 921. **KW** Intergenerational Transfers. Life Cycle Wealth. Savings Behavior.

AB This paper responds to Franco Modigliani's recent critique of our 1981 paper on the importance of intergenerational transfers for United States savings. Modigliani's paper is the latest salvo in a long running debate over the importance of intergenerational transfers in explaining savings behavior. While Modigliani corrects an algebraic error of minor consequences in our earlier paper, its correction does not, in our view, call into question the fundamental conclusion that life cycle considerations can account for only a small part of aggregate capital accumulation. Inevitably, it is possible to challenge aspects of any complex empirical calculation. Modigliani's attacks seem to us incorrect in most cases and generally fail to address our primary method of determining the importance of intergenerational transfers. Many considerations at least as important as those raised by Modigliani suggest that our method produces an overestimate of the importance of life cycle wealth.

Krishna, Kala

PD February 1986. **TI** Content Protection and Oligopolistic Interactions. **AU** Krishna, Kala; Itoh, Motoshige. **AA** Krishna: Department of Economics, Harvard University. Itoh: Faculty of Economics, University of Tokyo. **SR** National Bureau of Economic Research Working Paper: 1843; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 39. **PR** $2.00. **JE** 422. **KW** Content Protection.

AB In oligopolistic situations content protection can have unexpected effects as it changes the nature of interactions between input suppliers. With a duopoly, it does so in a manner that makes the foreign firm wish to match price increases and decreases of the domestic firm. Domestic input suppliers can therefore lose from such policies, even when set at free trade levels. The relation between input demands, the form of protection, and the degree of substitution between inputs is shown to define the effects of content protection and to provide the basis for understanding who might lobby for protection in different environments.

Laffont, Jean Jacques

PD May 1984. **TI** Using Cost Observation to Regulate Firms. **AU** Laffont, Jean Jacques; Tirole, Jean. **AA** Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8409; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 38. **PR** No Charge. **JE** 613, 022. **KW** Regulation. Average Cost Pricing. Cost Observability. Pricing Policy. Moral Hazard. Adverse Selection.

AB We give a complete characterization of the firm's and the planner's problem. Under moral hazard and total cost observability, the firm's effort is suboptimal, and its price is too high compared with perfect information. We found no rationale in our model for average cost pricing. As long as the second-order condition for the firm is satisfied, the planner can use a reward function that is linear in cost. The fraction of realized cost that is reimbursed to the firm is not a constant, but decreases with the firm's output or increases with the firm's announced cost. Furthermore the first transfer increases with the fraction of total cost that the firm is willing to share. Cost observability improves welfare. It has a tendency to distort the effort decision, but it allows more control over the pricing policy. Reward functions that are linear in cost do not give the most lenient second-order conditions: but if they suffice, they have attractive robustness properties. These reward functions deal with increasing risk aversion in the best way by increasing the fraction of reimbursed costs. If the good is marketed, the pricing distortion due to incomplete information is alleviated. If the firm makes an unobservable technological choice between fixed and variable costs, there is a bias towards low fixed costs and high variable costs.

TI Posterior Implementability in a Two-Person Decision Problem. **AU** Green, Jerry R.; Laffont, Jean Jacques.

PD October 1985. **TI** The Dynamics of Incentive Contracts. **AU** Laffont, Jean Jacques; Tirole, Jean. **AA** Laffont: Universite de Lausanne. Tirole: Massachusetts Institute of Technology. **SR** Universite de Lausanne, Cahiers de Recherches Economiques: 8512; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 79. **PR** No Charge. **JE** 613, 022. **KW** Cost Observability. Regulation. Adverse Selection. Moral Hazard.

AB In Laffont and Tirole (1984) we showed how cost observability helps a regulator controlling a private or public firm when both adverse selection and moral hazard affect their relationship. In particular, we showed that under cost observability, there is a trade-off between revelation of information through the selection of an incentive contract, and efficient ex-post production. The optimal sharing of overruns was obtained. The analysis was carried out in a one period model. Of course, relationships between firms and regulators are often repeated. The purpose of this paper is to extend our analysis of incentive contracts to a dynamic framework.

Lal, Deepak

PD 1984. **TI** The Real Exchange Rate, Capital Inflows and Inflation. Sri Lanka 1970-1982. **AA** University College London. **SR** University College London Discussion Paper: 84-04; Department of Political Economy, University college London, Gower Street, London WC1E 6BT, England. **PG** 48. **PR** No Charge. **JE** 431, 121, 134. **KW** Sri Lanka. Capital Inflows. Exchange Rate. Inflation.

AB This paper delineates the relevance and investigates the determinants of the real exchange rate in Sri Lanka. It also examines the interrelationships between the real exchange rate, monetary expansion and inflation between 1970-1982, within a simple open economy macro-economic model. This highlights the importance of the capital account in these interrelationships; as in Sri Lanka since 1977, capital inflows are a major element in the overall balance of payments.

PD June 1984. **TI** The Political Economy of the Predatory State. **AA** University College London. **SR** University College London Discussion Paper: 84-12; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 35. **PR** No Charge. **JE** 112, 050. **KW** Contestable Markets. India. Predatory State. Market Economies.

AB Other authors have argued for an interconnection between the form and extent of predation and the type of economic organization likely to emerge in a particular territorial area in developing economies. Part I presents some resulting speculations on the endogenous determination of these two aspects of economic development, by applying the recent theory of "contestable markets" and industrial structure (Baumol, Panzer and Willig). The second part attempts to provide an explanation for the particular form of predatory state that has existed for millenia in the developing country I know best--India. In the final part of the paper I draw some general conclusions on the feasibility of establishing market economies in areas where the 'natural' instincts of the predatory state are inhibiting.

Lambelet, Jean Christian

PD March 1984. **TI** Should Systems Like LINK Be Used for Long-Range Forecasts and Simulations?. **AA** Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8401; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 18. **PR** No Charge. **JE** 132. **KW** LINK. Forecasting.

AB LINK forecasts now routinely cover periods of more than five years ahead. For example, the forecasts dated December 16, 1983, concern the years 1983 to 1988; since the figures for 1983 necessarily were semi-forecasts, this means a true forecasting horizon of more than five years. Time horizons of similar length have also been adopted recently in LINK simulation studies (2). This is a relatively new practice; for example, the forecasts discussed at the LINK Meeting in March, 1982, covered the years 1982 to 1984, meaning a forecasting horizon of three years only. The question can therefore be raised: Are systems like LINK really suited for such long-range forecasts and simulations? This paper will try and suggest that the answer to this question is likely to be, at best, a very qualified yes and, at worst, a clear no.

PD August 1984. **TI** Two Papers on the Swiss Economy. **AA** Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8405; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 31. **PR** No Charge. **JE** 122. **KW** Switzerland. Macroeconomic Policy.
AB This paper presents two papers on the Swiss economy: I. "Switzerland: Macroeconomic Problems and Policy Since 1973" and II. "The Conduct of Macro Policy in a Federal, Regionally Diverse Economy: Some Comments on the Case of Switzerland.".

PD Juillet 1985. **TI** Finances publiques, comptabilite nationale et Investissements publics en Suisse. **AU** Lambelet, Jean Christian; Rakotoarimanana, Georges; Schwartz, Jean Jacques. **AA** Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8509; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 113. **PR** No Charge. **JE** 122, 221. **KW** Switzerland. Public Investment. National Accounts.
AB To measure the place of government in the general economy, one should rely not on public budgets and accounts as officially published but on the corresponding national account. In Switzerland budgetary data, on the one hand, and national accounting data, on the other, yield particularly divergent pictures. In this study we explain in detail how the government account in the Swiss national accounts ("compte 2: Etat") is built up from budgetary and other sources. The process turns out to be somewhat intricate as it involves over one thousand adjustments and corrections. A computer program has been written to capture this process and it is used to offer a first estimate of the share of public investment in total investment in Switzerland. (Paper written in French.).

PD January 1985. **TI** Arms Races as Good Things?. **AA** Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8501; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 22. **PR** No Charge. **JE** 114. **KW** Arms Races.
AB This paper discusses the dynamics of arms races and concludes, among other things, that a good theory of intra- and intergroup dynamics would be most welcome.

PD May 1985. **TI** What the Market is Telling Us - But Should We Believe What is Says? A Working Note on United States and Swiss Long-Term Interest Rates. **AA** Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8504; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 18. **PR** No Charge. **JE** 311, 431. **KW** International Capital Flows. Interest Differential. Inflation Differential. Depreciation Rate.
AB This paper presents a discussion of and empirical evidence relating to the following long term dynamic equilibrium condition between two countries with international capital flows: depreciation rate between the two currencies = interest rate differential = inflation rate differential.

PD December 1985. **TI** Conflicts, Arms Races, and War: A Synthetic Approach. **AU** Lambelet, Jean Christian; Luterbacher, Urs. **AA** Lambelet: Universite de Lausanne. Luterbacher: 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. **KW** Arm Race. War. Conflicts.
AB In this paper we present a formal approach which tries to model conflicts, arms races and war together, even though these three aspects of international behaviour are obviously connected--but not necessarily in a straightforward way: Some conflicts are accompanied by arms races, some are not; some conflicts end up in war others do not; some arms races turn into wars, some other ones merely produce enough mutual deterrence to prevent an armed confrontation.

Lancaster, Kelvin

PD November 1985. **TI** The Economics of Product Variety: A Survey. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 305; Department of Economics, Columbia University, New York, NY 10027. **PG** 48. **PR** $5.00. **JE** 022, 611. **KW** Product Variety. Monopolistic Competition. Optimal Choice of Product Variety.
AB Because of its central role in the theory of product variety, a considerable part of the paper will be taken up with a discussion of the modern theory of monopolistic competition in both the neo-Chamberlinian and neo-Hotelling traditions with an outline treatment of representative economics models of both kinds. This will be followed by a summary of work on optimal choice of variety by multi-product firms, of empirical work on product variety, and some other topics.

Lee, Sang Bin

TI Term Structure Movements and the Pricing of Corporate Bond Provisions. **AU** Ho, Thomas S. Y.; Lee, Sang Bin.

PD May 1985. **TI** The Pricing of Callable Government Bonds and Structure Estimation. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 347; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 31. **PR** $2.00. **JE** 313. **KW** Term Structure. Term Structure Estimation. Callable Treasury Bonds.
AB The purpose of this study is to extend the estimation of the term structure with callable United States Treasury bonds. The ability of this estimation methodology to approximate the discount function is analyzed empirically. Furthermore, an empirical pricing model for callable

United States Treasury bonds is developed. The empirical pricing model for callable United States Treasury bonds is compared with the "naive" model in terms of mean relative errors. In the "naive" model, a callable United States Treasury bond is evaluated as if it were an otherwise identical United States Treasury bond except for a call provision. We show that our procedure has more explanatory power than the naive model. Also, our empirical pricing model for callable United States Treasury bonds suggests that the call provision of a callable United States Treasury bond exhibits a call option property and is valuable to the government. Finally, we show that our procedure can extend the estimated term structure to over fifteen years by incorporating callable United States Treasury bonds. Using this estimated term structure, we can evaluate typical long-term corporate bonds.

TI Pricing of Corporate Bond Provisions an Empirical Evidence. **AU** Ho, Thomas S. Y.; Lee, Sang Bin.

Leiderman, L.

TI Portfolio Implications of Empirical Rejections of the Expectations Hypothesis. **AU** Hsieh, D. A.; Leiderman, L.

LeRoy, Stephan F.

TI The Local Expectations Hypothesis: A Discrete-Time Exposition. **AU** Gilles, Christian; LeRoy, Stephan F.

Lewis, Frank

PD March 14, 1986. **TI** Government Loan Guarantees and the Failure of the Canadian Northern Railway. **AU** Lewis, Frank; MacKinnon, Mary. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 645; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 42. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 042, 521. **KW** Bankruptcy. Loan Guarantees. Canadian National Railways.

AB The failure of the Canadian Northern Railway is analysed with a model of optimal capital structure drawn from Finance theory. Ex ante bankruptcy probabilities, which are computed on the basis of different assumptions about investors' expectations, range from 40 per cent to 90 per cent; and our "best" estimate is about 75 per cent. These high probabilities, we argue, were a consequence of loan guarantees provided to the Canadian Northern by the Federal and provincial governments. These guarantees induced the promoters, MacKenzie and Mann, to undertake an ex ante unprofitable project and to finance that project almost exclusively with debt.

LHuillier, Jacques

PD January 1986. **TI** "Vers un retour a l'etalon-or?" (Back to the Gold Standard?). **AA** Departement d'economie politique, University of Geneva, and Graduate Institute of International Studies, Geneva, Switzerland. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8601; Departement d'econometrie et d'economie politique, Universite de Lausanne BFSH - Dorigny, CH-1015 Lausanne / SWITZERLAND. **PG** 20. **PR** No Charge. **JE** 431, 432. **KW** International Liquidity. Gold Standard. Fixed Exchange Rates.

AB In the last twenty years or so, one has tried to benefit from the liberalization of international trade while, at the same time, preserving the autonomy of national economic policies. As a result, the world has been condemned both to inflation and to flexible exchange rates. By distorting relative prices in each economy and by preventing comparative production costs from translating into the correct ratios of absolute prices, these two scourges have inflicted great damage, particularly to the gains from international trade. It is not correct to hold that monetary and exchange rate stability must start with the coordination of national economic policies. A true reform must start with international liquidity which must be or become of a nature such that it can enjoy the respect of Central Banks and governments. None of the fiduciary forms of international liquidity in existence today (dollar balances, IMF reserve positions, SDR's) matches this requirement, which only gold can fulfill. (In French).

Lichtenberg, Frank R.

PD December 5, 1985. **TI** The Effect of Changing Market Opportunities on the Structure of R&D Investment: the Case of Energy. **AA** Graduate School of Business, Columbia University, and National Bureau of Economic Research. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-85-42; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 13. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 621, 114, 723. **KW** Research and Development. Energy Prices. Defense Spending.

AB The objective of this paper is to investigate, within the framework of a two-sector investment model, the effect of dramatic changes in relative market opportunities on the relative amount of R&D invested in different types of projects. In particular, we formulate and estimate a simple model of the share of aggregate United States industrial R&D devoted to "energy R&D," as a function of two measures or indicators of relative market opportunities: the real (or relative) price of energy, and the defense share of gross national product (GNP). During the period under consideration (1972-1983), there were sharp, abrupt, exogenous movements in both of these variables, which, our analysis indicates, jointly account for most of the variation in the allocation of R&D investment. Separate estimates of the response of privately- and federally-sponsored R&D investment are obtained.

PD December 5, 1985. **TI** Assessing the Impact of Federal Industrial R&D Expenditure on Private R&D Activity. **AA** Graduate School of Business, Columbia University and National Bureau of Economic Research. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-85-41; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 48. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 621, 114. **KW** Research and Development. Federal Contracting. Defense Spending.

AB A number of studies have attempted to determine the effect of federal expenditures on research and development (R&D) performed in industry, on the quantity of private investment in R&D, by analyzing the statistical relationship between federal and company R&D spending at the firm, industry, and aggregate levels. These studies are generally "reduced-form" in nature: they attempt to determine the direction and magnitude of this effect without providing an explicit theoretical basis for a link between federal and private industrial R&D. The purpose of this paper is both to formulate, and to review or develop evidence concerning, several major hypotheses that could account for the existence of such a link. The implications of these hypotheses are investigated within the context of an "equilibrium" model of private R&D-resource allocation. Evidence concerning three major hypotheses, which we refer to as "crowding-out," "spillovers," and "demand-pull," which could account for the existence of a relationship between federal and private R&D expenditure, are examined in detail. The "demand-pull" hypothesis receives the greatest emphasis; this emphasis reflects our belief that insufficient attention has been paid to the role of federal demand for goods and services in stimulating private R&D investment, and that, as a result, estimates of the relationship between federal and private R&D have been misinterpreted as solely reflecting effects of federal R&D on the supply (cost) of privately-produced innovations. The econometric evidence that we present suggests an alternative interpretation.

Lo, Andrew

PD May 1985. **TI** Logit Versus Discriminant Analysis: A Specification Test. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-5; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 38. **PR** $1.00. **JE** 211. **KW** Discriminant Analysis. Logit Analysis. Distributional Assumptions.

AB Two of the most widely used statistical techniques for analyzing discrete economic phenomena are discriminant analysis (DA) and logit analysis. For purposes of parameter estimation, logit has been shown to be more robust than DA. However, under certain distributional assumptions both procedures yield consistent estimates and the DA estimator is asymptotically efficient. This suggests a natural Hausman specification test of these distributional assumptions by comparing the two estimators. In this paper, such a test is proposed and an empirical example is provided. The finite-sample properties of the test statistic are also explored through some sampling experiments.

PD September 1985. **TI** Statistical Tests of Contingent Claims Asset - Pricing Models: A New Methodology. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-8; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 46. **PR** $1.00. **JE** 313. **KW** Contingent Claims Asset Pricing Models. Options' Pricing. Ito-Processes.

AB A new methodology for statistically testing contingent claims asset-pricing models based on asymptotic statistical theory is proposed. It is introduced in the context of the Black-Scholes option pricing model, for which some illustrative estimation, inference, and simulation results are also presented. The proposed methodology is then extended to arbitrary contingent claims by first considering the estimation problem for general Ito-processes and then deriving the asymptotic distribution of a general contingent claim which depends upon such Ito-processes.

Lundahl, Mats

TI Racial Discrimination, Dualistic Labor Markets and Foreign Investment. **AU** Findlay, Ronald; Lundahl, Mats.

Luterbacher, Urs

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

Machina, Mark J.

PD March 27, 1986. **TI** The Ross Characterizaton of Risk Aversion: Strengthening and Extension. **AU** Machina, Mark J.; Neilson, William. **AA** Department of Economics, University of California, San Diego. **SR** University of California San Diego Department of Economics Discussion Paper: 86-5; Department of Economics, D-008, University of California at San Diego, La Jolla, CA 92093. **PG** 17. **PR** $2.00; checks payable to University of California Regents. **JE** 026, 022. **KW** Risk. Uncertainty. Utility. Risk Aversion. Expected Utility.

AB This note strengthens the Ross characterization of comparative risk aversion by allowing for random non-negative risk premiums and demonstrating that Ross's asset demand condition is in fact equivalent to (and not merely an implication of) the other Ross conditions. The strengthened characterization is then extended to the case of general non-expected utility preferences.

MacKinnon, James G.

TI Testing the Specification of Econometric Models in Regression and Non-Regression Directions. **AU** Davidson, Russell; MacKinnon, James G.

MacKinnon, Mary

TI Government Loan Guarantees and the Failure of the Canadian Northern Railway. **AU** Lewis, Frank; MacKinnon, Mary.

Magill, Michael J. P.

PD May 1984. **TI** Understanding Futures Markets. **AA** Department of Economics, University of Southern California. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8403; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 26. **PR** No Charge. **JE** 313. **KW** Futures Markets. Commodity Markets.

AB This paper first discusses some of the more firmly established empirical properties of futures markets, then examines the economic theory of these markets.

TI Investment in Information Acquisition. **AU** Danthine, Jean Pierre; Magill, Michael J. P.

Magnus, Jan R.

PD October 1985. **TI** Some Properties of the Bordered Hessian Matrix. **AA** London School of Economics. **SR** London School of Economics, Suntory Toyota International Centre for Economics and Related Disciplines Working Paper: Econometrics 85/126; London School of Economics, Houghton Street, London WC2A 2AE, England. **PG** 27. **PR** No Charge. **JE** 211. **KW** Bordered Hession. Moore-Penrose Inverse.

AB Properties of the bordered Hessian matrix, Z, are studied. Two expressions for Q, the Moore-Penrose inverse (pseudo-inverse) of Z, are derived. ZQ is proved to be block diagonal. Properties of the submatrices of Q are presented and special cases are given.

Marcuzzo, Maria Christina

PD 1985. **TI** Profitability in the International Gold Market in the Early History of the Gold Standard. **AU** Marcuzzo, Maria Christina; Rosselli, Annalisa. **AA** University College London. **SR** University College London Discussion Paper: 85-15; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 23. **PR** No Charge. **JE** 041. **KW** Gold Standard. Gold Movements. International Gold Transactions Options.

AB The analysis of gold movements we put forward is based on assumption that actual transactions in the international gold market were carried out by specialized trading institutions in highly organized markets. It followed from that assumption that the stopping rule for gold movements in our analytical system does not require an equalization of commodity prices in all international markets. The stopping rule can be given simply by the equalization of the purchasing power of each currency in terms of gold at home and abroad. It follows that when gold is exported the price of all tradeable commodities in terms of gold is higher at home than abroad. Likewise, when gold is imported, prices of all tradeable commodities in terms of gold are lower at home than abroad. But this does not imply that gold movements will come to an end only when all tradeables are equalized across countries. Nor does it mean that gold is sent abroad to pay for commodities, or is sent from abroad to buy commodities. Any other commodity may be used for exploiting differences in prices. There is not much evidence to support the claim that gold had any pre-eminence over cotton, sugar or slaves. But there is evidence that a specialized class of merchants sustained the purchasing power parity of currencies in terms of gold. This, we believe, is the market mechanism on which the early history of the gold standard relied. It was only with the development of the City as the financial and commercial centre of the world, with its network of correspondents and with its developed credit market, that the history of the gold standard can be said to have begun.

