

ABSTRACTS OF WORKING PAPERS IN ECONOMICS

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Abel, Andrew

PD July 1985. TI Capital Accumulation and Uncertain Lifetimes with Adverse Selection. AA Department of Economics, Harvard University. SR National Bureau of Economic Research Working Paper: 1664; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 28. PR \$2.00. JE 915. KW Bequests. Social Security. Private Annuities. Adverse Selection.

AB This paper examines the implications of adverse selection in the private annuity market for the pricing of private annuities and the consequent effects on consumption and bequest behavior. With privately known heterogeneous mortality probabilities, adverse selection causes the rate of return on private annuities to be less than the actuarially fair rate based on population average mortality. However, a fully funded social security system with compulsory participation can offer an implied rate of return equal to the actuarially fair rate based on population average mortality. Thus, since social security offers a higher rate of return than private annuities, consumers cannot completely offset the effects of social security by transacting in the private annuity market. Using an overlapping generations model with uncertain lifetimes, we demonstrate that the introduction of actuarially fair social security reduces the steady state rate of return on annuities and raises the steady state levels of average bequests and average consumption of the young. The steady state national capital stock rises or falls according to the strength of the bequest motive.

Aizenman, Joshua

PD October 1985. TI Inflation, Tariffs and Tax Enforcement Costs. AA University of Chicago. SR National Bureau of Economic Research Working Paper: 1712; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 18. PR \$2.00. JE 422, 323. KW Tariff. Inflation Tax. Tax Collection Costs.

AB This paper derives the dependency of optimal tariff and inflation tax on tax collection and enforcement costs. The analysis is done for a small, open economy. The existence of such costs can justify tariff and inflation tax policies as optimal revenue-raising devices. This paper suggests that greater government demand for revenue will increase the use of inflation and tariffs as revenue devices. The analysis derives elasticity rules that tie optimal tariff and inflation rates to the costs of tax collection.

PD January 1986. TI Monopolistic Competition,

Relative Prices and Output Adjustment in the Open Economy. AA Graduate School of Business, University of Chicago. SR National Bureau of Economic Research Working Paper: 1787; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 42. PR \$2.00. JE 022, 131. KW Optimal Pricing Rule. Domestic-Foreign Goods Substitutability.

AB The purpose of this paper is to explain price and output dynamics in an open economy characterized by a monopolistic competitive market structure in which pricing decisions incur costs that lead producers to pre-set the price path for several periods. The paper derives an optimal pricing rule, including the optimal pre-setting horizon. It does so for a rational expectations equilibrium, characterized by staggered, unsynchronized price setting, for which the degree of staggering is endogenously determined. The discussion focuses on the critical role of the degree of domestic-foreign goods substitutability in explaining price and output effects of monetary and real shocks.

Allen, Steven G.

PD June 1985. TI The Effect of Unionism on Productivity in Privately and Publicly Owned Hospitals and Nursing Homes. AA North Carolina State University. SR National Bureau of Economic Research Working Paper: 1649; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 18. PR \$2.00. JE 831, 825, 913. KW Union Behavior. Productivity. Public Ownership. Hospital Labor.

AB This paper examines the effect of unions on productivity within a sample of publicly and privately owned hospitals and nursing homes to determine whether public ownership influences union behavior. The results show that the productivity of union contractors is much greater in private than in public projects. Within the sample of private projects, the estimates of the union-nonunion productivity difference are generally positive but very imprecise.

PD August 1985. TI Unions, Pension Wealth, and Age-Compensation Profiles. AU Allen, Steven G.; Clark, Robert L. AA Department of Economics and Business, North Carolina State University. SR National Bureau of Economic Research Working Paper: 1677; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 40. PR \$2.00. JE 831, 918. KW Unions. Pension Benefits. Pension Wealth of

Union Beneficiaries.

AB This paper examines the effect of unions on both the magnitude and distribution of pension benefits. Our empirical results show that beneficiaries in collectively bargained plans receive larger benefits when they retire, receive larger increases in their benefits after they retire, and retire at an earlier age than beneficiaries in other pension plans. As a result, the pension wealth of union beneficiaries is 50 to 109 percent greater than that of nonunion beneficiaries. Just as wage differentials within and across establishments are smaller among union workers, benefit differentials within and across cohorts of retirees are smaller among union beneficiaries. This results from the smaller weight given to salary average in determining initial benefits and the larger percentage increases given to those who have been retired the longest under post-retirement increases. The more compressed benefit structure under unionism causes the union-nonunion compensation (wages plus pension contributions) differential to decline more quickly than the union-nonunion wage differential over the life cycle.

PD October 1985. **TI** Union Work Rules and Efficiency in the Building Trade. **AA** North Carolina State University. **SR** National Bureau of Economic Research Working Paper: 1733; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 48. **PR** \$2.00. **JE** 831, 634. **KW** Construction Industry. Union Work Rules.

AB This paper estimates the effect of union work rules in the building trades on employment and costs by comparing factor demand elasticities for union and nonunion contractors and subcontractors over micro data from two different types of construction. The results show that the elasticities of substitution between labor and nonlabor inputs and own-price elasticities for nonlabor inputs are about the same for union and nonunion contractors. In contrast, the elasticities of substitution among different skill categories of labor and the own-price elasticities for each category are much lower under unionism. A simulation based on a typical office building subcontract shows that these lower factor demand elasticities result in excess staffing of 3.2 percent, excess labor costs of 5.0 percent, and excess total costs of 2.0 percent. This study also examines directly the effect of union work rules on the use of prefabricated components and finds that union contractors are just as likely to use them as nonunion contractors.

Alogoskoufis, George S.

PD December 1985. **TI** Aggregate Employment and Intertemporal Substitution in the United Kingdom. **AA** Birkbeck College. **SR** London School of Economics, Centre for Labour Economics Discussion Paper: 234; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. **PG** 23. **PR** No Charge. **JE** 824, 813. **KW** Wages. Employment. Interest Rate. Labor Supply. Intertemporal Substitution.

AB In this paper I set up, estimate and test an explicit model of labour supply based on the intertemporal substitution hypothesis. The model is derived as the optimal decision rule of an infinitely living household,

maximizing an intertemporal CES utility function over consumption and leisure. The assumed constant elasticity of substitution is estimated at around 0.2, and this estimate implies an intertemporal real wage elasticity of labour supply of the same order. This elasticity is a lot lower than for the United States. Although the estimated aggregate employment equation is a reasonably satisfactory statistical model, some of the overidentifying restrictions are rejected. We finally show that our findings are consistent with the findings of other investigators for the United Kingdom, who have estimated a negative effect of unemployment on real wages.

Altonji, Joseph G.

PD November 1985. **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: Department of Economics, University of Toronto and Industrial Relations Section, Princeton University. **SR** Princeton Industrial Relations Section Working Paper: 201; Industrial Relations Section, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 61. **PR** No Charge. **JE** 813, 131. **KW** Employment Growth. Sectoral Shocks. United States Shocks. Canadian Shocks. Canada.

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.

Anderson, Simon

PD November 1, 1985. **TI** Market Equilibrium and

Optimal Product Diversity: A Logit Specification. AU Anderson, Simon; dePalma, Andre. AA Anderson: C.O.R.E., Universite Catholique de Louvain. de Palma: Department of Economics, Queen's University. SR Queen's Institute for Economic Research Discussion Paper Series: 630; Department of Economics, Queen's University, Kingston, Ontario, K7L 3N6. PG 59. PR \$2.50 Canada; \$3.00 United States; \$3.50 Foreign. JE 022, 611. KW Product Differentiation. Logit. Oligopoly. Second Best. Optimum Product Diversity.

AB This paper has two major objectives. Firstly, we present the logit model of discrete consumer choice and apply it to an oligopoly model of product differentiation. It is argued that the logit is a particularly suitable functional form for both its analytical tractability and the intuitive appeal of the comparative static results. Social surplus analysis is also shown to be relatively simple with this formulation. In contrast to the frequently used CES functional form for utility, the second-best optimum and free entry equilibrium do not coincide (although they are "close") in the logit model. The second objective is to reconsider the question of monopolistic competition and optimal product diversity. The formulation used allows the free entry equilibrium product range to be greater than or less than the social optimum, depending on cost and demand conditions and the degree of heterogeneity of consumer tastes. The model suggests that when the observed market outcome involves a large number of products, it can be surmised that the market solution does not deviate very far from the social optimum. However, when there are very few products offered, it may be the case that there is a substantial under-production of product varieties. The market may indeed offer none of the product in question, yet the social optimum would call for a large variety.

Ando, Albert

PD November 1985. TI The Corporate Cost of Capital in Japan and the United States: A Comparison. AU Ando, Albert; Auerbach, Alan J. AA Department of Economics, University of Pennsylvania. SR National Bureau of Economic Research Working Paper: 1762; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 42. PR \$2.00. JE 123, 522, 313. KW Corporate Cost of Capital. Return to Capital.

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.

Arnott, Richard

PD February 12, 1986. TI Economics of A

Bottleneck. AU Arnott, Richard; dePalma, Andre; Lindsey, Robin. AA Arnott and de Palma: Queen's University. Lindsey: University of Alberta. SR Queen's Institute for Economic Research Discussion Paper: 636; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. PG 46. PR \$2.50 Canada; \$3.00 United States; \$3.50 foreign. JE 933, 641. KW Congestable Facility. Pricing. Capacity. Bottlenecks. Endogenous Time of Usage. Peak-Load Demand.

AB This paper, the first of a series of papers which will examine the economics of congestable facilities with peak-load demand, provides a thorough analysis of the simplest bottleneck model: A fixed number of individuals, one per car, must travel from home to work. Between home and work is a bottleneck of given capacity. The costs of travel include queuing time and schedule delay (early and late arrival at work). Equilibrium with no toll, a coarse toll, and a fine toll are compared, and optimal bottleneck capacity computed for the three cases. Subsequent papers will extend the model, incorporating heterogeneity of individuals, stochastic capacity, and a road network, inter alia.

Artus, Patrick

PD Octobre 1985. TI Negociation sur le salaire et l'emploi entre syndicat et entreprise et courbe de Phillips. AU Artus, Patrick; Norotte, Michel. AA Artus: Banque de France, Paris. Norotte: ENSAE. SR Unite de Recherche, Document de Travail ENSAE/INSEE: 8510; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. PG 38. PR No Charge. JE 832, 026. KW Salaires. Chomage. Syndicats. Contrats. Information Imperfaite.

AB We analyse how unions and firms negotiate to set wages and employment. We compare efficient contracts to those in which unions have a monopoly power by setting wages according to their own perception of the enterprise's labor demand curve. It is shown that the pro or contracyclical effects of activity on wages depends on the quality of unions' expectations.

Ashenfelter, Orley

PD January 9, 1986. TI The Case for Evaluating Training Programs with Randomized Trials. AA Princeton University. SR Princeton Industrial Relations Section Working Paper: 203; Industrial Relations Section, Department of Economics, Princeton University, Princeton, NJ 08544. PG 11. PR No Charge. JE 811. KW Training Programs.

AB This brief paper presents the reasons that I have come to conclude that the evaluation of the economic benefits of training programs will be greatly enhanced by the use of classical experimental methods. In particular, I am convinced that some of these training programs should be operated so that control and experimental groups are selected by random assignment (randomized trials). It follows that a simple comparison of earnings, employment, and other outcomes as between control and experimental groups subsequent to participation in the experimental program will provide a simple and credible estimate of program success (or failure). The principal reason why randomized trials should be used in this field is that too

much of the non-experimental estimation of the effects of training programs seems dependent on elements of model specification that cannot be subjected to powerful statistical tests. Moreover, these specification tests are merely necessary and not sufficient for the acceptability of a particular non-experimental estimation method, as an extensive example due to LaLonde demonstrates.

PD February 1986. **TI** Why Have Unemployment Rates in Canada and the United State Diverged? **AU** Ashenfelter, Orley; Card, David. **AA** Department of Economics, Industrial Relations Section, Princeton University. **SR** Princeton Industrial Relations Section Working Paper: 204; Industrial Relations Section, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 23. **PR** \$1.00 plus postage. **JE** 824, 123. **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 occurred 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.

Asikoglu, Merih Uctum

PD February 14, 1986. **TI** The Stock Market and Capital Accumulation in an open Economy with Flexible

Exchange Rates. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 832; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 48. **PR** \$2.50 Canada; \$3.00 United States; \$3.50 foreign. **JE** 441. **KW** Physical Capital Accumulation. Financial Flows. Flexible Exchange Rates. **Q** Theory of Investment.

AB The purpose of this paper is to analyze the interaction of financial capital movements and accumulation of physical capital in a small open economy with flexible exchange rates. Tobin's *q* theory of investment plays a central role not only in linking the financial and real sides of the economy but also in the determination of financial capital movements across boundaries. It is shown that endogenizing physical capital has important implications for the exchange rate dynamics, not captured by the models which assume a fixed capital stock. In this context, a foreign interest rate shock leads to a decumulation of physical capital and hence to a fall in the full employment level of output, to an increase in the foreign ownership of domestic capital under certain conditions and to the depreciation of the exchange rate. Monetary and fiscal policies can be utilized to counteract the effects on domestic wealth whereas the reduction in the stock of capital can be reversed by reducing corporate taxation.

Auerbach, Alan J.

PD June 1985. **TI** The Efficiency Gains from Social Security Benefit -- Tax Linkage. **AU** Auerbach, Alan J.; Kotlikoff, Laurence J. **AA** Auerbach: University of Pennsylvania, Philadelphia. Kotlikoff: Boston University. **SR** National Bureau of Economic Research Working Paper: 1645; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 41. **PR** \$2.00. **JE** 915. **KW** Deadweight Loss of Labor Income Taxation. Marginal Social Security Benefits. Marginal Social Security Payroll Taxes. Efficiency Gains.

AB This paper examines the efficiency gains from linking marginal Social Security benefits to marginal Social Security payroll taxes. In the United States the current combined employer-employee OASI payroll tax rate is 10.4 per cent. Recent estimates suggest that the average marginal income tax rate is roughly 27 per cent (Barro and Sahaskul (1983)). If marginal OASI payroll taxes provided no marginal Social Security benefits or were incorrectly perceived to provide no marginal benefits, the effective marginal federal government taxation of labor supply would average roughly 38 per cent. Since the efficiency costs of distortionary taxation rise as roughly the square of the tax rate, the Social Security payroll tax may be more than doubling the dead weight loss of labor income taxation. The findings of this paper suggest that there may be very significant efficiency gains available from tightening the connection between marginal Social Security taxes paid and marginal Social Security benefits received. Indeed, the simulated efficiency gains are very large in comparison with those obtained from analyses of the gains from structural tax reform. Restructuring Social Security to greatly enhance marginal benefit-tax linkage may be infeasible, at least in the short run. However, simply providing annual Social Security reports indicating

how a worker's projected benefits are affected by his or her tax contributions could provide substantial increases in economic efficiency. Such efficiency gains are potentially as large as increasing Gross National Product by 1 per cent this year and every year in the future.

PD October 1985. **TI** Life Insurance of the Elderly: Adequacy and Determinants. **AU** Auerbach, Alan J.; Kotlikoff, Laurence J. **AA** Auerbach: University of Pennsylvania. Kotlikoff: Boston University. **SR** National Bureau of Economic Research Working Paper: 1737; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 40. **PR** \$2.00. **JE** 918, 911, 921. **KW** Life Insurance. Elderly Households.

AB Despite a general reduction in poverty among the aged, roughly one third of elderly nonmarried women are officially poor. Many of these women are widows. The fact that poverty rates are significantly larger for widows than for married women suggests that many households may fail to buy sufficient life insurance. This paper considers the adequacy and determinants of life insurance among the elderly. Its principal conclusions are: (1) Combined private and public life insurance is inadequate for a significant minority of elderly households; (2) Of those elderly households in which the husband's future income represents a significant fraction of total household resources, roughly half are inadequately insured; (3) Households do not significantly offset Social Security's provision of survivor insurance by reducing their private purchase of life insurance; and (4) The actual determinants of the purchase of life insurance appear to differ greatly from those predicted by economic theory.

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

Avery, Robert B.

TI Estimating Systems of Nonlinear Equations with Limited Dependent Variables. **AU** Hotz, V. Joseph; Avery, Robert B.

Backus, David

PD June 1985. **TI** Credibility and Commitment in Economic Policy. **AU** Backus, David; Driffill, John. **AA** Backus: Queen's University. Driffill: University of Southampton. **SR** CEPR Discussion Paper: 63; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA ENGLAND. **PG** 22. **PR** individual: 1.00 pound sterling (\$2.00); institution: 1.50 pound sterling (\$3.00). **JE** 023, 311, 321. **KW** Rational Expectations. Dynamic Consistency feedback Solution. Atomistic Agents. Disinflation. Policy Credibility.

AB Dynamic inconsistency provides a theoretical basis for discussions of policy credibility: when the government cannot commit its future policies, the incentive to deviate from the 'optimal' plan renders it incredible. We derive the best policy in the absence of precommitment as the feedback Nash solution to a dynamic game between the government and a private sector composed of small agents. The solution is dynamically consistent by construction,

and therefore credible. An application to disinflation shows that the feedback Nash policy may be considerably more costly than the source of the inconsistency of benevolent governments' policies.

PD January 29, 1986. **TI** A Positive Theory of Fiscal Policy in Open Economies. **AU** Backus, David; Devereux, Michael; Purvis, Douglas. **AA** Backus and Purvis: Queen's University. Devereux: University of Toronto. **SR** Queen's Institute for Economic Research Discussion Paper: 638; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. **PG** 34. **PR** \$2.50 Canada; \$3.00 United States; \$3.50 foreign. **JE** 323, 423, 430. **KW** Overlapping Generations. Government Deficit. Trade Balance. International Policy Coordination.

AB When consumers have infinite horizons, the timing of taxes has, to a first approximation, no effect on the allocation of resources. The question arises: why do governments appear consistently to set taxes so that both tax rates and tax revenues vary directly with current income? We argue that consumers with finite lives (and no bequest motive) provide an incentive for governments to redistribute income over time in order to smooth utility across generations. This argument for income smoothing, made in the context of an overlapping-generations economy, has a number of implications for the dynamics of aggregate time series: First, the government in a small, open, pure-exchange economy can exploit its access to long-term capital markets to smooth fluctuations in private agents' income streams; Second, when goods are storable they provide an alternative method for smoothing income; Third, in a world composed of many economies there are no policy conflicts if all countries are small in the sense of being price-takers; and finally, the theory implies that tests of the Ricardian equivalence theorem based on aggregate time series have no power: if the government redistributes income optimally, aggregate consumption behaves as if it were chosen by a single, infinitely-lived household.

Baiman, Stanley

PD July 1985. **TI** Optimal Contracts with a Utility-Maximizing Auditor. **AU** Baiman, Stanley; Evans, John H.; Noel, James C. **AA** Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 13; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. **PR** No Charge. **JE** 022, 026. **KW** Principal-Agent Models. Contracts. Auditor.

AB In this paper we model a simple principal-agent problem in which, subsequent to contract agreement, the agent becomes strictly better informed than the principal. As a result, the optimal contract between the two diverges from the first-best contract. We then introduce a utility-making auditor who is subject to moral hazard considerations. Our objective is to: a) characterize the resulting optimal pair of contracts (principal/agent and principal/auditor), b) analyze how the hiring of the auditor improves the efficiency of the contractual relationship between the principal and agent, c) analyze

how the principal/deals with the moral hazard problem associated with hiring the utility-maximizing auditor and d) analyze conditions which are sufficient to assure that the principal and agent are better off hiring a utility-maximizing auditor than not.

PD November 1985. TI Noncontrollable Costs and Responsibility Accounting. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 28; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 022. KW Interperiod Cost Allocation.

AB In this paper we study the economic demand for interperiod cost allocation. We analyze a class of problems in which the Pareto Optimal contract allocates a cost to an agent over which he exercises no control.

Balas, Egon

PD July 1985. TI An $O(V + E)$ Algorithm for Finding an Edge-Maximal Subgraph with a TR-Formative Coloring. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 8; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 213. KW Maximum-Weight Clique. Edge-Maximal Subgraph.

AB If TR is the class of triangulated graphs, a TR-formative edge coloring is a green/red coloring of the edges of a graph, such that the green graph is triangulated (i.e. belongs to TR) and the red graph has no triangles. Recently Balas, Chvatal and Nesetril gave an $O(V \log V)$ algorithm for finding a maximum-weight clique in any graph $G = (V, E)$ with a known TR-formative edge coloring. In this paper we give an $O(V + E)$ time algorithm for finding in an arbitrary graph an edge-maximal subgraph with a TR-formative coloring. This can be used to construct improved implicit enumeration procedures for finding a maximum-weight clique in an arbitrary graph. Our algorithm consists of two subroutines, also of interest in their own right: one finds an edge-maximal triangulated subgraph, the other one an edge-maximal triangle-free subgraph, in an arbitrary graph.

PD July 1985. TI On the maximum-weight clique problem. AU Balas, Egon; Chvatal, Vasek; Nesetril, Jaroslav. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 7; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 213. KW Maximum-Weight Clique Problem. Polynomial Time Algorithms.

AB We introduce several new classes of graphs on which the maximum-weight clique problem is solvable in polynomial time. Their common feature, and the central idea of our algorithms, is that every clique of any of our graphs is contained in some member of a polynomial-sized

collection of induced subgraphs that are complements of bipartite graphs. Our approach is quite general, and might conceivably yield many other classes of graphs along with corresponding polynomial time algorithms.

Barro, Robert J.

PD January 1986. TI Reputation in a Model of Monetary Policy with Incomplete Information. AA Department of Economics, University of Rochester. SR National Bureau of Economic Research Working Paper: 1794; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 29. PR \$2.00. JE 134, 311. KW Inflation. Policymaker Reputation. Monetary Policy.

AB Previous models of rules versus discretion are extended to include uncertainty about the policymaker's "type." When people observe low inflation, they raise the possibility that the policymaker is committed to low inflation (type 1). This enhancement of reputation gives the uncommitted policymaker (type 2) an incentive to masquerade as the committed type. In the equilibrium the policymaker of type 1 delivers surprisingly low inflation--with corresponding costs to the economy--over an extended interval. The type 2 person mimics this outcome for awhile, but shifts eventually to high inflation. This high inflation is surprising initially, but subsequently becomes anticipated.

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

Barsky, Robert B.

PD August 1985. TI Gibson's Paradox and the Gold Standard. AU Barsky, Robert B.; Summers, Lawrence H. AA Barsky: University of Michigan. Summers: Harvard University. SR National Bureau of Economic Research Working Paper: 1680; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 35. PR \$2.00. JE 023, 311. KW Gibson's Paradox. Gold Standard.

AB This paper provides a new explanation for Gibson's Paradox - the observation that the price level and the nominal interest rate were positively correlated over long periods of economic history. We explain this phenomenon in terms of the fundamental workings of a gold standard. Under a gold standard, the price level is the reciprocal of the real price of gold. Because gold is a durable asset, its relative price is systematically affected by fluctuations in the real productivity of capital, which also determine real interest rates. Our resolution of the Gibson Paradox seems more satisfactory than previous hypotheses. It explains why the paradox applied to real as well as nominal rates of return, its coincidence with the gold standard period, and the co-movement of interest rates, prices, and the stock of monetary gold during the gold standard period. Empirical evidence using contemporary data on gold prices and real interest rates supports our theory.

Bartel, Ann P.

PD July 1985. TI Predation through Regulation: The Wage and Profit Impacts of OSHA and EPA. AU Bartel, Ann P.; Thomas, Lacy Glenn. AA Graduate School of Business, Columbia University.

SR National Bureau of Economic Research Working Paper: 1660; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 27. PR \$2.00. JE 613. KW Predation. Indirect Effects of Regulation. Asymmetric Impact of Regulation.

AB This paper documents the importance of studying the indirect effects of OSHA and EPA regulations -- the competitive advantages which arise from the asymmetrical distributions of regulatory impact among different types of firms. We argue that if the competitive advantage gained through indirect effects is sufficiently large, it can more than offset any direct costs producing a net benefit for the regulated firm and its workers. The indirect effects of OSHA and EPA regulations arise in two ways. The first source is compliance asymmetries, whereby one firm suffers a greater cost burden even when regulations are evenly enforced across firms. The second source is enforcement asymmetry, whereby regulations are more vigorously enforced against certain firms. Earlier research shows that these asymmetries do exist and are based on firm size, unionization, and regional location. In this paper we empirically document that the indirect effects produced by these asymmetries mitigate the direct costs of regulations for many firms. Large, unionized firms in the Frostbelt are clearly gaining wealth at the expense of small, nonunionized firms in the Sunbelt.

PD October 1985. TI The Comparative Advantage of Educated Workers in Implementing New Technology: Some Empirical Regularities. AU Bartel, Ann P.; Lichtenberg, Frank R. AA Graduate School of Business, Columbia University. SR National Bureau of Economic Research Working Paper: 1718; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 31. PR \$2.00. JE 621, 811, 824. KW Education-Distribution of Employment. Labor Demand.

AB In this paper we estimate variants of a labor demand equation derived from a (restricted variable) cost function in which "experience" on a technology (proxied by the mean age of the capital stock) enters "non-neutrally." Our specification of the underlying cost function is based on the hypothesis that highly educated workers have a comparative advantage with respect to the adjustment to and implementation of new technologies. Our empirical results are consistent with the implication of this hypothesis, that the relative demand for educated workers declines as the capital stock (and presumably the technology embodied therein) ages. According to our estimates, the education-distribution of employment depends more strongly on the age of equipment than on the age of plant, and the effect of changes in equipment age on labor demand is magnified in R&D-intensive industries.

Bates, Charles E.

PD January 1986. TI Efficient Estimation of Parametric Models. AU Bates, Charles E.; White, Halbert. AA Bates: Department of Political Economy, Johns Hopkins University. White: Department of Economics, University of California San Diego. SR Johns Hopkins Department of Political Economy Working Papers; Department of Political Economy, Johns

Hopkins University, Baltimore, MD 21218. PG 48. PR No Charge. JE 211. KW Asymptotically Efficient Estimators. Maximum Likelihood Estimator. Minimum Chi-Square Estimator. Parametric Models.

AB We provide a simple condition which characterizes the asymptotically efficient estimator in the affine hull of a consistent asymptotically second order indexed class of estimators, a class which includes consistent asymptotically normal estimators. We also provide a sufficient condition which allows the efficient estimator to be found by direct construction, often with very little effort. This provides a useful alternative to current ad hoc methods for finding efficient estimators. The conditions under which our results are obtained are quite general and do not rely heavily on the particular stochastic environment, so that assumptions of independence, stationarity, mixing, and the like are avoided. We apply the general results to obtain new results, finding the maximum likelihood estimator to be efficient in the class of regular optimization estimators and the minimum chi-square estimator to be efficient in the class of regular minimum discrepancy estimators.

PD January 24, 1986. TI Efficient Estimation of Parametric Models. AU Bates, Charles E.; White, Halbert. AA Bates: The Johns Hopkins Univ. White: UC, San Diego. SR UC San Diego Department of Economics Discussion Paper: 86-2; Department of Economics, D-008, UCSD, La Jolla, CA 92093. PG 48. PR \$2.00; checks payable to UC Regents. JE 211. KW Efficiency. Maximum Likelihood. Minimum Chi-Square. Method of Moments. Asymptotic Theory. Estimation.

AB We provide a simple condition which characterizes the asymptotically efficient estimator in the affine hull of a consistent asymptotically second order indexed class of estimators, a class which includes consistent asymptotically normal estimators. We also provide a sufficient condition which allows the efficient estimator to be found by direct construction, often with very little effort. This provides a useful alternative to current ad hoc methods for finding efficient estimators. The conditions under which our results are obtained are quite general and do not rely heavily on the particular stochastic environment, so that assumptions of independence, stationarity, mixing, and the like are avoided. We apply the general results to obtain new results, finding the maximum likelihood estimator to be efficient in the class of regular optimization estimators and the minimum chi-square estimator to be efficient in the class of regular minimum discrepancy estimators.

Baybars, Ilker

TI A Two-Process Enumeration Algorithm for the Simple Assembly Line Balancing Problem. AU Saltzman, Matthew J.; Baybars, Ilker.

Bean, Charles R.

PD January 1986. TI The Rise in Unemployment: A Multi-country Study. AU Bean, Charles R.; Layard, P. R. G.; Nickell, S. J. AA Bean and Layard: London School of Economics. Nickell: Oxford Institute of Economics and Statistics. SR London School of

Economics, Centre for Labour Economics Discussion Paper: 239; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UK. PG 44. PR No Charge. JE 824, 123. KW Unemployment. Corporatism. Real Wages.

AB A simple model of the labour market is estimated for eighteen major OECD countries. For most countries increases in real wages reduce employment but an increase in demand relative to potential also raises it. This is consistent with a model of imperfect competition in the product market. It is also found that increases in taxes and reduced search intensity tend to raise real wages in many of the countries. The results are used to estimate the proximate causes of the rise in unemployment. Cross-country differences in parameter values are also related to an index of corporatism. The labour market is generally found to adjust more quickly in more corporatist economies.

Bebchuk, Lucian Arye

PD November 1985. TI A Model of the Outcome of Takeover Bids. AA Harvard Law School. SR Tel Aviv Foerder Institute for Economic Research Working Papers: 37-85; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. PG 50. PR No Charge. JE 022, 521. KW Takeover Bids. Shareholders' Tender Decisions.

AB The concern of this paper is with the outcome of takeover bids. First, the paper presents a game-theoretic analysis of the factors that determine shareholders' tender decisions. This analysis identifies the likely outcome of a bid -- as a function of the bid's terms, the distribution of the shareholders' estimates of the independent target's value, and the other parameters involved. Second, the paper evaluates the outcome of bids from the perspectives of efficiency and of target shareholders. The paper shows that a bid's success might be substantially affected by factors that have little to do with whether or not a takeover would be efficient (or with whether or not a takeover would be in the interest of the target's shareholders). The identified distortions appear to operate systematically in favor of bidders. Third, the paper puts forward an arrangement that might be adopted, either by private parties or by law, to address the identified distortions. Under the proposed arrangement, shareholders would be able to indicate whether or not they "approve" a takeover, and the bidder would be allowed to purchase shares only if it attracts the required number of approving tenders. In addition, the paper examines the effectiveness and costs of several alternative remedies.

Becker, Gary S.

PD January 1986. TI A Reformulation of the Economic Theory of Fertility. AU Becker, Gary S.; Barro, Robert J. AA Becker: Department of Economics, University of Chicago. Barro: Department of Economics, University of Rochester. SR National Bureau of Economic Research Working Paper: 1793; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 46. PR \$2.00. JE 841. KW Fertility. Consumption Growth Rate.

AB When parents are altruistic toward children, the choices of fertility and consumption come from the

maximization of a dynastic utility function. The maximization conditions imply first, an arbitrage condition for consumption across generations, and second, the equation of the benefit from an extra child to the net cost of rearing that child. These conditions imply that fertility in open economies depends positively on the world interest rate, on the degree of altruism, and on the growth of child-survival probabilities; and negatively on the rate of technical progress and the growth rate of social security. The growth of consumption across generations depends on changes in the net cost of rearing children, but not on interest rates or time preference. Even when we include life-cycle elements, we conclude that the growth of aggregate consumption per capita depends in the long run on the growth of consumption across generations. Thereby we show that real interest rates and growth rates of consumption per capita would be unrelated in the long run.

Beinstock, Daniel

PD September 1985. TI Some Lattice - Theoretic Tools for Network Reliability Analysis. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 21; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 213. KW Reliability Analysis. Probabilistically Erased Arcs.