Mariano, Roberto S.

PD September 1984. **TI** Measures of Deterministic Bias in Nonlinear Simultaneous Systems. **AU** Mariano, Roberto S.; Brown, Bryan W. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-1; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 21. **PR** $1.00. **JE** 211. **KW** Nonlinear Simultaneous Systems. Deterministic Simulations. Deterministic Prediction Bias.

AB In this paper, techniques for assessing the magnitude and importance of the bias resulting from applying deterministic simulations in prediction in nonlinear simultaneous systems are developed. First, since this bias results from the nonlinearity of the system, indirect measures are proposed which indicate the extent of nonlinearity with respect to the disturbances in the system. These measures are based on the proportion of the generalized variance of the endogenous variables explained by a linear relationship with the disturbances. Next, direct estimates of the deterministic prediction bias are obtained by comparing the deterministic and the residual-based predictors. As a measure of the practical importance of the deterministic prediction bias, the estimates of the bias are compared with the variance of the endogenous variables in a quadratic form. In addition, the deterministic predictor is compared with the actual values of the endogenous variables to obtain an estimate of the average deterministic prediction bias over the sample period. Finally, formal tests of the null hypothesis that the deterministic predictor is unbiased are developed. The statistics utilized here differ from the direct measures in that the quadratic forms are now based on the covariance matrix of the estimated biases rather than the covariance matrix of the endogenous variables.

TI Asymptotic Behavior of Predictors in Dynamic Nonlinear Simultaneous Systems. **AU** Brown, Bryan W.; Mariano, Roberto S.

PD September 1985. **TI** Reduced Variance Prediction in Nonlinear Simultaneous Systems. **AU** Mariano, Roberto S.; Brown, Bryan W. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-7; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 27. **PR** $1.00. **JE** 211. **KW** Nonlinear Simultaneous Systems. Variance-Reduction Techniques.

AB In this paper, the impact of variance-reduction techniques on the asymptotic behavior of stochastic predictors in a nonlinear simultaneous system is examined analytically. The residual-based and Monte Carlo stochastic predictors, which have been previously studied by Brown and Mariano '1984a and Mariano and Brown '1983a, are modified through the use of, first, antithetic variates and, second, control variates. The use of antithetic variates is found to result in efficiency gains for the Monte Carlo procedure which may or may not be shared by the residual-based approach. When optimally chosen control variates are used, the Monte Carlo approach experiences efficiency gains while the residual-based predictor is found to be unaffected. In both cases, when sample size exceeds replication size, the residual-based version remains efficient relative to its Monte Carlo counterpart. It is shown that neither of these variance-reduction techniques is likely to yield improvements in prediction precision of the order of magnitude that have been obtained for estimators in linear models. A sampling experiment is conducted to examine the relative small sample performance of the predictors. The performance of the antithetic residual-based predictor was especially encouraging in these experiments.

PD September 1985. **TI** Finite-Sample Properties of Predictors in Nonlinear Systems: Some Initial Results. **AU** Mariano, Roberto S.; Brown, Bryan W. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-9; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 30. **PR** $1.00. **JE** 211. **KW** Non-Linear Systems. Small Sample Properties.
AB This paper concerns the finite-sample properties of predictors in nonlinear systems and supplements the large-sample asymptotic analysis in Mariano and Brown (1983a, 1983b, 1984, 1985). The distinguishing feature of the models under study is the nonlinearity of the solution for the endogenous variables in terms of model disturbances.

PD September 1985. **TI** Stochastic Prediction in Dynamic Nonlinear Econometric Systems. **AU** Mariano, Roberto S.; Brown, Bryan W. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-10; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 15. **PR** $1.00. **JE** 132, 211. **KW** Dynamic Non-Linear Models. Asymptotic Properties. Forecasting.
AB This paper considers the large-sample asymptotic behavior of predictors in dynamic nonlinear econometric models. The analytical results summarized in this paper document potential deficiencies in the common practice of forecasting through deterministic simulations of the nonlinear model. For asymptotic prediction efficiency, alternative forecasting procedures based on stochastic simulations of the model are analyzed. In particular, the paper focuses on stochastic simulations based on calculated residuals to develop more robust forecasting procedures in dynamic nonlinear systems.

Markandya, A.

PD May 1984. **TI** The Estimation of a Disequilibrium Model of the Housing Market -- An Application to the United Kingdom. **AU** Markandya, A.; Pemberton, M. **AA** University College London. **SR** University College London Discussion Paper: 84-15; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 23. **PR** No Charge. **JE** 932. **KW** Housing Market. Disequilibrium Econometrics.
AB In this paper a disequilibrium model of the housing market in the United Kingdom is formulated and estimated. This is the first application of disequilibrium econometrics to the housing market since the work of Fair and Jaffee in 1972 for the United States. Since then, the econometrics of disequilibrium estimation has advanced a great deal, as has our understanding of the housing market. The original features of the model presented here are the inclusion of a user cost of housing on the demand side and the examination of perfect foresight expectations of inflation in determining these costs. These are embedded in a demand function which is estimated simultaneously with a supply function and a non market clearing adjustment equation. The estimation is done by maximum likelihood techniques.

Marshall, John M.

PD June 14, 1985. **TI** Money and Redistribution: Revisionist Notes on a Problem of Samuelson. **AU** Marshall, John M.; Sonstelie, Jon; Gilles, Christian. **AA** Department of Economics, University of California, Santa Barbara. **SR** University of California Santa Barbara Department of Economics Working Papers: 259; Department of Economics, University of California at Santa Barbara, Santa Barbara, CA 93106. **PG** 37. **PR** No Charge. **JE** 021. **KW** Samuelson Model. Money. Wealth Distributions.
AB The present paper offers a competing analysis of the Samuelson model. The major assertion is that money remedies inefficiency by redistributing wealth. We will sketch the reasoning behind this conclusion. Start with the given distribution of wealth, and consider the resulting, unique competitive equilibrium. It is inefficient. Because of this, there must be another allocation that is Pareto superior to it and, using a further argument, Pareto optimum. In these models any Pareto optimum is supported by an appropriately defined price system, so we now have an equilibrium that is Pareto superior to the initial one. The prices in the second, superior equilibrium imply a particular distribution of wealth, and it is, of necessity, different from the distribution we started with. It is therefore meaningful to say that the difference in the two price systems is dictated by differences in the wealth distributions. The conclusion of the argument is that money injected in the Samuelson model redistributes wealth and, if properly injected, leads to a superior, efficient allocation.

Martin, Lawrence

TI Search, Unemployment, and the Production of Jobs.
AU Davidson, Carl; Martin, Lawrence; Matusz, Steven.

Mas, Colell Andreu

TI Real Indeterminacy with Financial Assets.
AU Geanakoplos, John; Mas, Colell Andreu.

Masson, P. R.

PD December 1985. **TI** The Sustainability of Fiscal Deficits. **AA** International Monetary Fund. **SR** International Monetary Fund Departmental Memoranda/Staff Papers: 32(4); International Monetary Fund, Washington D.C. 20431. **PG** 39. **PR** No Charge. **JE** 321. **KW** Fiscal Deficits. Fiscal Theory and Policy. Tax Increases. Bond Finance.
AB The paper explores the implications, for a hypothetical economy with two overlapping generations, of a set of government tax and expenditure policies that are unsustainable in the long run and are recognized to be so by private individuals. In the meantime, the government finances itself by issuing bonds. There is uncertainty whether the unsustainable policy will eventually be resolved by tax increases or by monetization. It is shown

that under these circumstances bond rates are likely to embody a risk premium that rises as debt grows, tending to hasten the need for an eventual change in policies.

Mattei, Aurelio

PD April 1984. **TI** Eparghe et Securite Sociale. **AA** Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8402; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 20. **PR** No Charge. **JE** 915. **KW** Social Security.

PD November 1984. **TI** Epargne et impots. **AA** Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8408; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 24. **PR** No Charge.

PD August 1985. **TI** Consumer Behavior and Aggregation: A Simulation Study. **AA** Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8508; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 28. **PR** No Charge. **JE** 022. **KW** Theory of Demand. Consumer Theory. Aggregation. Representative Consumer.

AB In this paper, we will explain why all the negative results obtained so far in tests of the theory of demand have not undermined the economists' confidence in the traditional model of consumer behavior. We will show that one should never test consumer theory using aggregate data as, for instance, those of the national income accounts. A little aggregation over goods and / or over consumers is enough to get negative results even with individual data perfectly consistent with the traditional model of consumer behavior.

Matusz, Steven

TI Search, Unemployment, and the Production of Jobs. **AU** Davidson, Carl; Martin, Lawrence; Matusz, Steven.

McCurdy, Thomas H.

PD February 14, 1986. **TI** Simultaneous Price-Quantity Adjustments in the Presence of Spillovers Across Markets. **AU** McCurdy, Thomas H.; Yannelis, Demetrius C. **AA** McCurdy: Department of Economics, Queen's University. Yannelis: Department of Economics, University of Toronto. **SR** Queen's Institute for Economic Research Discussion Paper: 569R; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 35. **PR** \$2.50 Canada; \$3.00 United States; \$3.50 foreign. **JE** 021. **KW** Spillovers. Stability. Marshallian adjustment. Non-Walrasian Equilibria.

AB Using a prototype non-market-clearing model, this paper analyses the implications of simultaneous output, price and wage adjustment at finite rates. Firms use a Marshallian-type output adjustment which utilizes available information about notional magnitudes. With this adjustment structure, the Walrasian equilibrium is shown to be globally stable. This result is compared with other formulations of the dynamics: such as, the usual structure which results in a continuum of non-Walrasian equilibria (along a boundary between regimes); and the formulation which excludes the forces of motion on the regime boundaries.

McDonald, Donogh C.

PD December 1985. **TI** Trade Data Discrepancies and the Incentive to Smuggle: An Empirical Analysis. **AA** International Monetary Fund. **SR** International Monetary Fund Departmental Memoranda/Staff Papers: 32(4); International Monetary Fund, Washington D.C. 20431. **PG** 25. **PR** No Charge. **JE** 411, 431. **KW** Exchange Rate Adjustment. International Trade. Underground Economy.

AB Discrepancies in the data of trading partners concerning their trade with each other have frequently been used to infer the significance of illegal trade activities. This paper attempts a statistical analysis of the relationship between trade data discrepancies and the incentive to smuggle. The results provide only limited support for the relationship hypothesized between these two variables, and they suggest that great caution should be exercised in using trade data discrepancies to infer the scale of smuggling activity.

McKenzie, George

PD February 26, 1986. **TI** Dominant Factors in Dollar-Sterling Exchange Rate Movements, 1965-1981. **AU** McKenzie, George; Thomas, Stephen. **AA** McKenzie: Department of Economics, The University, Southampton. Thomas: Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 640; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 31. **PR** \$2.50 Canada; \$3.00 United States; \$3.50 foreign. **JE** 431. **KW** Exchange Rates. Portfolio. Vehicle Currency. Data Consistent Models. Dollar-Sterling Exchange Rate. Forward Exchange Rate. Interest Differential Forward Rate.

AB We emphasize the need to extend the conventional range of financial items considered in bilateral portfolio models to reflect the reality of a sophisticated modern financial world by introducing euro-sterling assets and liabilities into our analysis. The emphasis on "efficiency" and R.E. has led researchers to focus on essentially static empirical models of exchange rates. It may be more sensible to start from a more general distributed lag model and explicitly recognise the adjustment lags and market-imperfections which exist in practice. With this in mind, the forward exchange rate, the interest differential forward rate and the spot rate are modelled jointly in our framework.

McKibbin, Warwick

PD January 1986. **TI** Coordination of Monetary and Fiscal Policies in the OECD. **AU** McKibbin, Warwick; Sachs, Jeffrey. **AA** Department of Economics, Harvard University. **SR** National Bureau of Economic Research Working Paper: 1800; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 69. **PR** \$2.00. **JE** 423, 321, 432. **KW** International Monetary Reform. Fiscal Policy.

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International Transmission of Fiscal Policy. Strategic Aspects of Policymaking.
AB Discontent with the functioning of the world monetary system has led to many proposals for international monetary reform. These proposals range from enhanced consultations under the current regime of floating exchange rates to a regime of fixed exchange rates, as proposed by Ronald McKinnon. In this paper we examine the implications of several alternative monetary arrangements for fiscal policy in the world economy. In particular we focus upon two issues. The first is the effects of alternative monetary arrangements on the international transmission of fiscal policy. The second is the implications of the alternative regimes for strategic aspects of fiscal policymaking. As is generally the case in the discussion of exchange regimes we find that the choice of the monetary system is crucially dependent upon the source and nature of the shocks hitting the world economy. In this paper we show that the monetary regime also has important implications for the transmission of fiscal policy in the world economy and for the nature of the strategic games played by fiscal authorities. Rigid rules of the game, as under fixed exchange rates, do not necessarily eliminate the inefficient equilibria that can occur when fiscal authorities behave non-cooperatively.

McManus, Douglas

PD November 1984. **TI** Identification in Nonlinear Rational Expectations Models. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E84-11-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 27. **PR** No Charge. **JE** 211. **KW** Rational Expectations Models. Identification.
AB This paper provides an analysis of identification for a general class of nonlinear rational expectations models. My approach treats expectation variables as parameters. The assumption that expectations are rational can then be expressed in a form which mirrors equality constraints on parameters as found in traditional econometric analysis. Conditions on the information matrix are given which are necessary and sufficient for identification. Further, a sufficient condition for identification is given based on the moments of the endogenous variables. In addition to identification criteria, my main findings are: (1) Unlike the case of linear rational expectations, perfectly anticipated exogenous variables need not necessarily lead to lack of identification in nonlinear rational expectations; (2) If a rational expectations model has nonunique rational expectations, then the identifiability of the model can depend on which of these expectations obtains; (3) A nonlinear model with expectations variables may be identified without the imposition of the rational expectations hypothesis. Finally, the expectations hypothesis implicit in the estimation method given by Fair and Taylor differs from the rational expectations hypothesis as defined here. An analysis of identification under this alternative expectations hypothesis is given.

PD July 1985. **TI** Options: Equilibrium and Optimality Properties. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-07-02; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 31. **PR** No Charge. **JE** 021, 313. **KW** Options Securities. General Equilibrium Model. Price Distribution.
AB It is the purpose of this paper to investigate the existence and optimality properties of a general equilibrium model with options securities. Although the existence of equilibrium is an important test of a model's internal consistency, most research on options securities presupposes the existence of an equilibrium, and, instead of investigating the existence of equilibrium, concentrates mainly on establishing properties of equilibria. However, existence in these models is not a trivial matter, because the demand correspondence need not be (upper hemi) continuous. Indeed, this paper provides an example of a model with options securities in which equilibrium does not exist. Although equilibrium need not always exist, a main finding of this paper is that, generically, an equilibrium does exist in these models. Furthermore, an example is given in which the (unique) competitive equilibrium of an options securities model is not Pareto optimal. Although equilibrium need not always be Pareto optimal, this paper proves that, generically, all equilibria will be Pareto efficient. These results on options securities are unusual in that they are obtained within a general equilibrium model. This contrasts with partial equilibrium studies which show complete risk mitigation through options written on some underlying asset, based on the assumption that this asset's price follows some exogenously given process. It is this assumption -- that the price distribution is exogenous -- which makes these approaches partial equilibrium. In my model, the price distribution is determined endogenously by the model.

McTaggart, Douglas

TI Insulating Policies for Large and Small Countries. **AU** Cox, W. Michael; McTaggart, Douglas.

Meghir, Costas

TI A Labour Supply Model for the Simulation of Tax and Benefit Reforms. **AU** Blundell, Richard; Meghir, Costas; Symons, Elizabeth; Walker, Ian.

TI Alternative Specifications of Labour Supply and the Simulation of Tax Reforms. **AU** Blundell, Richard; Meghir, Costas; Symons, Elizabeth; Walker, Ian.

TI Selection Criteria for a Microeconometric Model of Labour Supply. **AU** Blundell, Richard; Meghir, Costas.

Melino, Angelo

PD February 1986. **TI** The Term Structure of Interest Rates: Evidence and Theory. **AA** Institute for Policy Analysis, University of Toronto. **SR** National Bureau of Economic Research Working Paper: 1828; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 60. **PR** $2.00. **JE** 313, 311. **KW** Term Structure of Interest Rates. Asset Pricing Theory. Term Premia.
AB The term structure of interest rates is an old topic. Over the years, both the hypotheses debated and the research techniques used have changed considerably. Two fairly recent developments which distinguish current

research are the widespread adoption of rational expectations and the integration of the term structure with the general theory of asset pricing. This survey reviews previous work from this perspective. The main objective is to catalog available evidence about term premia and to interpret this evidence in light of alternative models of term premia determination.

Melitz, J.

PD February 1986. **TI** The Prospect of A Depreciating Dollar and Possible Tension in the EMS. **AA** I.N.S.E.E. **SR** Unite de Recherche, Document de Travail ENSAE/INSEE: 8603; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. **PG** 38. **PR** No Charge. **JE** 423, 023. **KW** Dollar Depreciation. European Monetary System.

AB The depreciation of the dollar can lead to conflict within the European Monetary System. In order to develop this theme, I suppose that Germany has a stronger anti-inflationary tendency than France. This means that the depreciation of the dollar will suit the Germans better than the French. Consequently, a dilemna can arise, wherein no possible realignment can resolve the conflict between France and Germany. Only a return to the conditions of the "snake" will do. That is, France may need to accept a situation where it bears exclusive responsibility for defending the jointly determined parity. But it may not be in its interests -- not even those of the Germans -- for it to do so.

Merrick, John J. Jr

PD January 1985. **TI** Bank Regulation and Monetary Policy. **AU** Merrick, John J. Jr; Saunders, Anthony. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 337; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 56. **PR** $2.00. **JE** 312, 613, 311. **KW** Monetary Policy Responses. Financial Crises. Bank Deregulation. Federal Deposit Insurance Corporation.

AB One objective of this paper is to assess the possible links between deregulation, financial crises and optimal monetary policy responses. However, any serious attempt to ensure that bank policy is consistent with overall financial stability in a deregulated environment must also address the structure of the federal deposit insurance. Hence, this paper also analyzes proposed reforms for the Federal Deposit Insurance Corporation's pricing and coverage policies in view of the moral hazard and adverse selection problems that may result as bank deregulation proceeds. As a byproduct of these analyses, the paper also reviews some relatively recent work dealing with interpretations of the financial panics of the nineteenth and early twentieth centuries, the importance of the asset transformation function of banks, and the interrelated roles of the Federal Reserve and the FDIC in crisis prevention.

TI Nonstationarity and Stage-of-the-Business-Cycle Effects in Consumption-Based Asset Pricing Relations. **AU** Ferson, Wayne E.; Merrick, John J. Jr.

Milgrom, Paul

PD May 1985. **TI** Relying on the Information of Interested Parties. **AU** Milgrom, Paul; Roberts, John. **AA** Roberts: Graduate School of Business, Stanford University. Milgrom: Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 749; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 33. **PR** No Charge. **JE** 026, 612, 613. **KW** Law and Economics. Regulation. Persuasion Games. Revelation Games. Lobbying. Strategic Information Transmission. Adversary System.

AB We investigate the conventional wisdom that competition among interested parties attempting to influence a decisionmaker by providing verifiable information brings out all the relevant information. We find that, if the decisionmaker is strategically sophisticated and well informed about the relevant variables and about the preferences of the interested party or parties, competition may be unnecessary, while if the decisionmaker is unsophisticated or not well informed, competition is not generally sufficient. However, if the interested parties' interests are sufficiently opposed, or if the decisionmaker is seeking to advance the parties' welfare, then competition can reduce or even eliminate the decisionmaker's need for prior knowledge about the relevant variables and for strategic sophistication. In other settings, only the combination of competition among information providers and a sophisticated skepticism is sufficient to allow effective decisionmaking.

PD November 1985. **TI** Auction Theory. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 779; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 50. **PR** No Charge. **JE** 022. **KW** Auction Theory. Sealed-Bid Auctions. Ascending-bid Auctions.

AB This paper discusses two central questions: Why do auction institutions continue to be so popular after thousands of years? and What accounts for particular details, like the popularity of sealed bid and ascending-bid auctions?.

Miron, Jeffrey A.

PD February 1986. **TI** Seasonal Fluctuations and the Life Cycle - Permanent Income Model of Consumption. **AA** Department of Economics, University of Michigan. **SR** National Bureau of Economic Research Working Paper: 1845; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 19. **PR** $2.00. **JE** 229, 023. **KW** Seasonal Fluctuations. Rational Expectations. Life Cycle-Permanent Income Model. Consumption.

AB Recent empirical work has found that both aggregate and micro data reject the rational expectations version of the Life Cycle-Permanent Income model of consumption. This paper examines a new possible explanation for the rejections: the treatment of seasonal fluctuations. There are substantial seasonal fluctuations in consumption purchases, but no previous paper has determined whether these fluctuations are consistent with the Life Cycle-

Permanent Income model. The results in this paper show that when the seasonal fluctuations in consumption purchases are included in an analysis of the Life Cycle-Permanent Income model there is no evidence in the aggregate data against the model. The estimates of the parameters of agents' utility functions obtained here are plausible, and the data do not reject the overidentifying restrictions on the model.

Mishkin, Frederic S.

TI Monetary Policy Regime Shifts and the Unusual Behavior of Real Interest Rates. **AU** Huizinga, John; Mishkin, Frederic S.

TI How Robust Are the Results? A Reply. **AU** Huizinga, John; Mishkin, Frederic S.

Mitra, Pradeep

TI A Computational Approach to Optimum Public Policies. **AU** Heady, Christopher; Mitra, Pradeep.

TI The Quantitative Analysis of Optimal Public Policy. **AU** Heady, Christopher; Mitra, Pradeep.

Mizrach, Bruce

PD May 1984. **TI** Money Supply Announcements: Term Structure and Stability. **AU** Mizrach, Bruce; Pauly, Peter. **AA** *Department of Economics, University of Pennsylvania.* **SR** University of Pennsylvania Econometrics Discussion Paper: 85-12; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 32. **PR** $1.00. **JE** 311. **KW** Term Structure. Money Supply Announcements. Monetary Base. Volcker Policy.

AB This paper concerns itself with the magnitude of the money supply announcement effect, through the term structure, and the question of whether or not there is a stable relationship between money supply announcements and interest rates. Among other things, it concludes that the effect declines through the term structure, only unanticipated money matters, and the effect is strongest in the period of strict Federal Reserve targeting.

PD October 1985. **TI** Aggregate Inventory Movements: A Dynamic Adjustment Model. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-29; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 25. **PR** $1.00. **JE** 022. **KW** Inventories. Aggregate inventory Movements. Persistence. Rational Expectations.

AB Persistence in time series has been used as an argument against rational expectations. With continuous market clearing, so the argument goes, the flows of a stock accumulation process should be a random walk (perhaps about a trend). A coherent explanation of time series inertia is provided in the model of partial adjustment we outline. The firm may in fact hold non-optimizing levels of inventory because of costs of adjustment. Because our model includes a one-period ahead forecast error, persistence enters as a moving average of innovations in current and future periods. Expressed as an infinite AR(p) in the lag operator, high order serial correlation will then be found in many stock processes. This does not arise because of long ad hoc distributed lags on exogenous variables, but rather rationally efficient use of sample information. Inertia or habit formation is the behavioral justification for the original stock-adjustment framework. The dynamic model simply recognizes that this inertia also extends into the future in a programming problem where forecasts of tommorrow affect current decisions. Rational expectations assumptions then take us one step further. By solving out for conditional expectations with their realized values, we get a reduced form where the influence of the future on today's events can be estimated. This reduced form also has a one to one analog to the microeconomic fundamentals facing the firm.

Modest, D. M.

TI Testing for Market Timing Ability: A Unified Framework for Forecast Evaluation. **AU** Cumby, R. E.; Modest, D. M.

Monfort, Alain

TI Some Useful Equivalence Properties of Hausman's Test. **AU** Holly, Alberto; Monfort, Alain.

Moore, Geoffrey H.

PD *October* 1985. **TI** *Forecasting Unemployment* with the Leading Employment Index. **AA** Graduate School of Business, Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-86-05; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 14. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 131, 132. **KW** Forecasting. Unemployment. Recessions. Leading Indicator.

AB A leading index of employment, constructed entirely from data pertaining to employment or unemployment such as the average workweek or initial claims for unemployment insurance, is used to forecast the unemployment rate. Changes in the average unemployment rate over six-month periods are closely related to preceding growth rates in the leading index. The results are also used to demonstrate a simple way to identify recessions.

PD December 23, 1985. **TI** Inflation Forecasts: Businessmen vs Economists. **AA** Graduate School of Business, Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-86-04; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 14. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 132, 134. **KW** Forecasting. Inflation.

AB A method is developed for using the Dun and Bradstreet quarterly survey of businessmen's anticipations of price changes to produce forecasts of inflation rates. The resulting record, covering year-to-year forecasts since 1951 of the rates of change in the consumer price index and in the implicit price deflator for gross national product, shows that this source of information makes a significant contribution. The businessmen's forecasts have proved more accurate than the consensus forecasts of inflation by economists. They are also less affected by the prior level of inflation and hence avoid the lagging tendency that appears in consensus forecasts.

PD January 1986. **TI** New Layoff Rate Scores Well as Leading Indicator. **AU** Moore, Geoffrey H.; Cullity, John P. **AA** Graduate School of Business, Columbia University. **SR** Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-86-06; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. **PG** 7. **PR** $5.00 academics and non-profit institutions; $6.00 corporations (add $1.00 outside United States, Canada and Puerto Rico). **JE** 131, 824. **KW** Leading Indicator. Layoff Rate.

AB A new layoff rate has been derived from the household survey data on unemployment. It is the ratio of the number of unemployed persons who were laid off within the past five weeks to total civilian employment. It moves closely with the layoff rate in manufacturing industries, 1969-81, which was based upon reports by employers until the labor turnover survey was discontinued in 1981. The new layoff rate leads the unemployment rate by a few months at every cyclical peak or trough since 1969.

Morishima, Michio

PD June 1985. **TI** Anti-Say's Law Versus Say's Law: A Change in Paradigm. **AU** Morishima, Michio; Catephores, George. **AA** Catephores: University College London. Morishima: London School of Economics. **SR** University College London Discussion Paper: 85-16; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 57. **PR** No Charge. **JE** 031. **KW** Say's Law. Anti-Say's Law. Keynes. Marx. Walras.

AB For the purposes of this paper an enquiry into what Say regarded as comprising the law of Debouches is immaterial. What is important is how Ricardo and Keynes respectively interpreted this law, and how they formulated it. Furthermore, in order to interpret the evolution of economy from Ricardo to Keynes it is also important to clarify the modes of thought of those theorists who find their place in the transition between Ricardo and Keynes; theorists who tried to advance economics by criticizing Ricardo while at the same time being influenced by him; theorists who stepped outside the Ricardian canon. As the most outstanding examples of this group we will take Marx and Walras. Why was it that these economists were unable to carry through their argument to the point of an Anti-Say's Law, such as that reached by Keynes? It is with these aims in mind that the present article is written.

Moulin, Herve

PD January 1985. **TI** Binary Choices with Compensations. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-04-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 39. **PR** No Charge. **JE** 024. **KW** Compensation. Egalitarian Solution. Utilitarian Solution.

AB A fixed, finite society must choose one out of two costless public decisions. Preferences are quasi-linear. The efficient decision maximizes joint utility. What transfers fairly compensate the losers (for whom the efficient decision is the bad one) out of the winner's pocket? We address this question axiomatically. The egalitarian solution (that divides equally the surplus above a conventional origin of utility) is characterized by means of the Agreement property: a change in agent 1's utility cannot be beneficial to agent 2 and harmful to 3. The utilitarian solution (that performs no compensatory transfers) is characterized by, essentially, the No Subsidy property: maximal joint utility over both decisions sets a ceiling to any coalitional utility. Other solutions are considered as well.

PD January 1985. **TI** Fairness and Strategies in Voting. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E 84-08-10; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 59. **PR** No Charge. **JE** 025. **KW** Voting. Scoring Methods. Condorcet Winner. Cooperative Behavior. Noncooperative Behavior.

AB When only two candidates are on stage ordinary majority voting is the unambiguously fair method of choice. When at least three candidates are present, binary majority contests (i.e., opposing candidates pairwise) might produce a Condorcet winner (one candidate defeating every other in binary contests) but it might also cycle and designate no clear winner (a configuration known as Condorcet's paradox). The paper introduces a family of voting rules that always selects the Condorcet winner when it exists, and considers scoring methods, which might fail to elect the Condorcet winner, though they all share Young's reinforcement axiom. The paper also analyzes voting rules as games of strategies, where each voter casts his vote so as to maximize its return. This in turn might induce him to misreport his preferences; a general result shows that any reasonable voting rule will indeed generate such maneuvers.

PD May 1985. **TI** Equal or Proportional Division of a Surplus, and Other Methods. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-05-02; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 35. **PR** No Charge. **JE** 022, 611. **KW** Equal Division of Surplus. Proportional Division of Surplus. Cooperative Ventures. Surplus Sharing.

AB A cooperative venture yields a nonnegative surplus. Agents are differentiated by their opportunity costs only. Two surplus sharing methods (equal sharing, proportional sharing) are characterized with the help of four axioms. Separability and No Advantageous Reallocation deal with coalitional changes in the opportunity costs. Additivity and Path Independence take into account variations in the surplus level. Any triple of these axioms characterizes equal or proportional sharing. Any pair of axioms characterize a distinct, infinite family of methods, compromising between equal and proportional sharing.

PD September 1985. **TI** Quasi-Egalitarian Cost Sharing of a Public Good. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-09-02; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 28. **PR** No Charge. **JE** 021, 024. **KW** Quasi-Egalitarian Cost Sharing. Public Goods.

AB In an economy with one public and finitely many private goods, quasi-egalitarian cost sharing consists of finding the highest public good level x(*) such that consuming x(*) for free yields a feasible utility distribution. We call this level egalitarian-equivalent. The corresponding feasible allocation (typically unique), called quasi-egalitarian, is in the core of the economy. Conversely, any cost sharing method satisfying: (i) Pareto optimality, (ii) individual rationality (no single agent coalition objects), and (iii) cost monotonicity (nobody suffers a utility loss if the production technology improves ceteris paribus), must select a quasi-egalitarian allocation in every economy.

PD September 1985. **TI** Lecture Notes on Voting and Social Choice Theory. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-09-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 150. **PR** No Charge. **JE** 025. **KW** Voting. Social Choice.

AB This paper contains my lecture notes for a class on voting and social choice theory.

PD December 1985. **TI** The Pure Compensation Problem: Egalitarianism Versus Utilitarianism. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-12-02; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 32. **PR** No Charge. **JE** 024, 026. **KW** Binary Choice Functions. Compensation Rules. Egalitarianism. Utilitarianism.

AB A binary choice problem where side-payments are feasible and utilities are quasi-linear is considered. We study two compensation rules, called social choice functions. The egalitarian s.c.f. divides equally the surplus above the average utility level. The utilitarian s.c.f. chooses an efficient decision but performs no transfer. Egalitarianism is characterized by a monotonicity axiom called Agreement: no two agents ever disagree in comparing two distinct preferences of a third one. Utilitarianism is characterized by the No Subsidy axiom: a coalition would not be worse off if the other agents were not present. Next the games of revelation of preference induced by our two methods are compared: the utilitarian game is shown to be more badly manipulated than the egalitarian one.

Nalebuff, Barry

PD January 1986. **TI** The Ambiguous Antitrust Implications of Information Sharing. **AU** Nalebuff, Barry; Zeckhauser, Richard. **AA** Nalebuff: Department of Economics, Princeton University. Zeckhauser: John F. Kennedy School of Government, Harvard University. **SR** Princeton Woodrow Wilson School Discussion Papers in Economics: 106; Woodrow Wilson School, Princeton University, Princeton, NJ 08544. **PG** 28. **PR** No Charge. **JE** 022, 611, 612, 026. **KW** Information Sharing. Antitrust.

AB In evaluating information sharing about demand, the efficiency gains from improved information must be balanced against collusive potential. In each of a series of models it is shown that information sharing about demand may be directly beneficial to producers, a result contrary to the prevailing wisdom. To observe such activity therefore need raise no suspicions since collusion need not be present. The contrasting approaches of economics and the law to this class of issues are highlighted.

Neilson, William

TI The Ross Characterizaton of Risk Aversion: Strengthening and Extension. **AU** Machina, Mark J.; Neilson, William.

Nelson, Julianne

TI Modeling Demand as a Function of Uncertain Availability: A Welfare Analysis of the Supermarket Unavailability Rule. **AU** Katz, Barbara Goody; Nelson, Julianne.

Newey, Whitney K.

PD November 1985. **TI** Hypothesis Testing with Efficient Method of Moments Estimation. **AU** Newey, Whitney K.; West, Kenneth D. **AA** Newey: Department of Economics, Princeton University. West: Woodrow Wilson School and Department of Economics, Princeton University. **SR** Princeton Woodrow Wilson School Discussion Papers in Economics: 103; Woodrow Wilson School, Princeton University, Princeton, NJ 08544. **PG** 35. **PR** No Charge. **JE** 211, 212. **KW** Hypothesis Testing. Method of Moments. Efficient Estimation.

AB Efficient method of moments estimation techniques include many commonly used techniques, including ordinary least squares, two and three stage least squares, quasi maximum likelihood, and versions of these for nonlinear environments. For models estimated by any efficient method of moments technique, we define analogues to the maximum likelihood based Wald, likelihood ratio, Lagrange multiplier, and minimum chi squared statistics. We prove the mutual asymptotic equivalence of the four in an environment that allows for disturbances that are autocorrelated and heteroskedastic, with the form of autocorrelation and heteroskedasticity possibly unknown, and for instruments that are not strictly econometrically exogenous. We also discuss some important special cases, describing in particular a very convenient way to test a linear hypothesis in a linear model.

Nickerson, David

PD December 1985. **TI** The Neutrality of Countercyclical Monetary Policy in Models with a Wealth Effect. **AA** Department of Economics, Duke University and Department of Economics, University of British Columbia. **SR** Duke Working Papers in Economics: 86-10; Working Papers Series, Department of Economics,

Duke University, Durham, NC 27706. **PG** 15. **PR** No Charge. **JE** 311, 133. **KW** Monetary Feedback Rules. Linear Feedback Rules. Countercyclical Monetary Policy.
AB A condition is offered which is both necessary and sufficient for the countercyclical neutrality of all linear monetary feedback rules with respect to deviations in real market output in that class of stochastic macroeconomic models with rational expectations, additive disturbances, multiple markets, and a wealth effect on excess commodity demand studied by Barro (1976), Barro and Fischer (1976), King (1982), Asako (1982), Waldo (1982) and Marini (1985). The condition has the form of a constraint on the values of the control parameters of a general monetary feedback rule which includes all other linear feedback rules in this class of models as special cases. When the selection of parameters violates this constraint, prospective monetary feedback can completely stabilize deviations in real market output around its natural rate.

Nolan, Brian

PD June 1985. **TI** Recent Changes in the United Kingdom Income Distribution: The Importance of Macroeconomic Conditions. **AA** Banking Department, Central Bank of Ireland. **SR** London School of Economics Suntory Toyota International Centre for Economics and Related Disciplines ESRC Programme Discussion Paper: 86; Suntory Toyota International Centre for Economics and Related Disciplines, London School of Economics and Political Science, 10 Portugal Street, London WC2A 2HD, ENGLAND. **PG** 35. **PR** No Charge. **JE** 024, 122, 131, 300. **KW** United Kingdom Income Distribution. Macroeconomic Fluctuations. Unemployment.
AB Recently-published data show substantial shifts in the United Kingdom size distribution of income between 1978/79 and 1981/82. Major changes in macroeconomic conditions, as macroeconomic policies were radically altered, took place over this period. The paper analyses the impact which these macroeconomic factors may have had on the size distribution. This involves both the decomposition - as far as the data allow - of the actual shifts in the size distribution over the period, and the application of the results of an analysis of the available time-series from 1961 to 1978/79. The time-series analysis is based on the application of the approach used with United States data by Blinder and Esaki (Review of Economics and Statistics 1978) to assess the impact of changes in unemployment and inflation rates on the size distribution. Reference is also made to the results of cross-section simulation-type analyses (fully reported elsewhere) of the effects of changes in unemployment and factor shares, using Family Expenditure Survey data. It is concluded that the changes in macroeconomic policies and conditions contributed substantially to the recent shifts in the size distribution.

PD July 1985. **TI** Direct Taxation, Transfers and Re-Ranking: Some Empirical Results for the United Kingdom. **AA** Banking Department, Central Bank of Ireland. **SR** London School of Economics Suntory Toyota International Centre for Economics and Related Disciplines ESRC Programme Discussion Paper: 87; Suntory Toyota International Centre for Economics and Related Disciplines, London School of Economics and Political Science, 10 Portugal Street, London WC2A 2HD. **PG** 20. **PR** No Charge. **JE** 229, 323. **KW** Horizontal Equity. Reranking.
AB The extent of re-ranking produced by state cash transfers and direct tax in the United Kingdom is examined using Family Expenditure Survey microdata. In addition to the Family Expenditure Survey current weekly income concept, estimates developed of annual incomes are also used. For annual incomes, the re-ranking produced appears somewhat less than for current incomes. When household incomes are adjusted for differences in size/composition, the extent of re-ranking appears greater rather than less. While a significant number of households are re-ranked by direct tax, not very many are shifted by more than one decile in ranking.

Nordhaus, William

PD May 24, 1985. **TI** Empirical Tests of the Rationality of Economic Forecasters: A Fixed Horizons Approach. **AU** Nordhaus, William; Durlauf, Steven D. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 717R; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 40. **PR** No Charge. **JE** 132. **KW** Forecast Efficiency. Forecast Adjustments.
AB This paper examines the behavior of 4 major forecasters and the forecast consensus. We employ a new technique of "Fixed Horizon" models. This technique analyzes the sequences of adjustments of a series of forecasts of the same event. We first demonstrate that these forecast adjustment sequences should fluctuate randomly under rationality. We then examine approximately 1200 forecast adjustments over the 1978-1982 period to examine the statistical properties of forecast adjustments. The evidence clearly demonstrates that there are marked and significant elements of statistical rationality for these major forecasters. Information shocks are processed slowly. The pattern of adjustments is consistent with forecasters being adverse to "Inconsistency," i.e. large rapid changes in forecasts. There also may be evidence that forecasters move towards a consensus in hero-like fashion.

TI The Share Economy: A Symposium. **AU** John, Andrew; Nordhaus, William.

Obstfeld, Maurice

TI Optimal Time-Consistent Fiscal Policy with Uncertain Lifetimes. **AU** Calvo, Guillermo A.; Obstfeld, Maurice.

PD February 1986. **TI** Discussion of Willem Buiter's "Macroeconomic Policy Design in an Interdependent World Economy: An Analysis of Three Contingencies". **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 314; Department of Economics, Columbia University, New York, NY 10027. **PG** 15. **PR** $5.00. **JE** 423. **KW** Macroeconomic Policy. International Policy Coordination.
AB This paper is a discussion of Willem Buiter's paper, "Macroeconomic Policy Design in an Interdependent World Economy: An Analysis of Three Contingencies".

Ono, Yoshiyasu

PD January 1986. **TI** Subcontracting and Monopsony in Parts Acquisition. **AA** Osaka University. **SR** Princeton Woodrow Wilson School Discussion Papers in Economics: 105; Woodrow Wilson School, Princeton University, Princeton, NJ 08544. **PG** 24. **PR** No Charge. **JE** 611. **KW** Subcontracting. Parts Acquisition. Vertical Relations.

AB This paper analyzes assemblers' choice of parts acquisition system between subcontracting and monopsony. It is proved that an assembler chooses subcontracting if there exist a sufficient number of parts makers who can promptly comply with his demand. However, if the number is binding, the monopsony system is selected. Furthermore the subcontract system creates greater total surplus than that of monopsony. In Japan, assemblers who select subcontracting organize a special group of parts makers to keep a sufficient number of potential suppliers. We find that this behavior not only makes subcontracting profitable but also creates greater total surplus.

Osawa, Machiko

PD April 1986. **TI** The Wage Gap in Japan: Changing Patterns of Labor Force Participation, Schooling and Tenure. **AA** Economics Research Center/NORC. **SR** Economics Research Center/NORC Discussion Paper: 86-1; Economics Research Center/NORC, 6030 South Ellis,Chicago, IL 60637. **PG** 42. **PR** $2.00; send requests to Librarian, NORC. **JE** 824, 813. **KW** Wage Differentials. Schooling. Work Experience.

AB This paper examines how changes in schooling and work experience over time between men and women workers have affected wage differentials observed in the post-World War II period in Japan. The wage gap in Japan during this period is relatively wide compared to that in western industrialized nations, and significantly, has widened in recent years. Our findings suggest that a slowing down in the narrowing of the male-female wage differentials between 1965 to 1970 seems to be associated with the rapid increase in the participation of married women who had very little work experience. However, at the same time, a rapid influx of relatively well-educated young women workers was observed. Since 1970 the cohorts born between 1945-49 began to enter the labor force and their peak participation rate reached about 64 per cent in 1973. Thus narrowing wage differentials between 1970 and 1975 can be attributed to the large influx of relatively well-educated women in the labor force as clerical workers or professional workers (mostly school teachers). Japanese women are characterized by substantial differences in the lifecycle accumulation of work experience across different age cohorts. For the older cohorts, the population was clearly dichotomized between very few workers with long accumulation of work experience and an overwhelming majority of non-workers who had never worked in the past. For the younger cohorts, through their early twenties, there is a high degree of homogeneity as is characteristic of American women workers. Unlike American workers, however, as workers in the Japanese younger cohorts approach their late twenties, they tend to withdraw from the labor force regardless of the level of accumulated work experience.