AB We present interesting lattice-theoretic identities that arise in the analysis of graphs whose arcs are probabilistically erased. These identities can be effectively used to compute reliability parameters in such graphs. We compare the computational requirements of these methods to that of existing algorithms in the case of independent arc failures.

Benassy, Jean Pascal

PD September 1985. TI On Learning and Divergence from Rational Expectations in an Overlapping Generations Model. AU Benassy, Jean Pascal; Blad, Michael C. AA Banassy: CEPREMAP And CNRS. Blad: University of Sydney. SR CEPREMAP Discussion Papers: 8524; CEPREMAP, 142, rue du Chevaleret, 75013 PARIS, FRANCE. PG 27. PR 10 FF. JE 020, 021. KW Rational Expectations. Overlapping Generations Model. Learning.

AB This paper investigates whether learning does actually lead to "rational expectations" in an overlapping generations model with fiat money. Expectations are formed according to a family of expectations functions containing a rational expectations scheme and indexed by a single parameter. This parameter is updated in every period to fit the latest observations. One finds that, unless the agents have rational expectations to start with, expectations will generally diverge from rational expectations in this simple model.

Bennett, Niel G.

TI Marriage Patterns in the United States. AU Bloom, David E.; Bennett, Niel G.

Bera, Anil

PD January 1986. **TI** Conditional and Unconditional Heteroscedasticity in the Market Model. **AU** Bera, Anil; Bubnys, Edward; Park, Hun. **AA** Bera: Department of Economics, University of Illinois. Bubnys: Memphis State University. Park: Department of Finance, University of Illinois. **SR** University of Illinois at Urbana-Champaign Bureau of Economic and Business Research Faculty Paper: 1218; Department of Economics, University of Illinois at Urbana-Champaign, 1206 S. 6th Street, Champaign, IL 61821. **PG** 15. **PR** No Charge. **JE** 211, 313. **KW** Market Model. Heteroscedasticity. Non-Normality. Arch Process. CAPM.

AB Unlike previous studies, this paper tests for both conditional and unconditional heteroscedasticities in the market model, and attempts to provide an alternative estimation of betas based on the autoregressive conditional heteroscedastic (ARCH) model introduced by Engle. Using the monthly stock rate of return data secured from the CRSP tape for the period of 1976-1983, it is shown that conditional heteroscedasticity is more widespread than unconditional heteroscedasticity, suggesting the necessity of the model refinements taking the conditional heteroscedasticity into account. In addition, the efficiency of the market model coefficients is markedly improved across all firms in the sample through the ARCH technique.

Bernanke, Ben

PD June 1985. **TI** Banking in General Equilibrium. **AU** Bernanke, Ben; Gertler, Mark. **AA** Bernanke: Graduate School of Business, Stanford University. Gertler: Department of Economics, University of Wisconsin, Madison. **SR** National Bureau of Economic Research Working Paper: 1647; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 45. **PR** \$2.00. **JE** 314. **KW** Financial Intermediaries. Aggregate Economic Activity.

AB This 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 general equilibrium 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 also show 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.

PD June 1985. **TI** Employment, Hours, and Earnings in the Depression: An Analysis of Eight Manufacturing Industries. **AA** Graduate School of Business, Stanford University. **SR** National Bureau of Economic Research Working Paper: 1642; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 67. **PR** \$2.00. **JE** 042, 631, 824. **KW** Lucas Labor Market. Fluctuating Hours of Work. Employment.

AB This paper employs monthly, industry-level data in a study of Depression-era labor markets. The underlying analytical framework is one in which, as in Lucas (1970), employers can vary total labor input not only by changing the number of workers but also by varying the length of the work-week. This framework appears to be particularly relevant to the 1930s, a period in which both employment and hours of work fluctuated sharply. With aggregate demand treated as exogenous, it is shown that an econometric model based on this framework, in conjunction with some additional elements (notably, the adjustment of workers' pay to permanent but not transitory variations in the cost of living, and the effects of New Deal legislation) can provide a good explanation of the behavior of the key time series. In particular, the empirical model is able to explain the puzzle of increasing real wages during a period of high unemployment.

PD June 1985. **TI** Alternative Nonnested Specification Tests of Time Series Investment Models. **AU** Bernanke, Ben; Bohn, Henning; Reiss, Peter. **AA** Graduate School of Business, Stanford University. **SR** National Bureau of Economic Research Technical Paper: 49; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** \$2.00. **JE** 211, 522. **KW** Nonnested Hypothesis Tests. First-Order Serial Correlation. Aggregate Investment Demand. Small Sample Properties. Accelerator Model of Equipment Investment.

AB This paper develops and compares nonnested hypothesis tests for linear regression models with first-order serially correlated errors. It extends the nonnested testing procedures of Pesaran, Fisher and McAleer, and Davidson and MacKinnon, and compares their performance on four conventional models of aggregate investment demand using quarterly United States investment data from 1951:I to 1983:IV. The data and the nonnested hypothesis tests initially indicate that no model is correctly specified, and that the tests are occasionally intransitive in their assessments. Before rejecting these conventional models of investment demand, we go on to investigate the small sample properties of these different nonnested test procedures through a series of monte carlo studies. These investigations demonstrate that when there is significant serial correlation, there are systematic finite sample biases in the nominal size and power of these test statistics. The direction of the bias is toward rejection of the null model, although it varies considerably by the type of test and estimation technique. After revising our critical levels for this finite sample bias, we conclude that the accelerator model of equipment investment cannot be rejected by any of the other alternatives.

Bienstock, Daniel

PD September 1985. TI An Algorithm for Reliability Analysis of Planar Graphs. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 20; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 213. KW Planar Graphs. Reliability Analysis. AB We give an algorithm for the computation of K-terminal reliability in planar graphs, whose worst-case complexity is strictly exponential in the square root of the total number of nodes.

PD October 1985. TI On Fault-Tolerant Broadcasting. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 25; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 026. KW Network. Arc Faults. Broadcasting. AB We consider the problem of disseminating in a network a message that originates from a given node in the presence of arc faults, and present optimal and near optimal bounds for the total broadcast time.

Blackburn, Keith

TI Alternative Financial Policy Rules in an Open Economy under Rational and Adaptive Expectations. AU Whittaker, Rod; Wren, Lewis Simon; Blackburn, Keith; Currie, David.

Blackorby, Charles

PD September 1985. TI Can Risk-Benefit Analysis Provide Consistent Policy Evaluations of Projects Involving Loss of Life?. AU Blackorby, Charles; Donaldson, David. AA Department of Economics, University of British Columbia. SR University of British Columbia Department of Economics Discussion Paper: 85-29; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C., Canada, V6T 1Y2. PG 38. PR \$.20 per page Canadian to other than educational institutions. JE 024, 026. KW Loss of Life. Probability of Living. Risk-Benefit Tests.

AB The usual risk-benefit test for projects involving loss of life sums individual compensating (or equivalent) variations (willingnesses to pay) and accepts the project if the sum is positive. In a simple model with one consumption good and known individual probabilities of living in a single period, we show: (i) the tests are consistent (producing orderings) if and only if they are in accord with Pareto-inclusive social welfare functions; (ii) consistency requires very special (Hicks-Allais) preferences, with the individual marginal rates of substitution between the probability of living and consumption independent of the level of consumption; & (iii) if individual preferences satisfy the expected utility hypothesis, then consistency requires either that everyone prefers death to life at all consumption levels or that everyone is a risk-lover who strictly prefers life to death at all consumption levels (including zero).

Blad, Michael C.

TI On Learning and Divergence from Rational Expectations in an Overlapping Generations Model. AU Benassy, Jean Pascal; Blad, Michael C.

Blanchard, Olivier J.

PD December 1985. TI The Wage Price Spiral. AA Massachusetts Institute of Technology. SR National Bureau of Economic Research Working Paper: 1771; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 29. PR \$2.00. JE 134, 821, 130. KW Wage Price Spiral. AB This paper rehabilitates the old wage price spiral. It shows that, after an increase in aggregate demand, the process of adjustment of nominal prices and nominal wages results from attempts by workers to maintain or increase their real wage and by firms to maintain or increase their markups of prices over wages. Under continuous price and wage setting, the process of adjustment would be instantaneous; under staggering of price and wage decisions, the adjustment takes time. The more inflexible real wages and markups are to shifts in demand, the higher is the degree of price level inertia, and the longer lasting are the effects of aggregate demand on output.

PD December 1985. TI Monopolistic Competition, Aggregate Demand Externalities and Real Effects of Nominal Money. AU Blanchard, Olivier J.; Kiyotaki, Nobuhiro. AA Blanchard: M.I.T. Kiyotaki: Department of Economics, University of Wisconsin. SR National Bureau of Economic Research Working Paper: 1770; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 32. PR \$2.00. JE 023, 131. KW Imperfect Competition. Output Fluctuations. Monopolistic Competition. Aggregate Demand Externalities.

AB A long standing issue in macroeconomics is that of the relation of imperfect competition to fluctuations in output. In this paper we examine the relation between monopolistic competition and the role of aggregate demand in the determination of output. We first show that monopolistically competitive economies exhibit an aggregate demand externality. We then show that, because of this externality, small menu costs, that is small costs of changing prices, may lead to large effects of aggregate demand on output and on welfare.

Bloom, David E.

PD September 1985. TI Marriage Patterns in the United States. AU Bloom, David E.; Bennett, Niel G. AA Bloom: Department of Economics, Harvard University. Bennett: Department of Sociology, Yale University. SR National Bureau of Economic Research Working Paper: 1701; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 31. PR \$2.00. JE 841. KW Cohort Marriage Patterns. Rates of First Marriage.

AB This paper analyzes cohort marriage patterns in the United States in order to determine whether declining rates of first marriage are due to changes in the timing of marriage, the incidence of marriage, or both. Parametric models, which are well-suited to the analysis of censored or truncated data, are fit separately to information on age at

first marriage derived from three data sets which were collected independently and at different points in time. Extended versions of the models are also estimated in which the parameters of the model distributions are allowed to depend on social and economic variables. The results provide evidence that the incidence of first marriage is declining and that there is only a slight tendency for women to delay marriage. In addition, education is the most important correlate of decisions about the timing of first marriage whereas race is the most important correlate of decisions about its incidence.

PD September 1985. **TI** On the Nature and Estimation of Age, Period, and Cohort Effects in Demographic Data. **AA** Harvard University. **SR** National Bureau of Economic Research Working Paper: 1700; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 15. **PR** \$2.00. **JE** 841. **KW** Demographics. Period Effects. Cohort Effects. Age Effects.

AB This paper develops a general procedure for estimating age, period, and cohort effects in demographic data. The procedure involves structuring, mathematically, the effect of cross-cohort changes in the timing and level of a vital event on period rates of occurrence of the event. The procedure is illustrated and tested in an application to data on the first birth rates of American women. Overall, the empirical results provide support for the procedure. The results also provide evidence that period effects are highly age-specific and that the size of cohort effects may be substantially overestimated by models which fail to allow for the age specificity of period effects.

Boadway, Robin

PD December 2, 1985. **TI** A Calculation of Marginal Effective Tax Rates for the Canadian Mining Industry. **AU** Boadway, Robin; Bruce, Neil; McKenzie, Ken; Mintz, Jack. **AA** Boadway, Bruce and Mintz: Department of Economics, Queen's University. McKenzie: Department of Finance, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 633; Department of Economics, Queen's University, Kingston, Ontario, K7L 3N6 CANADA. **PG** 24. **PR** \$2.50 Canada; \$3 United States; \$3.50 Foreign. **JE** 323, 721. **KW** Effective Tax Rates. Canadian Mining Industry.

AB A model of investment decisions in a mining firm is constructed. The firm has a three-stage decision process consisting of an exploration stage, a development stage and an extraction stage. For each stage, an expression for the before-tax rate of return on expenditures is derived in the presence of corporate taxes and mining taxes. Using institutional and empirical data for Ontario and Quebec, marginal effective tax rates are computed for 1985 for firms in a tax-paying position. The tax system is found to subsidize exploration, processing and depletion, and to tax holdings of inventories and buildings.

Bodie, Zvi

PD October 1985. **TI** Defined Benefit Versus Defined Contribution Pension Plans: What are the Real Tradeoffs?. **AU** Bodie, Zvi; Marcus, Alan J.; Merton, Robert C. **AA** Bodie & Marcus: Boston University. Merton: Sloan School, MIT. **SR** National Bureau of

Economic Research Working Paper: 1719; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 35. **PR** \$2.00. **JE** 915, 918. **KW** Pension Plans.

AB Defined Benefit and Defined Contribution plans have significantly different characteristics with respect to the risks faced by employers and employees, the sensitivity of benefits to inflation, the flexibility of funding, and the importance of governmental supervision. In this paper, we examine some of the main tradeoffs involved in the choice between Defined Benefit and Defined Contribution plans. Our most general conclusion is that neither plan type can be said to wholly dominate the other from the perspective of employee welfare. The major advantage of Defined Benefit plans is the potential they offer to provide a stable replacement rate of final income to workers. If the replacement rate is the relevant variable for worker retirement utility, then Defined Benefit plans offered some degree of insurance against real wage risk. Of course, protection offered to workers is risk borne by the firm. As real wages change, funding rates must correspondingly adjust. However, to the extent that real wage risk is largely diversifiable to employers, and nondiversifiable to employees, the replacement rate stability should be viewed as an advantage of Defined Benefit plans. The advantages of Defined Contribution plans are most apparent during periods of inflation uncertainty. These are: the predictability of the value of pension wealth, the ability to invest in inflation-hedged portfolios rather than nominal Defined Benefit annuities, and the fully-funded nature of the Defined Contribution plan. Finally, the Defined Contribution plan has the advantage that workers can more easily determine the true present value of the pension benefit they earn in any year, although they may have more uncertainty about future pension-benefit flows at retirement. Measuring the present value of accruing defined benefits is difficult at best and imposes severe informational requirements on workers. Such difficulties could lead workers to misvalue their total compensation, and result in misinformed behavior.

Bohi, Douglas R.

PD April 1985. **TI** Futures Trading and Oil Market Conditions. **AU** Bohi, Douglas R.; Toman, Michael A. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-82DD; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 44. **PR** \$5.00 (United States funds only), prepaid. **JE** 022, 132, 723. **KW** Futures Markets. Inventories. Rational Expectations.

AB This paper examines how changes in oil market conditions affect the link between spot and futures prices for oil, and ways in which information about market conditions may be extracted from observations of futures trading. It is found that futures prices do not perform well as simplistic predictors of spot prices. A more sophisticated model of spot and futures prices is developed that emphasizes (1) the relationship between inventory demand and price behavior, and (2) the effect of supply shocks and inventory demand shocks on market performance. Comparison of the model's results with

actual behavior in the market for No. 2 Heating Oil indicates that futures market activity can be useful as a guide for understanding how a disturbance is affecting the market.

PD June 1985. **TI** Oil Supply Disruptions and the Role of the International Energy Agency. **AU** Bohi, Douglas R.; Toman, Michael A. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-82Y; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 25. **PR** \$5.00 (United States funds only), prepaid. **JE** 723, 423. **KW** Energy Security. International Cooperation.

AB The mutual gains from international cooperation in responding to an oil supply disruption are likely to be substantial, and the International Energy Agency has an important part to play in reaping these gains. However, both the thrust of the current IEA Agreement and ambiguities concerning key provisions limit its capacity to attain successful cooperation. To better achieve this goal, the primary focus of the Agreement should be shifted from targeted embargoes and burden-sharing to coordinated, market-oriented responses involving import demand restraint and stockpiling. The paper also emphasizes the role of the IEA in promoting an environment conducive to cooperation through harmonizing members' interests and expectations.

PD September 1985. **TI** Restructuring the IEA Crisis-Management Program to Better Serve Member Country Interests. **AU** Bohi, Douglas R.; Toman, Michael A. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-82EE; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 28. **PR** \$5.00 (United States funds only), prepaid. **JE** 723, 423. **KW** Energy Security. International Cooperation.

AB Starting from the premise that securing the gains from international energy cooperation requires a milieu in which positive action will be taken, not just a narrow economic analysis of benefits and costs, this paper examines ways in which the crisis-management system of the International Energy Agency (IEA) could be strengthened to better serve members' self-interests. The benefits of stockpile coordination are found to be potentially substantial but difficult to achieve because of disparities in members' interests. A "mixed" agreement is recommended, with primary emphasis on stockpiling by the United States and demand restraint by other IEA countries. Such an approach, while theoretically inferior to stockpile coordination, is more compatible with members' interests and thus capable of achieving success.

Bohn, Henning

TI Alternative Nonnested Specification Tests of Time Series Investment Models. **AU** Bernanke, Ben; Bohn, Henning; Reiss, Peter.

Borjas, George J.

PD June 1985. **TI** The Sensitivity of Labor Demand

Functions to Choice of Dependent Variable. **AA** UC Santa Barbara. **SR** National Bureau of Economic Research Working Paper: 1624; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** \$2.00. **JE** 824. **KW** Estimating Labor Demand Functions.

AB This paper investigates whether the parameters of labor demand functions are sensitive to alternative methods of estimation. The assumption that the production technology is of the Generalized Leontief type implies that the demand system can be estimated by analyzing cross-section differences in earnings across labor markets, by studying longitudinal changes in earnings within a labor market, or by investigating cross-section differences in labor force participation rates across labor markets. The estimation of these models on the 1970 and 1980 Public Use Samples from the United States Census reveals that the estimates of labor demand functions are indeed quite robust to major specification changes.

Boskin, Michael J.

PD June 1985. **TI** Public Debt and United States Saving: A New Test of the Neutrality Hypothesis. **AU** Boskin, Michael J.; Kotlikoff, Laurence J. **AA** Boskin: National Bureau of Economic Research, Stanford, CA. Kotlikoff: Boston University. **SR** National Bureau of Economic Research Working Paper: 1646; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 39. **PR** \$2.00. **JE** 023. **KW** United States Savings Rate. Age Distribution of Resources. Aggregate Consumption. Government Debt Policy.

AB The substantial post war decline in the United States saving rate has added great impetus to the debate over whether public debt policy crowds out saving. Rather than attempting to reject specific saving models, empirical research on debt policy and savings has primarily focused on the impact of particular policy variables on savings. In this paper we examine Barro's infinite horizon, intergenerationally altruistic model. A distinguishing feature of this model is that aggregate consumption depends only on collective resources and not the age distribution of resources. To test this proposition we specify the Barro model under earnings uncertainty, rate of return uncertainty, and demographic change and test whether, given the level of consumption predicted by this model, variables measuring the age distribution of resources influence actual consumption. Data on the age distribution of resources are primarily obtained from the annual Current Population Surveys. Our results imply a rejection of the hypothesis that aggregate consumption is independent of the age distribution of resources. They therefore cast doubt on the contention that government debt policy does not affect consumption and saving.

PD November 1985. **TI** Changes in the Age Distribution of Income in the United States, 1968-1984.

AU Boskin, Michael J.; Kotlikoff, Laurence J.; Knetter, Michael. **AA** Boskin: National Bureau of Economic Research, Stanford. Kotlikoff: National Bureau of Economic Research, Cambridge. Knetter: Stanford University. **SR** National Bureau of Economic Research Working Paper: 1766; National Bureau of Economic

Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 46. PR \$2.00. JE 921. KW Age Distribution of Income. Social Security Income.

AB Among the interesting changes in the United States economy in recent years have been the substantial changes in the age distribution of income and its components. These changes are interesting in and of themselves, but also are an important background against which to interpret aggregate economic statistics. In this paper we present detailed data on both the shares of income, and the relative income per household, of households headed by persons of different ages. These data are supplemented by analogous data for the various components of income: earnings, property income, Social Security, unemployment insurance, welfare, and pensions. These data are tabulated from 17 years of the annual Current Population Surveys (CPS). Among the most interesting trends are the dramatic increase in the share of income received by households over the age of 65 and also in their relative incomes; the enormous growth in the absolute and relative contribution of Social Security income to the incomes of households 55-64, and 65 and over; the sharp decrease in the share of total earnings and of the relative earnings of these two most elderly cohorts; and swings in the shares of total income of the other age cohorts which reflect in part changes in the numbers of persons in households of different ages, e.g., due to the aging of the baby-boom generation.

PD December 1985. **TI** New Estimates of Federal Government Tangible Capital and Net Investment. **AU** Boskin, Michael J.; Robinson, Marc S.; Roberts, John M. **AA** Boskin and Roberts: Stanford University. Robinson: University of California Los Angeles. **SR** National Bureau of Economic Research Working Paper: 1774; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 47. **PR** \$2.00. **JE** 322. **KW** National Savings Rate. Government Capital Formation. Government Investment. **AB** Government capital formation raises a number of issues important to national economic well-being, yet the United States, unlike most advanced countries, does not account for capital in its formal budget documents. We estimate depreciation of government capital using a methodology developed by Hulten and Wykoff which is based on used asset price data. We estimate a federal government net nonresidential capital stock of over \$800 billion in 1984, more than 20 per cent higher than estimated by the BEA. We also find much larger net federal investment since World War II than the BEA. The behavior of military and civilian structures and equipment is also examined. We analyze the potential importance of these results for measuring the net national savings rate, national wealth, the trend in government capital formation relative to private capital formation, and the relationship between net investment and deficits.

Boyer, Robert

PD July 1985. **TI** Les Approches en Terme de Regulation: Presentation et Problemes de Methode (The "Regulation" Approach: Key Concepts and Methods). **AA** CEPREMAP And CNRS. **SR** CEPREMAP Discussion Papers: 8523; CEPREMAP, 142, rue du

Chevaleret, 75013 PARIS, FRANCE. **PG** 78. **PR** 20 **FF**. **JE** 050, 111. **KW** Economic History. Economic Systems. Growth. Capitalist Crises.

AB The term refers to the balance of social and institutional forces which characterise at a particular time, the economic pattern and dynamics of a given system. It should not be confused with the English term regulation, since public interventions are only a part of "regulation" in the French meaning. The aim is to provide comparative analysis and historical background to contemporary economic mechanisms. A whole set of interrelated notions is defined: accumulation regime, institutional form, labor wage nexus (for "rapport salarial"), and various crises from cyclical to structural. The research usually combines historical and institutional studies with statistical data analysis and macro-modelling. Various appendixes give a summary of the main accumulation regimes and "regulation" modes, a chronology, a series of definitions and a selected bibliography.

PD September 1985. **TI** Flexibilites des Marches Du Travail. Et/ou Recherche D'un Nouveau Rapport Salarial?. **AA** CEPREMAP And CNRS. **SR** CEPREMAP Discussion Papers: 8522; CEPREMAP, 142, rue du Chevaleret, 75013 PARIS, FRANCE. **PG** 113. **PR** 30 **FF**. **JE** 821, 832, 023. **KW** Collective Bargain-up. Labour Market. Flexibility. Industrial Relations. Stability.

AB The paper summarizes an international comparative study about the changing industrial relations and labor markets in Europe since 1973. First a survey of the literature on flexibility shows the huge discrepancies in the various meanings of this term and a lack of any firm theoretical basis. Moreover, the available econometric studies conclude contradictory effects on employment level. So a more general analysis of the links between firms' and unions' strategies and macroeconomic stability is needed. A very simple model suggests that a greater sensitivity of wages benefits from the employment at the micro level, but may destabilize the whole macroeconomic system. Then, various trends in the labor wage nexus ("rapport salarial") are examined: a renewal of fordist methods, flexible automation, a deepening of national forms of labour market segmentation and so on. Finally, five scenarii are discussed, the more likely leading to two (or much more) tier labor contracts.

PD November 1985. **TI** New Technologies and Employment in the Eighties. From Science and Technology to Macroeconomic Modelling. **AA** CEPREMAP And CNRS. **SR** CEPREMAP Discussion Papers: 8526; CEPREMAP, 142, rue du Chevaleret, 75013 PARIS, FRANCE. **PG** 41. **PR** 10 **FF**. **JE** 621, 023, 821. **KW** Technological Change. Employment. Crisis. Flexible Automation. Diffusion.

AB First the likely breaking-down of the post W.W. II technological system is shown by a qualitative analysis as well as by some statistical tests. It is then suggested that the relationship between new technologies and job opportunities is changed with respect to the Sixties. Conventional macroeconomic theories seldom consider new technologies by themselves and moreover have no clear cut conclusions. On the contrary, Science and Technology studies usually get very precise results but do not derive

any results about total employment. Hence, a very simple sectoral model is built, which exhibits the complexities of the factors which determine the employment level, and the crucial role of wage formation. The effects of the same technological change may be negative or positive according to the mechanisms of productivity diffusion (relative prices, wage differentiation, & average wage increases). Finally, the paper presents a balanced view about the impact of flexible automation as a way out of mass unemployment. Two types of flexibility are opposed, one with only short run and microeconomic effects, the other with a significant change in the long run law of returns and therefore job opportunities.

Bradford, David F.

PD October 1985. **TI** A Problem of Financial Market Equilibrium When the Timing of Tax Payments is Indeterminate. **AA** Woodrow Wilson School, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1713; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 19. **PR** \$2.00. **JE** 322, 323. **KW** Dividend Taxes. Neutrality Conditions. Financial Market Equilibrium.

AB If firms are indifferent about the timing of dividends, the government's cash flow from taxes on dividends is indeterminate. In an earlier paper, I showed in the context of a world without uncertainty that variations in tax receipts from this source would have no real effects. The extension of the analysis to a world of risk turns out to involve new elements that may be of some general interest. In particular, the conditions for neutrality seem less likely to be fulfilled in a practical context.

Brander, James A.

PD July 1985. **TI** Bankruptcy Costs and the Theory of Oligopoly. **AU** Brander, James A.; Lewis, Tracy R. **AA** Brander: Department of Commerce, University of British Columbia. Lewis: Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 85-30; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C., Canada, V6T 1Y2. **PG** 32. **PR** \$.20 per page Canadian to other than educational institutions. **JE** 521, 022. **KW** Bankruptcy Costs. Debt Obligations. Financial Structure of the Firm. Oligopoly. Financial Decisions. Output Decisions.

AB This paper examines the relationship between financial decisions and output decisions in oligopolistic markets. Assuming a duopoly market structure in which financial decisions and output decisions follow in sequence, we analyze how bankruptcy costs which are incurred when the firm is unable to meet current debt obligations affect the firm's behaviour in output markets. With fixed bankruptcy costs firms have an incentive to increase output levels if they take on more debt. Proportional bankruptcy costs lead to a U-shaped relationship between output and debt. We argue that foresighted owners of firms are likely to consider the strategic output effects of financial structure when considering an optimal financial structure for the firm.

Branson, William H.

PD December 1985. **TI** Expected Fiscal Policy and the Recession of 1982. **AU** Branson, William H.; Fraga, Arminio; Johnson, Robert A. **AA** Branson, Fraga: Woodrow Wilson School, Princeton University. Johnson: Board of Governors, Federal Reserve System. **SR** National Bureau of Economic Research Working Paper: 1784; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 31. **PR** \$2.00. **JE** 321. **KW** Economic Recovery Tax Act. Expectations Dynamics. Anticipatory Recession. Fiscal Policy. Tax Cut.

AB The Economic Recovery Tax Act of 1981 had one aspect that is unusually useful for economic analysis. It provided an example of a clear-cut announcement of future policy actions at specified dates. This provides an opportunity to apply recent advances in the analysis of expectations dynamics to data that have been generated in an environment that includes such announced and anticipated policy action. A three-stage future tax cut was announced in the Tax Bill in March 1981. In a Keynesian model with liquidity-constrained consumers or investors, or with uncertainty, this would normally be expected to provide a stimulus to the economy when the tax cuts actually appear. But the financial markets could look ahead to the stimulus and the shift in the high-employment deficit brought about by the tax cuts, and their implications for bond prices and interest rates. In this paper we argue that this happened during the first half of 1981. As market participants came to understand that the tax and budget actions of March 1981 implied a future shift of the high-employment -now "structural" -- deficit by some 5 percent of Gross National Product, they revised their expectations of future real interest rates upward. This caused a jump in real long-term rates then, in 1981. And, it also caused a sudden and unanticipated real appreciation of the dollar at the same time. The jump in real long-term interest rates and the dollar appreciation in the first half of 1981 were essential features of the recession that began in July 1981. This paper points out the possibility of a purely anticipatory recession. If the only policy action had been the fiscal announcement, and if goods markets are "Keynesian" but financial markets are forward-looking, the announcement can cause a recession, which will end when the actual fiscal action begins to stimulate the economy. In the actual context of 1981, a shift toward monetary tightness also contributed to the recession.

PD December 1985. **TI** The Dynamic Interaction of Exchange Rates and Trade Flows. **AA** Woodrow Wilson School, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1780; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 30. **PR** \$2.00. **JE** 431. **KW** Exchange rate determination. Fundamentals Model. Rational Expectations.

AB During the fifteen years since 1970, the theory of exchange-rate determination has been completely transformed. In the late 1960s, the standard model of the foreign exchange market had supply and demand as stable functions of exports and imports, with the expectation that a floating rate would move gradually with relative price

changes. However, the period of floating rates that began in the early 1970s has revealed that exchange rates exhibit the volatility of financial market prices. This experience, coupled with development of theory, led first to the "monetary" approach to exchange rate determination and then to the "asset market" approach. The monetary approach to exchange rate determination had essentially one-way causation from money to exchange rates, sometimes via purchasing power parity. The broader asset market approach assumes two-way causation. The exchange rate, in the asset-market view, is proximately determined by financial-market equilibrium conditions. It, in turn, influences the trade balance and the current account. The latter, in its turn, is the rate of accumulation of national claims on foreigners, and this feeds back into financial market equilibrium. Thus the asset market approach contains a dynamic feedback mechanism in foreign assets and exchange rates. This approach is called here a "fundamentals" model of exchange rate dynamics. Recent work on rational expectations adds a layer of expectations to the model. It is assumed that following an unexpected disturbance the market can anticipate where the fundamentals will move the system, and move the exchange rate in anticipation of that fundamentals path. This paper integrates the traditional elasticities and absorption approaches into the general equilibrium fundamentals model, and then adds the expectations layer. The model is used to interpret recent shifts in United States fiscal policy and portfolio preferences for the dollar.

PD December 1985. **TI** Causes of Appreciation and Volatility of the Dollar. **AU** Branson, William H.; Frenkel, Jacob A. **AA** Branson: Woodrow Wilson School, Princeton University. Frenkel: Department of Economics, University of Chicago. **SR** National Bureau of Economic Research Working Paper: 1777; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 18. **PR** \$2.00. **JE** 321, 311. **KW** Dollar Appreciation. Deficit Financing. Government Deficit.

AB In 1981, real interest rates in the United States increased spectacularly, and the dollar appreciated in real terms by about 20 per cent. Since the end of 1981, long-term real interest rates have remained in the range of 5-10 per cent, with nominal long rates above short rates. The dollar appreciated further, but more gradually, until early 1985. This paper argues that these movements in real interest rates and the real exchange rate are due to the shift in the high-employment deficit by some \$200 billion that was announced in the 1981 budget program. This requires an increase in real interest rates and a real appreciation to generate the sum of excess domestic saving and foreign borrowing to finance it. The argument is a straightforward extension of the idea of "crowding out" at full employment to an open economy. The current situation is not sustainable, however. Eventually international investors will begin to resist further absorption of dollars into their portfolios, so United States interest rates will have to rise further, as the markets seem to expect, and the dollar will have to depreciate. This will continue until the current account is back in approximate balance, and the entire load of deficit financing is shifted to excess United States saving. In his comments on

Branson's paper, Jacob A. Frenkel discusses additional factors that have contributed to the evolution of the dollar since 1980. He concludes that in addition to United States fiscal policies, monetary policy in the United States and the fiscal position of the United Kingdom, West Germany and Japan have also contributed to the dollar's strength.

Broadman, Harry G.