Ouliaris, Sam

TI The Exact Distribution of the Wald Statistic: The Non Central Case. **AU** Phillips, Peter C. B.; Ouliaris, Sam.

Pagan, Adrian

PD April 1985. **TI** Two State and Related Estimators and Their Applications. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 741; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 45. **PR** No Charge. **JE** 211. **KW** Two Stage Estimators. Censored Data. Anticipations.

AB Applied econometric research frequently encounters the difficulty that estimation of the parameters of interest is complex owing to the presence of incidental parameters. It is tempting therefore to try to circumvent the difficulties by proceeding in two stages. In the first, some estimates are made of the incidental parameters. In the second, these estimates are treated as though they were population values, leading to a large reduction in the dimension of the unknown parameter space, possibly even down to that of the parameters of interest only. The properties of such a staged process (particularly as they relate to issues arising from the consistency and efficiency of the estimator and the provision of reliable inferences), applications involving the presence of current and future anticipations, an alternative estimator, and diagnostic tests are all discussed in this paper.

Panthine, Jean Pierre

PD September 1985. **TI** Business Cycles in Switzerland (1967-1984): Intrinsic Characteristics and Comparison with the United States Economy. **AU** Panthine, Jean Pierre; Girardin, Michel. **AA** Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8510; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 29. **PR** No Charge. **JE** 131, 122, 123. **KW** Switzerland. Business Cycles.

AB The goal of this paper is to provide an empirical description of business cycles in Switzerland. We adopt a Lucasian view of business cycles as a set of regularities in the movements and co-movements of economic aggregates common to all decentralised economies 'Lucas (1977) and test whether Switzerland conforms to this view. To achieve such purpose we compute correlations of various types among the main aggregates. We then test their stability through time and compare with corresponding estimates for the United States.

PD October 1985. **TI** Inflation and Growth in Utility-Maximizing Models. **AA** Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8511; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 37. **PR** No Charge. **JE** 134, 121. **KW** Inflation. Growth. Tobin Effect. Superneutrality.

AB On the issue of inflation and growth, the literature reviewed in this paper can support all the imaginable positions. If money and capital are modelled as complements either directly as factors of production, or indirectly with money a costly prerequisite for the acquisition of capital, or, in a roundabout way, through the labor-leisure choice, a negative relationship - an anti-Tobin effect - exists. If on the other hand money and capital are essentially modelled as alternative means of transferring wealth, then superneutrality or the Tobin effect will obtain depending mostly on whether the costs of acquiring money balances are given weight or not, but also on other characteristics of the utility function. The "role and nature" assumed for money are important but not the only determinants of the answer obtained. It is probably fair to say that by failing to provide support for inflationary or deflationary monetary policies, thus only by default, the current generation of long run models with money reinforces the superneutrality or vertical Phillips curve view held by the majority of economists. Alternatively arguments in favor of the energetic disinflationary policies adopted in recent years by OECD countries have to be found elsewhere.

PD February 1986. **TI** On the Superneutrality of Money in a Stochastic Dynamic Macroeconomic Model. **AU** Panthine, Jean Pierre; Donaldson, John B.; Smith, Lance. **AA** Panthine: Universite de Lausanne. Donaldson: Columbia University. Smith: Columbia University. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8602; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 35. **PR** No Charge. **JE** 134, 311, 023, 026. **KW** Superneutrality. Money. Stochastic Growth. Uncertainty.
AB This paper is an attempt to understand the impact of monetary policy on the dynamics of a competitive economy in long run stochastic equilibrium. Money demand originates in consumers' deriving utility from the services of real balances. Our analysis is both theoretical and numerical. To study those qualitative properties which elude theoretical treatment, we have resorted to numerical computation of our economy's behavior for a wide class of parameter choices. One of our principal objectives is to test the robustness of Sidrauski's (1967) superneutrality result (that the steady state of the economy is invariant to the growth rate of money) to the introduction of uncertainty. We find that, with uncertainty, superneutrality may fail in a strict sense. The effect of an increased monetary growth rate on the equilibrium price distribution is found, however, to be dramatically greater than the corresponding effects on the equilibrium output, capital stock, and consumption distributions. This suggests that superneutrality remains at least a reasonable approximation in this expanded model context.

Patterson, Douglas

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

Pauly, Peter

TI Money Supply Announcements: Term Structure and Stability. **AU** Mizrach, Bruce; Pauly, Peter.

TI Evidence on the Small Sample Properties of Some Asympototically Equivalent Tests for Autoregressive Conditional Heteroscedasticity. **AU** Diebold, Francis X.; Pauly, Peter.

PD October 1984. **TI** Ridge Estimators for Distributed Lag Models. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-14; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 20. **PR** $1.00. **JE** 211. **KW** Ridge Estimators. Distributed Lags.
AB The purpose of the present paper is twofold: to propose a new non-stochastic technique to determine the biasing coefficient in ridge regression models, and to evaluate its relative performance in comparison with sample-based methods when applied in the context of a univariate linear distributed-lag model. The technique aims at minimizing the numerical value of the biasing coefficient without rendering the data matrix singular. It involves evaluating the ratio of the smallest eigenvalue to the trace of X'X. Conventional techniques combine information about the condition of X'X with an estimate of the residual variance and thus require a prior unrestricted regression analysis. The Monte-Carlo results indicate that the non-stochastic model compares favorably with both Shiller's proposed technique and simple ridge-type procedures. In general, though computationally simpler, it seems to also be equivalent in terms of relative efficiency to ridge-rules proposed by Dempster (1973) or Sclove (1973).

PD October 1984. **TI** Varying Parameter Estimates of Investment Functions: An Assessment of Policy Dependence. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-16; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 21. **PR** $1.00. **JE** 212, 131, 522. **KW** Lucas Critique. Investment Models. Policy Shocks.
AB The key point of the Lucas-critique is the observation that the behavior of economic agents reflects prevailing patterns of policies as well as agents' expectations about the future path of policies. Hence, policies based on inferences from reduced form relationships rather than structural relationships may fail, since the actions themselves alter the relationships between variables. As a practical matter, the quantitative importance of the Lucas-critique has to be assessed for each historical episode separately. In this paper we analyze the structure over time of two investment models which explicitly ignore the feedback from policy changes to the parameter set. Given the complexity of the models, the alternative of modeling parameter changes via Kalman-filter techniques is practically infeasible. It turns out that the parameter estimates for both models are increasingly unstable over time. Transformed prediction errors - the CUSUM's and CUSUM-squared statistics - are increasing continuously. The parameter estimates, particularly those for the impact of the user cost of capital, do seem to change even for transitory policy measures. On the other hand, the bounds of the CUSUM-squared statistic are only violated during the period following a

permanent policy shock. Thus, to some extent at least, these results support the basic claim of the Lucas-critique. Further work is, however, required to more clearly distinguish between the effects of these shocks and other disturbances occurring during this period, most importantly the two major oil shocks.

TI Endogenous Risk in a Portfolio Balance Rational Expectations Model of the Deutschemark-Dollar Rate. **AU** Diebold, Francis X.; Pauly, Peter.

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

TI Structural Change and the Combination of Forecasts. **AU** Diebold, Francis X.; Pauly, Peter.

TI The Time Series Properties of Pre-EMS and EMS Exchange Rates. **AU** Diebold, Francis X.; Pauly, Peter.

Paxson, Christina H.

TI Hours-Wage Tradeoffs and Job Mobility. **AU** Altonji, Joseph G.; Paxson, Christina H.

Pearce, David

TI Net Energy Expenditure and Energy Demand in the United Kingdom. **AU** Westoby, Richard; Pearce, David.

TI Optimal Cartel Equilibria with Imperfect Monitoring. **AU** Abreu, Dilip; Pearce, David; Stacchetti, Ennio.

PD 1985. **TI** Rural Electrification in Developing Countries: A Reappraisal. **AU** Pearce, David; Webb, Michael. **AA** Pearce: University College London. Webb: The World Bank. **SR** University College London Discussion Paper: 85-14; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 49. **PR** No Charge. **JE** 723. **KW** Rural Electrification. Electricity.
AB Rural electrification absorbs very large sums in investment financing. It has attracted its own 'folklore' in so far as it has been widely regarded as being somehow 'special' in the field of international (and national) lending. This paper has argued: (i) that the arguments for supposing rural electrification projects to be special are unconvincing and need far more research and documentation if they are to be substantiated; (ii) that rural electrification projects should be subjected to conventional cost-benefit appraisals - the nature of which we have outlined in the context of rural electrification - with due care and attention being paid to (a) the need for complementary investments to accompany rural electrification, and (b) the need to consider rural electricity as one component of a rural energy and even a rural development 'package'; (iii) that past studies have often wrongly enumerated and measured alleged benefits to rural electricity schemes; and (iv) that techniques exist whereby far greater control over rural electricity expenditures can be exercised through the proper

PD January 1985. **TI** World Oil Prices and Output Losses in Developing Countries. **AU** Pearce, David; Westoby, Richard. **AA** University College London. **SR** University College London Discussion Paper: 85-02; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 21. **PR** No Charge. **JE** 121, 723, 131. **KW** Oil Prices. Less Developed Countries. Oil Price Shock.
AB In this paper we use an earlier model of Pearce and Edwards (1984) to estimate the impacts of the 1979 oil price 'hike' on selected developing countries. We suggest that the results offer some guidance as to the extent to which LDC problems have been 'oil shock' induced and some indication of the varied impacts across nations. The pattern is consistent in that the short run impacts are all negative on GDP but the range of impact is quite substantial, reflecting the extent to which the countries are dependent upon the world market for oil.

PD March 1985. **TI** Resource Scarcity and Economic Growth in Poor Developing Countries: Missing Links in Simon's Cornucopian Philosophy. **AA** University College London. **SR** University College London Discussion Paper: 85-09; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 12. **PR** No Charge. **JE** 111, 841. **KW** Economic Growth. Population Growth.
AB This paper suggests that anyone setting out to model the interactive effects of population change on economic growth has a far more complex task than is envisaged even in the extended models of Simon. Population change reacts to, and partly determines, the loss of ecosystem function which in turn feeds back into loss of agricultural output, reduced water supply and water quality, reduced rates of return on investment and additional risk of turning manageable disasters into unmanageable disasters.

Pemberton, M.

TI The Estimation of a Disequilibrium Model of the Housing Market -- An Application to the United Kingdom. **AU** Markandya, A.; Pemberton, M.

Pemberton, Malcolm

PD 1984. **TI** The Economics of the Demand for Differentiated Products: 1. **AU** Pemberton, Malcolm; Ulph, David. **AA** University College London. **SR** University College London Discussion Paper: 84-05; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 23. **PR** No Charge. **JE** 022, 611. **KW** Demand for Differentiated Products. Product Differentiation.
AB In this paper we propose a framework for investigating the demand for differentiated products which incorporates both horizontal and vertical product differentiation and show how some of the critical features of vertically differentiated products can be usefully exploited in undertaking empirical work.

Penman, Stephen H.

TI Ex-dividend and Dividend Announcement Effects in the Stock Returns of Firms Initiating Dividend Payments. **AU** Brenner, Menachem; Penman, Stephen H.

Peterson, Christian E.

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

Peytrignet, Michel

PD Juillet 1985. **TI** Un Modele Macro economique dynamique avec rationnement quantitatif: version theorique et simulations numeriques. **AA** Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8507; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 48. **PR** No Charge.

Phillips, Peter C. B.

PD September 1984. **TI** An Everywhere Convergent Series Representation of the Distribution of Hotelling's Generalized T Sub o Squared. **AA** Cowles Foundation, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 723; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 22. **PR** No Charge. **JE** 211. **KW** Distribution Theory. Multivariate Tests. Hotelling's T Sub o Squared.

AB A new series representation of the distribution of Hotelling's generalized T sub o squared statistic is found which is everywhere convergent. Earlier results by Constantine which are convergent on the interval (0,1) are also derived from the formulae given here. The new results are made possible by the use of a matrix operator calculus developed by the author.

PD November 1984. **TI** The Exact Distribution of the Wald Statistic: The Non Central Case. **AU** Phillips, Peter C. B.; Ouliaris, Sam. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 731; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 12. **PR** No Charge. **JE** 211. **KW** Wald Statistic. Noncentral Quadratic Forms. Distribution Theory. Matrix Fractional Calculus.

AB This paper extends earlier results, which were reported in '7, to include non null distributions. As in '7, attention is concentrated on the Wald statistic for testing general linear restrictions on the coefficients in the multivariate linear model. The results of the present paper encompass the null distributions derived in '7 and generalize all previously known results for such statistics as the standard regression F test and Hotelling's T-squared test.

PD April 1985. **TI** Time Series Regression with Unit Roots. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 740; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 41. **PR** No Charge. **JE** 211. **KW** Unit Roots. Integrated Processes. Nonergodic Time Series. Tests for Unit Roots. Functional CLT.

AB This paper studies the random walk in a general time series setting that allows for weakly dependent and heterogeneously distributed innovations. It is shown that simple least squares regression consistently estimates the unit root in spite of the presence of autocorrelated errors. The limiting distribution of the standardized estimator and the associated regression t-statistic are found using functional central limit theory. New tests of the random walk hypothesis are developed which permit a wide class of dependent and heterogeneous innovation sequences. A new limiting distribution theory is constructed based on the concept of continuous data recording. This theory, together with an asymptotic expansion that is developed in the paper for the unit root case, explains many interesting experimental results.

PD July 1985. **TI** Understanding Spurious Regressions in Econometrics. **AA** Yale University. **SR** Yale Cowles Foundation Discussion Paper: 757; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 29. **PR** No Charge. **JE** 211. **KW** Spurious Regressions. Random Walk. Asymptotic Theory.

AB This paper provides an analytical study of spurious regressions involving the levels of economic time series. An asymptotic theory is developed for regressions that relate independent random walks. It is shown that the usual t ratio significance tests do not possess limiting distributions but actually diverge as the sample size T approaches infinity. The Durbin-Watson statistic, on the other hand, converges in probability to zero. The limiting behavior of other regression diagnostics such as the Box-Pierce statistic is also analyzed. An alternative asymptotic theory is developed based on the concept of continuous data recording. This theory together with the large sample asymptotics that we present go a long way towards explaining the experimental results of Granger and Newbold (1974, 1977).

PD August 1985. **TI** Asymptotic Expansions in Nonstationary Vector Autoregressions. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 765; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 32. **PR** No Charge. **JE** 211. **KW** Asymptotic Expansions. Vector Autoregressions. Characteristic Functionals. Generalized Random Process.

AB This paper studies the statistical properties of vector autoregressions (VAR's) for quite general multiple time series which are integrated of order one. Functional central limit theorems are given for multivariate partial sums of weakly dependent innovations and these are applied to yield first order asymptotics in nonstationary VAR's. Characteristic and cumulant functionals for generalized random processes are introduced as a means of developing a refinement of central limit theory on function spaces. The theory is used to find asymptotic expansions of the regression coefficients in nonstationary VAR's under very general conditions. The results are specified to the scalar case and are related to other recent work by the author in '17 and '19.

PD September 1985. **TI** Multiple Time Series Regression with Integrated Processes. **AU** Phillips, Peter C. B.; Durlauf, Steven D. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 768; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 43. **PR** No Charge. **JE** 211. **KW** Integrated Process. Multivariate Functional CLT. Asymptotic Theory for

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Stationary VAR's.
AB This paper develops a general asymptotic theory of regression for processes which are integrated of order one. The theory includes vector autoregressions and multivariate regressions amongst integrated processes that are driven by innovation sequences which allow for a wide class of weak dependence and heterogeneity. The models studied cover cointegrated systems and quite general linear simultaneous equations systems with contemporaneous regressor-error correlation and serially correlated errors. Problems of statistical testing in vector autoregressions and multivariate regressions with integrated processes are also studied. It is shown that the asymptotic theory for conventional tests involves major departures from classical theory and raises new and important issues of the presence of nuisance parameters in the limiting distribution theory.

PD September 1985. **TI** Fractional Matrix Calculus and the Distribution of Multivariate Tests. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 767; Cowles Foundation for Research in Economics, 30 Hilhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 22. **PR** No Charge. **JE** 211. **KW** Fractional Matrix Calculus. Multivariate Tests. Exact Distribution Theory. Asymptotic Expansions.
AB Fractional matrix operator methods are introduced as a new tool of distribution theory for use in multivariate analysis and econometrics. Earlier work by the author on this operational calculus is reviewed and to illustrate the use of these methods we give an exact distribution theory for a general class of tests in the multivariate linear model. This distribution theory unifies and generalizes previously known results, including those for the standard F statistic in linear regression, for Hotelling's T-square test and for Hotelling's generalised T naught-square test. We also provide a simple and novel derivation of conventional asymptotic theory as a specialization of exact theory. This approach is extended to generate general formulae for higher order asymptotic expansions. Thus, the results of the paper provide a meaningful unification of conventional asymptotics, higher order asymptotic expansions and exact finite sample distribution theory in this context.

Pick, Kathryn

TI Design Education and the Designers' Labour Market. **AU** Verry, Donald; Pick, Kathryn.

TI The Effect of Price and Non-Price Factors on United Kingdom Export Performance and Import Penetration. **AU** Schott, Kerry; Pick, Kathryn.

Pines, D.

TI The Futures Price of a Commodity in Fixed Supply. **AU** Eldor, R.; Pines, D.

Plott, Charles R.

TI An Experimental Analysis of Public Goods Provision Mechanisms with and without Unanimity. **AU** Banks, Jeffrey S.; Plott, Charles R.; Porter, David P.

PD March 1986. **TI** Laboratory Experiments in Economics: The Implications of Posted-Price Institutions. **AA** California Institute of Technology. **SR** Caltech Social Science Working Paper: 597; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 25. **PR** No Charge. **JE** 215, 022. **KW** Laboratory Experiments. Posted Prices.
AB A laboratory experimental methodology has been developing in economics in recent years. The nature of the methodology is to integrate clearly motivated but largely subjectively determined human decisions with the organizational features of markets. The article summarizes the nature of the incentive system and how market organization can be used as an independent variable. Initial basic research results that involved the assessment of the effects of posted price organization demonstrated that the effect of the institution is to raise prices and lower market efficiency. The existence of such effects and the close proximity of the laboratory posted price institution and rate posting institution required by the government in several industries has led to a series of policy related experiments. The results have also led to more basic research efforts on seemingly unrelated topics.

PD March 12, 1986. **TI** Laboratory Experiments in Economics: The Implications of Posted Price Institutions. **AA** California Institute of Technology. **SR** Caltech Social Science Working Paper: 597; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 25. **PR** No Charge. **JE** 215, 022. **KW** Experimental Economics. Posted Prices. Incentive System. Market Organization.
AB A laboratory experimental methodology has been developing in economics in recent years. The nature of the methodology is to integrate clearly motivated but largely subjectively determined human decisions with the organizational features of markets. The article summarizes the nature of the incentive system and how market organization can be used as an independent variable. Initial basic research results that involved the assessment of the effects of posted price organization demonstrated that the effect of the institution is to raise prices and lower market efficiency. The existence of such effects and the close proximity of the laboratory posted price institution and rate posting institution required by the government in several industries has led to a series of policy related experiments. The results have also led to more basic research efforts on seemingly unrelated topics.

Polemarchakis, Heraklis M.

TI Intertemporal Allocations and the Transfer Paradox. **AU** Galor, Oded; Polemarchakis, Heraklis M.

Polinsky, A. Mitchell

PD January 1986. **TI** Fixed Price Versus Spot Price Contracts: A Study in Risk Allocation. **AA** Stanford Law School, Stanford University. **SR** National Bureau of Economic Research Working Paper: 1817; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 34. **PR** $2.00. **JE** 022, 026. **KW** Price Contracts. Fixed Price Contract. Spot Price Contract. Risk Allocation. Floor Price.
AB This paper is concerned with the risk-allocation effects of alternative types of contracts used to set the price of a good to be delivered in the future. Under a fixed price contract, the price is specified in advance. Under a spot

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price contract, the price is the price prevailing in the spot market at the time of delivery. These contract forms are examined in the context of a market in which sellers have uncertain production costs and buyers have uncertain valuations. The paper derives and interprets a general condition determining which contract form would be preferred when the seller and/or the buyer is risk averse. In addition, an example is provided in which a spot price contract with a floor price is superior both to a "pure" spot price contract and a fixed price contract.

PD February 1986. **TI** Detrebling Versus Decoupling Antitrust Damages: Lessons from the Theory of Enforcement. **AA** Stanford Law School, Stanford University. **SR** National Bureau of Economic Research Working Paper: 1846; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 17. **PR** $2.00. **JE** 612. **KW** Antitrust. Private Antitrust Enforcement. Economic Theory of Enforcement. Detrebling. Decoupling.

AB This comment compares two alternative systems of private antitrust enforcement. In one (referred to as the "damage multiplier approach"), the plaintiff receives what the defendant pays; in the other (the "decoupling approach"), this constraint is not imposed. Reducing treble damages to single damages ("detrebling") would be an example of the first approach. Making the defendant pay treble damages while only giving the plaintiff single damages would be an example of the second approach. It is shown, using the principles of the economic theory of enforcement, that the decoupling approach is preferable to the damage multiplier approach, and that the optimal system of decoupling could award the plaintiff more or less than what the defendant pays. Several additional issues are raised that need to be considered before decoupling can be recommended in practice.

PD February 1986. **TI** The Welfare Implications of Costly Litigation in the Theory of Liability. **AU** Polinsky, A. Mitchell; Rubinfeld, Daniel L. **AA** Polinsky: Stanford Law School. Rubinfeld: School of Law, University of California Berkeley. **SR** National Bureau of Economic Research Working Paper: 1834; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 36. **PR** $2.00. **JE** 916, 024. **KW** Litigation. Theory of Liability.

AB One of the principal results in the economic theory of liability is that, assuming litigation is costless, the rule of strict liability with compensatory damages leads the injurer to choose the socially appropriate level of care. This paper reexamines this result when litigation is costly. It is shown that strict liability with compensatory damages generally leads to a socially inappropriate level of care and to excessive litigation costs. Social welfare can be increased by adjusting compensatory damages upward or downward, with the desired direction depending on the effect of changes in the level of liability on the injurer's decision to take care and on the victim's decision to bring suit.

Pollak, Robert A.

TI Do Parents Favor Boys?. **AU** Behrman, Jere R.; Pollak, Robert A.; Taubman, Paul.

PD August 1985. **TI** The Likelihood Dominance Criterion: A New Approach to Model Selection. **AU** Pollak, Robert A.; Wales, Terence J. **AA** Pollak: Department of Economics, University of Pennsylvania. Wales: University of British Columbia. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-26; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 27. **PR** $1.00. **JE** 212. **KW** Model Selection. Non-Nested Hypotheses. Dominance Ordering. Likelihood Dominance Criterion.

AB This paper provides a new approach to model selection. The likelihood dominance ordering and the LDC provide the new approach, which is consistent with the classical statistical approach to hypothesis testing. The dominance ordering is best described in terms of a fictive experiment in which the two competing hypotheses are nested in a composite. If estimating the composite leads to accepting one hypotheses and rejecting the other, then which one will be accepted and which rejected is determined by the adjusted likelihood values of the two hypotheses and does not require estimating the composite, although it does require specifying the size of the composite. The LDC generalizes the dominance ordering by considering a range of admissible composite sizes: from one parameter more than the larger hypothesis to one parameter more than the sum of the number of parameters in the two hypotheses. This range will usually include all composite sizes of practical interest. Although the LDC is indecisive when the dominance orderings corresponding to different composite sizes within this range imply different rankings, in most practical situations the LDC will be decisive for model selection.

TI Order and Inference in Qualitative Response Models. **AU** Crawford, David L.; Pollak, Robert A.

Porter, David P.

TI An Experimental Analysis of Public Goods Provision Mechanisms with and without Unanimity. **AU** Banks, Jeffrey S.; Plott, Charles R.; Porter, David P.

Racine, Jean Bernard

PD October 1984. **TI** Services Agencies in Swiss Regional Dynamics: Polycentric Decentralisation in Question. **AU** Racine, Jean Bernard; Cunha, Antonio. **AA** Universite de Lausanne. **SR** Universite de Lausanne Cahiers de Recherches Economiques: 8407; Departement d'econometrie et d'economie politique, Universite de Lausanne, BFSH - Dorigny, CH-1015 Lausanne, SWITZERLAND. **PG** 30. **PR** No Charge. **JE** 941. **KW** Development of Towns. Polycentric Decentralization.

AB Our main hypothesis is that the development of middle-sized and small towns was reduced due to the weakness of their tertiary and due to the fact that peripheral companies purchased their services from larger, extra-regional centres. This study has been able to point out the insufficiency of middle-sized towns with regard to basic services (non-basic services being better distributed), as well as the high concentration of basic services in towns of the higher levels. To this concentration is added the polarizing effects of an already very dense economic network.

Rakotoarimanana, Georges

TI Finances publiques, comptabilite nationale et Investissements publics en Suisse. **AU** Lambelet, Jean Christian; Rakotoarimanana, Georges; Schwartz, Jean Jacques.

Ramirez, Rojas C. L.

PD December 1985. **TI** Currency Substitution in Argentina, Mexico, and Uruguay. **AA** International Monetary Fund. **SR** International Monetary Fund Departmental Memoranda/Staff Papers: 32(4); International Monetary Fund, Washington D.C. 20431. **PG** 39. **PR** No Charge. **JE** 431, 121. **KW** Exchange Rates. Balance of Payments Adjustment. Foreign Currency Demand. Argentina. Mexico. Uruguay. Currency Substitution.

AB This paper analyzes currency substitution -- the demand for foreign money -- in Argentina, Mexico, and Uruguay. The appearance of currency substitution in these countries can be traced to their high inflation rates in recent years. In these countries the demand for foreign exchange by domestic residents has gone well beyond the requirements of international trade and tourism, complicating the management of domestic monetary policy. The empirical evidence presented shows the quantitative importance and apparent irreversibility of currency substitution in these countries, and policies to reduce the growth of currency substitution are discussed.

Ransom, Roger

PD April 1986. **TI** Did Rising Out-Migration Cause Fertility to Decline in Antebellum New England? A Life-Cycle Perspective on Old-age Security Motives, Child Default, and Farm Family Fertility. **AU** Ransom, Roger; Sutch, Richard. **AA** Ransom: University of California, Riverside. Sutch: University of California, Berkeley and California Institute of Technology. **SR** Caltech Social Science Working Paper: 610; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 92. **PR** No Charge. **JE** 042, 851, 841. **KW** Life-Cycle. Fertility. Schooling. United States 1790-1860.

AB A model of fertility based on the life-cycle model of intertemporal optimization is presented in which fertility, children's schooling, saving, and bequest planning are simultaneously determined. The paper hypothesizes that sometime shortly after the beginning of the nineteenth century, Americans began to adopt this life-cycle strategy and abandon the older, traditional family-based system of providing for old age. As a consequence the overall fertility rate began to fall. The change in attitudes was, it is argued, triggered by the high incidence of "child default" as young adults left the seaboard states for land in the west. The change to life-cycle strategies was gradual and proceeded at different rates in different parts of the country. This differential timing of the "life-cycle transition" allows empirical tests to be based on cross-sections of state data drawn from the 1840 United States Census. The model is shown to predict well. An alternative hypothesis, Richard Easterlin's "target-bequest model" is rejected by these tests.

Rau, Nicholas

PD 1984. **TI** The Microeconomic Theory of the Trade Union: A Comment. **AA** University College London. **SR** University College London Discussion Paper: 84-07; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 4. **PR** No Charge. **JE** 831. **KW** Utilitarian Trade Union.

AB This note shows that, contrary to Oswald's assertion in "The Microeconomic Theory of the Trade Union", the union's optimal wage is in fact a decreasing function of the elasticity of labor demands and of the employed man's degree of risk aversion.

Razin, Assaf

TI The International Transmission and Effects of Fiscal Policies. **AU** Frenkel, Jacob A.; Razin, Assaf.

Reinganum, Jennifer F.

PD March 1986. **TI** Credibility and Law Enforcement. **AU** Reinganum, Jennifer F.; Wild, Louis L. **AA** California Institute of Technology. **SR** Caltech Social Science Working Paper: 604; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 41. **PR** No Charge. **JE** 022, 026, 916. **KW** Economics of Crime. Law Enforcement. Law and Economics. Deterrence.

AB The precommitment approach to law enforcement is inappropriate as a positive theory of crime and punishment because it is inconsistent with the institutional structure of United States law enforcement. We develop a formal model which integrates theories of optimal sanctions, individual criminal behavior and the allocation of effort to apprehension, and imposes credibility constraints on the choice of sanction--i.e., given the severity of a crime and the individual characteristics of the criminal, the sanction imposed must be optimal from society's perspective, after the crime has been committed.

Ricart, I. Costa Joan E.

TI Managerial Incentives and Capital Management. **AU** Holmstrom, Bengt; Ricart, I. Costa Joan E.

Riordan, Michael H.

PD June 1985. **TI** Optimal Contracts with Public and Private Ex Post Information. **AU** Riordan, Michael H.; Sappington, David E. M. **AA** Bell Communications Research, Incorporated. **SR** Bell Communications Research Economics Discussion Paper: 10; Room 2Q-382, Bell Communications Research Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PR** No Charge. **JE** 026. **KW** Asymmetric Information. Ex Post Information. Optimal Contracts.

AB We are concerned with the value of ex post information about a seller's costs to an initially uninformed buyer. We derive necessary and sufficient conditions for an ex post signal that is correlated with the risk-neutral seller's costs to render the initial information asymmetry inconsequential to the buyer. The corresponding conditions are also derived for the case in which the ex post signal is observed only by the buyer. In this case, the buyer must provide herself with incentives not to exploit the seller ex post. Consequently, the seller will generally command some rents unless the private ex post signal is a perfect indicator of the seller's costs or unless the buyer can undertake an observable action after the ex post signal is realized. In the latter case, the buyer's profits must vary sufficiently with her action if her most preferred outcome is to be attainable.

Rivers, Douglas

PD March 1986. **TI** Microeconomics and Macropolitics: A Solution to the Kramer Problem. **AA** California Institute of Technology. **SR** Caltech Social Science Working Paper: 602; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. **PG** 42. **PR** No Charge. **JE** 025. **KW** Economic Voting. Pooling Cross-Sections. Measurement Error.

AB Estimation of economic voting models is complicated by the possibility that voters treat certain economic conditions as "politically irrelevant" and do not attribute responsibility for such conditions to the incumbent party. Kramer (1983) suggested that this phenomenon could account for the discrepancy between micro survey and aggregate time-series estimates of the economic voting model. Statistical methods are developed for testing the Kramer hypothesis and applied to presidential voting data from 1956 to 1984. With proper treatment, the estimated individual level income effect based on pooled cross-sectional surveys is as large as that found in aggregate time series data. Ordinary regression estimates are shown to be biased by a factor of approximately seven. It is also shown that ordinary regression estimates tend to overstate "sociotropic" or national level economic effects. Nonetheless, even using consistent estimation techniques, sociotropic effects are still found, though they are slightly smaller than the individual level-effects.

Roberts, John

TI Relying on the Information of Interested Parties. **AU** Milgrom, Paul; Roberts, John.

Rogers, Colin

PD 1985. **TI** Clower on the Irrelevance of Walras's Law for the Economics of Keynes: A Non Sequitur. **AA** University College London. **SR** University College London Discussion Paper: 85-13; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 23. **PR** No Charge. **JE** 031. **KW** Clower. Walras' Law. Dual Decision Hypothesis. Keynes.

AB It will be shown that Clower's analysis of the dual decision hypothesis is best interpreted as an extension of the "classical" tradition of which he was so critical. Specifically his argument about the irrelevance of Walras's Law for the economics of Keynes is seen to be a non sequitur which results from his failure to apply completely the logic of the dual decision hypothesis. When this oversight is corrected the analysis of the dual decision hypothesis is seen to be an extension of "classical" analysis which was later taken up by the fix-price general equilibrium theorists such as Barro and Grossman (1976) and Malinvaud (1977).

Rogoff, Kenneth

PD December 1985. **TI** Elections and Macroeconomic Policy Cycles. **AU** Rogoff, Kenneth; Sibert, Anne. **AA** Rogoff: Department of Economics, University of Wisconsin. Sibert: Board of Governors of the Federal Reserve System. **SR** Board of Governors of the Federal Reserve System International Finance Discussion Papers: 271; Federal Reserve Board, 20th and C Streets, N.W., Washington, D.C. 20551. **PG** 41. **PR** No Charge. **JE** 023, 026, 311, 131. **KW** Information. Signalling. Monetary Policy. Electoral Cycles. Political Business Cycle.

AB There is an extensive empirical literature on political business cycles, but its theoretical foundations are grounded in pre-rational expectations macroeconomic theory. Here we show that electoral cycles in taxes, government spending and money growth can be modeled as an equilibrium signaling process. The cycle is driven by temporary information asymmetries which can arise if, for example, the government has more current information on its performance in providing for national defense. Incumbents cheat least when their private information is either extremely favorable or extremely unfavorable. An exogenous increase in the incumbent party's popularity does not necessarily imply a damped policy cycle.

PD February 1986. **TI** Elections and Macroeconomic Policy Cycles. **AU** Rogoff, Kenneth; Sibert, Anne. **AA** Rogoff: Economics Department, University of Wisconsin at Madison. Sibert: International Finance Division, Board of Governors of the Federal Reserve System. **SR** National Bureau of Economic Research Working Paper: 1838; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 42. **PR** $2.00. **JE** 131, 026. **KW** Political Business Cycles. Electoral Cycles. Asymmetric Information.

AB There is an extensive empirical literature on political business cycles, but its theoretical foundations are grounded in pre-rational expectations macroeconomic theory. Here we show that electoral cycles in taxes, government spending and money growth can be modeled as an equilibrium signaling process. The cycle is driven by temporary information asymmetries which can arise if, for example, the government has more current information on its performance in providing for national defense. Incumbents cheat least when their private information is either extremely favorable or extremely unfavorable. An exogenous increase in the incumbent party's popularity does not necessarily imply a damped policy cycle.

Roley, V. Vance

PD January 1986. **TI** The Response of Interest Rates to Money Announcements Under Alternative Operating Procedures and Reserve Retirement Systems. **AA** Graduate School of Business Administration, University of Washington. **SR** National Bureau of Economic Research Working Paper: 1812; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 36. **PR** $2.00. **JE** 311. **KW** Money Supply Announcements. Interest Rates. Reserve Requirements. Operating Procedures.

AB The response of interest rates to money announcement surprises is examined both theoretically and empirically in this paper. In the theoretical models developed, not only changes in operating procedures, but also reserve requirement systems, are found to potentially affect the response. Moreover, under the current two-week contemporaneous reserve requirements (CRR) adopted in February 1984, the responses in the first and second weeks of the two-week reserve maintenance period may differ. The empirical results generally conform to the predictions of the theoretical models. The response of the Treasury bill yield to money announcement surprises changed significantly following changes in either operating procedures or reserve requirement systems in October 1979, October 1982, and February 1984.

Rosen, Sherwin

PD January 1986. **TI** A Time Series Model of Housing Investment in the United States. **AU** Rosen, Sherwin; Topel, Robert H. **AA** Rosen: Department of Economics, University of Chicago. Topel: Department of Economics, University of California Los Angeles. **SR** National Bureau of Economic Research Working Paper: 1818; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 71. **PR** $2.00. **JE** 932. **KW** Housing Investment. Q-Theory.

AB A decentralized market theory of investment based on rising supply price is formulated and explained. Asset prices embody all available information in a competitive market and serve as "sufficient statistics" for future market conditions. Construction is determined myopically by marginal cost pricing: rising supply price constrains aggregate investment. Market dynamics imply that anticipated pulses in demand and interest rates lead to "bubbles" in prices, rentals and construction, because it pays to "build ahead of demand" in the presence of rising supply price. This model, similar to q-theory, assumes that long and short run elasticities of supply are identical. Short-run supply is less elastic than long-run supply when internal adjustment costs are superimposed on rising supply price. Then the current construction decision is no longer myopic and current price (or current q) is no longer sufficient for investment. Instead, builders must anticipate the future path of asset prices for current construction decisions. This enriched model is estimated under the hypothesis of rational expectations. The short-run elasticity is found to be 1.0 in quarterly data. The long-run elasticity is 3.0. The long-run is achieved within one year, indicating substantial built-in flexibility in the industry to accomodate great volatility in housing construction. Elastic supply helps account for the large fluctuations in output and employment observed in this industry. The data also show that prices alone do not clear the market. Other nonprice dimensions, including expected time-to-sale and overall transactions volume play independent roles which remain to be explained.

Rosenthal, Robert W.

TI A Positive Approach to Noncooperative Games. **AU** Friedman, James W.; Rosenthal, Robert W.

Rosselli, Annalisa

TI Profitability in the International Gold Market in the Early History of the Gold Standard. **AU** Marcuzzo, Maria Christina; Rosselli, Annalisa.

Rubinfeld, Daniel L.

TI The Welfare Implications of Costly Litigation in the Theory of Liability. **AU** Polinsky, A. Mitchell; Rubinfeld, Daniel L.

Rudebuseh, Glenn

PD September 1985. **TI** A Disequilibrium Model of the Labor Market With Exact Excess Demand Indicators. **AA** Department of Economics, University of Pennsylvania. **SR** University of Pennsylvania Econometrics Discussion Paper: 85-27; Department of Economics, McNeil Building, 3718 Locust Walk, CR, University of Pennsylvania, Philadelphia, PA 19104. **PG** 40. **PR** $1.00. **JE** 821, 824. **KW** Market Excess Demand. Disequilibrium Model. Labor Market Equilibrium Test.

AB A disequilibrium model is presented that supplements the standard disequilibrium model with outside information on the extent of market excess demand. This information is assumed to take a linear, deterministic form. Empirical implementation of the supplemented model is considerably less involved than estimation of the standard model, and certain desirable features, such as an improved dynamic specification and an endogenous wage, are also obtained. The model is estimated from United States post-war labor market data, and an econometric test of the hypothesis of labor market equilibrium is performed.

Sachs, Jeffrey

TI Coordination of Monetary and Fiscal Policies in the OECD. **AU** McKibbin, Warwick; Sachs, Jeffrey.

PD February 1986. **TI** High Unemployment in Europe: Diagnosis and Policy Implications. **AA** Department of Economics, Harvard University. **SR** National Bureau of Economic Research Working Paper: 1830; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 44. **PR** $2.00. **JE** 824. **KW** Non-Accelerating Inflation Rate of Unemployment. NAIRU. Europe. Supply Shocks. Aggregate Demand Management.

AB Econometric evidence suggests that the non-accelerating inflation rate of unemployment (the NAIRU) has risen sharply in Europe in the past fifteen years. In the first section of this paper, I review the recent proliferation of supply-side models that say interesting things about why the NAIRU has increased so substantially in Europe. In the second section of the paper, I employ a simple example to show how aggregate demand should optimally be managed in response to transitory and permanent supply shocks, especially those shocks that cause a persistent rise in the NAIRU. Also, I discuss some policy implications of the increasingly popular "hysteresis" hypothesis, that the NAIRU itself is influenced by the time path of actual unemployment.

Sah, Raaj Kumar

PD January 1986. **TI** The Invariance of R & D to the Number of Firms in the Industry. **AU** Sah, Raaj Kumar; Stiglitz, Joseph. **AA** Sah: Department of Economics,

https://doi.org/10.1017/S0951007900000231 Published online by Cambridge University Press

Yale University. Stiglitz: Department of Economics, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1798; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 21. **PR** $2.00. **JE** 611, 621. **KW** Number of Firms. R & D. Allocation to R & D.
AB This paper presents certain remarkably simple results concerning market's allocation to R & D and its comparison to socially efficient allocations. We posit that a firm can undertake more than one project aimed at the same innovation, and consider a product market characterized by Bertrand competition. Among the results we obtain is that the market R & D (that is, the number of projects undertaken, and the effort spent on different projects) is invariant to the number of firms. We also examine the effects of the number of firms on the gains from innovation to consumers, firms, and society, and show, in particular, that the market undertakes less R & D than is socially desirable.

Sahi, S.

PD May 1985. **TI** A Model of a Sudden-Death Field-Goal Football Game: A Sequential Duel. **AU** Sahi, S.; Shubik, Martin. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 751; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 15. **PR** No Charge. **JE** 114, 026. **KW** Tactical Combat. War and Defense. Football. Sequential Dual.
AB This paper introduces a highly simplified version of 'sudden-death' scoring. The basic game is as follows. With equal probability the teams toss to see who gets the ball. The team with the ball can either run or try to kick a field goal. The first team to score wins the game.

Salant, David J.

PD August 1984. **TI** Equilibrium in a Spacial Model of Imperfect Competition. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E84-08-02; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 58. **PR** No Charge. **JE** 022. **KW** Spacial Competition. Inverse Demands. Product Differentiation.
AB The nature of equilibrium when imperfectly competitive firms produce differentiated products depends critically on the particular way in which products can differ. Differentiated product models of imperfect competition often fail to make explicit the relations between individual demand and firms' product design decisions. Here one particular stylized form of product differentiation is considered. It is shown that some common assumptions or assertions about the nature of market equilibrium are incompatible with the fairly standard form of product differentiation that is considered in this paper. For example, often, as in Chamberlinian models of monopolistic competition, it is asserted that equilibrium is symmetric. It is shown that this type of symmetry is inconsistent with some types of product heterogeneity.

PD August 1984. **TI** A Note on Convexity of Preferences and Continuity of Demand in Spatial Models. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E84-08-03; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 15. **PR** No Charge. **JE** 022, 941. **KW** Spacial Competition. Convex Preferences.
AB In order to ensure that market demand for goods are continuous functions of their prices, it is usually assumed that consumers possess convex preferences over those goods (or, less generally consumer preferences over goods can be represented by quasi-concave, and usually continuous, utility functions). In spatial models such assumptions are not innocuous. Such assumptions are also crucial in establishing continuity of market demand which, in turn, is essential in deriving existence and comparative statics results. Thus the question arises of finding conditions ensuring either that preferences over goods are convex when the underlying preferences over characteristics are, or that market demands are (upper semi-) continuous when there are a continuum of consumers. The purpose of this note is to study this question.