PD April 1984. **TI** The Social Cost of Imported Oil. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-82C; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 25. **PR** \$5.00 (United States funds only), prepaid. **JE** 723, 421, 024. **KW** Oil Imports. Energy Security. Tariff Policy.

AB This paper analyses the social cost of imported oil from both a theoretical and empirical perspective. An analytical framework of the oil import premium -- the difference between social and private marginal cost of imported oil -- is developed. It is argued that there are two components to the premium, (i) the long-run effect of changes in import demand on the world oil price, and (ii) the external costs of an oil supply disruption as related to changes in oil use. Moreover, it is posited that, in general, these two components are interrelated. Using this analytical framework as a reference point, an evaluation of quantitative estimates of the premium is then presented. The estimates span a wide range, from near zero to well over \$100 per barrel, and are shown to be highly sensitive to behavioral assumptions about the world oil market. The article concludes by noting that an oil import fee of \$5 to \$10 per barrel is the best policy instrument to capture the first component of the premium, and a strategic petroleum reserve is the best policy instrument to capture the second component.

PD May 1984. **TI** Elements of Market Power in the Natural Gas Industry and the Role of Private Carriage. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-92G; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 25. **PR** \$5.00 (United States funds only), prepaid. **JE** 610, 723. **KW** Market Power. Pipeline Regulation. Natural Gas.

AB This paper explores the sources of market power under the regime of private carriage as practiced in the natural gas pipeline industry. A broad conceptual framework for analyzing competition in pipeline receiving and delivery markets is developed, building on concepts in the literature on industrial organization and on stylized facts about such markets. In addition, available empirical evidence on the extent of concentration in pipeline receiving and delivery markets is presented. While some markets appear to be plagued by either a high degree of seller or buyer concentration, there is little reason to believe that structural monopoly or monopsony power is industrywide. Moreover, the evidence indicates that the typical receiving or delivery market is not structured as a pure monopoly or a pure monopsony. Rather these markets appear to have a bilateral oligopolistic structure.

PD July 1985. **TI** Non-Price Provisions in Long-Term Natural Gas Contracts. **AU** Broadman, Harry G.; Toman, Michael A. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-92F; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 24. **PR** \$5.00 (United States funds only), prepaid. **JE** 610, 723. **KW** Long-Term Contracts. Transaction Costs. Natural Gas.

AB This paper examines the relationship between current rigidities and inefficiencies in natural gas markets and the principal "non-price" provisions in long-term wellhead supply contracts. We argue that the presence of non-price terms is endemic to natural gas markets because they provide vital functions in reducing transactions costs and allocating risks associated with long-term contracting in such markets. However, the incidence of these terms in prevailing contracts, and thus the magnitude of current rigidities, stem from pent-up excess demand in the 1970s under field price controls. An important policy implication is that legislative "quick fixes" of the natural gas "contracts problem" may carry hidden costs and yield comparatively modest benefits. Instead, more fundamental changes are required to achieve greater flexibility in field market transactions. Private initiatives will accomplish much of this adjustment, but some governmental action also is required.

PD November 1985. **TI** Competition in Natural Gas Pipeline Wellhead Supply Purchases. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: EM 85-05; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 44. **PR** \$5.00 (United States funds only), prepaid. **JE** 723, 632. **KW** Market Concentration. Natural Gas.

AB This paper develops a conceptual framework for analyzing several of the principal determinants of the prices pipelines pay for gas in field market transactions and presents results from some empirical tests of the hypotheses implied by the framework. The empirical results suggest that in field markets characterized by relatively high levels of buyer concentration, pipeline market power appears to be exercised. In contrast, in field markets characterized by relatively high levels of seller concentration, producers do not appear to exercise market power. The results further suggest that the prices paid by a pipeline in the field are related to the elasticity of demand for gas in its downstream markets; that pipelines endowed with relatively large cushions of regulated, "old" gas tend to pay relatively high prices for deregulated, "high cost" gas; that prices paid by vertically integrated pipelines to affiliated producers are not different than those paid to non-affiliated producers; and that integrated pipelines do not appear to be deliberately paying relatively high prices to non-affiliated producers in order to be able to pay similarly high prices to affiliated producers.

Brown, Charles

PD October 1985. **TI** Standard-Rate Wage Setting; Labor Quality, and Unions. **AA** University of Michigan

at Ann Arbor. **SR** National Bureau of Economic Research Working Paper: 1717; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 5. **PR** \$2.00. **JE** 821, 831. **KW** Union Standard-Rate Policies. Standard Rate Wage Setting. Labor Quality.

AB "Standard rate" wage policies, under which all workers in a particular job receive the same wage, are common for blue-collar workers, especially those covered by collective bargaining agreements and those who work for large employers. This paper analyzes the impact of standard-rate wage setting. There are two important conclusions. First, a standard-rate rule which leaves the employer free to set the rate can either increase or reduce the quality of labor hired. Given empirically likely distributions of alternative wages for workers, it pushes employers toward the middle of the quality distribution. Second, union standard-rate policies allow union-nonunion differences in wages for workers of a given quality to exist even when union employers are free to alter the quality of their workforces.

PD October 1985. **TI** Assistance to the Poor in a Federal System. **AU** Brown, Charles; Oates, Wallace E. **AA** Brown: University of Michigan at Ann Arbor. Oates: University of Maryland at College Park. **SR** National Bureau of Economic Research Working Paper: 1715; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 39. **PR** \$2.00. **JE** 911, 914. **KW** Government Assistance to the Poor.

AB This paper explores the roles of different levels of government in assisting the poor. Using a model with utility interdependence, the paper presents some theoretical results on how levels of poor relief vary with the extent of mobility of the poor under both centralized and decentralized systems of support. After surveying the relevant empirical work and the experience under the English Poor Laws, the paper argues for a basic role for central government in this function.

Bruce, Neil

TI A Calculation of Marginal Effective Tax Rates for the Canadian Mining Industry. **AU** Boadway, Robin; Bruce, Neil; McKenzie, Ken; Mintz, Jack.

Bruno, Michael

PD September 1985. **TI** Aggregate Supply and Demand Factors in OECD Unemployment: An Update. **AA** Hebrew University, Mount Scopus, Jerusalem. **SR** National Bureau of Economic Research Working Paper: 1696; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 38. **PR** \$2.00. **JE** 122. **KW** OECD Countries. Wage Gaps. Unemployment.

AB The paper analyzes the change in unemployment in 12 OECD countries over the period 1970-83 in terms of underlying aggregate supply and demand shifts. Earlier evidence on wage gaps (given by Bruno and Sachs) is revised and extended. For most European countries a process of reduction in gaps is taking place in the 1980's, but the average absolute levels, when weighted by country size, are still sizeable, thus a 'classical' element of

unemployment remains. However, most of the large additional increase in unemployment after 1980 (as well as the profit squeeze and investment slowdown) is ascribed to the contractionary stance of macro policy in Europe, in contrast to the subsequent expansion and sharp fall of unemployment in the United States. The large United States deficit coupled with monetary restraint and the resulting dollar appreciation also account for the sharp difference in the behavior of import prices in the United States and Europe which in turn may explain the considerably slower inflation deceleration in Europe and the reluctance to expand activity more rapidly.

Bubnys, Edward

TI Conditional and Unconditional Heteroscedasticity in the Market Model. AU Bera, Anil; Bubnys, Edward; Park, Hun.

Buiter, Willem H.

PD November 1985. TI Macroeconomic Policy Design in an Interdependent World Economy: An Analysis of Three Contingencies. AA Economic Growth Center, Yale University. SR National Bureau of Economic Research Working Paper: 1746; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 47. PR \$2.00. JE 423, 023. KW Macroeconomic Policy Coordination. International Economic Interdependence. United States Dollar Collapse.

AB The paper uses a small analytical two-region (the United States and the Rest of the Industrial World) model, to analyze three issues concerning international economic interdependence and macroeconomic policy coordination that have been raised in connection with the September 1985 World Economic Outlook published by the International Monetary Fund. They are: (1) What should be the monetary and/or fiscal response in the Rest of the Industrial World to a tightening of United States fiscal policy and what should be the United States monetary response? (2) What should be the monetary and/or fiscal response in the United States and in the Rest of the Industrial World to a "collapse of the United States dollar?" The paper highlights the importance of determining the causes of such a "hard landing" for the United States dollar, as the appropriate policy responses are very sensitive to this; (3) What should be the macroeconomic policy response in the Industrial World to a disappointing real growth performance? Again the correct identification of the reason(s) for the disappointment is shown to be crucial. The final section discusses and qualifies the activist policy conclusions derived from the formal analysis.

PD November 1985. TI A Fiscal Theory of Hyperdeflations? Some Surprising Monetarist Arithmetic. AA Economic Growth Center, Yale University. SR National Bureau of Economic Research Technical Paper: 52; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 134, 311. KW Hyperdeflations.

AB The note mines an unsuspected lode in the Sargent-Wallace "Unpleasant Monetarist Arithmetic" deposit. While that model is shown to be incapable of generating

hyperinflations as a result of large monetized public sector deficits, it can generate hyperdeflations or perhaps more accurately, the first stages of an unsustainable process of hyperdeflation. The drawing of policy conclusions is left as an exercise for the reader.

Bulow, Jeremy I.

PD July 1985. TI A Theory of Dual Labor Markets with Application to Industrial Policy, Discrimination and Keynesian Unemployment. AU Bulow, Jeremy I.; Summers, Lawrence H. AA Bulow: University of Chicago. Summers: Harvard University. SR National Bureau of Economic Research Working Paper: 1666; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 49. PR \$2.00. JE 821, 917, 616. KW Involuntary Unemployment. Dual Labor Markets. Labor Market Phenomena. Industrial Policy. Discrimination.

AB This paper develops a model of dual labor markets based on employers' need to motivate workers. In order to elicit effort from their workers, employers may find it optimal to pay more than the going wage. This changes fundamentally the character of labor markets. The model is applied to a wide range of labor market phenomena. It provides a coherent framework for understanding the claims of industrial policy advocates. It also can provide the basis for a theory of occupational segregation and discrimination which will not be eroded by market forces. Finally, the model provides the basis for a theory of involuntary unemployment.

Calomiris, Charles W.

PD November 1985. TI Price Flexibility, Credit Rationing, and Economic Fluctuations: Evidence from the United States, 1879-1914. AU Calomiris, Charles W.; Hubbard, R. Glenn. AA Department of Economics, Northwestern University. SR National Bureau of Economic Research Working Paper: 1767; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 49. PR \$2.00. JE 131, 134. KW Price Flexibility. Deflation. Credit Rationing. Output Fluctuations.

AB The reawakening of interest in links between price flexibility and fluctuations in economic activity calls for a reconsideration of models of price and quantity adjustment. We examine relationships between credit disturbances and real activity under flexible prices, using monthly data on real and financial variables over the period from 1879-1914. Recent theoretical and empirical work has focused on models and institutions of the post World War II period. Historical episodes of pronounced business cycles, however, challenge our present formulations of the causes of fluctuations in output and employment. In this paper we pursue two goals: (i) to demonstrate that substantial price flexibility existed during the period to point out that models of economic fluctuations relying on sticky prices are not appropriate for analyzing the period, and (ii) to consider the effects of deflationary shocks on real variables in such a world. Our principal findings are two. First, we present evidence from several empirical tests to corroborate the stylized fact of price flexibility during our period of study (relative to patterns of flexibility observed in postwar data). Contrary

to conclusions of many models applied to postwar data, we find that shocks to inflation rates produce positive and persistent effects on output. Second, extending earlier examinations of credit rationing as an outcome under imperfect information, we motivate this link by considering the impact of deflation on credit availability. The addition of measures of credit rationing accompanying deflation contributes substantially to our empirical explanation of output fluctuations during the period.

Campbell, John Y.

PD June 1985. TI Stock Returns and the Term Structure. AA Department of Economics, Princeton University. SR National Bureau of Economic Research Working Paper: 1626; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 313. KW Term Structure of Interest Rates. Stock Returns. Latent Variable Asset Pricing Models. Conditional Variances.

AB It is well known that in the postwar period stock returns have tended to be low when the short term nominal interest rate is high. In this paper I show that more generally the state of the term structure of interest rates predicts stock returns. Risk premia on stocks appear to move closely together with those on 20-year Treasury bonds, while risk premia on Treasury bills move somewhat independently. Average returns on 20-year bonds have been very low relative to average returns on stocks. I use these observations to test some simple asset pricing models. First I consider latent variable models in which betas are constant and risk premia vary with expected returns on a small number of unobservable hedge portfolios. The data strongly reject a single-latent-variable model. The last part of the paper examines the relationship between conditional means and variances of returns on bills, bonds and stocks. Bill returns tend to be high when their conditional variance is high, but there is a perverse negative relationship between stock returns and their conditional variance. A model is estimated which assumes that asset returns are determined by their time-varying betas with a fixed-weight "benchmark" portfolio of bills, bonds and stocks, whose return is proportional to its conditional variance. This portfolio is estimated to place almost all its weight on bills, indicating that uncertainty about nominal interest rates is important in pricing both short- and long-term assets.

PD December 1985. TI Money Announcements, the Demand for Bank Reserves and the Behavior Of the Federal Funds Rate Within the Statement Week. AA Economics Department, Princeton University. SR Princeton Financial Research Center Memorandum: 65; Financial Research Center, Department of Economics, Princeton University, Princeton, NJ 08544. PG 22. PR \$2.00. JE 311, 312. KW Federal Funds Rate. Money Announcements. Bank Reserves.

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.

Campbell, Robert B.

PD September 1985. TI An Analysis of the Stabilizing and Welfare Effects of Intervention in Spot and Futures Markets. AU Campbell, Robert B.; Turnovsky, Stephen J. AA Campbell: OEPA Council, Australia. Turnovsky: University of Illinois at Urbana-Champaign. SR National Bureau of Economic Research Working Paper: 1698; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 52. PR \$2.00. JE 024, 313. KW Spot Market Intervention. Futures Market Intervention. Futures Market. Spot Market.

AB This paper analyzes the effects of three alternative rules on the long-run distributions of both the spot and futures prices in a single commodity market, in which the key behavioral relationships are derived from the optimizing behavior of producers and speculators. The rules considered include: (i) leaning against the wind in the spot market; (ii) utility maximizing speculative behavior by the stabilization authority in the futures market; (iii) leaning against the wind in the futures market. Since the underlying model is sufficiently complex to preclude analytical solutions, the analysis makes extensive use of simulation methods. As a general proposition we find that intervention in the futures market is not as effective in stabilizing either the spot price or the futures price as is intervention in the spot market. Indeed, Rule (iii), while stabilizing the futures price may actually destabilize the spot price. Furthermore, the analogous type of rule undertaken in the spot market will always stabilize the futures price to a greater degree than it does the spot price. The welfare implications of these rules are also discussed. Our analysis shows how these can generate rather different distributions of welfare gains, including the overall benefits.

Capalbo, Susan

PD November 1985. TI Testing Long-Run Productivity Models for the Canadian and United States Agricultural Sectors. AU Capalbo, Susan; Denny, Michael. AA Capalbo: Resources for the Future. Denny: Department of Economics, University of Toronto. SR National Bureau of Economic Research Working Paper: 1764; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 37. PR \$2.00. JE 711, 712. KW Agricultural Productivity. Hicks-Neutral Growth. Real-Value Added.

AB This paper discusses a portion of our work linking data on the agriculture sector in the United States and Canada. The purpose of this work is to explore the evolution of gains in agricultural productivity in the two countries during the post-WWII period. Comparable data has been developed for each country and a series of tests have been applied about the nature of the long-run production sector. These tests are designed to evaluate the alternate possible structures of shifts in the long-run

technology over time. There is considerable evidence in both countries that long-run shifts have been Hicks Neutral in models that use gross, not net, output measures. The reverse is true for the net output models. The use of the conventional net output measures is strongly rejected. However there is evidence, in both countries, in support of the hypothesis that separability of a type that is similar to, but weaker, than real-value added is not rejected.

Card, David

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

Carruth, Alan A.

PD December 1985. TI A Test of A Model of Trade Union Behaviour: the Coal and Steel Industries in Britain. AU Carruth, Alan A.; Oswald, Andrew J.; Findlay, Lewis. AA Carruth: Darwin College University of Kent. Findlay: Centre for Labour Economics, London School of Economics. Oswald: University of Oxford. SR London School of Economics, Centre for Labour Economics Discussion Paper: 238; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UK. PG 35. PR No Charge. JE 831, 832. KW Wages. Unions. Employment. Steel. Coal. AB The paper uses British steel and coal data to test the 'flat indifference curve' (FIC) model of union behaviour. The model is rejected. Various reduced-form elasticities are also calculated. One of the conclusions is that the aggregate unemployment elasticity of real wages appears to be very small.

Carter, R. A. L.

TI Nonparametric Inference in Econometrics. AU Singh, Radhey S.; Ullah, Aman; Carter, R. A. L.

Chaloupka, Frank

TI A Multinomial Logistic Approach to the Labor Force Behavior of Japanese Married Women. AU Yamada, Tadashi; Yamada, Tetsuji; Chaloupka, Frank.

Chirinko, Robert S.

PD August 1985. TI Hidden Stimuli to Capital Formation: Debt and the Incomplete Adjustment of Financial Returns. AU Chirinko, Robert S.; King, Stephen R. AA Chirinko: University of Chicago. King: Stanford University. SR National Bureau of Economic Research Working Paper: 1684; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 31. PR \$2.00. JE 023. KW Incomplete Adjustment of Financial Returns. Capital Formation. Role of Debt. AB There is a common belief that the disappointing economic performance in the 1970s can be attributed in good part to the interaction of tax rules, inflation, and capital formation. In this paper, we reassess the relationships between inflation, the tax code, and investment incentives because previous results are based on a number of tenuous assumptions whose impact has not been fully appreciated. We also question the appropriateness of the conventional user cost formulation,

and derive an alternative measure taking explicit account of the role of debt -- acquisition, retirement, and net-of-tax interest payments -- and the equityholders' ownership of the firm. Our numerical results show that previously reported disincentives for acquiring capital goods in general and against longer-lived capital in particular are attenuated, and in a number of cases reversed, under various sets of assumptions. Differences in results stemming from the conventional and modified user costs are highlighted, and are illustrated by a comparison of the United States Treasury's tax reform proposals under the two formulations.

PD September 1985. TI The Ineffectiveness of Effective Tax Rates on Business Investment. AA University of Chicago. SR National Bureau of Economic Research Working Paper: 1704; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 38. PR \$2.00. JE 522, 323, 022. KW Non-Neutral Tax Rules. Business Investment. Capital Formation.

AB In his Fisher-Schultz Lecture, Martin Feldstein examined the effects of non-neutral tax rules on business investment by estimating three econometric models, and he concluded that "the rising rate of inflation has, because of the structure of existing United States tax rules, substantially discouraged investment in the past 15 years." In a detailed examination of Feldstein's Effective Tax Rate model and a less extensive review of his other formulations (Neoclassical and Return-Over-Cost models), a number of important and independent criticisms are advanced. Our results from examining all three models suggest strongly that taxes have not adversely affected capital formation during the recent episode of inflation, a conclusion consistent with the relatively robust levels of net investment between 1965 and 1981 actually shown in the newly benchmarked National Income data.

Chismar, William

PD October 1985. TI A Criticism of Information Systems Research Employing "User Satisfaction." AU Chismar, William; Kriebel, Charles; Malone, Nancy. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 24; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 026. KW Information Systems Research. User Satisfaction. AB The notion of a user's satisfaction with an information system has been widely proposed and accepted by many as an output variable to measure system effectiveness and implementation success. In this paper we assess information systems research employing "user satisfaction," and investigate its credibility as a performance criterion in juxtaposition to relevant basic research from underlying disciplines. Despite the popularity of the user satisfaction construct, we conclude the following: the construct remains ambiguously defined, is devoid of theoretical support, and its proposed application as a criterion for evaluation is suspect. In particular, there is no sound basis for employing the construct either as a surrogate for system effectiveness or

system implementation success. Alternative approaches to the central issues and a revision of information systems research priorities in the area are discussed.

Chung, Alan

TI Aggregate Output with Operating Rates and Inventories as Buffers Between Variable Final Demand and Quasi-Fixed Factors. AU Helliwell, John F.; Chung, Alan.

Chvatal, Vasek

TI On the maximum-weight clique problem. AU Balas, Egon; Chvatal, Vasek; Nesetril, Jaroslav.

Clark, Robert L.

TI Unions, Pension Wealth, and Age-Compensation Profiles. AU Allen, Steven G.; Clark, Robert L.

Cohen, Daniel

PD September 1985. TI Growth and External Debt under Risk of Debt Repudiation. AU Cohen, Daniel; Sachs, Jeffrey. AA Cohen: CEPREMAP. Sachs: National Bureau of Economic Research, Cambridge, MA. SR National Bureau of Economic Research Working Paper: 1703; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 45. PR \$2.00. JE 443. KW Debt Repudiation. Foreign Debt.

AB We analyze the pattern of growth of a nation which borrows abroad and which has the option of repudiating its foreign debt. We show that the equilibrium strategy of competitive lenders is to make the growth of the foreign debt contingent on the growth of the borrowing country. We give a closed-form solution to a linear version of our model. The economy, in that case, follows a two-stage pattern of growth. During the first stage, the debt grows more rapidly than the economy. During the second stage, both the debt and the economy grow at the same rate, and more slowly than in the first stage. During this second stage, the total interest falling due on the debt is never entirely repaid; only an amount proportional to the difference of the rate of interest and the rate of growth of the economy is repaid each period.

Conrad, Klaus

PD November 1985. TI The Impact of Pollution Abatement Investment on Productivity Change: An Empirical Comparison of the United States, Germany, and Canada. AU Conrad, Klaus; Morrison, Catherine J. AA Conrad: University of Mannheim, West Germany. Morrison: Department of Economics, Tufts University. SR National Bureau of Economic Research Working Paper: 1763; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 30. PR \$2.00. JE 722, 631, 613. KW Productivity Growth. Pollution Regulation. Pollution Abatement Capital.

AB It has often been asserted that imposition of environmental regulations in the 1970's may be a partial explanation for the productivity growth slowdowns experienced by most industrialized countries during that decade. The contention is that expenses incurred to satisfy these regulations, such as investment in pollution

abatement capital, is unproductive in terms of measured output. Thus conventional productivity measures will be biased downward when such regulations are imposed. In this paper we construct a model which explicitly recognizes the difference between pollution abatement capital and "productive" capital and then use this framework to develop an adjustment to nonparametric measures of productivity growth, purging them of the bias resulting from regulation. We measure the bias for the manufacturing sectors of three countries, the United States, Canada and Germany, and thereby assess the impact of increased pollution abatement capital regulation on productivity growth. Our principal finding is that the bias, which depends on relative rates of growth of output and pollution abatement capital investment, is modest.

Cooper, Russell

PD October 1985. TI Sharing Some Thoughts on Weitzman's "The Share Economy". AA College of Business Administration, University of Iowa. SR National Bureau of Economic Research Working Paper: 1734; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 33. PR \$2.00. JE 023. KW Share Contracts. The Share Economy.

AB This paper explores the positive and normative aspects of share contracts. In particular, the paper explores the properties of a share system as advanced by Martin Weitzman in *The Share Economy*. The model employed highlights a "macroeconomic externality" created in a multi-sector economy with imperfect competition. The introduction of share contracts is shown to influence the comparative static properties of the model economy and in some cases to lead to Pareto superior outcomes.

Corman, Hope

PD October 1985. TI Birth Outcome Production Functions in the United States. AU Corman, Hope; Joyce, Theodore; Grossman, Michael. AA Corman: Manhattan College. Joyce: Iona College. Grossman: City University of New York Graduate School. SR National Bureau of Economic Research Working Paper: 1729; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 913, 841. KW Infant Health Production Function. Neonatal Mortality Rate.

AB This paper contains the first infant health production functions that simultaneously consider the effects of a variety of inputs on race-specific neonatal mortality rates. These inputs include the use of prenatal care, neonatal intensive care, abortion, federally subsidized organized family planning clinics, maternal and infant care projects, community health centers, and the WIC program. The empirical analysis is based on a cross section of United States counties in 1977, and the incidence of low birth weight (2,500 grams or less) is employed as an intermediate outcome. This allows us to examine the extent to which prenatal inputs operate directly on neonatal mortality and also allows us to examine their indirect effects on mortality rates through low birth weight. Since mothers with poor endowed birth outcomes will attempt to offset these unfavorable prospects by

utilizing more health inputs, major emphasis is placed on two-stage least squares estimates of the production function. Our results underscore the qualitative and quantitative importance of abortion, prenatal care, neonatal intensive care, and the WIC program in black and white birth outcomes.

Crafts, N. F. R.

PD October 1985. TI Comparative Advantage in UK Manufacturing Trade 1910-1935. AU Crafts, N. F. R.; Thomas, Mike. AA University College Oxford. SR Centre for Economic Policy Research Discussion Paper: 83; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 42. PR 1 pound (\$2) individuals; 1.50 pounds (\$3) companies, libraries, institutions. JE 044, 421. KW Comparative Advantage. Factor Endowments. Structural Change.

AB This paper uses a maintained hypothesis of comparative advantage based on relative factor endowments to investigate UK manufacturing trade prior to World War II. The results from several independent tests indicate that Britain exported goods intensive in the use of unskilled labour and had a comparative disadvantage in goods intensive in the use of human capital right up to the mid 1930s. This is consistent with the views of contemporaries but somewhat at odds with recent optimistic assessments of structural change in pre-war Britain.

PD October 1985. TI Long-Term Unemployment in Britain in the 1930s. AA University College Oxford. SR Centre for Economic Policy Research Discussion Paper: 76; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 22. PR 1 pound (\$2) individuals; 1.50 pounds (\$3) companies, libraries, institutions. JE 044, 824. KW 1930s. Long-Term Unemployment. 'Voluntary' Unemployment.

AB Long-term unemployment was regarded by contemporaries in the 1930's as a major problem but analysis of it has been neglected in modern economists' research. This paper presents data on durations of unemployment and a measure of the welfare costs associated with long-term unemployment. It is argued that only a small minority of the long-term unemployed had high replacement ratios and that re-employment probabilities were duration dependent. Particular attention is given to the notion of 'voluntary' unemployment and it is found that, in general, the long-term unemployed should not be regarded as 'workshy' or engaged in 'search'.

Crawford, Vincent P.

PD February 1986. TI Long-Term Relationships Governed by Short-Term Contracts. AA Princeton University and Department of Economics, University of California, San Diego. SR Princeton Industrial Relations Section Working Paper: 205; Industrial Relations Section, Department of Economics, Princeton University, Princeton, NJ 08544. PG 21. PR \$1.00. JE 022, 026, 821. KW Contract Theory. Bargaining Theory.

AB The effect of short-term contracting on the incentive to make relationship-specific investments is studied, when the contracting parties are fully rational, with perfect information and perfect foresight; and contracts are perfectly enforceable and complete, except that short-term contracts do not allow commitments to actions taken beyond the contract period. Under these assumptions, long-term contracting assures efficient investment, but short-term contracting may not, depending on whether the efficient investment plan creates reversible capital, which can be withdrawn from the relationship, or sunk-cost capital, which cannot. This difference arises because short-term contracting shuts down the "market" for intertemporal consumption-smoothing. When the efficient plan involves only sunk-cost investment, this typically induces underinvestment as a second-best response. But if the efficient plan creates enough reversible capital, parties can normally assign its property rights, in each short-term contract, to ensure that they will negotiate the efficient pattern of compensation in subsequent contracts, restoring the incentives for efficient investment.

Currie, David

TI Alternative Financial Policy Rules in an Open Economy under Rational and Adaptive Expectations. AU Whittaker, Rod; Wren, Lewis Simon; Blackburn, Keith; Currie, David.

PD February 1986. TI Credibility and Time Inconsistency in a Stochastic World. AU Currie, David; Levine, Paul. AA Currie: Bank of England. Levine: London Business School. SR Centre for Economic Policy Research Discussion Paper: 94; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 32. PR 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. JE 131, 133, 310, 320. KW Optimal Policy. Time Inconsistency. Policy Credibility. Policy Sustainability.

AB This paper re-examines the issue of the credibility and sustainability of optimal policies derived from Pontryagin's Maximum Principle and generally regarded as time-inconsistent, in models with forward-looking rational expectations. Specifically, it considers the behaviour of such models in the presence of continuing stochastic noise. This is shown to convert the policy problem from a one-shot dynamic policy game to a continuing game, giving governments an incentive to invest in a reputation for not renegeing on the full optimal rule. This incentive may, in certain circumstances, render the full optimal rule credible and therefore sustainable. It is demonstrated that a sufficiently low degree of discounting on the part of government, or a sufficiently high variance of shocks (measured relative to the initial displacement) ensures the sustainability of the full optimal rule. Using a simple dynamic open economy model, these conditions are shown to be plausible unless the discount rate is very high.

Dasgupta, Partha

PD September 1985. TI Information Disclosure and the Economics of Science and Technology. AU Dasgupta, Partha; David, Paul. AA Dasgupta: St John's College, Cambridge. David: Stanford University.

SR Centre for Economic Policy Research Discussion Paper: 73; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 37. **PR** 1 pound (\$2) individuals; 1.50 pounds (\$3) companies, libraries, institutions. **JE** 621, 024, 026. **KW** Information Theory. Economics of Science. Technological Change. Public Goods.

AB This paper takes an information-theoretic approach to the economics of science, extending Arrow's pioneering (1962) analysis of the allocation of resources for industrial research and invention. It addresses the questions: is there a valid economic distinction between scientific and technological research, and if there is, what implications may this have for public policy? A brief review points to deficiencies in several of the criteria proposed for distinguishing "scientific" from "technological" research, such as the degree of generality, abstractness, or practicality of the knowledge sought, or the source of the financial support. We suggest a primary differentiation arises between science and technology conceived as social constructions, and is manifested in the greater urgency shown by the "scientific" community towards the disclosure of newly acquired information. Scientists, qua scientists, may be thought to be devoted to the growth of the stock of knowledge as a public consumption good, whereas the technological community is concerned with the flow of rents that private parties derive from discoveries and inventions. The role of priority as a basis for allocating rewards among scientists, its compatibility with the norm of disclosure, and the ambiguous status of patent systems, are reconsidered from this perspective. Certain ineluctable conflicts between the goals of the two research communities point to the persisting economic need for public subsidies to sustain the scientific attitude.

PD October 1985. **TI** Learning-by-Doing, Market Structure and Industrial and Trade Policies. **AU** Dasgupta, Partha; Stiglitz, Joseph E. **AA** Dasgupta: St John's College Cambridge. Stiglitz: Princeton University. **SR** Centre for Economic Policy Research Discussion Paper: 80; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 27. **PR** 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. **JE** 022, 411, 611, 621, 616. **KW** Competition. Learning. Monopoly. Industrial Policy. Import Subsidies. Sunk Costs. Strategic Behaviour.

AB In this article the authors explore, in a preliminary way, some of the effects of learning-by-doing on the structure, conduct and performance of an industry. Learning is seen as a decline in a firm's unit production cost as a consequence of an increase in its cumulative production experience. Optimal pricing rules for nationalized industry are derived first. The authors then consider the case of an incumbent firm which is threatened by a rival possessing the option of entering the market now or at any time in the (finite) future. Entry is assumed to involve a (small) fixed cost which must be sunk. In a central example it is shown that the presence of the potential entrant has absolutely no effect on the behaviour of the incumbent. The authors therefore proceed to examine the implications of various government policies. Examples are produced where a variant of the classical infant-industry argument holds and also ones where the

presence of a foreign learning curve provides an argument for the domestic government to introduce an import subsidy.

David, Paul

TI Information Disclosure and the Economics of Science and Technology. **AU** Dasgupta, Partha; David, Paul.

de Macedo, Jorge Braga

TI A Vintage Model of Supply Applied to French Manufacturing. **AU** Kouri, Pentti; Viscio, Albert; de Macedo, Jorge Braga.

PD June 1985. **TI** Small Countries in Monetary Unions: A Two-Tier Model. **AA** Woodrow Wilson School, Princeton University. **SR** National Bureau of Economic Research Working Paper: 1634; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** \$2.00. **JE** 423, 432. **KW** West African Monetary Union. Monetary Unions.

AB In a previous analysis of the West African Monetary Union, Macedo (1985a), size is taken to be a major structural characteristic of a country in the sense that large countries are not affected by disturbances originating in small countries but small countries are affected by large countries' domestic disturbances. In this paper, we generalize some of the results and present the structure of the model in more detail. Using a four-country, two-tier macroeconomic model, it is shown that the pseudo-exchange rate union of the two small countries with the large partner has no effect on their real exchange rates but affects their price levels, whereas a full monetary union requires in principle a transfer from the large partner in the union. The allocation of this transfer between the two small countries by their common central bank will have real effects when the allocation rule differs from the steady-state monetary distribution.

DeLong, J. Bradford

PD August 1985. **TI** Is Price Flexibility Stabilizing?. **AU** DeLong, J. Bradford; Summers, Lawrence H. **AA** Harvard University. **SR** National Bureau of Economic Research Working Paper: 1686; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 27. **PR** \$2.00. **JE** 131, 133. **KW** Destabilizing Price Flexibility. Overlapping Contracts. Mundell Effect. Cyclical Variability of Output.

AB This paper uses Taylor's model of overlapping contracts to show that increased wage and price flexibility can easily be destabilizing. This result arises because of the Mundell effect. While lower prices increase output, the expectation of falling prices decreases output. Simulations based on realistic parameter values suggest that increases in price flexibility might well increase the cyclical variability of output in the United States.

Denny, Michael

TI Testing Long-Run Productivity Models for the Canadian and United States Agricultural Sectors. **AU** Capalbo, Susan; Denny, Michael.

dePalma, Andre

TI Market Equilibrium and Optimal Product Diversity: A Logit Specification. **AU** Anderson, Simon; dePalma, Andre.

TI Economics of A Bottleneck. **AU** Arnott, Richard; dePalma, Andre; Lindsey, Robin.

Devereux, Michael

TI A Positive Theory of Fiscal Policy in Open Economies. **AU** Backus, David; Devereux, Michael; Purvis, Douglas.

Diba, Behzad

PD December 1985. **TI** Rational Bubbles in Stock Prices?. **AU** Diba, Behzad; Grossman, Herschel **AA** Department of Economics, Brown University. **SR** National Bureau of Economic Research Working Paper: 1779; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 23. **PR** \$2.00. **JE** 313. **KW** Rational Bubbles. Stock Prices. Market Fundamentals.

AB This paper reports empirical tests for the existence of rational bubbles in stock prices. The analysis focuses on a familiar model that defines market fundamentals to be the expected present value of dividends, discounted at a constant rate, and defines a rational bubble to be a self-confirming divergence of stock prices from market fundamentals in response to extraneous variables. The tests are based on the theoretical result that, if rational bubbles exist, time series obtained by differencing real stock prices do not have stationary means. Analysis of the data in both the time domain and the frequency domain suggests that the time series of aggregate real stock prices is nonstationary in levels but stationary in first differences. Applications of the time domain tests to simulated nonstationary time series that would be implied by rational bubbles indicates that the tests have power to detect relevant nonstationarity when it is present. Furthermore, application of the time-domain and frequency-domain tests to the time series of aggregate real dividends also indicates nonstationarity in levels but stationarity in first differences -- suggesting that market fundamentals can account for the stationarity properties of real stock prices. These findings imply that rational bubbles do not exist in stock prices. Accordingly, any evidence that stock price fluctuations do not accord with market fundamentals (as specified above) is attributable to misspecification of market fundamentals.

Dickens, William T.

PD June 1985. **TI** Hours Restrictions and Labor Supply. **AU** Dickens, William T.; Lundberg, Shelly J. **AA** Dickens: University of California Berkeley. Lundberg: University of Washington. **SR** National Bureau of Economic Research Working Paper: 1638; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 35. **PR** \$2.00. **JE** 813, 821. **KW** Labor Supply. Fixed Hours of Work. Unconstrained Hours. Wage Elasticity of Desired Hours.

AB This study presents a model of labor supply in which individuals may face constraints on their choice of work

hours, and analyzes the sensitivity of parameter estimates and policy conclusions to the usual assumption of unrestricted choice. We set up the labor supply decision as a discrete choice problem, where each worker faces a finite number of employment opportunities, each offering fixed hours of work. The distribution from which these are drawn, as well as the number of draws, is estimated along with the behavioral parameters of individual labor supply. The standard model with unconstrained hours appears as a special case where the number of draws approaches infinity. We estimate the mean absolute difference between desired and actual work hours to be about ten hours per week. The results strongly support the notion that hours choices are constrained, and suggest that models which ignore restrictions on hours worked may yield biased estimates of the wage elasticity of desired hours. Further, we suggest that analysis of policies such as income transfers and the flat rate tax which do not consider their effects on the distribution of hours offered may be very misleading.

PD July 1985. **TI** Bargaining Unit, Union, Industry, and Locational Correlates of Union Support in Certification and Decertification Elections. **AU** Dickens, William T.; Wholey, Douglas R.; Robinson, James C. **AA** Dickens: Department of Economics, University of California Berkeley. Wholey: School of Business, University of Arizona. Robinson: School of Public Health, University of California Berkeley. **SR** National Bureau of Economic Research Working Paper: 1671; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 34. **PR** \$2.00. **JE** 831. **KW** Unions. Certification Elections. Decertification Elections.

AB This paper investigates the correlates of union success in NLRB certification and decertification elections. The analysis includes a wide variety of bargaining unit, union, industry, and geographic attributes, many of which have not been considered in previous studies. Variables having a statistically significant relation with voting in certification elections are the size of the unit, employer consent to the definition of the bargaining unit, the length of campaigns, union organizing effort, union dues, union wages, non-union wage variance, the industry unemployment rate, percentage of black workers and the concentration of jobs among a few employers in a geographic area. The same specification was estimated for decertification elections. Variables having a statistically significant association with voting are unit size, length of campaign, and the non-union wage variance. Examination of the magnitude of the estimated coefficients suggests that only unit size and union organizing effort might affect outcomes in more than a small percent of all certification elections. Estimated correlations for voting in decertification elections are not accurate enough to allow such a judgment. Finally, comparison of the regression results for certifications and de-certifications shows that the process determining how workers vote is very different in the two types of elections.

PD July 1985. **TI** Testing the Dual Labor Market Theory: A Reconsideration of the Evidence. **AU** Dickens, William T.; Lang, Kevin. **AA** Dickens: University of California Berkeley. Lang: University of California Irvine.

SR National Bureau of Economic Research Working Paper: 1670; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 33. PR \$2.00. JE 821, 824. KW Dual Labor Markets.

AB This paper replicates and extends our earlier analysis of dual market theory. We use a technique which estimates for each worker a probability of being in the primary sector on the basis of his characteristics. We use this information to determine the occupational and industrial composition of the sectors. We continue to produce results which are very supportive of the theory. In studies by other authors, workers were "assigned" to the primary or secondary sector on the basis of the industry or occupation in which they are employed and educated guesses about the industries or occupations which make up the two sectors. We find that previous studies, which produced mixed and inconclusive results, had serious misclassification problems. In the cases examined, at least half of all full time prime age male workers identified as being in the secondary sector by these classification schemes are found to have a high probability of primary sector attachment. Past studies which were most supportive of dual market theory are found to have had the least severe misclassification problems.

TI The Impact of the Runaway Office on Union Certification Elections in Clerical Units. AU Freiberg, Beatrice J.; Dickens, William T.

Diewert, W. E.

PD May 1985. TI Flexible Functional Forms and Global Curvature Conditions. AU Diewert, W. E.; Wales, T. J. AA University of British Columbia. SR University of British Columbia Department of Economics Discussion Paper: 85-19; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C., CANADA, V6T 1Y2. PG 52. PR \$.20 per page Canadian to other than educational institutions. JE 211, 631, 022. KW Cost Function Estimation. Curvature Conditions. Flexible Functional Forms.

AB Empirically estimated flexible functional forms frequently fail to satisfy the appropriate theoretical curvature conditions. Lau and Gallant and Golub have worked out methods for imposing the appropriate curvature conditions locally, but those local techniques frequently fail to yield satisfactory results. We develop two new methods for imposing curvature conditions globally in the context of cost function estimation. The first method adopts Lau's technique to a generalization of a functional form first proposed by McFadden. Using this Generalized McFadden functional form, it turns out that imposing the appropriate curvature conditions at one data point imposes the conditions globally. The second method adopts a technique used by Diewert, McFadden and Barnett, which is based on the fact that a nonnegative sum of concave functions will be concave. Our various suggested techniques are illustrated using the United States Manufacturing data utilized by Berndt and Khaled.

PD December 1985. TI Microeconomic Approaches to the Theory of International Comparisons. AA University of British Columbia. SR National Bureau of Economic

Research Technical Paper: 53; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 221, 123. KW Multilateral Indexes. Economic Theory of Index Numbers.

AB The paper considers alternative approaches to providing consistent multilateral indexes of real output, real input, real consumption or productivity across many regions, countries or industries at one point in time. The recommended approaches are based on aggregating up various bilateral indexes which in turn are based on the economic theory of index numbers, either in the producer or consumer theory context. In order to distinguish between various competing multilateral approaches, an axiomatic or test approach to multilateral comparisons is developed. This test approach indicates that the Geary-Khamis and Van Yzeren approaches to multilateral output comparisons are dominated by the (new) own share and the Elteto-Koves-Szulc methods.

Dinenis, Elias

PD December 1985. TI Q, Gestation Lags and Investment: Is the Flexible Accelerator a Mirage?. AA Centre for Labour Economics, London School of Economics. SR London School of Economics, Centre for Labour Economics Discussion Paper: 236; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UK. PG 57. PR No Charge. JE 522. KW Gestation Lags. Expectations. Investment. Output. Q Theory of Investment.

AB In this paper, Tobin's Q theory of investment is used to explain the behaviour of manufacturing and non-manufacturing investment in the United Kingdom. The fit of the equations is very good and gestation lags of up to three years are found. Moreover, the restriction that output has no independent effect on investment is satisfied. When a number of conventional accelerator models are fitted, it is shown that manufacturing output is a good predictor of both manufacturing and non-manufacturing investment. It is argued that the observed correlation between investment and manufacturing output is largely spurious and due to the large capital goods content of the latter.

PD December 1985. TI Adjustment Costs, Q, Taxation and Investment in the United Kingdom. AA Centre for Labour Economics, London School of Economics. SR London School of Economics, Centre for Labour Economics Discussion Paper: 235; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UK. PG 36. PR No Charge. JE 521, 522. KW Taxation. Investment. Q Theory of Investment.

AB Tobin's "Q" ratio depends, in general, on the financial policies of the firm and the adjustment cost function employed. In this paper various "Q" measures are derived under alternative assumptions about the financial policies of the firm and the form of the adjustment cost function. The adequacy of each "Q" measure in explaining the behaviour of manufacturing and private non-manufacturing investment is tested by using test procedures for non-nested hypotheses.

Dinopoulos, Elias

PD January 1986. **TI** Import Quotas and VERS: A Comparative Analysis in A Three-country Framework. **AU** Dinopoulos, Elias; Kreinin, Mordechai E. **AA** Department of Economics, Michigan State University. **SR** Michigan State Econometrics and Economic Theory Workshop Series: 8508; Department of Economics, Michigan State University, East Lansing, MI 48824. **PG** 15. **PR** No Charge. **JE** 422. **KW** Voluntary Export Restraints. Capital Mobility. Foreign Investment. Three-Country Framework. International Capital Mobility.

AB Traditional analysis of the "equivalence" of tariffs and quotas and of quotas and VERs employs a two-country partial-or general-equilibrium approach. But the VER is inherently a discriminatory policy instrument. Therefore any comparison of the VER with a tariff or a quota requires a three-country framework. Such a framework, coupled with a general-equilibrium approach, is adopted in this paper, where the three countries are labelled: United States, Europe, and Japan. First we compare a United States import quota (or tariff) with a United States VER imposed only on Japanese exports, when capital is immobile internationally. United States welfare is higher under a quota than under an equivalent VER, as is the outcome of a two-country analysis. This is true for two alternative definitions of equivalence: one based on the quantity of trade and the other based on price. However, in contrast to the two-country case, the relative effects of the two instruments on Japan's welfare is indeterminate, while for Europe (the third country) a United States VER is preferable to a quota. Next we introduce international capital mobility within one sector. A United States import quota produces capital inflow into the United States with its source indeterminate, while a United States VER imposed on Japan produces a capital outflow from Japan with an indeterminate destination.

PD January 1986. **TI** Mutually-Penetrating, Intra-Industry Cross-Investment: A Theoretical Analysis. **AA** Department of Economics, Michigan State University. **SR** Michigan State Econometrics and Economic Theory Workshop Series: 8507; Department of Economics, Michigan State University, East Lansing, MI 48824. **PG** 24. **PR** No Charge. **JE** 611, 022. **KW** Intra-Industry Trade. Cross-Investment. Intra-Industry Investment. Characteristics Approach. Biological Model of Trade.

AB The present paper develops a new approach to the theory of the firm which produces a product differentiated by two characteristics. The product differentiation technology of the firm consists of two assets which are allocated between two activities to determine the amount of each characteristic per unit of output. The above framework is then combined with the demand and market structure of Dinopoulos (1985b) to build a general equilibrium model of intra-industry trade and investment. Different assumptions on intra-firm resource mobility across activities result in a variety-quality trade-off which in turn provides the incentive for intra-industry investment. The paper discusses conditions under which intra-industry investment occurs and the effects of the latter on prices and product specifications. It also provides

a formal model which follows very closely the "Biological" model of trade in similar products and the Mutual Penetration of Investment model scenarios.

PD January 1986. **TI** A Formalization of the "Biological" Model of Trade in Similar Products. **AA** Department of Economics, Michigan State University. **SR** Michigan State Econometrics and Economic Theory Workshop Series: 8506; Department of Economics, Michigan State University, East Lansing, MI 48824. **PG** 25. **PR** No Charge. **JE** 411. **KW** Differential National Tastes. Biological Model of Trade. Intra-Industry Trade.

AB The present paper uses a variant of the characteristics framework to develop a world demand structure based on broadly defined international taste differences. Moreover, firms face short-run "adjustment" costs when changing product specifications. This constellation of assumptions traces very closely the "biological" model of trade in similar products. The usual problem of the pattern of trade indeterminacy that emerges in models of intra-industry trade is resolved even in the case with zero transport costs. Finally, the paper analyzes the effects of taste-induced intra-industry trade on prices and product specifications.

PD January 1986. **TI** A North-south Model of International Justice. **AU** Dinopoulos, Elias; Wooton, Ian. **AA** Dinopoulos: Department of Economics, Michigan State University. Wooton: Department of Economics, University of Western Ontario. **SR** Michigan State Econometrics and Economic Theory Workshop Series: 8505; Department of Economics, Michigan State University, East Lansing, MI 48824. **PG** 16. **PR** No Charge. **JE** 411. **KW** North-South. Rawls. International Justice. Tariffs and Transfers. Optimal Rawlsian Transfer.

AB The present paper develops a model with the South producing only a composite good and utilizing technology imported from the North. The North produces both technology and the composite good. It is demonstrated that free trade is not "just" in the Rawlsian sense. Alternative trading schemes, which are designed to maximize the welfare of the South, are examined and the optimal Rawlsian transfer from North to South is calculated.

Donaldson, David

TI Can Risk-Benefit Analysis Provide Consistent Policy Evaluations of Projects Involving Loss of Life?. **AU** Blackorby, Charles; Donaldson, David.

Dornbusch, Rudiger

PD July 1985. **TI** Special Exchange Rates for Capital Account Transactions. **AA** Department of Economics, MIT. **SR** National Bureau of Economic Research Working Paper: 1659; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 41. **PR** \$2.00. **JE** 431. **KW** Asset Market. Capital Controls. Dual Exchange Rates. Parallel Markets for Foreign Exchange.

AB The exchange rate consistent with high employment and a balanced current account are rarely the same as the

rates consistent with asset market equilibrium at interest rates policy makers wish to prevail. Whenever rates are freely determined the assets markets prevail and the results may be hard to live with, or at least harder than would appear to be the case of special exchange rates and capital controls which are used to isolate home asset markets from the world capital market. This paper investigates the motive for choosing capital controls and special exchange rates, the principal forms and some of the experience. We look in particular at three institutional arrangements: 1) dual exchange rates separating current and capital account transactions, 2) black or parallel markets for foreign exchange, 3) exchange rate guarantees, dollar deposits and dollar-linked domestic debt.

PD August 1985. **TI** Stopping Hyperinflation: Lessons from the German Inflation Experience of the 1920s. **AA** Department of Economics, MIT. **SR** National Bureau of Economic Research Working Paper: 1675; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 30. **PR** \$2.00. **JE** 134, 133, 044. **KW** Credible Policies. Hyperinflation. Stabilization.

AB The special role of money in the hyperinflation process, and particularly in the stabilization phase, has now been reconsidered in a best-selling essay by Sargent. The message is that credible fiscal stabilization is the sine qua non of stopping inflation. This is definitely not viewed as being in conflict with the monetary hypothesis, but it does represent a shift of emphasis. We draw attention to a third aspect of the hyperinflation process, and the stabilization, namely exchange rate and interest rate policy. Even though a government may accomplish all the right measures in terms of budget stabilization or control of money creation, there remains the problem of making these measures credible and hence being able to actually achieve them. We argue that exchange rate and interest rate policy in the transition have traditionally formed the vehicle for establishing that credibility by a de facto stabilization. We make that point by discussing the events of the German hyperinflation. In that case the stabilization was a much more diffuse, accidental matter than a reading of the classics reveals with exchange rate policy playing a key role. Immensely high interest rates in the face of a sharply appreciating free market exchange rate wiped out adverse speculation thus helping to establish stabilization. The real exchange rate sharply appreciated in the final stage and persisted at an appreciated level well into the post-stabilization phase. It reflects the reverse of the coin of real depreciation in the capital flight phase.

PD October 1985. **TI** Inflation, Exchange Rates and Stabilization. **AA** Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 1739; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 35. **PR** \$2.00. **JE** 134, 431, 133. **KW** Inflation. Exchange Rate Policy. Stabilization.

AB The essay is an extended version of the Frank D. Graham Lecture presented at Princeton University in May 1985. It discusses the interaction of inflation and exchange rate policy in a variety of contexts. Four different settings are used to highlight that role: the experiments with

exchange rate overvaluation in the Southern Cone; the place of exchange depreciation in the transition from high to even higher inflation discussed in the context of Brazil; exchange rate fixing and real appreciation during stabilization in the 1920s; and finally the United States real appreciation of 1980-85. The common thread of the argument is that exchange rate policy can make an important contribution to stabilization, but that it can also be lead to persistent deviations from PPP, with devastatingly adverse effects. The essay investigates through what channels these PPP deviations arise and how they influence inflation, trade and capital flight.

PD December 1985. **TI** Exchange Rates and Prices. **AA** M. I. T. **SR** National Bureau of Economic Research Working Paper: 1769; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 32. **PR** \$2.00. **JE** 431, 023. **KW** Dollar Appreciation. Exchange Rate Changes. Relative Price Changes. Price Adjustments.

AB The appreciation of the United States dollar over the past five years opens important areas of research. The fact of a large and persistent real appreciation poses a challenge for equilibrium theorists to uncover the change in fundamentals and seems to support the role of long-term wage contracts in macroeconomic adjustment. This paper adopts the perspective of given wages and investigates in a partial equilibrium setting the determinants of relative price changes of different groups of goods. Specifically it advances hypotheses about those sectors where an exchange rate change should lead to large relative price changes and others where the relative price effects should be negligible. The general idea is to draw on models of industrial organization to explain price adjustments in terms of the degree of market concentration, the extent of product homogeneity and substitutability, and the relative market shares of domestic and foreign firms. The exchange rate movement and the less than fully flexible money wage interact to produce a cost shock for some firms in an industry -- foreign firms in the home market and home firms abroad -- and thus bring about the need for an industry-wide adjustment in prices.

Driffill, John

TI Credibility and Commitment in Economic Policy. **AU** Backus, David; Driffill, John.

Due, John F.

PD November 18, 1985. **TI** The Choice Between a Value Added Tax and a Retail Sales Tax. **AA** Department of Economics, University of Illinois at Urbana-Champaign. **SR** University of Illinois at Urbana-Champaign Bureau of Economic and Business Research Faculty Working Paper: 1205; Bureau of Economic and Business Research, University of Illinois at Urbana-Champaign, 1206 S. 6th Street, Champaign, IL 61821. **PG** 15. **PR** \$1.00. **JE** 323. **KW** Sales Tax. Value Added Tax.

AB The two acceptable forms of sales tax are the retail sales tax and the value added tax. In principle, the only difference between them is the application of the tax solely at the retail level with the former, the spreading out of the impact of the tax throughout production and distribution

with the latter. In practice, there are typically substantial differences in coverage, although these are not necessary consequences of the differences in the two forms of tax. The primary advantage of the value added tax is somewhat greater ability to enforce the tax effectively, although the difference is not nearly as great as is often claimed. The retail tax is basically simpler. In terms of structure, cascading can more easily be avoided with the value added tax, although cascading of the retail taxes could be greatly reduced. There is no inherent advantage of the value added tax in terms of breadth of coverage except in facilitating the taxation of services by lessening cascading. Other differences claimed between the two types of taxes are not at all inherent in the particular forms. In the Canadian context, use of the value added tax to replace the manufacturers sales tax probably has some net advantage over the retail tax in terms of intergovernmental relations and the ability to gain substantial Federal revenue. But the advantage is much less than often claimed.

PD January 16, 1986. **TI** A Brief Summary of Excise and Sales Taxation in India. **AA** Department of Economics, University of Illinois, Urbana-Champaign. **SR** University of Illinois at Urbana-Champaign Bureau of Economic and Business Research Faculty Paper: 1213; Department of Economics, University of Illinois at Urbana-Champaign, 1206 S. 6th Street, Champaign, IL 61821. **PG** 25. **PR** No Charge. **JE** 321. **KW** Sales Taxes. India. Excise Tax.

AB The Central government of India and the states make substantial use of indirect taxes, which yield about 80 percent of total tax revenue. The Central government uses an extensive system of excises, which is so broad in coverage as to constitute in essence a manufacturers sales tax, with widely varying rates. The states and the union territories apply sales taxes, which now constitute their chief source of revenue. The sales taxes are now imposed primarily at the first point, that is, sale by the manufacturer or first seller in the state, though there is limited collection at the retail level and some multi point (turnover tax) elements. Various efforts have been made to meet the interstate problem, but have culminated in multiple taxation of many interstate transactions by the exporting state and the importing state, as permitted by Central government law. The state levies are characterized by complex, multiple rates (as many as 19) and many special features for various types of business, and involve substantial taxation of inputs, as do the Central excises. There is believed to be widespread evasion of tax; this has resorted to use of check points on the roads, which delay traffic. The complex Central and state picture is aggravated by the use of the octroi by many cities -- a tax on goods entering the city. There has been extensive analysis of the taxes and the defects, and many suggestions for reform, but the problems of the complexity, extensive taxation of inputs, evasion, and overtaxation of interstate transactions continue. The experience offers little for optimization of commodity taxation in other Federal countries, except in calling attention to features that should be avoided.

Eaton, Jonathan

PD September 1985. **TI** Lending with Costly Enforcement of Repayment and Potential Fraud. **AA** University of Virginia. **SR** National Bureau of Economic Research Working Paper: 1697; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 20. **PR** \$2.00. **JE** 315. **KW** Bank. Loan Repayment. Contracts. Default Penalty. Enforcement of Repayment.

AB If contracts are costlessly enforceable then insolvency is the only reason for nonrepayment of loans. While some models have examined the borrower's incentive to repay, it has typically been assumed that the penalty suffered by a debtor in default is imposed automatically and without cost to the lender. If in fact invoking a penalty is costly, Pareto-improving loans may be dynamically inconsistent not because of the absence of a sufficiently harsh penalty for default, but because the lender has no incentive actually to implement the penalty in the event of default. In such situations infinitely-lived institutions can emerge as banking intermediaries between lenders and borrowers. These institutions, repeatedly involved in lending, have an incentive to enforce contracts that individual lenders lack. They can consequently sustain more lending. For their reputations as enforcers of contracts to have value requires that banks earn strictly positive profits. Maintaining the value of bank equity also provides an incentive for bank owners to invest deposits rather than to use these funds fraudulently. Because of the supernormal profits that banks must earn, an equilibrium that is sustained by bank reputation will not replicate an equilibrium in which loan repayment is automatically guaranteed.

Edwards, Jeffrey R.

PD August 1985. **TI** Job Satisfaction and Job Stress as Competing Predictors of Job Outcomes. **AA** Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 14; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. **PR** No Charge. **JE** 913, 825. **KW** Psychological State of Workers. Job Satisfaction. Stress.

AB Research concerning the impact of job perceptions on health-related outcomes has focused primarily on the effects of negative psychological states, such as job stress, while ignoring the possible effects of positive psychological states, such as job satisfaction. This paper discusses the implications of this bias and proposes that both positive and negative psychological states should be used in the prediction of worker health. Hypotheses are derived concerning the impact of task performance on satisfaction and stress, the relationship between these two variables, and their relationship with blood pressure and heart rate. An experiment was conducted, consisting of 36 male college students working on anagrams of varying levels of difficulty. Blood pressure and heart rates were monitored throughout the experiment. Results indicate that stress and dissatisfaction have similar determinants and are highly related, but satisfaction as a positive mood state is unrelated to stress. After controlling for demographic information, variation in blood pressure and heart rate

were explained equally well by job satisfaction (and dissatisfaction) and job stress. The implications of these findings for future research involving the relationship between occupational and physiological variables are discussed.

Edwards, Sebastian

PD June 1985. **TI** Country Risk, Foreign Borrowing and the Social Discount Rate in an Open Developing Economy. **AA** University of California Los Angeles. **SR** National Bureau of Economic Research Working Paper: 1651; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 37. **PR** \$2.00. **JE** 112. **KW** Social Rate of Discount. Developing Countries. Open Economy.

AB Most discussions on the social rate of discount have assumed that the economy under consideration is isolated from the rest of the world, and that there are no capital movements. This paper explicitly analyzes the determination of the social rate of discount in a small open developing economy. It is shown that under general conditions, the discount rate will be a weighted average of the marginal return to capital in the private sector (ρ), the rate of time preference (r), and the marginal cost of foreign indebtedness (π). It is also shown that unless the country faces an upward-sloping supply curve for foreign funds the weights of ρ and r will be zero. Finally, it is shown that if the country in question faces a foreign borrowing constraint imposed from abroad, the social rate of discount becomes equal to a weighted average of the domestic marginal return to capital and the rate of time preferences. Data for a group of LDCs is then used to show that financial markets have indeed attached a default country risk premium to LDCs. This provides some evidence in favor of the hypothesis that developing countries face an upward-sloping supply curve of foreign funds, and that, in general, the social rate of discount should be a weighted average of ρ , r and π . Finally, some numerical examples are used to show that ignoring the open economy aspects can result in a substantial overstatement of the social rate of discount.

PD August 1985. **TI** The Pricing of Bonds and Bank Loans in International Markets: An Empirical Analysis of Developing Countries' Foreign Borrowing. **AA** University of California Los Angeles. **SR** National Bureau of Economic Research Working Paper: 1689; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 40. **PR** \$2.00. **JE** 433, 121. **KW** International Bank Loans. Country Risk Premium. Debt Crisis.

AB The purpose of this paper is to compare the pricing of bank loans and bonds in international markets. The results obtained, using data on LDC debtors, indicate that in both markets the country risk premium has responded to some of the variables suggested by the theory. However, the way in which these variables affect the risk premium differs across these markets. Data on LDC bond yields in the secondary market for 1980-85 are also used to analyze the way in which this market reacted and anticipated the debt crisis.

PD August 1985. **TI** Are Devaluations

Contractionary?. **AA** Department of Economics, University of California, Los Angeles. **SR** National Bureau of Economic Research Working Paper: 1676; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 23. **PR** \$2.00. **JE** 023, 431. **KW** Devaluations. Stabilization Programs. Contractionary Devaluations.

AB Recently a number of authors have criticized the role of devaluations in traditional stabilization programs. It has been argued that, contrary to the traditional view, devaluations are contractionary, and generate a decline in aggregate output. In spite of the renewed theoretical interest in the possible contractionary effects of devaluations, the empirical evidence on the subject has been quite sketchy. In this paper the Khan and Knight (1981) model is extended to empirically address the issue of contractionary devaluations. The extended model considers the effect of money surprises, fiscal factors, terms of trade changes and devaluations on the level of real output. The results obtained, using a variance components procedure on data for 12 developing countries, provide some support to the short-run contractionary devaluation hypothesis; the results obtained indicate that in the short run a devaluation will generate a decline in aggregate output. It is also found that after one year a devaluation will have an expansionary effect on output. The evidence suggests that in the long run, devaluations will have no effect on output.

PD September 1985. **TI** The Behavior of Interest Rates and Real Exchange Rates During a Liberalization Episode: The Case of Chile 1973-83. **AA** The World Bank. and UCLA. **SR** National Bureau of Economic Research Working Paper: 1702; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 40. **PR** \$2.00. **JE** 121, 432. **KW** Chile. Real Exchange Rate. Interest Rates. Liberalization of the Capital Account.

AB This paper analyzes the behavior of some key variables during the recent economic liberalization reform attempted in Chile. The paper concentrates on the behavior of the real exchange rate and nominal and real interest rates during the period 1977-83. It is argued that as a consequence of the liberalization of the capital account in Chile in 1979-81, dramatic inflows of financial capital resulted. These capital inflows generated an important increase in expenditure, and a lower relative price of tradables to nontradables or real appreciation. Moreover, it is argued that it is the liberalization of the capital account, and not the adoption of a preannounced rate of devaluation, that generated the dramatic real appreciation of the Chilean currency between 1979 and 1981. A model to analyze interest rate behavior in a semi-open economy is also presented and applied to the case of Chile. The results obtained suggest that during this period interest rates responded both to open-economy and closed-economy factors. Among the former the increase in the expected rate of devaluation was particularly important.

PD November 1985. **TI** Commodity Export Boom and the Real Exchange Rate: The Money-Inflation Link. **AA** Department of Economics, University of California, Los Angeles. **SR** National Bureau of Economic Research Working Paper: 1741; National Bureau of Economic

Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 29. PR \$2.00. JE 134, 023, 411, 431. KW Commodity Export Booms. Dutch-Disease Case. Columbia.

AB This paper analyzes the relation between exogenous changes in commodity export prices and the real exchange rate in a monetary economy. The traditional Dutch-Disease case is extended, and the monetary consequences of an export boom are explored. It is shown that commodity export booms can generate, in the short run, either an excess demand or an excess supply for money. In a monetary setting the short-run behavior of the real exchange rate can differ significantly from the more traditional Dutch-Disease case without money. The model is tested using data for Colombia.

Ehrenberg, Ronald G.

PD November 1985. **TI** Workers' Rights: Rethinking Protective Labor Legislation. **AA** Department of Labor Economics, NYSSILR, Cornell University. **SR** National Bureau of Economic Research Working Paper: 1754; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 53. PR \$2.00. JE 822. **KW** Protective Labor Legislation. Hours of Work. Comparable Worth.