PD August 1984. **TI** Technical Appendix to "Equilibrium in a Spacial Model of Imperfect Competition". **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Paper in Economics: E84-08-04; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 15. **PR** No Charge. **JE** 941, 213, 022. **KW** Spacial Competition. Inverse Demands.
AB This paper provides, in a sequence of lemmas, a proof of the assertion that inverse demands are well defined and continuous functions of the output and locations of the firms.

Salehi, Isfahani Djavad

PD May 1985. **TI** On the Generalization of the Boserup Model: Some Clarifications. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-05-03; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 11. **PR** No Charge. **JE** 621, 711. **KW** Agricultural Growth. Technical Change. Technical Progress.
AB In a recent issue of this journal Robinson and Schutjer (1984) attempted a generalization of the model of agricultural intensification put forward by Ester Boserup in her classic book, The Conditions of Agricultural Growth (1965). They criticized my interpretation of her model (Salehi-Isfahani, 1977a) on grounds of its description of the land-use technology. The basic point in dispute is whether Boserup's notion of intensification of land use is technical change or technical progress. They maintain that I have unnecessarily restricted the interpretation of intensification to technical change and that it is better understood as technical progress. Since this issue goes to the heart of Boserup's contribution I would like to show that it can be easily established from her own writing that it is technical change that she had in mind and, more importantly, that the technical progress interpretation put forth by Robinson

and Schutjer is inconsistent with her model since it precludes a systematic role for population as a condition of agricultural growth.

Sappington, David E. M.

PD November 1984. **TI** Information, Incentives and Organizational Mode. **AA** Bell Communications Research, Incorporated. **SR** Bell Communications Research Economics Discussion Paper: 4; Room 2Q-382, Bell Communications Research Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PR** No Charge. **JE** 511, 026, 022. **KW** Endogenous Private Information. Organizational Mode.

AB We consider an environment where private information is endogenous, and examine how the choice of organizational mode is affected by this possibility. There are two stages of production. The individual who performs a particular stage is the only one to observe the associated cost realization. We show that when the cost realizations at the two stages are positively correlated, the principal in our model prefers to carry out production at the second stage herself. When the correlation is negative and sufficiently small, she will prefer that the agent who performs the first stage also perform the second. For large negative correlation, either mode might be preferred.

TI Optimal Contracts with Public and Private Ex Post Information. **AU** Riordan, Michael H.; Sappington, David E. M.

TI Entry in Regulated Industries: An Information-Based Perspective. **AU** Demski, Joel S.; Sappington, David E. M.; Spiller, Pablo T.

PD August 1985. **TI** Regulatory Incentive Schemes Using Historic Cost Data. **AU** Sappington, David E. M.; Sibley, David S. **AA** Bell Communications Research, Incorporated. **SR** Bell Communications Research Economics Discussion Paper: 7; Room 2Q-382, Bell Communications Research Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PR** No Charge. **JE** 613. **KW** Regulation. Regulatory Incentive Schemes.

AB We examine the optimal use of data that is readily available to regulators in practice, i.e., lagged reports of total expenditures by the firm. We focus on the case where the regulator knows nothing about the firm's technology, but shares the firm's (possibly imperfect) knowledge of demand. A regulatory procedure is proposed that, at minimal cost to society, ensures the outcome that the regulator would enforce if (s)he shared the firm's perfect knowledge of its technology.

TI Delegated Expertise. **AU** Demski, Joel S.; Sappington, David E. M.

TI Line-Item Reporting, Factor Acquisition, and Subcontracting. **AU** Demski, Joel S.; Sappington, David E. M.

Saunders, Anthony

TI Bank Regulation and Monetary Policy. **AU** Merrick, John J. Jr; Saunders, Anthony.

PD July 1985. **TI** Intra- and Interindustry Effects of Bank Securities Market Activities: The Case of Discount Brokerage. **AU** Saunders, Anthony; Smirlock, Michael. **AA** Saunders: New York University. Smirlock: Wharton School, University of Pennsylvania. **SR** New York University Salomon Brothers Center Working Paper: 352; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 20. **PR** $2.00. **JE** 312, 313. **KW** Discount Brokerage. Bank Discount Brokerage Activity.

AB The primary purpose of this paper is to evaluate the economic arguments of bank entry into discount brokerage. In particular, we examine the effect on the risk and return characteristics of banking and securities firms stocks to the initial announcement of bank entry into, and the subsequent regulatory approval of, bank discount brokerage activity.

Schinasi, Garry J.

PD February 1986. **TI** International Comparisons of Fiscal Policy: The OECD and the IMF Measures of Fiscal Impulse. **AA** International Finance Division, Federal Reserve System. **SR** Board of Governors of the Federal Reserve System International Finance Discussion Papers: 274; Federal Reserve Board, 20th and C Streets, N.W., Washington, D.C. 20551. **PG** 22. **PR** No Charge. **JE** 321, 322, 123. **KW** Fiscal Impulse. Fiscal Policy. International Comparisons. OECD. IMF.

AB Both the OECD and the IMF periodically estimate and publish measures of fiscal impulse to gauge the extent to which fiscal policy in the major industrial countries has become more or less expansive over time. This paper compares these measures analytically and numerically. The paper shows that the OECD and IMF measures of fiscal impulse differ in at least four fundamental ways: (1) the OECD includes fiscal drag under the presumption that it is part of the "structure" of fiscal policy, while the IMF excludes it from its adjusted measure of the budget balance; (2) the OECD and the IMF both adjust for cyclical factors but they do so differently; (3) the OECD estimates its marginal tax and expenditure rates from a structural model whereas the IMF assumes unit income-elasticity of its parameters and uses historical average tax and spending rates; and (4) each agency uses different estimates of potential output. The paper then numerically allocates differences in the published figures of the OECD and the IMF to these various sources. The paper assesses the usefulness of each measure.

Scholes, Myron S.

TI Taxation and the Dynamics of Corporate Control: The Uncertain Case for Tax Motivated Acquisitions. **AU** Gilson, Ronald J.; Scholes, Myron S.; Wolfson, Mark A.

Schott, Kerry

PD 1983. **TI** The Simple Economics of Price and Quality Competition in International Trade. **AA** University College London. **SR** University College London Discussion Paper: 84-02; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 22. **PR** No Charge. **JE** 616, 411. **KW** Quality. Price. International Trade. Industrial Strategy.

AB In this paper a simple model that incorporates quality as well as price competition is presented. This model suggests that the industrial strategy for British industry should be concerned with the relative qualities as well as the relative prices of the products sold. Goods are demanded on grounds of both their performance and aesthetic characteristics, as well as cost. It was suggested that preferences about costs varied with incomes. Low income consumers will be more concerned to have low cost products though all consumers prefer goods of superior quality. In the international market Britain faces fierce competition on cost grounds, from the newly industrializing countries in particular. However there is also fierce competition on quality grounds from other developed countries. The basic idea is to produce good value for money and to be aware that as incomes rise the preference for quality over cost strengthens.

PD 1984. **TI** The Effect of Price and Non-Price Factors on United Kingdom Export Performance and Import Penetration. **AU** Schott, Kerry; Pick, Kathryn. **AA** University College London. **SR** University College London Discussion Paper: 84-01; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 27. **PR** No Charge. **JE** 411. **KW** Non-Price Determinants of Trade. Trade. Quality.

AB There is very little known about how important non-price determinants of trade really are in both a quantitative and aggregate sense. Specific industry studies, using questionnaire methods, do seem to tell us that quality is very important. But what does this mean in quantitative terms for aggregate exports and imports? To address this question we begin by first explaining on a theoretical level why non-price factors are important and when they may be dominant determinants of sales. Next we turn to the issues that must be found in an empirical study of British exports and imports. The exploratory work here makes use of both cross section and time series data within a panel data framework. This generates many more degrees of freedom than are otherwise available and avoids many restrictions that have beset previous studies (see for example Smith, White, Owen and Hill; 1982). The estimates presented here do however suggest that the model may be mis-specified. Thus the results reported here should only be regarded as explorations.

Schwartz, Jean Jacques

TI Finances publiques, comptabilite nationale et Investissements publics en Suisse. **AU** Lambelet, Jean Christian; Rakotoarimanana, Georges; Schwartz, Jean Jacques.

Segerstrom, Paul S.

PD January 1986. **TI** Demons and Repentance. **AA** Department of Economics, Michigan State University. **SR** Michigan State Econometrics and Economic Theory Workshop Series: 8509; Department of Economics, Michigan State University, East Lansing, MI 48824. **PG** 35. **PR** No Charge. **JE** 022, 611, 026. **KW** Trigger Strategies. Noncooperative Collusion. Cartel Stability. Cournot Duopoly Games.

AB This paper presents a new explanation for the stability of cartels. For a large class of repeated Cournot duopoly games with discounting, trigger strategies are constructed which have the property that cheating on the cartel is followed by repentance. It is shown that these strategies form a subgame perfect Nash noncooperative equilibrium and that in the presence of demons (infrequently irrational behavior on the part of both players) these strategies lead to Pareto superior expected discounted payoffs in comparison with the symmetric trigger strategies of either Friedman (1971) or Abreu (1985).

Shapiro, Carl

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

Sharkey, William W.

PD July 1985. **TI** Cores and Implications for Pricing in a Model of Production with Fixed Costs and Shared Facilities. **AA** Bell Communications Research, Incorporated. **SR** Bell Communications Research Economics Discussion Paper: 1; Room 2Q-338, Bell Communications Research Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PR** No Charge. **JE** 022, 026. **KW** Shared Fixed Cost Facilities. Network Technologies.

AB This paper studies a class of cooperative games involving the shared use of fixed cost facilities. It is shown that a sufficient and in some cases a necessary condition for a nonempty core is the coincidence of optimal values for a pair of integer and linear programs. The same condition is both necessary and sufficient for the existence of competitive prices. In an application to network technologies it is shown that the core may or may not exist, and that decentralized ownership of individual links in the network cannot be sustained by market prices.

PD December 1985. **TI** Applications of Public Utility Pricing Theory to BOC Pricing Issues. **AU** Sharkey, William W.; Sibley, David S. **AA** Bell Communications Research, Incorporated. **SR** Bell Communications Research Economics Discussion Paper: 11; Room 2Q-338, Bell Communications Research Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PR** No Charge. **JE** 613, 635. **KW** Public Utility Pricing. Telecommunications Industry. Local Service Pricing Issues. Access Pricing.

AB This paper illustrates how some recent theoretical research in public utility pricing theory can be used to analyze current policy issues in the telecommunications industry. The analysis considers local service pricing issues, including measured service and optional calling plans. It also considers the issue of access pricing and the potential for bypass of the local exchange network.

Sheffrin, Steven

TI New Evidence on the Cyclical Behavior of Unemployment Durations. **AU** Dynarski, Mark; Sheffrin, Steven.

Sheppard, Stephen

PD March 1985. **TI** The Local Cheaper Point Condition and Continuity in Dispersed Economics. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University

Working Papers in Economics: E85-03-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 21. **PR** No Charge. **JE** 023. **KW** Dispersedness. Local Cheaper Point Condition. Aggregate Demand. Upper Hemi-continuous Demand. Non-Convex Budget Sets.

AB This paper shows how the concept of dispersedness, which has been widely used to obtain continuity and differentiability of aggregate demand, can be applied in situations where budget sets are non-convex, and thus individual and aggregate demand may fail to be upper hemi-continuous. A general framework is provided, followed by some examples to outline how dispersedness can be used to show that almost every agent has a budget set which satisfies the Local Cheaper Point property, which can be combined with continuity of preferences to obtain upper hemi-continuous demand.

Shubik, Martin

PD August 1984. **TI** Plausible Outcomes for Games in Strategic Form. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 714; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 34. **PR** No Charge. **JE** 026. **KW** Game Theory. Matrix Form. Extensive Form.

AB This is the first in a projected series of papers on solutions to games in matrix and extensive form.

PD August 1984. **TI** The Many Approaches to the Study of Monopolistic Competition. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 713; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 31. **PR** No Charge. **JE** 611. **KW** Monopolistic Competition. Oligopolistic Competition.

AB It is suggested here that there are many highly different purposes for the study and application of theories of oligopolistic competition, monopolistic competition, and allied topics. This paper sets the different purposes and questions in context, then makes criticisms and suggestions as to where to go from here.

PD October 1984. **TI** Strategic Market Games: A Dynamic Programming Application to Money, Banking and Insurance. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 715; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 22. **PR** No Charge. **JE** 311, 315. **KW** Strategic Market Games. Dynamic Programming. Fiat Money. Credit.

AB A series of models (kept simple in order to stress the structure of the models and the nature of the questions) are described and problems are posed pertaining to a dynamic economy with various possibilities for the issuance of fiat money, credit, and insurance.

PD November 1984. **TI** A Note on Enough Money in a Strategic Market Game with Complete or Fewer Markets. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 730; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 10. **PR** No Charge. **JE** 020. **KW** Enough Money in Trade. Price System. Market Structure.

AB This paper discusses the notion of "enough money" in strategic market games. In an economy with one money, m-1 markets and no credit, in order to be able to achieve efficient trade there must be "enough money" held by all traders. In essence "enough money" means that the noncooperative equilibrium solutions to a strategic market game is interior, in other words it is not constrained by lack of liquidity. For simplicity two specific market mechanisms are described to illustrate the relationship between market structure and liquidity.

PD December 1984. **TI** Games with Perceptive Commanders But Less Perceptive Subordinates. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 733; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 13. **PR** No Charge. **JE** 026. **KW** Game Theory. Agents. Commanders. Subordinates.

AB We introduce a model of the 2x2 game played by agents or subordinates of the players. We assume that each agent is not as perceptive as his commander in that he can make only two distinctions among the four outcomes whose value can be distinguished by the commanders.

TI A Model of a Sudden-Death Field-Goal Football Game: A Sequential Duel. **AU** Sahi, S.; Shubik, Martin.

PD May 1985. **TI** The Numeraire, Money and the Missing Degree of Freedom. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 750; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 13. **PR** No Charge. **JE** 026. **KW** Strategic Market Games. Numeraire. Single Means of Exchange.

AB The prime purpose of this article is to illustrate some basic problems in the modelling of strategic market games with a single means of exchange or with complete markets. A simple example involving three types of traders trading in three commodities serves to make the points clear.

PD May 1985. **TI** Some Three Person Games in Coalitional form for Teaching and Experimentation. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 747; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 16. **PR** No Charge. **JE** 026, 012. **KW** Game Theory. Cooperative Game Solutions. Sensitivity Analysis Problems.

AB Since 1973 I have used several three person games in coalitional form for both teaching and experimental purposes. They have been run in primarily a normative mode. The individuals have been asked to act as judges called upon to recommend a division of assets among three players. The basic use of these games has been to help to raise questions about context and solution concepts in cooperative game theory. Since 1980 the three basic games noted below have been used with five more or less similar groups of students at Yale. The games, their didactic

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purpose and the results from the normative suggestions as to how the players should be rewarded are noted here and then these results are compared with previous games. Furthermore some extra sensitivity analysis problems are noted.

PD May 1985. **TI** The use of Simple Games to Illustrate Concepts and to Provide Experimental Evidence. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 744; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PR** No Charge. **JE** 026. **KW** Game Theory. Cooperative Game Solutions. Strategic Form. Extensive Form.
AB This paper is devoted to a discussion of several simple experimental games used in a series of lectures on game theory. The prime purpose of these games was to raise questions and illustrate problems in the construction of game theoretical models in the social sciences. The students were asked to make choices or to give opinions as to what imputation should be recommended as a solution in a cooperative game.

PD June 1985. **TI** Enough Gold in a Society Without and with Moneylenders. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 753; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 21. **PR** No Charge. **JE** 021. **KW** Strategic Market Game. Noncooperative Equilibria. Enough Money. Money.
AB If an exchange economy is modeled as a strategic market game with one commodity serving as a money, then if there is no credit available and if all traders are insignificant in size, so that an individual does not influence prices, the noncooperative equilibria (NEs) of the game will coincide with the competitive equilibria of the exchange economy provided that there is enough money to facilitate trade. The meaning of 'enough money' is that the NEs are interior. In other words the constraint that an individual cannot spend more of the means of payment than he holds is not binding on any individual's plans. The condition on enough money is characterized both by the total amount of money in the system and its distribution. It is possible that an economy may not have enough money no matter how it is distributed; it is also possible that a redistribution will give rise to interior solutions. These statements are made precise and illustrated by means of specific examples. If there is enough money but it is maldistributed it is shown that a loan market '100 per cent backed by gold' will bring efficiency.

PD September 1985. **TI** The Many Properties of Money: A Strategic Market Game Analysis. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 759; Cowles Foundation for Research in Economics, Yale University, Box 2125 Yale Station, New Haven, CT 06520. **PG** 19. **PR** No Charge. **JE** 023, 310. **KW** Strategic Market Games. Properties of Money.
AB Among the major properties of a money are that it can serve as (1) a numeraire, (2) a means of exchange, (3) a store of value, and (4) a source of liquidity. Among the lesser properties are that it should be easy to transport and identify, it should be durable, easily divisible, hard to counterfeit and easy to store. A possibly desirable property is that it is an anonymous "bearer instrument," but the price of anonymity is that it is hard to recover if it is stolen. A personal check which is bank money can be stopped and is more personal than a $100 bill. The properties of a money are systemic and strategic and are most naturally formalized by means of strategic market games. Here we concentrate on the four major properties noted above and include comments on the cost of liquidity and the role of various assets as near monies.

Sibert, Anne

TI Elections and Macroeconomic Policy Cycles. **AU** Rogoff, Kenneth; Sibert, Anne.

TI Elections and Macroeconomic Policy Cycles. **AU** Rogoff, Kenneth; Sibert, Anne.

Sibley, David S.

TI Regulatory Incentive Schemes Using Historic Cost Data. **AU** Sappington, David E. M.; Sibley, David S.

TI Applications of Public Utility Pricing Theory to BOC Pricing Issues. **AU** Sharkey, William W.; Sibley, David S.

Silber, William L.

PD July 1985. **TI** The Economic Role of Financial Futures. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 353; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 49. **PR** $2.00. **JE** 313. **KW** Financial Futures. Futures Prices. Risk Transfer. Market Liquidity.
AB This paper reviews briefly the risk transfer and price discovery functions of futures markets and applies these concepts to financial futures, showing that their main contribution is a reduction in transactions costs and an improvement in market liquidity, with the ultimate benefit a reduction in the cost of capital to business firms. It also offers practical evidence on the centrality of transactions economies to the success of financial futures, focusing primarily on a review of how various institutions actually use financial futures, and provides additional evidence by examining the success and failure of specific contracts. Finally, it presents an overview of some of the policy issues that have surrounded financial futures, including questions of contract proliferation, the consequences for the underlying cash markets and the role of speculation and cash settlement in stock index contracts.

Siow, Aloysius

TI The Division of Markets is Limited by the Extent of Liquidity. **AU** Economides, Nicholas; Siow, Aloysius.

Skott, Peter

PD February 1985. **TI** Effective Demand, Class Struggle and Cyclical Growth. **AA** Institute of Economics, University of Copenhagen and University College London. **SR** University College London

Discussion Paper: 85-05; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 44. **PR** No Charge. **JE** 111. **KW** Growth. Balanced Growth Equilibrium. Marxian Emphasis.

AB The paper presents a simple model of growth and accumulation in a pure capitalist economy. The model integrates Keynesian ideas on effective demand with a Marxian emphasis on class struggle and the reserve army of labour. The key behavioural relations of the model (describing the production and investment decisions of firms) are derived from profit maximisation. For reasonable parameter values the model has a unique (non-trivial) balanced growth equilibrium, the equilibrium is unstable and the economy will exhibit perpetual fluctuations around the balanced growth path.

Smirlock, Michael

TI Intra- and Interindustry Effects of Bank Securities Market Activities: The Case of Discount Brokerage. **AU** Saunders, Anthony; Smirlock, Michael.

Smith, Lance

TI On the Superneutrality of Money in a Stochastic Dynamic Macroeconomic Model. **AU** Panthine, Jean Pierre; Donaldson, John B.; Smith, Lance.

Smith, Richard J.

PD February 1985. **TI** An Exogeneity Test for a Simultaneous Equation Tobit Model With an Application to Labour Supply. **AU** Smith, Richard J.; Blundell, Richard. **AA** Blundell: University College London. Smith: University of Manchester. **SR** University College London Discussion Paper: 85-06; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 11. **PR** No Charge. **JE** 211, 813. **KW** Labor Supply. Tobit. Exogeneity Test.

AB A test of (weak) exogeneity in the simultaneous equation Tobit Model is proposed and illustrated using a female labour supply model estimated on cross-section data. The test statistic can be simply output from any standard Tobit maximum likelihood package, and is asymptotically optimal. The procedure provides a consistent estimator for the simultaneous Tobit model whose asymptotic covariance matrix is a simple extension of the usual Tobit formula. We also provide the score test of (weak) exogeneity. The methodology can be simply adapted for simultaneous Probit, Truncated and other Limited Dependent Variable models.