AB This paper focuses on a few directions in which protective labor legislation might be expanded in the United States over the next decade and the implications of expansion in each area for labor markets. Specifically, it addresses the areas of hours of work, unjust dismissal, comparable worth, and plant closings. In each case, the discussion stresses the need to be explicit about how private markets have failed, the need for empirical evidence to test such market failure claims, the need for economic analysis of potential unintended side effects of policy changes, and the existing empirical estimates of the likely magnitudes of these effects.

PD November 1985. **TI** Employment While in College, Academic Achievement and Post-College Outcomes: A Summary of Results. **AU** Ehrenberg, Ronald G.; Sherman, Daniel R. **AA** Ehrenberg: New York State School of Industrial and Labor Relations. Sherman: Federal Trade Commission. **SR** National Bureau of Economic Research Working Paper: 1742; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 31. PR \$2.00. JE 912, 824, 800. **KW** In-school Employment. College Student Employment. Academic Achievement.

AB This paper uses panel data that cover the 1972-1979 period obtained from the National Longitudinal Survey of the High School Class of 1972 to study how male college students' employment while in college influences their academic performance, persistence in school, decisions to enroll in graduate school, and post-college labor market success. The analytic framework employed treats in-school employment as endogenous and determines persistence by a comparison of expected utilities.

Eichenbaum, Martin S.

PD December 1985. **TI** Capital Accumulation and Annuities in an Adverse Selection Economy.

AU Eichenbaum, Martin S.; Peled, Dan. **AA** Eichenbaum: Carnegie-Mellon University. Peled: Carnegie-Mellon University and Technion-Israel Institute of Technology. **SR** Economics Research Center/NORC Program in Quantitative Economic Analysis Discussion Paper: 85-21; Economics Research Center/NORC, 6030 S. Ellis, Chicago, IL 60637. PG 29. PR \$2.00; send requests to Librarian, NORC. JE 024, 313. **KW** Adverse Selection. Competitive Annuity Markets. Capital Accumulation.

AB This paper suggests that adverse selection problems in competitive annuity markets can generate quantity constrained equilibria in which some agents whose length of lifetime is uncertain find it advantageous to accumulate capital privately. This occurs despite the higher rates of return on annuities. The welfare properties of these allocations are analyzed. It is shown that the level of capital accumulation is excessive in a Paretian sense. Policies which eliminate this inefficiency are discussed.

Eichengreen, Barry

TI Debt and Default in the 1980s: Causes and Consequences. **AU** Portes, Richard; Eichengreen, Barry.

PD November 1985. **TI** Unemployment in Interwar Britain: New Evidence from London. **AA** Department of Economics, Harvard University. **SR** Centre for Economic Policy Research Discussion Paper: 85; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, England. PG 26. PR 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. JE 824, 044. **KW** Interwar Unemployment. Britain. Cross-Section Analysis.

AB This paper reassesses the pattern of unemployment in interwar Britain from a microeconomic perspective. A 10 per cent sample of some 27,000 case record cards completed in 1929-31 as part of the New Survey of London Life and Labour is used as a basis for cross-section analysis of unemployment incidence among adult male wage earners. To provide a basis for comparison, these results for the interwar period are set against a comparable analysis for the postwar years using the General Household Survey for 1975. The findings indicate that unemployment was concentrated among certain segments of the labour force and suggest that a disproportionate burden was borne by the poor and disadvantaged, thus providing the first systematic support for those views of contemporary observers so often invoked by subsequent historians.

PD December 1985. **TI** Debt and Default in the 1930s: Causes and Consequences. **AU** Eichengreen, Barry; Portes, Richard. **AA** Eichengreen: Department of Economics, Harvard University. Portes: Department of Economics, Birkbeck College. **SR** National Bureau of Economic Research Working Paper: 1772; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 61. PR \$2.00. JE 441, 433, 042. **KW** Debt Crisis. International Capital Markets. Foreign Loans.

AB This paper analyzes the "debt crisis" of the 1930s to see what light this historical experience sheds on recent difficulties in international capital markets. We first consider patterns of overseas lending and borrowing in the

1920s and 1930s, comparing the performance of standard models of foreign borrowing in this period to the 1970-80s. Next, we analyze the incidence and extent of default on sovereign debt, adapting models of debt capacity to the circumstances of the interwar years. We consider the choices available to investors in those foreign loans which lapsed into default in the 1930s, emphasizing the distinction between creditor banks and bondholders. Finally, we provide the first estimates of the realized rate of return on foreign loans floated between the wars, based on a sample of dollar and sterling bonds issued in the 1920s.

Ellwood, David T.

PD October 1985. TI Poverty in America: Is Welfare the Answer or the Problem?. AU Ellwood, David T.; Summers, Lawrence H. AA Ellwood: Kennedy School of Government, Harvard University. Summers: Department of Economics, Harvard University. SR National Bureau of Economic Research Working Paper: 1711; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 33. PR \$2.00. JE 914, 911. KW Poverty. Poverty Rate. Government Assistance Programs.

AB This paper reviews the current policies for fighting poverty and explores the impact they have had. We begin by reviewing trends in poverty, poverty spending and economic performance. It is immediately apparent that economic performance is the dominant determinant of the measured poverty rate over the past two decades. Government assistance programs expanded greatly over this period, but the growth in cash assistance was too modest to have major effects, and the large growth in in-kind benefits could not reduce measured poverty since such benefits are not counted as income. Next we focus on three groups: the disabled, female family heads, and unemployed black youth. We find little evidence that government deserves the blame for the problems of each group, and suggest that the broad outlines of current policies are defensible on economic grounds.

Ericsson, Neil R.

TI Assertion Without Empirical Basis: An Econometric Appraisal of Monetary Trends in the United Kingdom by Milton Friedman and Anna J. Schwartz. AU Hendry, David F.; Ericsson, Neil R.

Eswaran, Mukesh

PD August 1985. TI Risk-Bearing Capacity and Entrepreneurship as Privileges of Wealth. AU Eswaran, Mukesh; Kotwal, Ashok. AA Department of Economics, University of British Columbia. SR University of British Columbia Department of Economics Discussion Paper: 85-28; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C., Canada, V6T 1Y2. PG 48. PR \$.20 per page Canadian to other than educational institutions. JE 026, 315. KW Residual Claimant. Risk Behavior. Production Hierarchy. Credit.

AB This paper investigates how wealth or access to credit might impinge on risk behaviour. It demonstrates that access to credit, by facilitating the pooling of risk across time, renders a risk-averse individual more capable

of absorbing risk. The paper then seeks to determine, in a Knightian framework, who the entrepreneur (i.e., residual claimant) would be in a production hierarchy. It is shown that if two individuals with identical risk preferences form a production hierarchy, the individual with greater access to consumption credit would become the residual claimant.

Evans, John H.

TI Optimal Contracts with a Utility-Maximizing Auditor. AU Baiman, Stanley; Evans, John H.; Noel, James C.

Evans, Merran A.

TI Testing for Block Effects in Regression Models Based on Survey Data. AU King, Maxwell L.; Evans, Merran A.

Feenberg, Daniel R.

PD June 1985. TI State Personal Income and Sales Taxes: 1977-1983. AU Feenberg, Daniel R.; Rosen, Harvey S. AA Feenberg: National Bureau of Economic Research, Cambridge, MA. Rosen: Department of Economics, Princeton University. SR National Bureau of Economic Research Working Paper: 1631; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 324. KW State Income Tax. Sales Tax. Revenue Elasticities.

AB The two main workhorses of state tax systems are levies on sales and individual incomes. In this paper we develop and implement a coherent methodology for characterizing these systems. The measures thus generated are used to show how the various systems differ across states, and how they evolved over the seven year period 1977-1983. We consider the systems' revenue elasticities with respect to income, average and marginal tax rates at various income levels, and several other issues as well.

PD November 1985. TI The Deductibility of State and Local Taxes: Impact Effects by State and Income Class. AU Feenberg, Daniel R.; Rosen, Harvey S. AA Feenberg: National Bureau of Economic Research, Cambridge. Rosen: Department of Economics, Princeton University. SR National Bureau of Economic Research Working Paper: 1768; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 22. PR \$2.00. JE 324, 322. KW Tax Reform. Deductibility of Taxes.

AB This paper provides careful estimates of the impact of removing the deductibility of state and local taxes by state and by income class. We show how deductibility affects marginal and average tax rates for both state and federal tax systems. One striking result is that combined federal income tax and state tax burdens would generally fall under the President's tax reform proposal, even for high income people in high tax states.

Feldstein, Martin

PD December 1985. TI The Second Best Theory of Capital Taxation. AA National Bureau of Economic Research, Cambridge. SR National Bureau of Economic Research Working Paper: 1781; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 21. PR \$2.00. JE 323.

KW Capital Tax Rates. Optimal Capital Taxation.

AB An important proposition in the theory of efficient taxation is that, if capital income is taxed, all types of capital income should be taxed at the same rate. This conclusion has motivated extensive empirical analysis of the tax rates on different types of capital income. It has also been the basis for a variety of proposals to revise actual tax rules. The present paper emphasizes that the conventional view must be modified in the very common situation in which some capital tax rate is politically constrained to something other than its optimal value, e.g., the zero rates on the imputed income on owner-occupied housing. The formal analysis of the paper examines the case in which there are three types of capital income and one of the tax rates is arbitrarily constrained to be zero. Three general "rule of thumb" results emerge from the specific analysis: First, if the several types of capital can be regarded as independent in production, the optimal tax rates on the taxable types of capital income should depart from equality in the direction of an inverse elasticity rule. Second, in comparison to these rates, capital that is a complement to the untaxed capital should generally be taxed more heavily while capital that is a substitute for the untaxed capital should be taxed less heavily. Third, variations in the degree of complementarity or substitutability between the two types of capital should alter the two tax rates in a way that maintains a constant difference in the total taxes on each type of capital. Although these rule-of-thumb results help to modify the conventional equal-tax-rates rule in an appropriate way, the most important implication of the present analysis is that any departure from optimal taxation makes it very difficult to set other capital tax rates optimally.

PD December 1985. **TI** Should Social Security Be Means Tested?. **AA** Department of Economics, Harvard University. **SR** National Bureau of Economic Research Working Paper: 1775; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 43. **PR** \$2.00. **JE** 915. **KW** Social Security. Means Tests.

AB The provision of social security benefits to retirees distorts the saving decisions of workers who are rational enough to save for their future. Since the implicit rate of return in an unfunded social security program is less than the marginal product of capital, the resulting decline in saving causes a welfare loss. It has been suggested that this welfare loss could be reduced, while still protecting those who lack the foresight to save for their retirement (the "myopes" and "partial myopes" of the paper), by replacing the current universal social security program with a means-tested program that pays benefits only to the "myopic" individuals who have little or no other retirement income or assets. The present paper evaluates this suggestion with the help of an explicit steady-state welfare comparison of the optimal universal and optimal means-tested programs. The relative welfare levels depend on characteristics of the economy (the growth rates of population and real wages and the productivity of capital) and of the population (the frequency and degree of myopia with respect to saving for retirement). The analysis shows that, although a means tested program is generally superior, it does not always dominate the best alternative

universal program. A universal program can be preferable under conditions which imply that the optimal means-tested program would induce rational savers to stop saving. The analysis also implies that overall welfare can be increased by using different social security programs for different groups of workers if the working population as a whole can be divided into two or more subgroups with different mixes of myopes, partial myopes and rational life-cycle savers.

PD January 1986. **TI** Supply Side Economics: Old Truths and New Claims. **AA** National Bureau of Economic Research, Cambridge. **SR** National Bureau of Economic Research Working Paper: 1792; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 11. **PR** \$2.00. **JE** 023. **KW** Supply Side Economics.

AB This paper, prepared for the annual meetings of the American Economic Association, examines the claims that were made at the beginning of the decade by the "new" supply-siders and contrasts their views with the traditional supply-side economics that has been a prominent part of economics since Adam Smith. The analysis gives particular attention to the pace of recovery and growth and to the revenue effects of the 1981 tax cut.

PD January 1986. **TI** The Effect of Federal Deductibility on State and Local Taxes and Spending. **AU** Feldstein, Martin; Metcalf, Gilbert. **AA** National Bureau of Economic Research, Cambridge. **SR** National Bureau of Economic Research Working Paper: 1791; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 60. **PR** \$2.00. **JE** 325, 324. **KW** Federal Deductibility. State and Local Government Finance.

AB This paper examines the effect of federal deductibility of state and local taxes on the fiscal behavior of state and local governments. The primary finding is that deductibility affects the way that state-local governments finance their spending as well as the overall level of spending. More specifically, in states where federal deductibility implies a relatively low cost of using deductible personal taxes (including income, sales and property taxes), there is greater reliance on those taxes and less reliance on business taxes and other revenue sources. The effect of deductibility on the state-local financial mix implies that deductibility has a much lower cost to the federal government than has previously been assumed. Indeed, if deductibility causes a large enough shift of financing from business taxes to personal taxes, deductibility may actually raise federal tax receipts. The analysis also implies that deductibility is likely to be a more cost-effective way than direct grants for raising the general level of state-local government spending. The present study uses the individual tax return data in the National Bureau of Economic Research TAXSIM model to calculate federal tax prices for itemizers and other taxpayers in each state. The econometric analysis recognizes that the federal tax price is endogenous (because it reflects the state-local spending decisions) and therefore uses a consistent instrumental variable procedure. This use of instrumental variable estimation exacerbates the difficulty of making precise estimates from the data. The relatively large standard errors indicate the need for

caution in interpreting the point estimates.

PD January 1986. **TI** United States Budget Deficits and the European Economics: Resolving the Political Economy Puzzle. **AA** National Bureau of Economic Research, Cambridge. **SR** National Bureau of Economic Research Working Paper: 1790; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 10. **PR** \$2.00. **JE** 323, 423. **KW** Budget Deficits. Foreign Implications of Domestic Deficits.

AB This paper, prepared for the annual meetings of the American Economic Association, discusses how the increases in the United States budget deficits since 1980 have affected the economies of Western Europe. The analysis emphasizes that United States deficits have not only affected these economies directly but have also induced them to adopt more restrictive monetary and fiscal policies than they would otherwise have chosen. This induced shift in domestic policies is the primary reason why European governments have pressed for a reduction in the United States budget deficits despite the favorable impact of those deficits on European trade surpluses.

Findlay, Lewis

TI A Test of A Model of Trade Union Behaviour: the Coal and Steel Industries in Britain. **AU** Carruth, Alan A.; Oswald, Andrew J.; Findlay, Lewis.

Fischer, Stanley

PD June 1985. **TI** Serial Correlation of Asset Returns and Optimal Portfolios for the Long and Short Term. **AU** Fischer, Stanley; Pennacchi, George. **AA** Fischer: Department of Economics, MIT. Pennacchi: Wharton School, University of Pennsylvania. **SR** National Bureau of Economic Research Working Paper: 1625; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** \$2.00. **JE** 313. **KW** Asymptotic Portfolios. Serially Correlated Asset Returns. Optimal Portfolios. Holding Period Length.

AB Optimal portfolios differ according to the length of time they are held without being rebalanced. For the case in which asset returns are identically and independently distributed, it has been shown that optimal portfolios become less diversified as the holding period lengthens. We show that the anti-diversification result does not obtain when asset returns are serially correlated, and examine properties of asymptotic portfolios for the case where the short term interest rate, although known at each moment of time, may change unpredictably over time. The theoretical results provide no presumption about the effects of the length of the holding period on the optimal portfolio. Using estimated processes for stock and bill returns, we show that calculated optimal portfolios are virtually invariant to the length of the holding period. The estimated processes for asset returns also imply very little difference between portfolios calculated ignoring changes in the investment opportunity set and those obtained when the investment opportunity set changes over time.

PD October 1985. **TI** Monetary Rules and Commodity Schemes under Uncertainty.

AA Massachusetts Institute of Technology. **SR** National Bureau of Economic Research Working Paper: 1722; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 20. **PR** \$2.00. **JE** 026, 311. **KW** Monetary Systems. Monetary Rules. Commodity Money.

AB The paper sets out a simple monetary model and uses it to compare alternative monetary systems. Money may be either fiat or gold. Both gold supply and velocity are uncertain. Asset demands are derived from expected utility maximization. I demonstrate the basic argument against a commodity money -- that it wastes resources, show why the optimal growth rate of money may be zero, and compare the behavior of the economy under constant money stock, constant price level, and constant gold price rules. Expected utility is typically highest under the constant price level rule.

Fisher, Paul

TI On Evaluating the Importance of Non-linearity in Large Macro-econometric Models. **AU** Salmon, Mark; Fisher, Paul.

Flavin, Marjorie A.

TI On the Limitations of Government Borrowing: A Framework for Empirical Testing. **AU** Hamilton, James D.; Flavin, Marjorie A.

Fleisig, Heywood

PD December 1985. **TI** Primary Commodity Prices, the Business Cycle and the Real Exchange Rate of the Dollar. **AU** Fleisig, Heywood; van Wijnbergen, Sweder. **AA** World Bank, Washington D.C. **SR** Centre for Economic Policy Research Discussion Paper: 90; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 17. **PR** 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. **JE** 411, 131. **KW** Primary Producers' Terms of Trade. Dollar Appreciation. Real Commodity Prices. Cyclical Movements. Secular Movements.

AB An empirical stylized fact is that primary exporters' terms of trade worsen when the dollar appreciates and improve when the dollar depreciates. In our theoretical analysis, we demonstrate that an appreciation of the dollar will worsen a primary exporter's terms of trade, the smaller the United States share in the world market for the primary commodity, the lower the United States demand elasticity for that good, and the larger the United States share in the exporter's imports. We present empirical findings that support the theoretical analysis. We also find strong evidence of the cyclical sensitivity and the secular decline of real commodity prices.

Floud, Roderick

PD July 1985. **TI** The Physical State of the British Working Class, 1870-1914: Evidence from Army Recruits. **AU** Floud, Roderick; Gregory, Annabel; Wachter, Kenneth W. **AA** Floud and Gregory: University of London. Wachter: Graduate Group in Demography, University of California Berkeley. **SR** National Bureau of Economic Research Working Paper: 1661; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 38. **PR** \$2.00.

JE 044, 913. KW Britain. Army Recruits. Health of the Male Working Class.

AB It is easier to discover why people died in the past than how healthy they were during their lives. However, in both Europe and North America, much evidence survives about the health of young males from the medical examination of recruits to the armed forces. The paper discusses the possibility of generalizing from one such source, that of British volunteer recruits, to the health of the male working class. It concludes that the source is not seriously biased and that, after some statistical correction, the data suggest a gradual improvement in the nutritional status, measured by average height, of the British working class. This finding contradicts much contemporary opinion that the British were physically deteriorating in the late nineteenth century.

Fraga, Arminio

TI Expected Fiscal Policy and the Recession of 1982. **AU** Branson, William H.; Fraga, Arminio; Johnson, Robert A.

Frankel, Jeffrey A.

PD July 1985. **TI** Using Survey Data to Test Some Standard Propositions Regarding Exchange Rate Expectations. **AU** Frankel, Jeffrey A.; Froot, Kenneth. **AA** Department of Economics, University of California Berkeley. **SR** National Bureau of Economic Research Working Paper: 1672; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 61. **PR** \$2.00. **JE** 431. **KW** Exchange Rate Expectations. Expected Depreciation.

AB Survey data provide a measure of exchange rate expectations that is superior to the commonly-used forward exchange rate in the respect that it does not include a risk premium. We use survey data and the technique of bootstrapping to test a number of propositions of interest. We are able to reject static or "random walk" expectations for both nominal and real exchange rates. Expected depreciation is large in magnitude. There is even statistically significant unconditional bias; during the 1981-85 "strong dollar period" the market persistently overestimated depreciation of the dollar. Expected depreciation is also variable, contrary to some recent claims. The expected future spot rate can be viewed as inelastic with respect to the contemporaneous spot rate, in that it also puts weight on other variables: the lagged expected spot rate (as in adaptive expectations), the lagged actual spot rate (distributed lag expectations), or a long-run equilibrium rate (regressive expectations). In one important case, the relatively low weight that investors' expectations put on the contemporaneous spot rate constitutes a statistical rejection of rational expectations: we find that prediction errors are correlated with expected depreciation, so that investors would do better if they always reduced fractionally the magnitude of expected depreciation. This is the same result found by Bilson, Fama, and many others, except that it can no longer be attributed to a risk premium.

PD December 1985. **TI** International Capital Mobility and Crowding Out in the United States

Economy: Imperfect Integration of Financial Markets or of Goods Markets?. **AA** Department of Economics, University of California, Berkeley. **SR** National Bureau of Economic Research Working Paper: 1773; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 53. **PR** \$2.00. **JE** 441, 423. **KW** International Finance. International Capital Mobility. Domestic Rate of Return. Crowding Out. Integration.

AB Conventional wisdom in the field of international finance holds that the United States economy has become so open financially as to be characterized by perfect capital mobility: a highly elastic supply of foreign capital prevents the domestic rate of return from rising significantly above the world rate of return. This view has been challenged recently by the observation that investment rates are highly correlated with national saving rates, and the claim by Feldstein and Horioka that this correlation is evidence of relatively low capital mobility. The premise of this paper is that the Feldstein-Horioka finding regarding crowding out in an open economy is strong enough to survive the econometric critiques that have been leveled against it, but that it need have nothing to do with the degree of capital mobility in the sense of the openness of financial markets and the equalization of international interest rates expressed in a common currency. It is real interest rates that matter for questions of crowding out, and real interest parity requires not just that nominal interest rates be equalized when expressed in a common currency, but also that purchasing power parity hold. It is well-known that purchasing power parity does not in fact hold. Currently, for example, the dollar is expected to depreciate in real terms. Thus real interest rate parity fails and crowding out takes place because of imperfect integration of goods markets, not imperfect integration of financial markets.

Freeman, Richard

PD June 1985. **TI** Who Escapes? The Relation of Church-Going and Other Background Factors to the Socio-Economic Performance of Black Male Youths from Inner-City Poverty Tracts. **AA** National Bureau of Economic Research, Cambridge, MA. **SR** National Bureau of Economic Research Working Paper: 1656; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 37. **PR** \$2.00. **JE** 914, 916, 921. **KW** Church-Going. Socially Deviant Behavior. Inner-City Poverty.

AB Using data from the National Bureau of Economic Research survey of Inner City youth and the National longitudinal survey of young men this paper examines the effect of church-going and other aspects of the background of youth on their allocation of time, socially deviant behavior, and labor force behavior. 1) Church-going is associated with substantial differences in the behavior of youths, and thus in their chances to 'escape' from inner city poverty. It affects allocation of time, school-going, work activity, and the frequency of socially deviant activity. 2) The diverse background factors examined in this study have different effects on various outcomes. Their differential effects suggest true causal impacts, with for example, the proportion of a youth's family working having positive effects on his labor market activity but not

on other activities. 3) In addition to church going, the background factors that most influence 'who escapes' are whether other members of the family work and whether the family is on welfare. 4) The allocation of time and activities by youth is significantly influenced by market opportunities (or perceptions thereof). Those youths who believe it is easy to find a job are more likely to engage in socially productive activities than others. Youths who see many opportunities to make money illegally are less likely to engage in socially productive activities than other youths.

PD June 1985. **TI** How Do Public Sector Wages and Employment Respond to Economic Conditions?. **AA** National Bureau of Economic Research, Cambridge, MA. **SR** National Bureau of Economic Research Working Paper: 1653; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 41. **PR** \$2.00. **JE** 824, 917. **KW** Public Sector. Discrimination. Public Sector Wages. Public Sector Employment.

AB This paper examines the changes over time in public sector wages and employment relative to private sector wages and employment using data from surveys of establishments and individuals. The paper finds that: (1) The pay of public sector workers relative to private sector workers varies greatly over time. Contrary to the view that public sector pay is inflexible, variations in relative pay are due as much to fluctuations in public pay as to fluctuations in private pay. (2) The relatively high paid public sector worker of the early 1970s has within the span of a decade lost much of his or her advantage over otherwise comparable private sector workers, seriously denting if not destroying the picture of the 'overpaid' public employee which developed in the early 1970s. The group of public sector workers who tend to be most highly paid in the United States relative to private sector workers are blacks and women, suggesting that the public sector discriminates less than does the private sector. (3) Differentials in public and private sector pay vary greatly depending on the nature of comparisons, with for example Current Populations Survey comparisons of individuals with similar broad human capital showing federal employees to be higher paid than private employees and Bureau of Labor Statistics surveys of wage rates in particular occupations showing federal workers to be lower paid. (4) Public sector employment follows a very different pattern of change than private sector employment. It has smaller annual variation, and moves countercyclically rather than cyclically. In terms of demographic composition the public sector employs relatively more blacks and women than the private sector.

PD June 1985. **TI** Union Maids: Unions and the Female Workforce. **AU** Freeman, Richard; Leonard, Jonathan S. **AA** Freeman: National Bureau of Economic Research, Cambridge, MA. Leonard: School of Business Administration, University of California Berkeley. **SR** National Bureau of Economic Research Working Paper: 1652; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 46. **PR** \$2.00. **JE** 831, 813. **KW** Public Sector. Unionized Work Force. Unions. Women.

AB How have women fared in unions in recent years?

The major findings of this paper are that unions have been more beneficial for women in the public sector than in the private sector, and that unionism for women is primarily a public sector white collar phenomenon distinguished from that of males. According to our analysis: (1) Women have come to be an increasingly large proportion of the unionized work force, and are critical in the one area in which unions have recently succeeded -- the public sector. (2) In the public sector and in white collar occupations where women unionists are concentrated, unions raise women's wages more than they raise the wages of men. (3) In the private sector unions have essentially the same effect on women in wages, turnover, employment and so forth, and do not deter affirmative action programs to raise female employment. (4) Comparable worth presents a rare confluence of interests of unions in search of members, particularly in the public sector, and women in search of higher wages, and will likely continue to be used by both especially within the confines of collective bargaining.

PD November 1985. **TI** The Effect of the Union Wage Differential on Management Opposition and Union Organizing Success. **AA** National Bureau of Economic Research, Cambridge, MA. **SR** National Bureau of Economic Research Working Paper: 1748; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 13. **PR** \$2.00. **JE** 831, 833. **KW** Unions. Union Wage Premium. Union Organizing Success.

AB This paper argues that under current United States institutional arrangements, in which management's opposition to unions is as important as workers and unions, the magnitude of the union wage premium actually reduces organization rather than increasing it. It reduces organizing success by lowering profits, thus giving management a greater incentive to oppose unions. It shows that in the traditional monopoly model, any given premium can cause management to donate more resources to opposing a union than workers will donate to organizing. Empirical evidence from NLRB elections supports the model in which larger premiums induce greater opposition and thus reduce union organizing success.

Freiberg, Beatrice J.

PD August 1985. **TI** The Impact of the Runaway Office on Union Certification Elections in Clerical Units. **AU** Freiberg, Beatrice J.; Dickens, William T. **AA** Freiberg: Office of the New York City Comptroller. Dickens: University of California Berkeley. **SR** National Bureau of Economic Research Working Paper: 1693; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 26. **PR** \$2.00. **JE** 831. **KW** Union Certification Elections. Firm's Ability to Relocate. Fear of Job Loss.

AB The law prohibits firms from moving work to avoid unionization. Still, many employees fear that joining a union may cost them their jobs. This paper assesses the impact of that fear on how clerical workers vote in union certification elections. Two data sets were collected and analyzed for this purpose, and three measures of the firms' ability to relocate office work were developed. Clerical workers in offices that were judged to be easier to relocate

were found to be more likely to report that the fear of job loss was important to their voting decision. Those who voted against the union were most likely to report that the fear that they would lose their jobs was a significant consideration. Further, workers in units judged to be most easily relocated were found to have a 7 to 30 per cent lower probability of voting union than those who were in less mobile jobs.

Frenkel, Jacob A.

TI Causes of Appreciation and Volatility of the Dollar.
 AU Branson, William H.; Frenkel, Jacob A.

Freet, Kenneth

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

Friedman, Benjamin M.

PD August 1985. TI Annuity Prices and Saving Behavior in the United States. AU Friedman, Benjamin M.; Warshawsky, Mark. AA Friedman: Harvard University. Warshawsky: Federal Reserve Board. SR National Bureau of Economic Research Working Paper: 1683; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 32. PR \$2.00. JE 918. KW Bequest Motive. Individual Life Annuities. Life Cycle Saving.

AB The observed reluctance of most individuals in the United States to buy individual life annuities, and the concomitant approximately flat average age-wealth profile, stand in sharp contradiction to the standard life cycle model of consumption-saving behavior. The analysis in this paper lends support to an explanation for this phenomenon based on the interaction of an intentional bequest motive and annuity prices that are not actuarially fair. Premiums charged for individual life annuities in the United States include a load factor of 32-48 per dollar, or 18-33 per dollar after allowing for adverse selection, in comparison to actuarially fair annuity values. Load factors of this size are not out of line with those on other familiar (and almost universally purchased) insurance products. Simulations of an extended model of life cycle saving and portfolio behavior, allowing explicitly for uncertain lifetimes and Social Security, show that the load factor charged would have to be far larger than this to account for the observed behavior in the absence of a bequest motive. By contrast, the combination of a load factor in this range and a positive bequest motive can do so for some plausible values of the assumed underlying parameters. Moreover, if this combination of factors is leading elderly individuals to avoid purchasing life annuities, it implies a typical bequest that is fairly large in comparison to their consumption.

PD August 1985. TI The Cost of Annuities: Implications for Saving Behavior and Bequests. AU Friedman, Benjamin M.; Warshawsky, Mark. AA Friedman: Harvard University. Warshawsky: Federal Reserve Board. SR National Bureau of Economic Research Working Paper: 1682; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 27. PR \$2.00. JE 918.

KW Life Cycle Saving. Annuities. Bequest Motive. Adverse Selection.

AB The fact that most elderly individuals in the United States choose to maintain a flat age-wealth profile, rather than buy individual life annuities, stands in contrast to central implications of the standard life-cycle model of consumption-saving behavior. The analysis in this paper lends support to an explanation for this phenomenon based either on the cost of annuities, importantly including the element of that cost due to adverse selection, or on the interaction of that cost and an intentional bequest motive. Expected yields offered on individual life annuities in the United States are lower by some 4-6 per cent, or 2 1/2-4 1/2 per cent after allowing for adverse selection, than yields on alternative long-term fixed-income investments. Simulations of an extended model of life-cycle saving and portfolio behavior, allowing explicitly for uncertain lifetimes and Social Security, show that yield differentials in this range can account for the observed behavior, even in the absence of a bequest motive, during the early years of retirement. By contrast, at older ages the combination of yield differentials in this range and a positive bequest motive is necessary to do so.

Fuchs, Victor R.

PD August 1985. TI The Economics of Reproduction-Related Health Care. AU Fuchs, Victor R.; Perreault, Leslie. AA National Bureau of Economic Research, Stanford, CA. SR National Bureau of Economic Research Working Paper: 1688; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 47. PR \$2.00. JE 913, 841. KW Reproduction-Related Health Services. Infant Care. Obstetrical Care.

AB This paper presents the first systematic estimates of the direct money costs of reproduction-related health services. In 1982 Americans spent approximately \$17.7 billion for contraception, abortion, treatment of infertility, obstetrical care, and infant care. This represented 5.5 percent of total health care spending and was equal to \$327 per woman of reproductive age (15-44). Obstetrical care accounted for almost half of the reproduction-related expenditures and infant care accounted for more than one-third. The paper discusses the demographic, technological, economic, and sociopolitical factors that determine these expenditures. It also considers related public policy issues regarding legal status, sources of funding, and allocation of resources.

PD December 1985. TI Has Cost Containment Gone Too Far?. AA National Bureau of Economic Research, Stanford. SR National Bureau of Economic Research Working Paper: 1776; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 913. KW Health Services. Cost Containment.

AB Current cost containment strategies will undoubtedly result in fewer health services for patients. The analytical framework presented in this paper shows how the effects of reductions in services on health and social welfare depend upon the amount and distribution of services (relative to potential benefit) prior to cost containment and on the size and selectivity of the reductions. Disagreement over

whether cost containment has gone too far arises from disagreements about the criterion (health or social welfare), the prior distribution, and how selective the reductions will be. In the long run selectivity will be the key to successful cost containment.

Fullerton, Don

PD June 1985. TI The Indexation of Interest, Depreciation, and Capital Gains: A Model of Investment Incentives. AA University of Virginia. SR National Bureau of Economic Research Working Paper: 1655; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 45. PR \$2.00. JE 323. KW Investment Incentives. Corporate Tax. Effective Tax Rates. Inflation.

AB Despite much recent interest in a consumption tax, the Treasury Department's November 1984 tax plan proposes to adopt carefully coordinated features of a more comprehensive income tax, including the indexation of interest, depreciation, and capital gains. The May 1985 White House proposal would retain some of these indexing provisions. This paper looks at the incentives under alternative tax regimes to make marginal investments in the corporate sector, noncorporate sector, and in owner-occupied housing. It finds that the current system is characterized by effective tax rates that increase with inflation for some assets and decrease with inflation for other assets. Overall rates fall with inflation, and the corporate tax is completely offset by credits, allowances, and deductions. Under the Treasury or White House plans, the corporate tax re-emerges, effective tax rates are considerably more uniform, and the interference of inflation is virtually eliminated.

Fuss, Melvin A.

PD October 1985. TI Productivity Growth in the Automobile Industry, 1970-1980: A Comparison of Canada, Japan and the United States. AU Fuss, Melvin A.; Waverman, Leonard. AA Department of Economics, University of Toronto. SR National Bureau of Economic Research Working Paper: 1735; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 50. PR \$2.00. JE 631, 641. KW Automobile Industry. Capacity Utilization. Total Factor Productivity.

AB In this paper we calculate and analyze the automobile industries cost and productivity experience during the 1970's in Canada, the United States and Japan. Utilizing an econometric cost function methodology, we are able to isolate the major source of short-run disequilibrium in this industry variations in capacity utilization - and analyze its effects on cost and total factor productivity (TFP) gross. This is achieved through a novel application of the Viner-Wong envelope theorem, which allows us to track short-run behavior utilizing what is essentially a long-run cost function. Two striking empirical results emerge. First, TFP grew much faster in the Japanese automobile industry (4.3 per cent annum) than in the Canadian (1.4 per cent) and United States (1.6 per cent) industries. Second, the importance in analyzing variations in capacity utilization is confirmed by the fact that failure to correct for this source of productivity change would have led to a 31 per cent underestimate of long-run TFP

growth in Canada and a 37 per cent underestimate for the United States.

Galenson, David W.

PD September 1985. TI On the Age at Leaving Home in the Early Nineteenth Century: Evidence from the Lives of New England Manufacturers. AA University of Chicago. SR National Bureau of Economic Research Working Paper: 1706; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 30. PR \$2.00. JE 042, 841. KW Age at Leaving Home.

AB Much recent research has focussed on some decisions that affected family composition in the past, including the determination of the age of marriage and the timing of fertility. This paper considers another such decision that has been relatively neglected, the determination of the age at which children left the parental home. Observations drawn from a collection of biographies of successful New England manufacturers, most of whom departed from their parents' homes in the first half of the nineteenth century, indicated that their age of departure was concentrated in the late teen ages and early twenties, with a median of 18 years. Multivariate analysis suggests that the age at which these men had left home varied directly with family income or wealth and inversely with the opportunity cost of their retention at home. Sons whose fathers had died tended to leave home earlier than otherwise, as did those whose first job away from home was in the employ of a relative, while those whose families invested more in their formal education appear to have stayed home longer.

Galor, O.

PD November 1985. TI Intertemporal Equilibrium and the Transfer Paradox. AU Galor, O.; Polemarchakis, H. M. AA Galor: Department of Economics, Brown University. Polemarchakis: Graduate School of Business, Columbia University. SR Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-84-2; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. PG 21. PR \$5.00 academics and non-profit institutions; \$6.00 corporations (add \$1.00 outside United States, Canada and Puerto Rico). JE 021, 024. 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 immiserize the recipient while enriching the donor. Away from the golden rule, a transfer may result in a Pareto improvement.

Gertler, Mark

TI Banking in General Equilibrium. AU Bernanke, Ben; Gertler, Mark.

Gertler, Paul J.

PD July 1985. TI Regulated Price Discrimination and Quality: The Implications of Medicaid Reimbursement Policy for the Nursing Home Industry. AA Department of Economics, SUNY at Stony Brook. SR National Bureau of Economic Research Working Paper: 1667;

National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 21. PR \$2.00. JE 913, 613, 918. KW Regulated Price Discrimination. Nursing Homes. Quality of Service. Medicaid.

AB Nursing homes participate simultaneously in a regulated and an unregulated market, and are required to supply the same quality of service to both markets. Specifically, nursing homes compete for patients who finance their care privately, and patients whose care is financed by the government's Medicaid program. The government reimburses nursing homes a set fee for the care of Medicaid patients, whereas nursing homes charge "private pay" patients what the market will bear. Quality is determined by competition in the "private pay" patient market. The greater the size of the "private pay" market relative to the Medicaid market, the higher is quality. We find that Medicaid policy makers face a trade-off between the access of Medicaid patients to care and quality. Specifically, an increase in the Medicaid reimbursement rate causes nursing homes to reduce quality, increase "private pay" price, and to admit more Medicaid patients and fewer "private pay" patients. Hence, in the nursing home industry, higher prices are associated with lower levels of quality. In addition, nursing homes set quality higher if the reimbursement rate is set via "cost plus" pricing than if it is set via "flat rate" pricing. Moreover, consumers in both markets are better off under "cost plus" pricing, nursing homes earn higher profits under "flat rate" pricing, and total governmental Medicaid expenditures are the same under both reimbursement methods.

PD August 1985. **TI** Subsidies, Quality, and Regulation in the Nursing Home Industry. **AA** SUNY, Stony Brook. **SR** National Bureau of Economic Research Working Paper: 1691; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 29. PR \$2.00. JE 613, 913, 918. **KW** Medicaid. Nursing Home Behavior.

AB This paper analyzes the impact of the Medicaid patient subsidy and Certificate of Need (CON) cost containment programs on nursing home behavior. The analysis is complicated by the fact the both proprietary and "not for profit" nursing homes exist, and by the problem that quality is not directly observed. Medicaid pays the nursing homes for the care of the financially indigent by directly reimbursing nursing homes at a predetermined rate. As a result, nursing homes can price discriminate between patients who finance their care privately and patients whose care is financed by Medicaid. Nevertheless, nursing homes are required to provide the same quality to both types of patients. Typically, Medicaid reimbursement rates are set by a cost plus method, where the reimbursement per patient is equal to average cost plus some return referred to as the Medicaid "plus" factor. Our results show that Medicaid policy makers face a trade-off between quality and the access of poor to nursing home care. Specifically, we find that increases in the Medicaid "plus" factor cause nursing homes to reduce quality and substitute Medicaid patients for "private pay" patients. These quality differences can be quite large. In fact, in our sample, we find that homes who receive high Medicaid "plus" factors provide hundreds of thousands of dollars less in goods and services than

homes who receive average Medicaid "plus" factors, *ceteris paribus*. CON attempts to control nursing home expenditures by limiting the supply of beds with capacity constraints and entry barriers. Our analysis shows that CON policy makers are forced to a tradeoff containing the size of the industry (and therefore total Medicaid payments) against quality and access of the poor to nursing home care. Specifically, we find that the capacity constraints and the reduced competition from the entry barriers lead to lower quality and fewer Medicaid patients receiving care.

PD November 1985. **TI** A Decomposition of the Elasticity of Medicaid Nursing Home Expenditures into Price, Quality, and Quantity Effects. **AA** Department of Economics, SUNY Stony Brook. **SR** National Bureau of Economic Research Working Paper: 1751; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 18. PR \$2.00. JE 913. **KW** Medicaid. Nursing Homes. Medicaid Expenditure Elasticity. Medicaid "Plus" Factor.

AB Nursing home expenditures have become a public policy concern primarily because the Medicaid program pays for approximately 50 per cent. Medicaid makes health care available to individuals who otherwise could not afford it, by directly reimbursing nursing homes for Medicaid patient care. Typically, Medicaid reimbursement rates are set by a cost plus method, where the reimbursement per patient is equal to average cost plus some return referred to as the Medicaid "plus" factor. This paper estimates the elasticity of Medicaid expenditures with respect to a change in the Medicaid "plus" factor, and decomposes that elasticity into price, quality, and quantity components. The decomposition is derived from a model of nursing home behaviour, which shows that an increase in the Medicaid "plus" factor causes nursing homes to admit more Medicaid patients and reduce quality. Total expenditures are the Medicaid reimbursement rate times the number of Medicaid patients receiving care. An increase in the Medicaid "plus" factor affects the Medicaid reimbursement by directly raising the Medicaid "plus" factor, and by indirectly decreasing average cost through a reduction in quality. These are the price and quality effects, respectively. The quantity effect is the change in the number of Medicaid patients. The elasticities are estimated separately for proprietary and "not for profit" nursing homes using a 1980 sample of New York nursing homes. Uniformly, the proprietary elasticities are approximately twice as large as the "not for profit" elasticities. As expected the price and quantity effects are positive, and the quality effects are negative. In the decomposition, the quality effect is quite important. In fact, ignoring it would lead to a fifty-three per cent overestimate of the Medicaid expenditure elasticity.

PD November 1985. **TI** A Latent Variable Model of Quality Determination. **AA** Department of Economics, SUNY Stony Brook. **SR** National Bureau of Economic Research Working Paper: 1750; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 13. PR \$2.00. JE 913. **KW** Quality Evaluation. Nursing Homes.

AB Despite substantial interest in the determination of quality, there has been little empirical work in the area.

The problem, of course, is the general lack of data on quality. This paper overcomes the data problem by constructing a Multiple Indicator Multiple Cause (MIMIC) model of quality determination. We present a one-factor MIMIC model of quality which derives natural indicators out of the relationship between input demand and output determination. The indicators turn out to be input demands which have been filtered to remove variation due to all factors, except quality and random disturbances. These indicators are measures of input investment in each unit of output or the volume (intensity) of service. The model is identified by defining input demand to be a function of quantity and "total effective output" (quantity times average quality), instead of quantity and average quality. The model is then applied to the determination of nursing home quality. The model appears to perform quite well, as the results generally conform with economic theory and restrictions implied by the MIMIC structure are accepted in hypothesis tests.

Giammarino, Ronald M.

PD October 1985. TI A Theory of Negotiated Equity Financing. AU Giammarino, Ronald M.; Lewis, Tracy R. AA Giammarino: Department of Commerce, University of British Columbia. Lewis: Department of Economics, University of British Columbia. SR University of British Columbia Department of Economics Discussion Paper: 85-33; Department of Economics, University of British Columbia, 997-1873 East Mall, Vancouver, B.C., CANADA, V6T 1Y2. PG 38. PR \$20 per page Canadian to other than educational institutions. JE 022, 026, 522. KW Investment Financing. Asymmetric Information. Adverse Selection. Negotiated Equity Financing. Credit Rationing.

AB In this paper we examine the problems involved in financing an investment project about which a firm's management and the financial market are asymmetrically informed. In particular, we consider the case where the manager of the firm is better informed about the value of existing assets and investment opportunities than financiers. Investments are financed by the issue of new equity. We model the interaction between the firm and the financiers (underwriters) as a sequential game in which the firm offers shares at a specified price and a financier either accepts or rejects the offer. Separating, pooling and semi-pooling equilibria for the model are characterized and examined for their empirical implications. Our principal results are as follows: 1) We find situations in which positive net present value investments are not undertaken because of the adverse selection problem associated with asymmetric information, and this problem is not necessarily eliminated as firms increase their financial slack. 2) In some cases the financier accepts the securities of only a fraction of the firms seeking financing despite the fact that all firms are essentially identical from the financiers point of view. Thus a form of credit rationing may result. 3) In some cases financiers will earn abnormal expected returns on the purchase of an issue even under conditions of free entry. 4) We find that the successful issue of new shares does not necessarily signal that the firm is of low value. For instance we are able to establish conditions under which the only firm issuing securities at a low price is actually a high valued firm and that once the

issue price is set all agents are aware that the firm is of high value.

Gilboa, Itzhak

PD October 1985. TI Additivizations of Non-Additive Measures. AA Department of Economics, Tel-Aviv University. SR Tel Aviv Foerder Institute for Economic Research Working Papers: 34-85; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. PG 44. PR No Charge. JE 026. KW Non-Additive Measures. Semi-values. Additivization.

AB The concept of an additivization of a non-additive probability measure is introduced and studied. The relation to cooperative game theory is explored, and it is shown that, in many cases of interest, additivizations may be considered as a special type of semi-values.

Gordon, Roger H.

PD October 1985. TI Intergenerational Risk Sharing. AU Gordon, Roger H.; Varian, Hal R. AA University of Michigan at Ann Arbor. SR National Bureau of Economic Research Working Paper: 1730; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 16. PR \$2.00. JE 322, 023, 915. KW Intergenerational Risk Sharing. Debt Financing.

AB In this paper, we argue that in designing government debt and tax-transfer policies, it is important to consider their implications for the allocation of risk between generations. There is no reason to presume that the market or the family can allocate risk efficiently to future generations, implying that stochastic government policies have the potential to create first-order welfare improvements. The model provides a non-Keynsian justification for debt-finance of wars and recessions, as well as an added rationale for Social Security type tax-transfer schemes which aid unlucky generations, e.g. the Depression generation, at the expense of luckier generations.

PD October 1985. TI Taxation of Investment and Savings in a World Economy. The Certainty Case. AA University of Michigan at Ann Arbor. SR National Bureau of Economic Research Working Paper: 1723; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 20. PR \$2.00. JE 323, 423. KW Individual Portfolio Holdings. Investment Taxation.

AB This paper explores the characteristics of individual portfolio holdings in a world economy with a unified securities market where there are many countries, each with its own tax rates and inflation rate. When nominal interest is taxable but income to equity owners is tax exempt in all countries, I show that the highest tax bracket investors specialize in equity and, among the remaining investors, those with lower tax rates buy bonds of countries with higher inflation rates. Because of the tax system, countries with a higher inflation rate must pay a higher real interest rate on their debt. This is necessary in equilibrium to compensate those who purchase the debt for their higher taxable income. This diversity of real rates of return in the world securities market has a variety of

effects on the optimal tax policy of a small open economy. I also explore a model where there is a unified world market in bonds, but no international trade in equity. Here, I find a strong tax incentive for firms owned by investors in countries with high personal tax rates to become multinationals and invest abroad. If domestic investors do end up purchasing both bonds and domestic equity, then the optimal corporate tax rate on real corporate income in a small open economy would be quite high relative to the personal tax rate on nominal interest income, in order not to distort the portfolio composition of domestic investors.

Gourieroux, C.

TI Aspects Econometriques de L'Hypothese D'Anticipation Rationnelle. AU Gourieroux, C.; Laffargue, J. P. AA CEPREMAP. SR CEPREMAP Discussion Paper: CEPREMAP, 142 Rue du Chevaleret, 75013 Paris, FRANCE. PG 221. PR No Charge. JE 211. KW Rational Expectations.

PD October 1985. TI Residus Generalises, Residus Simules Et Leurs Utilisations Dans Les Modeles Non Lineaires (Generalized Residuals, Simulated Residuals and Their Applications in Non-Linear Models). AU Gourieroux, C.; Monfort, A.; Renault, E.; Trognon, A. AA Unite de Recherche, INSEE. SR Documents de Travail ENSAE/INSEE: 8511; Unite de Recherche, INSEE, 18 Bd Adolphe Pinard, 75675 Paris. PG 33. PR No Charge. JE 211. KW Score Tests. Generalised Residuals. Simulated Residuals.

AB In this paper we propose two generalizations of the classical notion of residuals for a large class of non-linear models. We first recall the links between the residuals of a linear model and the score tests. Then we show that these links can be generalized to the non-linear case through the notion of generalized residuals. Finally we propose another generalization of the classical residuals: the simulated residuals. These simulated residuals provide graphs which can be read in the usual way; moreover an asymptotic theory is developed which derives genuine statistical tests based on these simulated residuals.

Grabowski, Henry

PD 1986. TI Pioneers, Imitators and Generics -- A Model of Schumpeterian Competition in the Pharmaceutical Industry. AU Grabowski, Henry; Vernon, John. AA Department of Economics, Duke University. SR Duke Working Papers in Economics: 86-07; Working Papers Series, Department of Economics, Duke University, Durham, NC 27706. PG 44. PR No Charge. JE 631, 621. KW Pharmaceutical Industry. R & D Competition. Generic Goods. Technical Change.

AB A computer simulation model in the tradition of evolutionary models of technical change is developed in this paper. It focuses on R & D competition in new product introductions and is based on data for the United States pharmaceutical industry during the 1970s. The sensitivity of innovation levels to the rate of generic competition, regulatory review time, and patent life is examined in the computer simulation experiments. These factors are found to have significant long run effects on industry structure and innovation levels.

PD 1986. TI Longer Patents for Lower Imitation Barriers: The 1984 Drug Act. AU Grabowski, Henry; Vernon, John. AA Department of Economics, Duke University. SR Duke Working Papers in Economics: 86-06; Working Papers Series, Department of Economics, Duke University, Durham, NC 27706. PG 10. PR No Charge. JE 621, 913, 631. KW Pharmaceutical Industry. Generic Drugs. Patents.

AB The Drug Price Competition and Patent Term Restoration Act has been termed the most important legislation for the pharmaceutical industry since the 1962 Kefauver Amendments. Essentially it eliminates duplicative testing and makes entry easy for generic competitors while at the same time extending patent protection for future new product introductions. In this paper we analyze its likely impacts on competition in the pharmaceutical industry, the incentives for innovation, and general consumer welfare.

Granger, C. W. J.

PD January 1986. TI Developments in the Study of Co-integrated Economic Variables. AA University of California at San Diego. SR Oxford Applied Economics Discussion Paper: 3; Institute of Economics and Statistics, Saint Cross Building, Manor Road, Oxford OX1 3UL, ENGLAND. PG 28. PR No Charge. JE 211. KW Co-integration Theory. Time-Series.

AB This paper presents an analysis of the major results of co-integration theory. Co-integration analysis and error-correction modelling provide a framework for combination of the long-run, or "equilibrium" relationships provided by economic theory with the short-run dynamics found necessary by time series analysis to explain economic data. Whether or not co-integration occurs is an empirical question, but the beliefs of economists appear to strongly support its existence in some form. Use of these techniques could produce models having both better short-run and long-run properties than many of those now specified and estimated and could provide interesting interpretations of long-established results. The field is still in a very early stage of development but appears to be rapidly being accepted by econometricians and macroeconomists.

Greenberg, J.

PD October 14, 1985. TI Consistent Voting Rules for Competitive Local Public Good Economies. AU Greenberg, J.; Shitovitz, Benyamin. AA Stanford University. SR Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: 469; Fourth Floor, Encina Hall, Stanford University, Stanford CA 94305. PG 26. PR \$3.00. JE 321. KW Local Public Goods. Voting. D-Majority Equilibrium.

AB We establish the existence of a "voting-market equilibrium" for local public goods economies where an individual's preferences need be neither transitive nor complete and may depend also on the public goods produced by neighboring communities, even though he does not contribute to their production. Moreover, private goods prices may be either positive or negative. Our equilibrium concept coincides with that of the Arrow-Debreu model for the private goods and with Greenberg's d-majority equilibrium for the public goods. More

specifically, faced with prices of the private goods and with the public goods produced by the local governments, each firm maximizes its profits and each individual maximizes his utility subject to his budget constraint, (i.e., his income net of taxes). In addition, each local government, taking the prices of private goods as given, (i) has a balanced budget, and (ii) chooses its production of public goods in such a way that no group that contains more than $q/(q+1)$ of its residents (i.e., no "winning coalition"), where q denotes the number of public goods produced, will unanimously prefer another affordable vector of public goods.

Gregory, Allan W.

PD June 1985. TI On Formulating Wald Tests of Nonlinear Restrictions. AU Gregory, Allan W.; Veall, Michael R. AA Department of Economics, University of Western Ontario. SR University of Western Ontario Centre for Decision Sciences and Econometrics Technical Reports: 2; The Centre for Decision Sciences and Econometrics, Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. PG 7. PR No Charge. JE 211. KW Wald Tests. Nonlinear Methods. Monte Carlo.

AB This note discusses a problem which has received little attention in the econometrics literature, namely that Wald tests of nonlinear restrictions that are algebraically equivalent under the null hypothesis give different results in small samples. The magnitude of potential discrepancies is illustrated by a simple Monte Carlo experiment.

Gregory, Annabel

TI The Physical State of the British Working Class, 1870-1914: Evidence from Army Recruits. AU Floud, Roderick; Gregory, Annabel; Wachter, Kenneth W.

Griliches, Zvi

PD December 1985. TI R&D and Productivity Growth: Comparing Japanese and United States Manufacturing Firms. AU Griliches, Zvi; Mairesse, Jacques. AA Griliches: Harvard University. Mairesse: Institut National de la Statistique et des Etudes Economiques. SR National Bureau of Economic Research Working Paper: 1778; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 35. PR \$2.00. JE 825, 123. KW Labor Productivity Growth. R&D. Capital-labor ratio.

AB We compute rates of growth in labor productivity during the 1973-80 period for samples of individual manufacturing firms, in both Japan and the United States, and relate them to differences in the rates of growth in their capital-labor ratios and in their intensities of R&D effort. Japanese firms spent about as much of their own money on R&D, relative to sales, as did similar United States firms. An econometric analysis of R&D performing firms leads to the acceptance of the hypothesis that the contribution of such expenditures to productivity growth was about the same in both countries. Hence, the rather large differences on the observed rates of productivity growth between the two countries cannot be accounted for

by differences in either the intensity or fecundity of such expenditures. We do find two important differences between the two countries which help to explain a significant fraction of the observed differences in productivity but require, in turn, an explanation of their own: 1) Japanese firms reduced their employment levels significantly during this period while United States firms were increasing theirs. This, by itself, accounts for the twice as fast growth in capital-labor ratio in Japanese manufacturing. 2) The estimated effect of the growth in the capital-labor ratio on firm productivity is approximately twice as large in Japan than in the United States. The two factors together can account for about half of the observed differences in the average rates of productivity growth between the two countries.

Grossman, Gene M.

PD July 1985. TI Optimal Dynamic R and D Programs. AU Grossman, Gene M.; Shapiro, Carl. AA Woodrow Wilson School, Princeton University. SR National Bureau of Economic Research Working Paper: 1658; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 33. PR \$2.00. JE 621. KW R and D. Research and Development. Optimal Expenditure Rate.

AB We study the optimal pattern of outlays for a single firm pursuing an R and D program over time. In the deterministic case, (a) the amount of progress required to complete the project is known, and (b) the relationship between outlays and progress is known. In this case, it is optimal to increase effort over time as the project nears completion. Relaxing (a), we find in general a simple, positive relationship between the optimal expenditure rate at any point in time and the (expected) value at that time of the research program. We also show that, for a given level of expected difficulty, a riskier project is always preferred to a safe project. Relaxing (b), we find again that research outlays increase as further progress is made.

PD August 1985. TI Dynamic R&D Competition. AU Grossman, Gene M.; Shapiro, Carl. AA Woodrow Wilson School, Princeton University. SR National Bureau of Economic Research Working Paper: 1674; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 25. PR \$2.00. JE 621. KW Dynamic R&D Competition. Patent Race.

AB We study a simple, two-stage, stochastic patent race involving two firms. We examine the behavior of the participants as they gain the lead or fall behind in the race. We find that the leader engages in R&D more intensively than does the follower, and that both firms intensify their efforts if the follower does catch up with the leader. We also analyze (1) the attractiveness of licensing, whereby the leader shares his results with the follower, (2) a policy of issuing patents for intermediate research results, and (3) the effects of research joint ventures, whereby the firms coordinate their initial research efforts and share their results.

Grossman, Herschel

PD July 1985. TI Sovereign Debt as a Contingent Claim: Excusable Default, Repudiation, and Reputation.

AU Grossman, Herschel; van Huyck, John.
AA Grossman: Department of Economics, Brown University. van Huyck: Department of Economics, Texas A&M University. **SR** National Bureau of Economic Research Working Paper: 1673; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 19. **PR** \$2.00. **JE** 443.
KW Sovereign Debt. Repudiation. Lending Ceiling. Reputation.

AB History suggests the following stylized facts about default on sovereign debt: (1) Defaults are associated with identifiably bad states of the world. (2) Defaults are usually partial, rather than complete. (3) Sovereign states usually are able to borrow again soon after a default. Motivated by these facts, this paper analyses a reputational equilibrium in a model that interprets sovereign debts as contingent claims that both finance investments and facilitate risk shifting. Loans are a useful device to facilitate risk shifting because they permit the prepayment of indemnities. Nevertheless, because the power to abrogate commitments without having to answer to a higher enforcement authority is an essential aspect of sovereignty; a decision by a sovereign to validate lender expectations about debt servicing depends on the sovereign's concern for its trustworthy reputation. A trustworthy reputation is valuable because it provides continued access to loans. A key aspect of the analysis is that lenders differentiate excusable default, which is associated with implicitly understood contingencies, from unjustifiable repudiation. In the reputational equilibrium, the short-run benefits from repudiation are smaller than the long-run costs from loss of a trustworthy reputation. Thus, although sovereigns sometimes excusably default, they never repudiate their debts. The reputational equilibrium can involve efficient risk shifting and efficient investment or it can involve a binding lending ceiling that limits risk shifting and can also restrict investment. The factors that tend to produce a binding lending ceiling include a high time discount rate for the sovereign, low-risk aversion for the sovereign, and a low net return from the sovereign's investments.

TI Rational Bubbles in Stock Prices?. **AU** Diba, Behzad; Grossman, Herschel

Grossman, Michael

TI Birth Outcome Production Functions in the United States. **AU** Corman, Hope; Joyce, Theodore; Grossman, Michael.

Grossman, Sanford J.

PD June 1985. **TI** Estimating the Continuous Time Consumption Based Asset Pricing Model. **AU** Grossman, Sanford J.; Melino, Angelo; Shiller, Robert J. **AA** Grossman: Department of Economics, Princeton University. Melino: Department of Economics, University of Toronto. Shiller: Cowles Foundation, Yale University. **SR** National Bureau of Economic Research Working Paper: 1643; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 33. **PR** \$2.00. **JE** 313.
KW Consumption Based Asset Pricing Model. Relative Risk Aversion. Estimation and Testing.

AB The consumption based asset pricing model predicts that excess yields are determined in a fairly simple way by the market's degree of relative risk aversion and by the pattern of covariances between per capita consumption growth and asset returns. Estimation and testing is complicated by the fact that the model's predictions relate to the instantaneous flow of consumption and point-in-time asset values, but only data on the integral or unit average of the consumption flow is available. In our paper, we show how to estimate the parameters of interest consistently from the available data by maximum likelihood. We estimate the market's degree of relative risk aversion and the instantaneous covariances of asset yields and consumption using six different data sets. We also test the model's overidentifying restrictions.

PD July 1985. **TI** Monetary Dynamics with Proportional Transaction Costs and Fixed Payment Periods. **SR** National Bureau of Economic Research Working Paper: 1663; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 72. **PR** \$2.00. **JE** 023, 311.
KW Monetary Transaction Costs. Monetary Policy. Price Level Policies. Interest Rate Policies. Money Demand.

AB A general equilibrium model of an economy is presented where people hold money rather than bonds in order to economize on transaction costs. In any such model it is not optimal for individuals to instantaneously adjust their money holdings when new information arrives. The (endogenous) delayed response to new information generates a response to a new monetary policy which is quite different from that of standard flexible price models of monetary equilibrium. Though all goods markets instantaneously clear, the monetary transaction cost causes delayed responses in nominal variables to a change in monetary policy. This in turn causes real variables to respond to the new monetary policy. The two classes of monetary policies analyzed here are price level policies and interest rate policies. Price level policies are monetary policies which in general equilibrium keep the nominal rate constant, but change the long run price level. We show that the money supply must rise gradually to its new steady level if the price level is to be raised without causing nominal interest rates to fall. When interest rate policies are analyzed, it becomes clear that aggregate money demand at time *t* depends on the path of interest rates, not just the instantaneous interest rate at time *t*. This is because the aggregate money holding at time *t* is composed of the money holdings of various consumers, each of whom has a different but overlapping holding period. The staggering of money holding periods is a necessary condition for general equilibrium; general equilibrium requires that some consumers must be incrementing their cash when other consumers are decrementing their cash via spending. Some results of our analysis include the fact that high frequency movements of the interest rate cause a much smaller change in money demand than low frequency movements, since it is the integral of the interest rate over a holding period which determines money demand. Further, at high frequencies, the rate of inflation is not the difference between the nominal interest rate and the rate of time preference.

PD July 1985. **TI** The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration. **AU** Grossman, Sanford J.; Hart, Oliver A. **AA** Grossman: University of Chicago. Hart: MIT. **SR** CEPR Discussion Paper: 70; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 45. **PR** individual: 1.00 pounds sterling (\$2.00); institution: 1.50 pounds sterling (\$3.00). **JE** 022, 611. **KW** Theory of the Firm. Vertical Integration. Horizontal Integration. Contracts.

AB What determines how integrated a firm is? We emphasize the benefits of "control" when there are difficulties in writing complete contracts. We define the firm as being composed of its assets. We present a theory of costly contracts which emphasizes that contractual rights can be of two types: specific rights and residual rights. When it is too costly to list all specific rights over assets in the contract, it may be optimal to let one party purchase all residual rights. Ownership is the purchase of these residual rights. We show that there can be costs associated with the wrong allocation of residual rights.

Hall, Robert E.

PD August 1985. **TI** Real Interest and Consumption. **AA** Hoover Institution, Stanford University. **SR** National Bureau of Economic Research Working Paper: 1694; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 37. **PR** \$2.00. **JE** 023. **KW** Consumption. Saving. Real Interest Rate. Elasticity of Intertemporal Substitution.

AB One of the important determinants of the response of saving and consumption to the real interest rate is the elasticity of intertemporal substitution. That elasticity can be measured by the response of the rate of change of consumption to changes in the expected real interest rate. A detailed study of data for the twentieth-century United States shows no strong evidence that the elasticity of intertemporal substitution is positive. Earlier studies finding substantially positive elasticities are shown to suffer from a bias related to the timing of instrumental variables.

PD January 1986. **TI** The Relation Between Price and Marginal Cost in United States Industry. **AA** Hoover Institution, Stanford University. **SR** National Bureau of Economic Research Working Paper: 1785; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 41. **PR** \$2.00. **JE** 022, 630. **KW** Price-Marginal Cost Disparity.

AB An examination of data on labor input and the quantity of output reveals that most United States industries have marginal costs far below their prices. The conclusion rests on the empirical finding that cyclical variations in labor input are small compared to variations in output. In booms, firms produce substantially more output and sell it for a price that exceeds the costs of the added inputs. The paper documents the disparity between price and marginal cost, where marginal cost is estimated from variations in cost from one year to the next. It considers a wide variety of explanations of the findings that are consistent with competition, but none is found to be plausible.