TI Least Squares Theory and the Hausman Specification Test. **AU** Fisher, Gordon; Smith, Richard J.

Smith, William T. II

PD October 1985. **TI** An Overlapping Generations Model of a Forward Exchange Market. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-10-02; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 32. **PR** No Charge. **JE** 431. **KW** Forward Exchange Market. Macroeconomic Policy. Portfolio Problem.

AB In two recent papers Nickelsburg (1981) and Sibert (198?) have developed overlapping generations models of forward markets in foreign exchange. Neither, however, has investigated the implications of the existence of such markets for welfare or macroeconomic policy. This paper sketches a model of a forward exchange market which, by virtue of its simplicity, can be applied to a variety of policy-oriented issues. The paper formulates and solves the portfolio problem of a representative domestic agent who holds domestic currency as a store of value and can purchase a foreign currency in a forward exchange market, then solves the foreign portfolio problem. It next derives the equilibrium spot and forward exchange rates, and introduces the exogenous processes driving the economies and arrives at reduced form expressions for the inflation and exchange rate processes. The paper concludes with a brief discussion of several applications to which the model lends itself.

Sofianos, George

PD February 1985. **TI** Lending with Default: A Model of Intermediation. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 341; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 56. **PR** $2.00. **JE** 314, 315. **KW** Financial Intermediation. Loan Default Risks. Lending Rate Structures. Borrower Expectations.

AB This paper investigates the effects of financial intermediation on loan repayments. It is shown that an "institutional lender" serving many borrowers may be able to elicit better repayment behavior than an "occasional lender" serving a single borrower. The implication is that intermediaries not only reduce the riskiness of their portfolio by diversifying across many independent default risks, but also by reducing the riskiness of each individual loan. Because the repayment probability on an intermediated loan is raised, intermediaries can charge lower lending rates. The extent to which financial intermediaries "make a difference" hinges crucially on the way borrowers form expectations of the penalty they will suffer if they default. Empirically testable expressions for lending rate structures are derived under various assumptions about borrower expectations.

PD February 1985. **TI** Personal Borrowing and Bankruptcy: The Role of the Exemption Level. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 340; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 50. **PR** $2.00. **JE** 315. **KW** Personal Bankruptcy. Cost of Credit. Bankruptcy Reform Act.

AB Since 1980, there has been a spectacular increase in the number of personal bankruptcies. Part of the reason for this increase is the Bankruptcy Reform Act of 1978. Concerned with the plight of noncorporate borrowers unable to repay their loans, legislators made it easier to file for bankruptcy. Critics of the Act claim that because lenders reacted by raising the cost of credit to allow for the anticipated higher bankruptcy rate, contrary to intentions, the borrowers are the net losers. Using a simple model of borrower-lender behavior this paper demonstrates that this reasoning is erroneous: although the critics are right in claiming that the cost of credit will rise, borrowers can still be made better off.

Sonstelie, Jon

TI Money and Redistribution: Revisionist Notes on a Problem of Samuelson. **AU** Marshall, John M.; Sonstelie, Jon; Gilles, Christian.

TI The Welfare Costs of Rationing by Waiting. **AU** Deacon, Robert T.; Sonstelie, Jon.

Spiller, Pablo T.

TI Entry in Regulated Industries: An Information-Based Perspective. **AU** Demski, Joel S.; Sappington, David E. M.; Spiller, Pablo T.

Spraos, John

PD 1984. **TI** On the Commodity Power of Less Developed Countries. **AA** University College London. **SR** University College London Discussion Paper: 84-06; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 12. **PR** No Charge. **JE** 112, 423. **KW** Cartelization. LDC's. Primary Commodities.

AB Primary commodities dominated by LDC producers have very low demand elasticity, but the latent market power is often said to be unexploitable by cartelisation (despite the success of OPEC) because cartels are vulnerable to erosion of market share. By appealing to the plainest possible model, this paper establishes that this vulnerability is grossly exaggerated when resort to a strategy of entry deterrence is overlooked. Informal considerations are then adduced to show that exogenous factors can play an important part in both the launching and continuation of a cartel. The inefficiency argument against cartelisation as a means of income redistribution from DCs to LDCs is questioned.

PD April 1985. **TI** Cartelisation for Efficient Planning. **AA** University College London. **SR** University College London Discussion Paper: 85-10; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 16. **PR** No Charge. **JE** 112, 113. **KW** Planning. Less Developed Countries. Efficient Decentralized Planning.

AB Planning within a strictly national frame is liable to be suboptimal for a variety of reasons. Here the focus is on suboptimality-and-how-to-overcome-it in the context of certain primary commodities which are produced overwhelmingly in less developed countries (LDCs) and consumed overwhelmingly in developed countries (DCs). The tropical beverages (cocoa, coffee, tea) are examples among agricultural products; tin is an example among the minerals.

Stacchetti, Ennio

TI Optimal Cartel Equilibria with Imperfect Monitoring. **AU** Abreu, Dilip; Pearce, David; Stacchetti, Ennio.

Steinberg, Richard

PD January 1985. **TI** Optimal Fundraising by Nonprofit Firms. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-01-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 32. **PR** No Charge. **JE** 521. **KW** Fundraising.

AB Beginning with a discussion of the distinction between socially and privately optimal fundraising, this paper presents mathematical rules for determining (in theory): 1. What sum of money should be spent on all forms of fundraising? 2. How should this money be divided among various fundraising techniques (direct mail, media campaigns, door-to-door solicitation, etc.)? 3. How should this money be divided among various potential donors (donor retention vs. donor acquisition, special treatment for large donors, etc.)? To implement these rules, a nonprofit organization would need statistical estimates of certain behavioral relationships, and the techniques for obtaining these estimates are briefly described. At best, statistical techniques can give answers that are 'right' on average, and experience and intuition will always play the principal part in campaign design. Nonetheless, an appreciation of the logic of the decision rules may help 'intuition' to do a better job.

PD March 1985. **TI** Tax Reform and Charitable Donations -- Problems and Opportunities. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-03-02; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 29. **PR** No Charge. **JE** 323. **KW** Tax Reform. Charitable Contributions.

AB This paper analyzes the impact on charitable donations of the principal reform plans with respect to the goals of growth, fairness, and simplicity. I suggest that these goals are better achieved by implementing a tax credit for charitable donations than by any of the current proposals.

TI Optimal Inventories and Reputation. **AU** Detemple, Jerome B.; Steinberg, Richard.

Stern, Nicholas

TI The Theory of Cost-Benefit Analysis. **AU** Dreze, Jean; Stern, Nicholas.

Stiglitz, Joseph

PD December 1985. **TI** Credit Rationing with Collateral. **AU** Stiglitz, Joseph; Weiss, Andrew. **AA** Stiglitz: Princeton University. Weiss: Bell Communications Research, Incorporated. **SR** Bell Communications Research Economics Discussion Paper: 12; Room 2A-351, Bell Communications Research Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PR** No Charge. **JE** 315. **KW** Collateral Requirements. Credit Rationing. Loan Contracts.

AB We present a model of a competitive banking system in which banks simultaneously choose interest rates and collateral requirements. Contracts can have both incentive and sorting effects. We construct equilibria in which every type of borrower is rationed. That is, for each group of identical loan applicants some get credit and others do not, and within each group the applicants getting credit are strictly better off than the applicants being denied credit. This construction is possible whether loan contracts are acting as self-selection devices, or all borrowers are choosing the same contract.

TI The Invariance of R & D to the Number of Firms in the Industry. **AU** Sah, Raaj Kumar; Stiglitz, Joseph.

Summers, Lawrence H.

TI The Contribution of Intergenerational Transfers to Total Wealth: A Reply. **AU** Kotlikoff, Laurence J.; Summers, Lawrence H.

Sutch, Richard

TI Did Rising Out-Migration Cause Fertility to Decline in Antebellum New England? A Life-Cycle Perspective on Old-age Security Motives, Child Default, and Farm Family Fertility. **AU** Ransom, Roger; Sutch, Richard.

Swary, Itzhak

PD January 1985. **TI** Continental Illinois Crisis: An Empirical Analysis of Regulatory Behavior. **AA** Hebrew University of Jerusalem. **SR** New York University Salomon Brothers Center Working Paper: 335; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 32. **PR** $2.00. **JE** 312, 313. **KW** Bank Crisis. Continental Illinois National Bank. Regulation.

AB This study uses capital market data (in the form of data on prices and volume of trading) to analyze the Continental Illinois National Bank crisis in an attempt to detect the perceived contagion effects on the performance of the banking industry as reflected in price changes and volume of trading. The analysis considers which groups of banks could be vulnerable to any contagion effect, thus verifying the degree to which the effect exists and how great its impact, in fact, is. In addition, the implications of the regulators' policy are also examined.

PD September 1985. **TI** The Role of Collateral in Commercial Lending. **AU** Swary, Itzhak; Udell, Gregory F. **AA** Swary: Hebrew University. Udell: New York University. **SR** New York University Salomon Brothers Center Working Paper: 359; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 25. **PR** $2.00. **JE** 315. **KW** Financial Market Failure. Collateral. Commercial Loan Contracts. Bankruptcy.

AB Some authors have argued that collateral plays a critical role in limiting failure in financial markets. The precise nature of this role is not sufficiently understood. This paper describes the circumstances under which a collateral loan contract Pareto dominates all others. In so doing we make an important distinction between two types of commercial loan contracts: those that involve a pledge by shareholders of personal assets to secure a corporate loan and those that involve a pledge by the corporation of all or part of its corporate assets to a specific lender or group of lenders. Virtually all of the current theoretical literature has focused on the first type of collateral contract while ignoring the second. In addition to defining a role for the first type of collateral contract, this paper develops a theoretical foundation for the presence of the second type of collateral contract in a world of imperfect information based on its role in reducing what we call the "the closure cost of bankruptcy".

Symons, Elizabeth

TI A Labour Supply Model for the Simulation of Tax and Benefit Reforms. **AU** Blundell, Richard; Meghir, Costas; Symons, Elizabeth; Walker, Ian.

TI Alternative Specifications of Labour Supply and the Simulation of Tax Reforms. **AU** Blundell, Richard; Meghir, Costas; Symons, Elizabeth; Walker, Ian.

Tanzi, Vito

PD December 1985. **TI** Fiscal Deficits and Interest Rates in the United States: An Empirical Analysis, 1960-84. **AA** International Monetary Fund. **SR** International Monetary Fund Departmental Memoranda/Staff Papers: 32(4); International Monetary Fund, Washington D.C. 20431. **PG** 26. **PR** No Charge. **JE** 321, 322. **KW** United States Fiscal Deficits. United States Interest Rates. Fiscal Policy.

AB This paper analyzes the relationship between United States interest rates and fiscal deficits for the 1960-84 period. It uses a framework developed by the author in a 1980 article (American Economic Review, Vol. 70, No. 1), in which the interest rate on one-year Treasury bills was correlated with expected inflation and an index of economic activity. In this paper the fiscal deficit is added among the independent variables. The empirical results strongly support the view that the size of the deficit, and of the public debt, plays an important role in determining the level of interest rates.

Taubman, Paul

TI Birth Order, Schooling, and Earnings. **AU** Behrman, Jere R.; Taubman, Paul.

TI A Comparison and Testing of Two Fertile Ideas. **AU** Behrman, Jere R.; Taubman, Paul.

TI Do Parents Favor Boys?. **AU** Behrman, Jere R.; Pollak, Robert A.; Taubman, Paul.

Thomas, Stephen

TI Dominant Factors in Dollar-Sterling Exchange Rate Movements, 1965-1981. **AU** McKenzie, George; Thomas, Stephen.

Tideman, T. Nicolaus

PD October 1984. **TI** Remorse, Elation, and the Paradox of Voting. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E 84-10-05; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 7. **PR** No Charge. **JE** 025. **KW** Voting Behavior. Paradox of Voting.

AB The fact that people vote when the number of voters is very large has been called a paradox, because the plausibly calculable expected benefit of voting seems so miniscule. A minimax regret theory to explain voting has been proposed (Ferejohn and Fiorina, 1975) and has been deservedly criticized (Mayer and Good, 1975; Beck, 1975; Tullock, 1975). This paper proposes that remorse and elation, emotions that arise as a consequence of being responsible for one's circumstances by one's own action, contribute substantially to explaining the paradox of voting.

PD October 1984. **TI** Demand-Revealing Solutions to the Two-Person Bargaining Problem. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E 84-10-03; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 15. **PR** No Charge. **JE** 026. **KW** Two-Person Bargaining Problem. Demand-Revealing Process. Public Goods Problem.
AB A trade between two persons may be conceived as the "public good" of reallocating resources in such a way as to promote the combined interests of the two parties. Therefore any solution to the public goods problem, such as the "demand-revealing process," in principle ought to provide a solution to the two-person bargaining problem. This paper examines several applications of the demand-revealing process and traces their implications for the two-person bargaining problem.

PD November 1984. **TI** An Instrumental Variables Approach to Income Redistribution. **AU** Tideman, T. Nicolaus; Coats, R. Morris. **AA** Tideman: Virginia Polytechnic Institute and State University. Coats: Marshall University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E84-10-04; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 13. **PR** No Charge. **JE** 024, 025. **KW** Income Redistribution.
AB When individuals participate in the process that determines their redistributive obligations and claims, outcomes based on stated judgements concerning the obligations of those who have more to those who have less can be expected to be biased relative to the outcome based on true judgements. This bias can be reduced by partitioning the collectivity into groups that set one another's redistributive obligations in a cycle.

Timmis, Jerry

PD February 27, 1986. **TI** Multiperiod Wage Contracts and Productivity Profiles. **AU** Timmis, Jerry; Bernhardt, Dan. **AA** Timmis: Carnegie-Mellon University and Goldman Sachs and Company, New York. Bernhardt: Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 644; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 28. **PR** $2.50 Canada; $3.00 United States; $3.50 foreign. **JE** 022, 825, 851. **KW** Multiperiod Wage Contracts. Productivity Profiles. Time Consistency. Incentive Compatability.
AB Creditors do not generally honor human capital as collateral. This paper demonstrates how long term wage contracts between workers and firms can circumvent this capital market imperfection. Generation of firm specific skills creates an economic bond between worker and firm. This bond enables the firm to transfer loans to an impatient worker in the form of wages in excess of what the worker is initially worth to the firm. Subsequently, the value of the worker's marginal product to the employer exceeds his spot market value enabling the firm to recoup its loans to the worker through lower wages and still retain his services. The paper can be interpreted as providing a link between the human capital and implicit contract literature. Econometrically, the model can be used to identify unobserved increments in a worker's general skills from the observed wage path. However, unobserved increments in firm specific skills can never be unravelled. The model can also be used to explain interindustry disparities in wage paths and statistical discrimination by firms.

Tirole, Jean

TI Using Cost Observation to Regulate Firms. **AU** Laffont, Jean Jacques; Tirole, Jean.

TI The Dynamics of Incentive Contracts. **AU** Laffont, Jean Jacques; Tirole, Jean.

Tobin, James

PD January 10, 1986. **TI** The Monetary-Fiscal Mix: Long-Run Implications. **AA** Cowles Foundation for Research in Economics, Yale University. **SR** Yale Cowles Foundation Discussion Paper: 780; Cowles Foundation for Research in Economics, 30 Hillhouse Avenue, Box 2125 Yale Station, New Haven, CT 06520. **PG** 15. **PR** No Charge. **JE** 023, 321. **KW** Monetary-fiscal Mix. Public Deficits. Public Debt.
AB The long-run dynamics of public deficits and debt are modeled, assuming that public debt competes with capital for limited private savings. The interest costs of the debt are endogenously determined in this market, and the deficit in other budget transactions is a constant fraction of Gross National Product. Simulations with parameter values suggested by recent United States experience show the likelihood of unstable paths, along which debt grows faster than GNP indefinitely.

Toker, Mehmet Ayhan

PD March 1985. **TI** Disaggregation of Joint Production Systems in the Determination of Process Specific Embodied Labour Times. **AA** University College London. **SR** University College London Discussion Paper: 85-08; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 29. **PR** No Charge. **JE** 821, 022. **KW** Joint Production Systems. Embodied Labor Times.
AB It is shown that the problem of indeterminacy of process specific embodied labour times in joint production systems can be solved by means of disaggregating them into multi-technique single product systems. The concept of r-equivalence between these two systems is introduced. Since the uniqueness of embodied labour times determined as such are strictly dependent on the uniqueness of disaggregation itself, it is first proved that the set of assumptions which ensure the uniqueness of competitive prices of joint production systems are also sufficient to guarantee the uniqueness of their disaggregation.

Consequent labour times, which are actual and additive by definition, are proved to be non negative and proportional to the prices of a joint production system at a given viable rate of profit. Finally, it is proved that a positive rate of profit is possible if and only if the rate of exploitation of labour is positive.

Topel, Robert H.

TI A Time Series Model of Housing Investment in the United States. **AU** Rosen, Sherwin; Topel, Robert H.

Turnovsky, Stephen

PD January 1986. **TI** Monetary Policies in Interdependent Economies with Stochastic Disturbances: A Strategic Approach. **AU** Turnovsky, Stephen; dOrey, Vasco. **AA** Department of Economics, University of Illinois at Urbana-Champaign. **SR** National Bureau of Economic Research Working Paper: 1824; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 47. **PR** $2.00. **JE** 311, 423. **KW** Monetary Policy. Noncooperative Equilibria. Exchange Rate Regimes.

AB This paper analyzes strategic monetary policies using a standard two country stochastic macro model. Three noncooperative equilibria, namely Cournot, Stackelberg, and Consistent Conjectural Variations, are considered. The Pareto Optimal equilibrium, where aggregate joint costs are minimized is also considered, and all strategic equilibria are compared to the perfectly fixed and flexible exchange rate regimes. The main conclusions obtained are: (i) Demand shocks are much less problematical than supply disturbances from the viewpoint of macro stabilization; (ii) the gains from cooperation are typically small; (iii) the strategic equilibria all show substantial margins of superiority over the fixed and flexible regimes.

Udell, Gregory F.

PD May 1985. **TI** Technology and Bank Monitoring. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 348; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 29. **PR** $2.00. **JE** 621, 312. **KW** Technology. Monitoring Bank Risk.

AB This paper examines the dual impact of technology on the problem of monitoring bank risk. On the one hand technology has provided banks with new opportunities to increase risk while on the other it offers regulators improved techniques with which to monitor that risk. Technology, however, does not appear to offer in the near future the luxury of cost effective continuous monitoring. Consequently, the optimal monitoring policy must be part of a deposit insurance contract that minimizes the incentive to exploit the insurer. This is critical, because the primary beneficiaries of an improved monitoring policy are the insurance funds. A proposal is offered, consistent with current technological constraints, that offers the prospect of significantly limiting the moral hazard problem without concomitantly affecting private decisionmaking. A major part of this proposal involves redefining the monitoring procedure so that bank examinations focus (ex post) on evaluating ex ante risk.

TI The Role of Collateral in Commercial Lending. **AU** Swary, Itzhak; Udell, Gregory F.

PD September 1985. **TI** Consumer Deposit Pricing Under Asymmetric Information. **AA** New York University. **SR** New York University Salomon Brothers Center Working Paper: 358; Salomon Brothers Center, Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006. **PG** 15. **PR** $2.00. **JE** 312. **KW** Consumer Deposit Pricing. NSF Fees. Minimum Balance Charges.

AB Consumer deposit pricing has recently been the subject of close public scrutiny. Banks have been accused of monopolistically setting fees for some of their deposit services at levels greater than associated costs. This paper examines consumer deposit pricing in a world characterized by imperfect information about a heterogeneous customer population. It is demonstrated that banks, in order to minimize an adverse selection problem, utilize a menu of pricing elements including NSF fees, minimum balance requirements and deposit hold schedules. As a result, competitive banks may be deliberately overcharging for some component deposit services while simultaneously undercharging for others.

Ul, Haque Nadeem

TI Foreign Borrowing and Capital Flight: A Formal Analysis. **AU** Khan, Mohsin S.; Ul, Haque Nadeem.

Ulph, David

TI The Economics of the Demand for Differentiated Products: 1. **AU** Pemberton, Malcolm; Ulph, David.

van Wijnbergen, Sweder

PD January 1986. **TI** Fiscal Deficits, Exchange Rate Crises and Inflation: On the Inflationary Consequences of Anti-Inflationary Exchange Rate Policies. **AA** World Bank, Washington D.C. **SR** Tel Aviv Foerder Institute for Economic Research Working Papers: 2-86; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. **PG** 40. **PR** No Charge. **JE** 134, 431, 423. **KW** Government Budget Constraint. Exchange Rate Policy. Rational Speculative Behaviour. Fiscal Deficits. High Inflation.