Halpern, Janice

PD August 1985. **TI** Choice under Uncertainty: A Model of Applications for the Social Security Disability Insurance Program. **AU** Halpern, Janice; Hausman, Jerry. **AA** Halpern: Lexecon. Hausman: MIT. **SR** National Bureau of Economic Research Working Paper: 1690; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 46. **PR** \$2.00. **JE** 915. **KW** Disability Insurance.

AB Not all people with health problems are disabled. Some individuals with severe physical or mental impairments, such as blindness or limb amputation, continue to hold jobs and generally function satisfactorily. They constitute, however, a group of potentially disabled individuals who might apply and qualify for Disability Insurance or other disability-related benefits if they were to lose their jobs or to decide that employment offered an inadequate financial or non-pecuniary reward. Thus, disability, or a health-related inability to work, is more than a medical problem but involves motivational and attitudinal factors. We specify a model of the application process, which we model as choice under uncertainty about approval of an application for Disability Insurance. We specify the possible outcomes to the choice process of an individual in which the probability of acceptance for Disability Insurance is a key consideration. We then estimate a joint model of labor supply and application to the Disability Insurance program based on the 1972 survey. We then compare our results to the observed time series applications process since 1976. Lastly, we estimate the sensitivity of the application process to the probability of acceptance and the level of benefits.

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.

Hamilton, James D.

PD June 1985. **TI** On the Limitations of Government Borrowing: A Framework for Empirical Testing. **AU** Hamilton, James D.; Flavin, Marjorie A. **AA** Department of Economics, University of Virginia. **SR** National Bureau of Economic Research Working Paper: 1632; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** \$2.00. **JE** 322. **KW** Budget Deficit. Balanced Budget.

AB This paper seeks to distinguish empirically between two views on the limitations of government borrowing. According to one view, nothing precludes the government from running a permanent budget deficit, paying interest due on the growing debt load simply by issuing new debt. An alternative perspective holds that creditors would be unwilling to purchase government debt unless the government made a credible commitment to balance its budget in present-value terms. We show that distinguishing between these possibilities is mathematically equivalent to testing whether a continuing currency inflation might be fueled by speculation alone or is instead driven solely by economic fundamentals. Empirical tests which have been developed for this economic question lead us to conclude that postwar United States deficits are

largely consistent with the proposition that the government budget must be balanced in present-value terms.

Hansen, Lars Peter

PD November 1985. TI Using Martingale Difference Approximations to Obtain Covariance Matrix Bounds for Generalized Methods of Moments Estimators. AA University of Chicago. SR NORC Program in Quantitative Economic Analysis Discussion Paper: 85-16; Program in Quantitative Economic Analysis, NORC, Chicago, IL 60637-2667. PG 83. PR \$2.00; send requests to NORC Librarian. JE 211. KW Martingale Difference Sequences. Instrumental Variables. Generalized Method of Moments Estimators. Time Series Analysis. Asymptotic Theory.

AB This paper investigates the asymptotic distribution of generalized method of moments estimators in three distinct estimation environments. Greatest lower bounds are derived for the asymptotic covariance matrices of the estimators in each environment. The estimation environments differ with respect to the temporal correlation properties of the disturbance vector, the cross-correlation properties of the disturbance vector and the instrumental variables, and the number of instrumental variables that are available. The time series data are generated by a stationary stochastic process in all three environments.

Harrigan, Kathryn Rudie

PD December 1985. TI Integrating Parent and Child: Successful Joint Ventures. AA Graduate School of Business, Columbia University. SR Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-85-21; First Boston Series, Graduate School of Business, Columbia University, New York, NY 10027. PG 24. PR \$5.00 academics and non-profit institutions; \$6.00 corporations (add \$1.00 outside United States, Canada and Puerto Rico). JE 541, 611. KW Joint Ventures. Strategy. Cooperation. Coordination.

AB The integrating mechanisms that firms use to control their joint venture's activities may be at odds with the systems needed for the venture to compete effectively. A framework is suggested for matching parents' coordination needs with the venture's success requirements in order to suggest how the benefits of cooperative strategy might best be realized. Industry examples illustrate the framework's efficacy.

PD December 1985. TI Joint Ventures and Competitive Strategy. AA Graduate School of Business, Columbia University. SR Columbia First Boston Series in Money, Economics and Finance Working Papers: FB-85-20; 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 514, 611. KW Joint Ventures. Strategy. Competition. Industry Structure. Cooperation. AB A framework for using joint ventures (and other forms of cooperative strategy) within varying competitive environments is constructed, and hypotheses are developed

concerning the impact of particular industry traits upon firms' options in pursuing them. Industry examples illustrate the framework's hypothesis. Demand traits suggest what types of cooperative strategies are needed. Competitor traits suggest how firms will respond to these needs for cooperation. Since joint ventures can be an inherently-unstable organizational form, it is important for managers to (1) select the right strategy option and (2) modify the autonomy from (and coordination with) sponsoring firms that ventures enjoy as their industry structures evolve. An understanding of cooperative strategy is important because as growth slows, as markets shrink or become crowded, as industries become global, or as technological change accelerates to speeds where individual firms cannot recover their initial investments, managers will have less margin for error. They must learn how to use cooperative strategies advantageously. Otherwise, their firms may encounter difficulties in delivering adequate value to their customers, replenishing their base of skills, and/or safeguarding their abilities to increase long-term shareholder value.

Hart, Oliver A.

TI The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration. AU Grossman, Sanford J.; Hart, Oliver A.

Haurin, Donald R.

PD September 1985. TI Affordability and the Value of Seller Financing. AU Haurin, Donald R.; Hendershott, Patric H. AA Ohio State University. SR National Bureau of Economic Research Working Paper: 1695; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 27. PR \$2.00. JE 932, 315. KW Creative Financing. Hedonic Indices. Value of Seller Financing.

AB The typical methodology in valuing seller financing consists of calculating a discount -- the present value of the after-tax interest savings due to the creative financing -- and including this variable, along with other characteristics of the purchased house, in an hedonic price equation explaining the house price actually paid. Resulting from this equation is a set of marginal prices corresponding to each characteristic of the house, including the quantity (discount) of creative finance accompanying the house. The central question usually addressed is whether the discount is fully capitalized in the value of the house -- whether the price of creative finance is unity. In our view, one should not ask what the price of creative finance is because this price, like that of other housing attributes, likely depends upon supply and demand conditions. We develop and estimate a model incorporating this dependency.

Hausman, Jerry

TI Choice under Uncertainty: A Model of Applications for the Social Security Disability Insurance Program. AU Halpern, Janice; Hausman, Jerry.

Havrilesky, Thomas

PD January 7, 1986. TI Monetary Policy Signaling from the Administration to the Federal Reserve. AA Duke University. SR Duke Working Papers in

Economics: 86-01; Working Papers Series, Department of Economics, Duke University, Durham, NC 27706. PG 29. PR No Charge. JE 311. KW Money Supply. Presidential Influence. Federal Reserve. Influence of the Administration. Signals from the Administration to the Federal Reserve.

AB This paper develops an index of monetary policy Signals from the Administration to the Federal Reserve (SAFER). The index is a simple weekly sum of every article that appeared in the Wall Street Journal from September 1, 1979 to December 31, 1984 in which Administration officials express a desire for easier (+1) or tighter (-1) monetary policy. In ordinary least squares regressions cumulative values of the SAFER index over a three week period have a significant effect on the narrow money supply at the end of the third week; a similarly constructed index of signals from Congress to the Federal Reserve has no significant money supply impact. After classifying the signals by sources within the Administration, it is shown that responses to signals from the Treasury Department and from unidentified sources have a statistically significant effect on the money supply. In related regressions, the narrow money supply is also shown to be sensitive to a measure of their expected vote-producing effect, Presidential popularity polls. In an estimated reaction function, cumulative monthly values of the SAFER index respond to variables which measure the state of the economy; in other reaction functions, monthly money growth does not respond to the same state-of-the-economy measures but does respond to signals from the Administration. Further evidence suggests that the SAFER index is Granger-causal with respect to the money supply.

PD January 7, 1986. TI Monetary Modeling In A World of Financial Innovation. AA Duke University. SR Duke Working Papers in Economics: 86-02; Working Papers Series, Department of Economics, Duke University, Durham, NC 27706. PG 38. PR No Charge. JE 311, 023. KW Financial System. Electronic Funds Transfer System. Financial Innovation. Monetary Policy. AB Sufficient information has been amassed regarding Electronic Funds Transfer Systems (EFTS) to allow intelligent guessing about the outlines of the financial system which will emerge. This paper begins by sketching some key elements of the type of macroeconomic model which would be consistent with that system. It then presents an intuitive model of the interface between regulatory and market forces which motivate financial innovation. Having considered the macrotheoretic end point and the forces propelling us toward that point, the paper then examines ongoing changes in monetary and nonmonetary behavioral relations and how they are likely to affect monetary policy.

Hayashi, Fumio

PD October 1985. TI Tests for Liquidity Constraints: A Critical Survey. AA Northwestern University. SR National Bureau of Economic Research Working Paper: 1720; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 44. PR \$2.00. JE 311, 023. KW Liquidity Constraints. Consumption.

AB This paper surveys recent empirical work on tests for liquidity constraints. The focus of the survey is on the tests based on the Euler equation. After examining the technical aspects of the recent tests on aggregate time-series data and on micro data, the survey tries to evaluate their economic significance. The paper concludes that for a significant fraction of the population the behavior of consumption over time is affected in a way predicted by credit rationing and differential borrowing and lending rates. However, the available evidence is shown to have failed in providing information necessary to calculate the response of consumption to changes in the time profile of income. The paper attributes the failure to the fact that not much attention in the literature has been paid to the cause of liquidity constraints.

PD November 1985. TI Taxes and Corporate Investment in Japanese Manufacturing. AA Department of Economics, Osaka University. SR National Bureau of Economic Research Working Paper: 1753; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 43. PR \$2.00. JE 022, 522. KW Tax-Adjusted Q. Corporate Investment. Japanese Manufacturing.

AB This paper examines the impact of taxes on the incentive to invest for the Japanese manufacturing sector in the postwar period. The idiosyncratic feature of the Japanese corporation tax system as compared to the United States is the prevalence of tax-free reserves and the tax deductibility of a part of taxes paid by corporations in the previous year. Our formula for the tax-adjusted Q and the cost of capital incorporates this. The main conclusions are as follows. While the postulated negative relation with the cost of capital cannot be found, investment in Japanese manufacturing shows until 1974 a strong association with the tax-adjusted Q. Since the change in stock prices, not taxes, is the primary source of changes in Q, the profitability of capital is the major determinant of investment.

Helliwell, John F.

PD June 1985. TI Aggregate Output with Operating Rates and Inventories as Buffers Between Variable Final Demand and Quasi-Fixed Factors. AU Helliwell, John F.; Chung, Alan. AA University of British Columbia. SR National Bureau of Economic Research Working Paper: 1623; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 022. KW Production Function. Quasi-Fixed Factors. Operating Rate Decision.

AB Empirical evidence has long shown that output varies more in the short-run than do all factor inputs, including employment and hours worked. There is also evidence that all factors, including capital, start adjusting within a few months, suggesting that production models should treat all measured factor inputs as quasi-fixed. In such a context, long-run equilibrium involves the choice of average factor proportions, including an average operating rate, that minimize total costs of producing the desired level of output. In response to unexpected or temporary changes in demand or cost conditions, optimal temporary equilibrium involves some changes in factor demands coupled with the joint use of pricing and production

decisions to make best use of the buffering capacity provided by inventories and operating rates. Applying this framework to aggregate annual data, this paper concentrates on the econometrics of the production or operating rate decision, since the operating rate is the key adjusting variable in the short-run. The operating rate decision also reveals most clearly the important consequences of quasi-fixity, and shows how our model contrasts with more conventional treatments. Other models of temporary equilibrium of production usually assume either the strict applicability of the underlying production function (requiring the assumption of either completely flexible product prices or at least one fully variable factor if quantity rationing is not to take place) or that current output is determined by aggregate demand without reference to the production function constraint. The assumed long-run production structure is two-level CES, with the inner function's vintage bundle of capital and energy combining with efficiency units of labour in the outer function. Long-run average cost minimization assumptions are used to derive the parameters of the production function, assuming constant returns to scale and constant growth of labour efficiency. These assumptions about the functional form and properties of the long-run production function are tested against various alternatives in the context of the derived temporary equilibrium output decision.

Helpman, Elhanan

PD December 1985. TI Exchange Rate Management: Intertemporal Tradeoffs. AU Helpman, Elhanan; Razin, Assaf. AA Department of Economics, Tel-Aviv University. SR Tel Aviv Foerder Institute for Economic Research Working Papers: 36-85; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. PG 38. PR No Charge. JE 023, 431. KW Exchange Rate Management.

AB The management of the exchange rate is possible only if the government pursues a monetary-fiscal policy mix which is consistent with its exchange rate targets. In this paper we construct a model in which the real consequences of exchange rate management depend on the precise time pattern of the accompanying fiscal and monetary policies. We study the macroeconomic constraints on feasible policies and the comparative dynamics of disinflation by means of exchange rate targeting that takes place with an initially overvalued currency and a delayed accompanying contractionary policy. The policy brings about an intergenerational redistribution of wealth, and as a result, spending rises during the initial time periods and falls during later periods, the real exchange rate declines initially and rises eventually, and the country's external debt rises in all time periods. These results are consistent with recent exchange-rate-managed-disinflation attempts in Argentina, Chile and Israel.

Hendershott, Patric H.

PD September 1985. TI Tax Reform, Interest Rates and Capital Allocation. AA Ohio State University. SR National Bureau of Economic Research Working Paper: 1708; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 43.

PR \$2.00. JE 323, 932, 313. KW Tax Reform. Interest Rate. Capital Stock Allocation.

AB The impacts of four major tax reform proposals on the level of interest rates and the allocation of the American capital stock are derived. The four plans are Bradley-Gephardt, Kemp-Kasten, Treasury I and Treasury II. The allocation is among seven types of nonresidential capital, rental housing, and owner occupied housing held by households in five different income classes. The inflation-neutrality of the four plans is also deduced.

PD September 1985. TI Tax Reform and Financial Markets. AA Ohio State University. SR National Bureau of Economic Research Working Paper: 1707; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 42. PR \$2.00. JE 323, 313. KW Tax Reforms. Security Flows. Stock Prices. Interest Rate.

AB Four tax reform proposals have been advanced in recent years: Bradley-Gephardt, Kemp-Kasten, Treasury-Department and the Administration plan. These plans could have significant impacts on financial markets. Reductions in investment incentives and marginal tax rates would tend to lower before-tax interest rates, and lower taxes on existing corporate capital would tend to increase stock prices. The pattern of security issues would be altered by resulting changes in the composition of investment between real estate and nonreal estate assets and in desired loan-to-value ratios. The paper compares and contrasts the likely impacts of each of the four reform proposals on interest rate (taxable and tax-exempt), security flows, and stock prices.

TI Affordability and the Value of Seller Financing. AU Haurin, Donald R.; Hendershott, Patric H.

PD November 1985. TI The Administration Tax Reform Proposal and Housing. AU Hendershott, Patric H.; Ling, David C. AA Hendershott: Ohio State University. Ling: Southern Methodist University. SR National Bureau of Economic Research Working Paper: 1740; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 33. PR \$2.00. JE 323, 932. KW Tax Reform. Home Ownership. Owner-Occupied Housing.

AB This paper estimates the likely impact of the Administration tax reform plan on housing. Our analysis incorporates two general equilibrium impacts -- a one percentage point decline in the level of interest rates and a decrease in the property and rate on principal residences -- and corrects errors regarding discount rates and refinancing in the basic rental model. A 7 per cent increase in market rents (11 per cent without the decline in interest rates) is projected. Consideration of the individual components of the Administration plan suggests that the only significant negative provision is the cut in the personal tax rate from 0.53 (including a 6 per cent state and local rate deductible at the Federal level) to 0.41. Without this cut (and the decline in interest rates which is largely attributable to the cut), market rents would fall by 6 per cent. Rents rise only because rental housing is a negatively taxed asset in the sense that a tax cut lowers the supply of the asset. The general-equilibrium effects will offset the negative direct effects -- the cut in marginal tax rates and loss of

deductibility of property taxes -- on owner-occupied housing in the aggregate. However, this housing will generally be cheaper for households with incomes below \$40,000 -- especially below \$25,000 -- but will be more expensive for those with incomes above \$60,000. This constitutes an improvement in both efficiency and equity because under current law the price of owner housing services is far lower for high income households than for low income households. Homeownership rates should increase by 2 to 3 percentage points for households with incomes below \$40,000 and 1 to 2 percentage points in the aggregate.

Hendry, David F.

PD October 1985. TI Procrustean Econometrics: Or Stretching and Squeezing Data. AU Hendry, David F.; Mizon, Grayham E. AA Hendry: Nuffield College, Oxford. Mizon: Economics Department, Southampton University. SR Centre for Economic Policy Research Discussion Paper: 68; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 20. PR 1 pound (\$2) individuals; 1.50 pounds (\$3) companies, libraries, institutions. JE 212. KW Econometric Modelling. Model Evaluation.

AB Recent concern about the inadequacies of econometric models has led not only to the search for causes, but also to the proposal of constructive remedies for these difficulties. In this paper we analyse the links between econometric modelling methodologies and the performance of econometric models. We comment on a number of the constructive modelling strategies that have been proposed, and emphasise the importance of evaluating models, especially by checking whether they are congruent with the available information. This process of model evaluation is destructive rather than constructive, and the criteria it employs form a set of necessary, not sufficient, conditions for model adequacy.

PD December 1985. TI Assertion Without Empirical Basis: An Econometric Appraisal of Monetary Trends in the United Kingdom by Milton Friedman and Anna J. Schwartz. AU Hendry, David F.; Ericsson, Neil R. AA Hendry: Nuffield College, Oxford. Ericsson: International Finance Division, Federal Reserve Board. SR Board of Governors of the Federal Reserve System, International Finance Discussion Papers: 270; International Finance Division, Board of Governors of the Federal Reserve System, Washington, DC 20551. PG 74. PR No Charge. JE 211, 212, 311, 122, 131, 132. KW Conditional Models. Diagnostic Testing. Dynamics. Econometrics. Error-Correction Models. Evaluation Criteria. Exogeneity. Information Sets. Marginalising. Money Demand. Phase Averages. Quantity Theory. Statistical Inference. Time Series. Velocity of Circulation. Milton Friedman. Anna J. Schwartz.

AB This paper critically re-evaluates some of the fundamental empirical claims about monetary behaviour in the United Kingdom made by Milton Friedman and Anna J. Schwartz in their 1982 book *Monetary Trends in the United States and the United Kingdom*. We focus on six aspects of their analysis: the exogeneity of money; their claims of the constancy and correct specification of their

money-demand equation; their interpretation of a dummy variable in that equation as capturing a "shift in liquidity preference" for 1921-55; their treatment of the interdependence of money, income, prices, and interest rates; and their use of phase-average data. They fail to support many of their empirical assertions with valid econometric evidence: in particular, they leave untested many conditions necessary to sustain their inferences. However, those conditions either are in part directly testable from their data or have testable implications: we test many of those hypotheses and reject virtually all of them. We reject basic claims made for their empirical model of money demand, e.g., those of parameter constancy, price homogeneity, and normality of the disturbances. En route, we show that their model of velocity as a constant performs poorly relative to the "will-o'-the-wisp" model of velocity as a random walk. As constructive evidence against their models, we develop a money-demand model superior to either model of velocity, and which has an unexplained residual variance less than one tenth that of their money-demand equation. This paper, however, is not an "anti-monetarist" critique; rather, it is a pro-econometrics tract which highlights the practical dangers of seeking to analyse complex stochastic processes while eschewing modern econometric methods.

PD January 1986. TI Empirical Modelling in Dynamic Econometrics. AA Nuffield College and Institute of Economics and Statistics, Oxford. SR Oxford Applied Economics Discussion Paper: 1; Institute of Economics and Statistics, Saint Cross Building, Manor Road, Oxford OX1 3UL, ENGLAND. PG 46. PR No Charge. JE 932, 212. KW Economic Time Series. Evaluation. Analysis. Model Construction.

AB The roles of evaluation, discovery and theory in modelling economic time series are analysed. Being reductions of data processes, models reflect economic behaviour, filtered by the measurement system; the reductions entail a taxonomy of information sets and hence of selection criteria characterising congruency. No method of model construction is necessarily valid, but search affects only research efficiency, not the intrinsic usefulness of a model. Moreover, critical evaluation remains justifiable, with predictive failure revealing the information content of tiny samples, and encompassing sustaining progressivity. Theory-models of starts and completions of private dwellings based on dynamized static equilibria and intertemporal optimization are contrasted. Empirical modelling illustrates the analysis.

Hernandez, D. Alejandro

PD November 1985. TI Exchange Controls, Capital Controls, and International Financial Markets. AU Hernandez, D. Alejandro; Stockman, Alan C. AA Department of Economics, University of Rochester. SR National Bureau of Economic Research Working Paper: 1755; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 31. PR \$2.00. JE 441, 422, 411. KW International Financial Markets. Trade. State-Contingent Financial Markets.

AB This paper examines the effects of restrictions on

international financial markets. We analyze a general equilibrium, rational expectations model of a two-country world in which well-functioning international financial markets permit trade in all state-contingent securities except insofar as governments restrict these markets. The restrictions we examine take the form of taxes or quantitative controls on purchases of foreign currency and on the income from foreign assets. State-contingent financial markets allow households to allocate wealth optimally across states so that the imposition of exchange and capital controls has, roughly speaking, only substitution effects but no wealth effect. These restrictions reduce international trade in goods and lower ex-post welfare in the country in which they are imposed. Nominal prices and exchange rates are nonmonotonic functions of these restrictions.

Hodrick, Robert J.

PD November 1985. TI The Covariation of Risk Premiums and Expected Future Spot Exchange Rates. AU Hodrick, Robert J.; Srivastava, Sanjay. AA Hodrick: Kellogg Graduate School of Management, Northwestern University. Srivastava: Graduate School of Industrial Administration, Carnegie-Mellon University. SR National Bureau of Economic Research Working Paper: 1749; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 36. PR \$2.00. JE 313, 431. KW Risk Premiums. Exchange Rates. Future Spot Exchange Rates. United States Dollar Depreciation. Forward Markets.

AB Fama (1984) analyzed the variability and the covariation of risk premiums and expected rates of depreciation. We employ three statistical techniques that do not suffer from a potential bias in Fama's analysis, but we nevertheless confirm his findings. In contrast to his interpretation the results are not necessarily at variance with the predictions of a theoretical model of the risk premium. Increases in expected rates of depreciation of the dollar relative to five foreign currencies are positively correlated with increases in the expected profitability of purchasing these currencies in the forward market, and risk premiums have larger variances than expected rates of depreciation.

PD November 1985. TI Foreign Currency Futures. AU Hodrick, Robert J.; Srivastava, Sanjay. AA Hodrick: Kellogg Graduate School of Management, Northwestern University. Srivastava: Graduate School of Industrial Administration, Carnegie-Mellon University. SR National Bureau of Economic Research Working Paper: 1743; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 49. PR \$2.00. JE 313, 026, 431. KW Foreign Currency Futures Markets. Futures Markets. Risk Premiums. Forward Rates. Unbiasedness Hypothesis.

AB The theoretical nature of risk premiums in foreign currency futures markets is derived and studied empirically. Estimation problems encountered in using futures data are discussed. Since forward rates and futures prices are demonstrated to be approximately equal, and because risk premiums in forward markets are highly variable, consistency of the data requires time variation in daily risk premiums in the futures market. Unbiasedness

of daily futures prices as predictors of the following day's futures price is rejected for all currencies. Reconciliation of daily and monthly data requires positive serial correlation in daily risk premiums.

Holm, Soren

PD January 1986. TI Decomposition in Integer Programming by Superadditive Functions. AU Holm, Soren; Tind, Jorgen. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 32; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 213. KW Integer Programming. Superadditive Duality Theory.

AB The purpose of this paper will be to demonstrate how the Dantzig-Wolfe decomposition principles can be extended to integer programming. The decomposition is based on superadditive duality theory developed for integer and mixed integer programming. The master problem, taking care of the joint constraints in the decomposition, is a mixed integer programming problem that generates superadditive functions for its dual. These functions evaluate the utilization of joint constraints and are incorporated in the objective function for the subproblem. The subproblem itself maximizes a convex piecewise linear function over the polyhedron of local constraints and is thus generating extreme points to be transferred into the masterproblem. The procedure terminates in a finite number of steps with integral data.

Holtz, Eakin Douglas

PD June 1985. TI Implementing Causality Tests with Panel Data, with an Example from Local Public Finance. AU Holtz, Eakin Douglas; Newey, Whitney; Rosen, Harvey S. AA Holtz-Eakin: Department of Economics, Columbia University. Newey and Rosen: Department of Economics, Princeton University. SR National Bureau of Economic Research Technical Paper: 48; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 324, 211. KW Causality Tests. Local Public Finance. Vector Autoregression. Panel Data. Nonstationary Individual Effects.

AB This paper considers estimation and testing of vector autoregression coefficients in panel data, and applies the techniques to analyze the dynamic properties of revenues, expenditures, and grants in a sample of United States municipalities. The model allows for nonstationary individual effects, and is estimated by applying instrumental variables to the quasi-differenced autoregressive equations. Particular attention is paid to specifying lag lengths and forming convenient test statistics. The empirical results suggest that intertemporal linkages are important to the understanding of state and local behavior. Such linkages are ignored in conventional cross sectional regressions. Also, we present evidence that past grant revenues help to predict current expenditures, but that past expenditures do not help to predict current revenues.

Hooker, John N.

PD December 1985. TI The Projective Linear Programming Algorithm. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 31; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 213. KW Linear Programming. Projective Algorithm.

AB N. Karmarkar's new projective algorithm for linear programming has caused quite a stir in the press, due mainly to reports that it is 50 times faster than the simplex method on large problems. It also has a polynomial bound on worst-case running time that is better than the ellipsoid algorithm's. Radically different from the simplex method, it moves through the interior of the polytope's center. This paper describes the algorithm in enough detail to enable one to write his own computer code and to understand why it has polynomial running time. It also reviews some recent attempts to make the algorithm live up to its promise.

Hotz, V. Joseph

PD November 1985. TI Estimating Systems of Nonlinear Equations with Limited Dependent Variables. AU Hotz, V. Joseph; Avery, Robert B. AA Hotz: University of Chicago. Avery: Board of Governors of the Federal Reserve System. SR Economics Research Center/NORC Discussion Paper: 85-19; Economics Research Center/NORC, 6030 S. Ellis, Chicago, IL 60637. PG 36. PR \$2.00; send requests to Librarian, NORC. JE 211, 813. KW Limited Dependent Variables. Systems of Nonlinear Equations. Female Labor Supply. Generalized Method of Moments.

AB Because of the computational burdens of estimating systems of equations with limited dependent variables and correlated disturbances, the recent literature has considered less efficient but computationally tractible estimation methods. To date, these methods have all developed two-step estimators which presume the existence of a reduced form representation of the system. In this paper, we consider estimation of systems in which either such representations do not exist or are not identified. We propose a one-step Generalized Method of Moments (GMM) strategy for the estimation in such situations. Such estimators can be shown to be consistent and have an asymptotic normal distribution. We show that within this class one can derive estimators which are asymptotically equivalent to those derived using two-step procedures. We illustrate our strategy with a life cycle model of married women's labor supply which contains a nonlinear specification not estimable with the existing two-step estimators.

PD December 1985. TI Intertemporal Preferences and Labor Supply. AU Hotz, V. Joseph; Kydland, Finn E.; Sedlacek, Guilherme L. AA Hotz: University of Chicago. Kydland and Sedlacek: Carnegie-Mellon University. SR Program in Quantitative Economic Analysis/NORC Discussion Paper: 85-18; Program in Quantitative Economic Analysis/NORC, 6030 S. Ellis, Chicago, IL 60637. PG 52. PR \$2.00; send requests to Librarian,

NORC. JE 813, 821, 824. KW Life-Cycle Labor Supply. Intertemporal Labor Supply. Nonseparable Preferences.

AB Recently, several authors have argued for the use of dynamic preference structures for leisure which incorporate forms of intertemporally nonseparable preferences in the analysis of intertemporal labor supply decisions. In this paper, we examine whether or not such nonseparable preference structures are important in characterizing micro data on life-cycle labor supply. Using longitudinal data on males from the Panel Study of Income Dynamics, we estimate a model of life-cycle labor supply and consumption under uncertainty in which the structure of intertemporal leisure preferences is allowed to be nonseparable in leisure. Our model nests a number of alternative specifications considered in the literature as special cases. We investigate the robustness of our findings to certain forms of population heterogeneity and to some types of model misspecification. Across a number of alternative specifications, we find evidence that the standard assumption of intertemporally separable preferences for leisure is not consistent with data for prime-age males.

Hubbard, R. Glenn

PD October 1985. TI Nominal Contracting and Price Flexibility in Product Markets. AU Hubbard, R. Glenn; Weiner, Robert J. AA Hubbard: Northwestern University. Weiner: Harvard University. SR National Bureau of Economic Research Working Paper: 1738; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 33. PR \$2.00. JE 611, 632, 023, 022. KW Role of Contracts. Contracts. Price Rigidity. Contract Indexation. Copper. Petroleum. Commodity Markets.

AB The search for microeconomic foundations of non-Walrasian outcomes in labor and product markets has spawned many studies of contracting. This paper emphasizes the role of contracts for market equilibrium -- for many raw materials and basic industrial commodities -- in which long-term contractual arrangements and spot markets coexist. Our principal goals are two -- (i) to explain the existence of contracts and the equilibrium fraction of trades carried out under contract, and (ii) to consider the impact of demand and supply shocks on spot prices when market trades also take place through long-term contracts. We find that the relative importance of contracting depends on, inter alia, the variance of the spot price and the sources of underlying fluctuations. Consistent with the findings of previous macroeconomic studies, we find that contracting and price rigidity are more likely the more important demand shocks are relative to supply shocks. We adapt our static model of contract price and quantity determination to discuss the adjustment of contract prices. Finally, we discuss three important applications of our multiple-price modeling structure -- to (i) analyses of the effects of changes in vertical market structure on market equilibrium in commodity markets (with specific reference to petroleum and copper), (ii) models of the optimal degree of contract indexation, and (iii) aggregate studies of "sticky prices" in macroeconomics.

PD October 1985. **TI** Social Security and Individual Welfare: Precautionary Saving, Liquidity Constraints, and the Payroll Tax. **AU** Hubbard, R. Glenn; Judd, Kenneth L. **AA** Northwestern University. **SR** National Bureau of Economic Research Working Paper: 1736; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 37. **PR** \$2.00. **JE** 915, 024. **KW** Social Security Retirement Annuities. Saving Behavior. Life-Cycle Model. Progressive Tax.

AB Recent advances in the examination of efficiency gains from dynamic tax reforms have used simulation models to isolate intragenerational and/or intergenerational effects. Important considerations having to do with uncertainty or capital market imperfections are frequently missing from such a framework. In this paper, we focus on the welfare gains from introducing social security retirement annuities, given lifetime uncertainty and borrowing restrictions. Our principal findings are four. First, given the considerations mentioned above, "precautionary saving" exceeds life-cycle saving (that would have taken place in the absence of lifetime uncertainty), lending further support to the notion that the perfect-certainty version of the life-cycle model provides an inadequate explanation of observed saving behavior. Second, the introduction of an actuarially fair social security system leads to a significant partial equilibrium increase in lifetime consumption and welfare, accompanied by a reduction in the capital stock. The increase in lifetime welfare is reduced, however, and in many cases eliminated, when borrowing restrictions are imposed. Third, extending the model to general equilibrium, we find that the partial equilibrium gains in lifetime welfare from participation in social security are offset by the interaction of higher steady-state interest rates and binding liquidity constraints. Finally, replacing the proportional payroll tax with a progressive tax (essentially a linear tax with an exemption), we show that age-specific tax schemes can restore much of the potential gain from introducing social security.