AB The paper presents an analysis that explains a series of puzzles in the recent inflationary experience and stabilization failures in high inflation countries, in the context of a model with rational and forward looking consumers. The government budget constraint and the resolutions of inconsistencies between implications of different policy instruments for that constraint are the core of the analysis. Regime switches are linked to rational speculative behavior and exchange rate policy is an important ingredient. The paper shows how external shocks such as increases in world interest rates lead to a deterioration of the government deficit in the presence of external public debt which, in turn, leads to high inflation rate through the role of the inflation tax. The paper also shows how exchange-rate slowdowns may lead to high inflations in the long run.

Vaughan, Richard N.

PD September 1984. **TI** Distributional Aspects of the Life Cycle Theory of Saving. **AA** University College

London. **SR** University College London Discussion Paper: 84-11; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 59. **PR** No Charge. **JE** 024, 921. **KW** Life Cycle Model of Saving. Equilibrium Distribution of Wealth.

AB In this paper it is proposed to investigate the formal relationship that exists between the life cycle model of saving and the nature of the equilibrium distribution of wealth which results from such behaviour. The analysis follows the distributional approach initiated in the context of wealth distribution by Sargan(1957) and Wold and Whittle(1957).

Veljanovski, C. G.

TI A Positive Economic Theory of Regulatory Enforcement. **AU** Fenn, P.; Veljanovski, C. G.

Verry, Donald

PD November 1983. **TI** Design Education and the Designers' Labour Market. **AU** Verry, Donald; Pick, Kathryn. **AA** University College London. **SR** University College London Discussion Paper: 84-03; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 27. **PR** No Charge. **JE** 912, 811. **KW** Design Education.

AB This paper briefly outlines the issues that arise using a supply-demand framework to analyze problems in design education, and looks at the pattern and growth of design education in the United Kingdom since the mid-1960s. It then looks at the experience of designers in the labour market with the aim of shedding some light on the attractiveness or otherwise of a career in design. The concluding section makes some suggestions about the type of research which could go some way towards providing fuller answers to the questions raised in this paper.

Vora, Ashok

TI Random Market-Price-of-Risk in Single-Variable CAPM. **AU** Hawawini, Gabriel; Vora, Ashok.

TI Systematic Risk Estimation and the Investment Horizon: Some Further Comments. **AU** Hawawini, Gabriel; Vora, Ashok.

Wales, Terence J.

TI The Likelihood Dominance Criterion: A New Approach to Model Selection. **AU** Pollak, Robert A.; Wales, Terence J.

Walker, Ian

TI A Labour Supply Model for the Simulation of Tax and Benefit Reforms. **AU** Blundell, Richard; Meghir, Costas; Symons, Elizabeth; Walker, Ian.

TI Alternative Specifications of Labour Supply and the Simulation of Tax Reforms. **AU** Blundell, Richard; Meghir, Costas; Symons, Elizabeth; Walker, Ian.

Watts, Harold N.

PD September 1985. **TI** Have Our Measures of Poverty Gotten Poorer?. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 302; Department of Economics, Columbia University, New York, NY 10027. **PG** 18. **PR** $5.00. **JE** 914, 225. **KW** Poverty. Poverty Measures.

AB There are several ways in which the much criticized but quite durable poverty measures have deteriorated since 1965 as measures of general capacity to consume at the social minimum. Because there is also an opportunity to bring new kinds of data into the measure, now is an especially good time to consider how the measures might be changed. It appears that most of the weaknesses can be corrected and our poverty measures enriched without doing major violence to the intuitive and vernacular notion of what it means to be "poor".

Webb, Michael

TI Rural Electrification in Developing Countries: A Reappraisal. **AU** Pearce, David; Webb, Michael.

Wegge, Leon L.

PD April 2, 1986. **TI** Common Left Factors in the Multivariate Arma(p,q)-Model. **AA** Department of Economics, University of California, Davis. **SR** University of California Davis Economics Department Working Paper: 274; Department of Economics, University of California at Davis, Davis, CA 95616. **PG** 10. **PR** No Charge. **JE** 211. **KW** Autoregressive-Moving Average Process. Identifiability. Left Factors. Inverse Left Factors. Matrix Variant of Sylvester's Resultant. Commuting Matrices. Autocovariance Matrix.

AB We study further the identifiability problem posed by Hannan. In the G-variate Arma(p,q)-Model under what conditions do the generating functions of the p-th order autoregressive process and of the q-th order moving average process contain a common left divisor? We find two sets of equivalent conditions. A sufficient condition, also necessary when the parameter matrices commute, is that the matrix generalization of Sylvester's resultant, be different from zero. Alternatively necessary and sufficient is that a pGxp(G-squared) submatrix of the autocovariance matrix have rank pG. These findings complete and correct the algebraic results stated in the literature.

Weiss, Andrew

PD February 1985. **TI** Absenteeism and Wages. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 280; Department of Economics, Columbia University, New York, NY 10027. **PG** 4. **PR** $5.00. **JE** 821. **KW** Absenteeism.

AB In this paper we show that in an assembly line production process a worker's propensity to be absent will have a significant effect on his value to the firm.

PD June 1985. **TI** High School Graduates: Performance and Wages. **AA** Bell Communications Research, Incorporated. **SR** Bell Communications Research Economics Discussion Paper: 3; Room 2A-351, Bell Communications Research Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PR** No Charge. **JE** 824, 825. **KW** Quit Propensity. Absenteeism. High School Graduation. Wage Premium.

AB Using data from the Panel Study of Income Dynamics and a Proprietary sample of semi-skilled production workers, this paper investigates the reasons for the discontinuous increase in wages associated with graduation from high school. Associated with graduation from high school, we find a discontinuous decrease in worker's propensity to quit or be absent. However, we do not find that high school graduates have a comparative advantage on production jobs requiring more training, nor, in the PSID sample, are high school graduates assigned to jobs requiring more training. Finally, we find that the wage premium associated with graduation from high school vanishes during severe slumps: periods in which employers are likely to be hoarding labor and in which quits and absences are least important to firms. We conclude from this evidence that differences in quit propensity and absenteeism are important explanatory factors for the discontinuous increase in wages associated with graduation from high school.

PD June 1985. **TI** The Effect of Job Complexity on Job Satisfaction: Evidence from Turnover and Absenteeism. **AA** Bell Communications Research, Incorporated. **SR** Bell Communications Research Economics Discussion Paper: 2; Room 2A-351, Bell Communications Research Incorporated, 435 South Street, Morristown, NJ 07960-1961. **PR** No Charge. **JE** 824. **KW** Absenteeism. Job Complexity. Job Satisfaction.
AB Using a detailed sample of semi-skilled production workers we find that holding a wide range of personal and job-related characteristics constant, workers assigned to more complex jobs seem to be more likely to quit than are workers assigned to simpler jobs. Job complexity has no discernible effect on absenteeism. Matching better educated workers to more complex jobs affects neither absenteeism nor quit propensity. Thus it appears that experimental evidence suggesting that job enlargement increases worker satisfaction is likely to stem from the experimental design: asking for volunteers to be assigned more complex jobs, and improving the quality of supervision for workers assigned to more complex jobs.

TI Credit Rationing with Collateral. **AU** Stiglitz, Joseph; Weiss, Andrew.

West, Kenneth D.

TI Hypothesis Testing with Efficient Method of Moments Estimation. **AU** Newey, Whitney K.; West, Kenneth D.

PD December 1985. **TI** A Standard Monetary Model and the Variability of the Deutschemark-Dollar Exchange Rate. **AA** Woodrow Wilson School, Princeton University. **SR** Princeton Woodrow Wilson School Discussion Papers in Economics: 104; Woodrow Wilson School, Princeton University, Princeton, NJ 08544. **PG** 33. **PR** No Charge. **JE** 431. **KW** Exchange Rate Variability. Monetary Model.
AB This paper uses a novel test to see whether the Meese (1984) and Woo (1985) models are consistent with the variability of the deutschemark - dollar exchange rate 1974-1984. The answer, perhaps surprisingly, is yes. Both models, however, explain the month to month variability as resulting in a critical way from responses to not only news about basic economic variables, but also to shocks to money demand and purchasing power parity. Insofar as exchange rates are thought to fluctuate mainly in response to news about economic variables, it would therefore be of interest in future work to model one or both of these shocks as explicit functions of economic variables.

PD February 1986. **TI** Targeting Nominal Income: A Note. **AA** Woodrow Wilson School, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1835; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 14. **PR** $2.00. **JE** 023. **KW** Nominal Income Targeting.
AB This paper compares nominal income and monetary targets in a standard aggregate demand - aggregate supply framework. If the desirability of policies is measured by their effect on the unconditional variance of output, nominal income targeting is preferable if and only if the aggregate elasticity of demand for real balances is greater than one. This is precisely the opposite of the condition that in Bean (1984) is sufficient to make nominal income targeting preferable. This points out the importance of specification of supply and of objective function in work on nominal income targeting.

PD February 1986. **TI** Dividend Innovations and Stock Price Volatility. **AA** Woodrow Wilson School, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1833; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 51. **PR** $2.00. **JE** 313. **KW** Stock Prices. Dividend Stream. Speculative Bubbles. Stock Price Volatility.
AB This paper establishes an inequality that may be used to test the null hypothesis that a stock price equals the expected present discounted value of its dividend stream, with a constant discount rate. The inequality states that if this hypothesis is true, the variance of the innovation in the stock price is bounded above by a certain function of the variance in the innovation in the dividend. The bound is valid even if prices and dividends are nonstationary. The inequality is used to test the null hypothesis, for some long term annual United States stock price data. The null is decisively rejected, with the stock price innovation variance exceeding its theoretical upper bound by a factor of as much as twenty. The rejection is highly significant statistically. Regression diagnostics and some informal analysis suggest that the results are more consistent with there being speculative bubbles in the United States stock market than with a failure of the rational expectations or constant discount rate hypothesis.

Westoby, Richard

PD 1984. **TI** Net Energy Expenditure and Energy Demand in the United Kingdom. **AU** Westoby, Richard; Pearce, David. **AA** University College London. **SR** University College London Discussion Paper: 84-10; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 19. **PR** No Charge. **JE** 723, 921. **KW** Aggregate Energy Demand.
AB In this paper, we present an extention of the calculation of a price weighted concept of aggregate energy consumption performed by Turvey and Nobay (1965). We

use the extended Net Energy Expenditure series for the economic analysis of the pattern of energy consumption because it measures (albeit imperfectly) both the quality and quantity attributes of fuel demand. For instance, calculations with aggregate United Kingdom data suggest that energy productivity has remained relatively stable since the 1950s with a tendency to decline until the oil shocks of the 1970s after which it begins to rise. This may be contrasted with the secular increase in the measure of energy productivity in which energy is not adjusted for quality-attribute variations. In experiments with a simple forecasting model there is a tendency to overpredict the Net Energy Expenditure series after 1973 on the basis of data before this year. In contrast the model is able to predict Primary Energy Consumption more accurately but erratically overpredicts and underpredicts demand. Two problems arise. Firstly, the results may be model specific. Second, there is a more general point that the criterion for judging which series has the most desirable properties is largely a function of the use to which the series is to be put.

PD April 1984. **TI** A Survey of Methods and Models Used to Assess the Macroeconomic Impact of Oil Price Rises. **AA** University College London. **SR** University College London Discussion Paper: 84-17; Department of Political Economy, University College London, Gower Street, London WC1E 6BT, ENGLAND. **PG** 63. **PR** No Charge. **JE** 723, 131, 212. **KW** Oil Price Rise. Macroeconomic Effects.

AB The purpose of this paper is to survey the diverse methods which have been employed to analyse in a quantitative way the macro-economic impacts of changes in the real price of energy, but especially oil. To this end researchers have used methods ranging from the sophistication of large computer models to simulate the workings of the economy to the simplicity of calculations based on estimates of the elasticity of output with respect to the price of oil. In many cases the different methods and models employed reflect genuine differences in the perception of the problem by researchers. However, in some cases diverse approaches arise because different phenomena are being measured, e.g. short run as opposed to long run effects. The following description of the ways in which an oil price rise may affect the economy should illustrate the different aspects of the problem and give a framework to analyse the methods and models described in the survey.

TI World Oil Prices and Output Losses in Developing Countries. **AU** Pearce, David; Westoby, Richard.

Wild, Louis L.

TI Credibility and Law Enforcement. **AU** Reinganum, Jennifer F.; Wild, Louis L.

Wiseman, Michael

PD February 1986. **TI** Proposition 13 and Effective Property Tax Rates in San Francisco. **AA** Department of Economics, University of California at Berkeley. **SR** University of California Berkeley Institute of Business and Economic Research, Research Papers in Economics: 86-8; Institute of Business and Economic Research, 156 Barrows Hall, University of California at Berkeley, Berkeley, CA 94720. **PG** 39. **PR** $5.00. **JE** 324. **KW** Proposition 13. Property Tax. San Francisco Property Tax. Assessment Ratio.

AB This paper uses sales data and the entire city property assessment roll to calculate assessment ratios for all taxed properties in San Francisco in 1984. The estimated aggregate assessment ratio for the city is .55, indicating that the effective property tax rate for the city is slightly more than one-half the nominal rate. Effective assessment ratios differ significantly among and within property types, with on average business and private homeowners paying lower rates than owners of multiple-unit dwellings. Within property classes, assessment ratios are shown to be inversely related to property values.

TI What's to Be GAINed: Welfare in California Since 1971. **AU** Albert, Vicky; Wiseman, Michael.

Wolfe, Barbara L.

TI Investments in Schooling in Two Generations in a Developing Country: The Roles of Family Background and School Supply. **AU** Behrman, Jere R.; Wolfe, Barbara L.

Wolfson, Mark A.

TI Taxation and the Dynamics of Corporate Control: The Uncertain Case for Tax Motivated Acquisitions. **AU** Gilson, Ronald J.; Scholes, Myron S.; Wolfson, Mark A.

Wooders, Myrna Holtz

TI Mass-Economics with Vital Small Coalitions; The F-Core Approach. **AU** Hammond, Peter J.; Kaneko, Mamoru; Wooders, Myrna Holtz.

Woolford, Michael

PD February 1985. **TI** Interest and Prices in a Cast-in-Advance Economy. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 281; Department of Economics, Columbia University, New York, NY 10027. **PG** 125. **PR** $5.00. **JE** 023, 311. **KW** Cash-in-Advance Constraint. Open Market Operation Effects. Reserve Requirements.

AB This paper analyzes the effects of open market operations on the price level and interest rates in an overlapping generations model with a cash-in-advance constraint. Particular attention is given to the effects of policies that seek to peg the nominal interest rate at a low level. It is shown that such policies do not cause indeterminacy of the price level and do not cause perpetual inflation, and that, on the other hand, such a policy is necessary in order to achieve a Pareto optimal intertemporal allocation of resources, and is consistent with the goal of achieving the optimal long-run steady state allocation. The effects of a 100 per cent reserve requirement in banking are considered as well; it is shown that such a restriction upon the banking system may prevent an efficient intertemporal allocation of resources, even when supplemented by interest payments on bank reserves or by a steady deflation of the sort advocated by Friedman (1969).

PD September 1985. **TI** Expectations, Finance

Constraints, and the Instability of Aggregate Expenditure. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 303; Department of Economics, Columbia University, New York, NY 10027. **PG** 42. **PR** $5.00. **JE** 131, 023. **KW** Self-Fulfilling Expectations. Investors' Expectations. Aggregate Fluctuations.
AB An equilibrium business cycle model is presented in which aggregate fluctuations result from spontaneous revisions of the expectations of investors. Finance constraints faced by households are crucial in allowing such revisions of expectations to be self-fulfilling. The predicted movements in output, credit, and the price level are similar to observed aggregate fluctuations. An active fiscal policy that stabilizes the level of aggregate money expenditure can prevent such fluctuations.

Yannelis, Demetrius C.

TI Simultaneous Price-Quantity Adjustments in the Presence of Spillovers Across Markets. **AU** McCurdy, Thomas H.; Yannelis, Demetrius C.

Yeldan, A. Erinc

PD April 1986. **TI** A Computable General Equilibrium Model for Development Policy Analysis. **AA** Department of Agricultural and Applied Economics, University of Minnesota. **SR** University of Minnesota Economic Development Center Bulletin: 86-1; Department of Economics, 1035 Management-Economics, University of Minnesota Minneapolis, MN 55455. **PG** 69. **PR** No Charge. **JE** 112, 422. **KW** Computable General Equilibrium. Development Policy. Economic Development.
AB This paper presents a Computable General Equilibrium (CGE) Model that would serve as a laboratory for analyzing alternative strategies of economic development. The model is composed of a simultaneous system of non-linear equations which converges towards a general equilibrium solution by means of a Walrasian solution algorithm (tatonnement) in the product and factor markets. Specifically, it endogeneously solves for: relative product prices, sectoral production, wages, profits, the exchange rate, imports, exports, sectoral consumption and investment, GDP and the functional distribution of income. The system is further projected through time via changes in sectoral productivity and rate of population growth along with an explicit specification of dynamic linkages which govern the endogeneous processes of capital accumulation and labor migration.

Young, Allan Richard

PD August 1985. **TI** Dividing-the-Dollar Efficiently Between Occasionally Risk-Seeking Agents. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-06-01; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 10. **PR** No Charge. **JE** 026. **KW** Risk Attitudes. Divide-the-Dollar. Risk-Seekers.
AB When Divide-the-Dollar is performed for agents who might be risk-seeking, efficiency requires the occasional use of lotteries. An approach is given for devising privacy-respecting mechanisms that induce truthful reporting of risk attitudes and are ex post efficient.

PD October 1985. **TI** A Model of Negotiation: Nash's Demand Game With Varying Risk Attitudes. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E84-08-06; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 22. **PR** No Charge. **JE** 026. **KW** Attitudes Toward Risk. Bargaining.
AB Through examination of a simple model of bargaining, this paper demonstrates how risk attitudes can severely affect outcomes of negotiation. Nash's original formulation of the bargaining problem is modified to include utility functions that are not completely known by both agents. Since the Nash-Zeuthen solution is inaccessible, the parties instead play a non-cooperative game with incomplete information which is resolved according to one of several possible "Bayesian equilibria." It is shown that negotiators with high risk tolerance maximize expected utility by seeking large rewards that could well lead to impasse, while less risk-loving agents seek small rewards having a good chance of success. Additional properties of equilibrium behavior are revealed in the examples. Since players are fully rational, the presence of incomplete information provides a sound rationalization for final impasse in bargaining.

PD December 1985. **TI** A Note on Two-Part Tariffs and Transport Costs. **AA** Virginia Polytechnic Institute and State University. **SR** Virginia Polytechnic Institute and State University Working Papers in Economics: E85-12-03; Department of Economics, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. **PG** 9. **PR** No Charge. **JE** 611. **KW** Aggregation Problem. Negative Entrance Fee. Two-Part Tariffs.
AB If customers bear a cost of travelling to a monopolist's store, it might be profit-maximizing for the monopolist to offer a "negative entrance fee" that defrays these costs. The situation can be formulated so that Oi's (1971) paper applies. In an example, lump-sum payments from the seller to buyers allow positive profits to be earned from (mutually advantageous) production, which otherwise could not be supported by uniform pricing. Comments on the aggregation problem validate this note's particular approach.

Zaman, Asad

PD November 1985. **TI** On the Impossibility of Events of Zero Probability. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 312; Department of Economics, Columbia University, New York, NY 10027. **PG** 4. **PR** $5.00. **JE** 211. **KW** Zero Probability.
AB Consider a random variable X uniformly distributed on the unit interval '0,1. For any x in '0,1, the probability that X=x is zero, and yet one of these events must occur. This appears to preclude interpretation of an event of probability zero as an impossible event. Several authors of elementary probability texts comment on this puzzling situation. Levi (1980) argues from this that events of probability zero may nonetheless be "seriously possible".

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The object of this note is to present a logically consistent way of maintaining that events of probability zero are impossible.

PD February 1986. **TI** A Game Theoretic Model of Agricultural Supply Response. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 318; Department of Economics, Columbia University, New York, NY 10027. **PG** 24. **PR** $5.00. **JE** 711. **KW** Agricultural Supply Response.
AB We argue that Nerlove's supply response model either omits important variables (such as inhomogeneities in land) or is misspecified (when price is not exogenous). An alternative game theoretic model of supply response in a general equilibrium framework is proposed. While too simple to be directly applicable, the model does lead to useful insights regarding supply response.

PD February 1986. **TI** On the Subjectivist Theory of Decision Making Under Uncertainty. **AA** Department of Economics, Columbia University. **SR** Columbia Department of Economics Working Paper: 313; Department of Economics, Columbia University, New York, NY 10027. **PG** 7. **PR** $5.00. **JE** 511, 026. **KW** Prior Beliefs. Decision Making Under Uncertainty.
AB Savage has shown that for certain decisions made under uncertainty, rational agents act as if they have prior beliefs. We show that it is not correct to deduce from this that they actually have such prior beliefs. Various fallacies resulting from this commonly made incorrect deduction are discussed.

Zeckhauser, Richard

TI The Ambiguous Antitrust Implications of Information Sharing. **AU** Nalebuff, Barry; Zeckhauser, Richard.

Zilcha, I.

TI A Correspondence Theorem between Expected Utility and Smooth Utility. **AU** Chew, Soo Hong; Epstein, L.; Zilcha, I.