TI Price Flexibility, Credit Rationing, and Economic Fluctuations: Evidence from the United States, 1879-1914. **AU** Calomiris, Charles W.; Hubbard, R. Glenn.

Hughes, Hallett Andrew

PD October 1985. **TI** How Much Could the International Coordination of Economic Policies Achieve? An Example from United States-EEC Policy Making. **AA** University of Newcastle upon Tyne. **SR** Centre for Economic Policy Research Discussion Paper: 77; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 34. **PR** 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. **JE** 122, 133, 423. **KW** International Policy Coordination. Anticipations. Dynamic Games.

AB The economic recessions since 1973 have emphasised the interdependence of the major economies and their policy choices. This paper examines whether decentralised control of the world economy effectively limits our ability to manage individual economies. It is well known that noncooperative policies are Pareto inefficient; but there is, as yet, no empirical evidence on the costs of uncoordinated

policies, or the potential gains and risks in cooperation. In contrast to recent theoretical work in the area, this paper uses an estimated multicountry model in a dynamic game framework to estimate those costs and benefits. Policy design depends crucially on the asymmetries between economies. Successful coordination depends on anticipations, and on timing the fiscal and monetary policy impacts correctly. The gains from sustainable cooperation are relatively small and benefit Europe.

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: Graduate School of Business, University of Chicago. Mishkin: Graduate School of Business, Columbia University. **SR** National Bureau of Economic Research Working Paper: 1678; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 38. **PR** \$2.00. **JE** 311. **KW** High Real Interest Rates. Real Interest Rate Behavior. Monetary Policy Regime.

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 September 1985. **TI** Interest Rates, Money Supply Announcements, and Monetary Base Announcements. **AU** Huizinga, John; Leiderman, Leonardo. **AA** Huizinga: University of Chicago. Leiderman: Tel Aviv University. **SR** National Bureau of Economic Research Working Paper: 1705; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PR** \$2.00. **JE** 311. **KW** Term Structure. Interest Rates. Unexpected Monetary Announcements. Monetary Base Announcements.

AB This paper presents a new set of empirical regularities on the link between interest rates, money supply announcements and monetary base announcements. Among the main findings reported are: (i) unexpected increases in the announced monetary base have a

significantly positive effect on interest rates during the period from October 1979 to October 1982; (ii) although unexpected money supply and monetary base announcements have the same impact on interest rates, they have different implications for the future behavior of the money supply and monetary base; (iii) the significant response of longer-term interest rates to unexpected monetary announcements is reflecting a response of current and expected future short-term rates -- i.e. term-structure premia are not altered by these announcements.

Ijiri, Yuji

PD July 1985. TI A Framework for Triple-Entry Bookkeeping. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 12; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 224. KW Wealth. Income. Force.

AB If wealth (assets less liabilities) is denoted by X , then income is aX which explains the reason for a change in wealth, and force is a^2X which explains the reason for a change in income. Under single-entry bookkeeping, only X is recorded in the books of accounts; under double-entry bookkeeping, X and aX are recorded in an integrated framework; and under triple-entry bookkeeping, X , aX and a^2X are all recorded in an integrated framework. Extending the author's earlier work (1982), the paper presents such a framework for triple-entry bookkeeping along with a simple but integrated example. The paper elaborates on the relationship between income momentum and force, showing various types of force accounts that may be used in triple-entry bookkeeping.

Inman, Robert

PD October 1985. TI The Funding Status of Teacher Pensions: An Econometric Approach. AA Wharton School of Management, University of Pennsylvania. SR National Bureau of Economic Research Working Paper: 1727; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 29. PR \$2.00. JE 915. KW Teacher Pension Plans. Pension Funding. Pension Deficits.

AB The financing of public employee pensions has become an issue of growing public concern. This paper examines the funding status of teacher pension plans for the fifty states and for selected localities for the decade, 1971-1980. A pension underfunding equation based upon actuarial principles is specified and estimated using a sample of pension plans for which actuarially sound measures of underfundings are available. The econometrically-estimated pension equation is then used to "predict" underfundings for each state and local pension plan for each year for which full pension plan data are available. The results reveal that the real dollar value of plan underfundings has risen by over 50 per cent in the average state from 1971-1980. Strategies for funding these growing pension deficits are required.

PD October 1985. TI Does Deductibility Influence Local Taxation?. AA Wharton School of Management, University of Pennsylvania. SR National Bureau of

Economic Research Working Paper: 1714; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 48. PR \$2.00. JE 323, 325. KW City Revenue. Deductibility Reform. Tax Reform.

AB Recent proposals to reform the United States tax code all contain significant reforms of the current provision allowing for the deductibility of state and local taxes. This paper examines the effect of deductibility reform on the revenue decisions of the largest United States cities. The analysis of eight alternative reforms concludes: (1) total taxes change very little in the long-run, falling at most by 13 per cent and, for many cities, even rising slightly; (2) fees and license revenue (predominantly a tax on firms) generally fall, in some cases by 30 per cent or more; (3) the net effect on total revenues (tax plus fees) is generally small, never declining by more than 12 per cent even with full loss of deductibility; and (4) policies to offset city revenue losses are effective in neutralizing the negative effects of deductibility reform.

Ishii, Naoko

PD June 1985. TI Macroeconomic Interdependence of Japan and the United States: Some Simulation Results. AU Ishii, Naoko; McKibbin, Warwick; Sachs, Jeffrey. AA Department of Economics, Harvard University. SR National Bureau of Economic Research Working Paper: 1637; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 58. PR \$2.00. JE 023, 423. KW Macroeconomic Policy. Budget Cuts. Protectionist Tariff. Policy Coordination.

AB In this paper we examine the macroeconomic interdependence of Japan and the United States using a medium-scale simulation model of the world economy. Our goal is to determine how shifts in macroeconomic policies in the United States or Japan affect the other country as well as the rest of the world. In particular we examine the following three issues: (1) the likely macroeconomic ramifications for the United States, Europe and Japan of significant budget cuts in the United States; (2) the macroeconomic implications of a protectionist tariff imposed by the United States; and (3) the scope for policy coordination among the United States, Japan and Europe.

Ito, Takatoshi

TI Estimation and Hypothesis Testing with Restricted Spectral Density Matrices: An Application to Uncovered Interest Parity. AU Quah, Danny; Ito, Takatoshi.

Johnson, Robert A.

TI Expected Fiscal Policy and the Recession of 1982. AU Branson, William H.; Fraga, Arminio; Johnson, Robert A.

Jones, Stephen R. G.

PD May 1985. TI Minimum Wage Legislation in a Dual Labor Market. AA University of California, Berkeley and University of British Columbia. SR University of British Columbia Department of Economics Discussion Paper: 85-25; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C., CANADA, V6T 1Y2. PG 31. PR \$.20 per page Canadian to other than

educational institutions. **JE** 822, 821. **KW** Minimum Wage Legislation. Unemployment. Dual Labor Markets. **AB** The paper studies the equilibrium effects of minimum wage legislation in an economy with coexisting primary and secondary labor markets. Owing to difficulties in monitoring, relative wages and the threat of job loss play a functional role in eliciting effort from primary sector workers. Minimum wage laws hence affect the primary wage and employment level, even if the law only binds in the secondary labor market. Furthermore, interaction between the two sectors can also alter the secondary outcome, relative to the standard analysis, and has implications for participation decisions and for the level of unemployment.

Joyce, Theodore

TI Birth Outcome Production Functions in the United States. **AU** Corman, Hope; Joyce, Theodore; Grossman, Michael.

PD November 1985. **TI** The Impact of Induced Abortion on Birth Outcomes in the United States. **AA** Department of Economics, Iona College. **SR** National Bureau of Economic Research Working Paper: 1757; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 41. **PR** \$2.00. **JE** 913, 841. **KW** Infant Health. Abortion.

AB This paper examines the impact of induced abortion on birth outcomes by treating abortion as an endogenous input into the production of infant health. To gauge the direct and indirect effect of abortion, three measures of infant health are considered simultaneously: the neonatal mortality rate, the percentage of low-birth weight births, and the percentage of preterm births. All three are race-specific and all pertain to large counties in the United States in 1977. Because the utilization of health inputs may be conditioned on the expected birth outcome, estimates obtained by two-stage least squares are emphasized. The results make clear that abortion is an important determinant of infant health. This suggests that by reducing the number of unwanted births, abortion enhances the healthiness of newborns of a given weight and gestational age, as well as improving the distribution of births among high-risk groups. Moreover, these direct and indirect effects differ by race.

Judd, Kenneth L.

TI Social Security and Individual Welfare: Precautionary Saving, Liquidity Constraints, and the Payroll Tax. **AU** Hubbard, R. Glenn; Judd, Kenneth L.

Kaku, B.

TI A Heuristic Method for the Multi-Story Facilities Layout Problem. **AU** Thompson, G. L.; Kaku, B.

Kaplan, Robert S.

PD July 1985. **TI** Financial Justification for the Factory of the Future. Manufacturing Configuration and Mix Flexibility. **AU** Kaplan, Robert S.; Karmarkar, Uday S.; Kekre, Sunder. **AA** Harvard Business School and Graduate of Industrial

Administration, Carnegie-Mellon University. Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 1; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 2; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. **PR** No Charge. No Charge. **JE** 522, 522. **KW** Investment. Flexible Automation. Financial Analysis. Manufacturing Process Selection.

AB Many articles have argued that financial criteria are too limiting and myopic for justifying investments in flexible automation. But claims that such investments can only be justified on a strategic basis imply either bad strategy or less than adequate financial analysis. Discounted cash flow analysis is conceptually correct but may be misused in practice when analysts employ an arbitrarily high discount rate, specify too short payback periods, neglect the consequences of failing to remain a low cost producer, fail to value the option in new technology they are acquiring, or assign zero value to the many tangible or difficult to measure benefits from Computer-Integrated-Manufacturing processes. Such benefits include improved quality, reduced inventory and floor space requirements, increased flexibility, and greatly shortened throughput times and lead times. The paper provides guidance on how to correct these limitations so that financial analysis can support, not inhibit, the acquisition decision of CIM equipment. The configuration of manufacturing processes is often seen as a capacity decision followed by an engineering design analysis with justification of the design in aggregate financial terms which emphasize initial outlays and direct costs. In fact, a major consequence of process choice is the resulting impact on operational performance. This relationship is sometimes intuitively characterized in terms of the "flexibility" of alternative process configurations. We present a framework for process selection in which operational costs are imbedded. The emphasis is on comparing dedicated facilities against multiproduct configurations. Specific issues examined include the costs of switching production and the uncertainty in multi-item production.

Kaplow, Louis

PD August 1985. **TI** Horizontal Equity: Measures in Search of a Principle. **AA** Harvard Law School. **SR** National Bureau of Economic Research Working Paper: 1679; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 38. **PR** \$2.00. **JE** 011, 024. **KW** Horizontal Equity.

AB Horizontal equity -- the command that equals be treated equally -- has received increased attention, particularly in attempts to measure the desirability of tax reform proposals. This paper questions whether the normative foundations for horizontal equity justify the indexes and approaches that have generally been adopted. It suggests that past attempts to implement horizontal equity are inconsistent with its supposed foundations and that a more thorough examination of the concept raises

serious doubts as to whether any alternative interpretation of horizontal equity reasonably consistent with common understanding of the concept can be justified.

Karmarkar, Uday S.

TI Financial Justification for the Factory of the Future. Manufacturing Configuration and Mix Flexibility. AU Kaplan, Robert S.; Karmarkar, Uday S.; Kekre, Sunder.

Karni, Edi

PD December 1985. TI A Welfare Analysis of Steady States in an Overlapping Generations Model with Uncertain Lifetime. AU Karni, Edi; Zilcha, Itzhak. AA Karni: John Hopkins University and Tel-Aviv University. Zilcha: Tel-Aviv University. SR Tel Aviv Foerder Institute for Economic Research Working Papers: 38-85; Department of Economics, Tel Aviv University, Ramat Aviv 69978, Tel Aviv, ISRAEL. PG 25. PR No Charge. JE 024, 021. KW Overlapping Generations. Uncertain Lifetime.

AB We consider an overlapping generations economy where individuals have uncertain lifetime. Each generation has a continuum of consumers. Each individual earns income when "young" and when "middle-aged" but not in the retirement period. The intergenerational transfers are either intentional bequest (which are a source of utility) or unintentional bequest. We show that although the offspring's utility or consumption are not incorporated in the parents utility function, when fair life-insurance and annuity markets are available a steady-state equilibrium exists and it is Pareto optimal.

PD March 1986. TI Dynamic Consistency in English Auctions and Expected Utility Theory. AU Karni, Edi; Safra, Zvi. AA Karni: Johns Hopkins University. Safra: Tel Aviv University. SR Johns Hopkins Department of Political Economy Working Papers: 167; Department of Political Economy, Johns Hopkins University, Baltimore, MD 21218. PG 12. PR No Charge. JE 022, 026. KW English Auctions. Expected Utility Maximizing Behavior. Dynamically Consistent Behavior. Dominant Bidding Strategy.

AB This paper explores the relationship between dynamically consistent behavior and expected utility maximizing behavior in the context of English auctions. We consider English auctions where: (a) the objects offered for sale are lotteries, that is, risky prospects with objectively known probabilities and (b) the conditions of the independent private values model prevail, that is, each participant in the auction knows his own assessment of the value of the object that is being auctioned but not its value to other bidders, the individual evaluations of the object are independent, and the behavior of the bidders is non-cooperative. The main result of this paper is that decision makers are dynamically consistent English auction bidders if and only if they are expected utility maximizers. The proof of this result involves two intermediary steps that are of interest in their own right: (a) dynamic consistency implies the existence of a dominant bidding strategy, and (b) this strategy is preference revealing in the sense that the actual bid, namely the price at which a dynamically consistent decision maker withdraws from the

auction, coincides with his personal assessment of the value of the lottery being auctioned.

Kearl, J. R.

PD November 1985. TI The Covariance Structure of Earnings and Income, Compensatory Behavior and On-The-Job Investments. AA Department of Economics, Brigham Young University. SR National Bureau of Economic Research Working Paper: 1747; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 35. PR \$2.00. JE 851, 042, 229. KW Human Capital. On-The-Job Investment Hypothesis.

AB Observationally alike individuals who make different choices about on-the-job investments should have earnings profiles that differ in systematic ways. In particular, investments in non-specific human capital should result in lower initial earnings but higher earnings growth rates. Human capital models of this sort admit testing, then, by examining the covariance between the level of earnings and the growth rate of earnings. This paper reports estimates of this covariance using the sample covariance among income observations across time for the same individuals. The sample covariances are drawn from the Utah Panel Data, a panel of some 16,000 households with income and wealth observations at various intervals over the period from 1850 to 1900. The parameter of interest is negative. This estimate is robust to various specifications of the model. I also reexamine earlier work by Lillard and Weiss and Hause, who use data on earnings, and conclude that there is strong support for the on-the-job investment hypothesis using data from three quite different sources covering different economies and different time periods.

Kekre, Sham

PD July 1985. TI Push and Pull Systems for Production Control. AU Kekre, Sham; Kekre, Sunder. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 11; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 022. KW Production Control.

AB System costs and performance are dependent on the method of shop control. We analyse two basic methods of production control - Push and Pull and compare their costs on a mean value basis. It is seen that in both methods, the costs are sensitive to the key parameters - demand and manufacturing lead time. Extension to multi-stage systems is also demonstrated. Other factors besides costs that have to be considered in practical situations are also discussed.

PD July 1985. TI Work-in-Process Considerations in Job-Shop Production Planning. AU Kekre, Sham; Kekre, Sunder. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 5; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 022, 531. KW Production Planning. Work-in-

Process.

AB We discuss production planning in closed jobshops facing demand that has seasonal variations in product mix and volume. The queueing phenomena in such shops results in significant work-in-process. The planning decisions are to determine production levels and lotsizing policies considering tradeoffs between work-in-process and finished goods carrying costs. The use of the model to practitioners is illustrated through an example.

Kekre, Sunder

TI Push and Pull Systems for Production Control. **AU** Kekre, Sham; Kekre, Sunder.

PD July 1985. **TI** Consideration of Work-In-Process in Capacity Decisions. **AA** Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 10; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. **PR** No Charge. **JE** 641, 522. **KW** Work-In-Process. Capacity Choice. **AB** Capacity models often ignore the costs of carrying work-in-process. In this paper we investigate some capacity choice issues in jobshops and consider the tradeoffs between capital costs and inventory holding costs. A queueing model relating batching decisions and processing capacity to lead time of manufacture is used. The capacity choice of a single machine and the impact of the substitution of a machine of large capacity with a pool of a number of smaller units of equivalent capacity is analysed. The models yield simple decision rules and give intuitive insights concerning capacity choice that should be useful to operation managers and designers of manufacturing systems.

TI Work-in-Process Considerations in Job-Shop Production Planning. **AU** Kekre, Sham; Kekre, Sunder.

TI Financial Justification for the Factory of the Future. Manufacturing Configuration and Mix Flexibility. **AU** Kaplan, Robert S.; Karmarkar, Uday S.; Kekre, Sunder.

Kimbrough, Kent P.

PD September 1985. **TI** Foreign Aid and Optimal Fiscal Policy. **AA** Department of Economics, Duke University. **SR** Duke Working Papers in Economics: 85-12; Working Papers Series, Department of Economics, Duke University, Durham, NC 27706. **PG** 44. **PR** No Charge. **JE** 443, 321, 023. **KW** Foreign Aid. Fiscal Policy. Foreign Aid Receipts.

AB This paper uses an intertemporal utility maximization framework to study the effects of changes in government and private sector foreign aid receipts on macroeconomic behavior in a small open economy. Particular attention is given to the optimal response of fiscal policy to changes in foreign aid inflows. The optimal adjustment of distorting taxes on labor, the optimal adjustment of government purchases, and the optimal behavior of the government's budget deficit are all considered. It is shown that in response to an increase in government foreign aid receipts optimal fiscal policy calls

for a reduction in tax rates and a rise in government purchases, while just the reverse is optimal when private sector foreign aid receipts increase. These results are interpreted from a public finance perspective in terms of the differing opportunities the two types of foreign aid make available to an economy that must rely on distorting taxes to raise revenue. In addition, the effects of changes in foreign aid inflows on private sector variables such as consumption, output, employment, investment, the current account, and welfare are examined.

PD October 1985. **TI** Inflation, Employment, and Welfare in the Presence of Transactions Costs. **AA** Department of Economics, Duke University. **SR** Duke Working Papers in Economics: 85-11; Working Papers Series, Department of Economics, Duke University, Durham, NC 27706. **PG** 22. **PR** No Charge. **JE** 023, 311, 134. **KW** Inflation. Unemployment. Phillips Curve. Transactions Costs.

AB This paper examines the relationship between inflation and employment and the issue of the optimum rate of inflation in an economy where transacting uses up scarce resources but by holding money individuals can reduce transactions costs. The model yields a positively sloped long-run Phillips curve (i.e., an inverse relation between inflation and employment) and results for the optimum rate of inflation that are identical to those of Friedman (1969). It is also argued that even in the presence of distorting taxes optimal taxation calls for inflation to be set as dictated by the optimum quantity of money rule.

King, Maxwell L.

PD November 1985. **TI** Testing for Block Effects in Regression Models Based on Survey Data. **AU** King, Maxwell L.; Evans, Merran A. **AA** Department of Econometrics and Operations Research, Monash University. **SR** Monash Department of Econometrics and Operations Research Working Paper: 14/85; Department of Econometrics and Operations Research, Monash University, Clayton, Victoria 3168, AUSTRALIA. **PG** 9. **PR** No Charge. **JE** 211. **KW** Durbin-Watson Test. Intra-block Correlation. Lagrange Multiplier Test. Power. Sample Survey Data.

AB This paper considers the problem of testing for intra-block or intra-cluster correlation in regression disturbances that may occur when cluster or two-stage sampling data is used in regression analysis. It points out that the one-sided Lagrange multiplier test is locally best invariant. An empirical power comparison suggests that if the block structure is known this test should be used. Otherwise the Durbin-Watson test provides a useful test, especially in large samples.

PD February 1986. **TI** Joint One-Sided Tests of Linear Regression Coefficients. **AU** King, Maxwell L.; Smith, Murray D. **AA** King: Department of Econometrics and Operations Research, Monash University. Smith: School of Economics, University of New South Wales. **SR** Monash Department of Econometrics and Operations Research Working Paper: 1/86; Department of Econometrics and Operations Research, Monash University, Clayton, Victoria 3168,

AUSTRALIA. PG 24. PR No Charge. JE 211. KW F-test. Likelihood Ratio Test. Linear Regression. One-sided Testing. Power Envelope. UMPI Test.

AB The main example of the class of problems considered below is that of testing whether a subset of regression coefficients are jointly zero assuming knowledge of the coefficients' signs. If this knowledge is ignored, the likelihood ratio, Wald, and Lagrange multiplier tests are each equivalent to the F-test. We propose a new test which can be applied as a one-sided t-test and which is UMPI in a subspace of the parameter space. Empirical power comparisons with the power envelope, the F-test, and the exact one-sided likelihood ratio test show that the new test can have exceptionally good power over a wide range of the parameter space.

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. SR National Bureau of Economic Research Working Paper: 1681; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 31. PR \$2.00. JE 322, 323. KW Optimal Taxation. Public Expenditures. Public Goods.

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 effect of taxes on the willingness to pay for the public good, and (b) distributional effects. The former captures 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.

King, Stephen R.

TI Hidden Stimuli to Capital Formation: Debt and the Incomplete Adjustment of Financial Returns. AU Chirinko, Robert S.; King, Stephen R.

Kiyotaki, Nobuhiro

TI Monopolistic Competition, Aggregate Demand Externalities and Real Effects of Nominal Money. AU Blanchard, Olivier J.; Kiyotaki, Nobuhiro.

Knetter, Michael

TI Changes in the Age Distribution of Income in the United States, 1968-1984. AU Boskin, Michael J.; Kotlikoff, Laurence J.; Knetter, Michael.

Knight, John L.

PD June 1985. TI The Distribution of the Stein-Rule Estimator in a Model with Non-Normal Disturbances. AA Department of Econometrics, University of New

South Wales. SR University of Western Ontario Centre for Decision Sciences and Econometrics Technical Reports: 3; The Centre for Decision Sciences and Econometrics, Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. PG 18. PR No Charge. JE 211. KW Non-Normal Distribution. Estimation. Stein-Rule.

AB It is the purpose of this paper to extend the approach of Phillips (1984) to examine the distribution and moments of the Stein-rule estimator under the assumption the disturbances follow a non-normal distribution of the Edgeworth or Gram-Charlier type. We use the technique developed by Davis (1976) and used by the author in other contexts to examine the effects of non-normal disturbances (see, e.g. Knight (1983a, 1983b, 1984a, 1984b)).

Kotlikoff, Laurence J.

TI Public Debt and United States Saving: A New Test of the Neutrality Hypothesis. AU Boskin, Michael J.; Kotlikoff, Laurence J.

TI The Efficiency Gains from Social Security Benefit -- Tax Linkage. AU Auerbach, Alan J.; Kotlikoff, Laurence J.

TI Life Insurance of the Elderly: Adequacy and Determinants. AU Auerbach, Alan J.; Kotlikoff, Laurence J.

TI Changes in the Age Distribution of Income in the United States, 1968-1984. AU Boskin, Michael J.; Kotlikoff, Laurence J.; Knetter, Michael.

Kotwal, Ashok

TI Risk-Bearing Capacity and Entrepreneurship as Privileges of Wealth. AU Eswaran, Mukesh; Kotwal, Ashok.

Kouri, Pentti

PD June 1985. TI A Vintage Model of Supply Applied to French Manufacturing. AU Kouri, Pentti; Viscio, Albert; de Macedo, Jorge Braga. AA Kouri and Viscio: Department of Economics, New York University. de Macedo: Woodrow Wilson School, Princeton University. SR National Bureau of Economic Research Working Paper: 1639; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 37. PR \$2.00. JE 022, 631. KW Fixed Factors. French Manufacturing. Vintage Effects.

AB In Kouri, Macedo and Viscio (1982), we applied a vintage model of supply to data from the French manufacturing sector. The model was, however, solved with a particular parametrization (Cobb Douglas production function and a quadratic adjustment function). Also, no fixed factors were allowed for in the theoretical treatment, even though fixed labor was found to be significant in the application to France. The treatment of technological progress was equally restrictive. Here we solve in Section I the general case of N variable factors and M fixed factors with embodied and disembodied technological progress. It turns out to be simpler than the combination of a Cobb-Douglas production function with a

quadratic adjustment function, thus suggesting a manageable framework for the analysis of profitability and employment in industrial countries. The model is simulated in Section II using previously unavailable data on a subsector of French manufacturing from 1959 to 1980. The empirical results confirm the importance of vintage effects.

Kreinin, Mordechai E.

TI Import Quotas and VERS: A Comparative Analysis in A Three-country Framework. AU Dinopoulos, Elias; Kreinin, Mordechai E.

Kriebel, Charles

TI A Criticism of Information Systems Research Employing "User Satisfaction." AU Chismar, William; Kriebel, Charles; Malone, Nancy.

Krugman, Paul

PD June 1985. TI Is the Strong Dollar Sustainable?. AA Sloan School of Management, MIT. SR National Bureau of Economic Research Working Paper: 1644; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 48. PR \$2.00. JE 431, 133. KW Speculative Bubbles. Dollar's Value.

AB This paper presents evidence strongly suggesting that the current strength of the dollar reflects myopic behavior by international investors; that is, that part of the dollar's strength can be viewed as a speculative bubble. At some point this bubble will burst, leading to a sharp fall in the dollar's value. The essential argument is that given the modest real interest differentials between the United States and its trading partners, the dollar's strength amounts to an implicit forecast on the part of the market that with high probability the dollar will remain very strong for an extended period. The paper shows that such sustained dollar strength would lead the United States to Latin American levels of debt relative to Gross National Product, which is presumably not feasible. Allowing for the possibility that something will be done to bring the dollar down before this happens actually reinforces the argument that the current value of the dollar is unreasonable.

PD November 1985. TI Increasing Returns and the Theory of International Trade. AA Department of Economics, Massachusetts Institute of Technology. SR National Bureau of Economic Research Working Paper: 1752; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 53. PR \$2.00. JE 411. KW Increasing Returns. International Trade.

AB Increasing returns are as fundamental a cause of international trade as comparative advantage, but their role has until recently been neglected because of the problem of modelling market structure. Recently substantial theoretical progress has been made using three different approaches. These are the Marshallian approach, where economies of scale are assumed external to firms; the Chamberlinian approach, where imperfect competition takes the relatively tractable form of monopolistic competition; and the Cournot approach of noncooperative

quantity-setting firms. This paper surveys the basic concepts and results of each approach. It shows that some basic insights are not too sensitive to the particular model of market structure. Although much remains to be done, we have made more progress toward a general analysis of increasing returns and trade than anyone would have thought possible even a few years ago.

Kumar, Praveen

PD October 1985. TI The Sequential General Principal-Agent Problem and the Generalized Incomplete Revelation Principle. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 23; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 026. KW Generalized Incomplete Revelation Principle. Sequential Incentive Mechanism Design. Principal-Agent Models.

AB A Principal-Agent characterised by both private information and moral hazard is considered in a finite horizon economy. The problem of sequential incentive mechanism design with consistency constraints on the principal is considered in this context. The mechanism design problem is modelled as an extensive form game of incomplete information, and a refinement of the sequential equilibrium (Kreps and Wilson (1982)), the structural hierarchical equilibrium (SHE), is used as the solution concept. It is argued that Myerson's (1982) Generalized Revelation Principle is extended to the Generalized Incomplete Revelation principle: The optimal incentive mechanism in the class of all sequential incentive mechanisms for the generalized principal-agent model is a GICIR mechanism. In other words, the set of allocations sustainable as SHE is a subset of the set of equilibrium allocations sustainable with GICIR mechanisms.

PD October 1985. TI Sequential Incentive Mechanism Design and the Incomplete Revelation Principle. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 22; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 026. KW Revelation Principle. Structural Hierarchical Equilibrium. Incomplete Revelation Principle.

AB We study the problem of consistent mechanism design in a finite horizon economy. The mechanism design is modelled as an extensive form game of incomplete information and a refinement of the sequential equilibrium (Kreps and Wilson 1982), called the structural hierarchical equilibrium is used as a solution concept. It is shown that the Revelation Principle does not apply, and the problem with constructing equivalent truth revealing mechanisms is related to the data of the model -- the discount factors, initial priors, and the optimizing horizon of the players. A two period sequential auction mechanism design example is presented to demonstrate the case where it is not desirable from the principal's point of view to induce truthful revelation. The concept of incentive compatible incomplete revelation (ICIR) mechanisms is introduced

and the Revelation Principle is generalized to the Incomplete Revelation Principle: The optimal incentive mechanism in the class of all sequential incentive mechanisms is an ICIR mechanism. The Incomplete Revelation Principle is then generalized to the case where, (a) the private information of the agents is itself evolving over time, and (b) where agents only receive signals correlated with the actual messages sent to the principal.

PD December 1985. **TI** Shareholder-Manager Conflict, Costly Monitoring, and the Information Content of Dividends. **AA** Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 30; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. **PR** No Charge. **JE** 022, 026, 522. **KW** Moral Hazard. Investment Allocation. Monitoring.

AB The effect of monitoring moral hazard on the information content of the agent's signals is considered in a model where both adverse selection and moral hazard sequentially coexist. I consider a two period snapshot of a repeated rent-sharing relationship between a risk averse manager and a risk neutral shareholder. There are informational asymmetries of two kinds: The manager has private information on the quality of the firm's opportunity set, and the actual investment allocation by the manager is not costlessly observable. Differences in attitudes towards risk set up a moral hazard problem in investment allocation. The shareholder can undertake costly monitoring of the manager's actions, and the precision of this monitoring is increasing in the level of monitoring investment. The manager decides on his signalling (dividend payout) strategy after the monitoring decision of the shareholder. It is shown that, (a) in the case of perfect monitoring (and when forcing contracts can be written) dividends signal (in the sense of Spence) the privately observed prospects of the firm, (b) in the other polar case of no monitoring there is only a complete pooling equilibrium wherein the information content of dividends is completely vitiated. Most importantly, it is shown that, for the most interesting case of imperfect monitoring, partition pooling equilibria exist, where dividend payouts coarsely signal the quality of the firm's opportunity set. Furthermore, these equilibria are shown to exist with pecuniary signalling and nonsatiation in the agent's preferences over the principal's response variable, i.e. under much more general conditions than heretofore shown. Finally, by restricting attention to Pareto perfect equilibrium, comparative static results on the extent of information coarsening are obtained. It is shown that under plausible conditions, the coarseness of the partition equilibria (in a sense made precise) is strictly decreasing in the level of monitoring investment. In that sense, the principal, by moving first and deciding on the monitoring investment, effectively chooses the equilibrium information content of the agent's signals. This results in a particularly attractive characterization of the principal's monitoring investment decision, where the costs of monitoring are traded off with the value of the higher information content of the agent's signals.

Kurke, Lance B.

TI Environmental Selection Versus Organizational Adaptation: Toward a Middle Ground. **AU** Ulrich, Dave; Kurke, Lance B.

Kydland, Finn E.

TI Intertemporal Preferences and Labor Supply. **AU** Hotz, V. Joseph; Kydland, Finn E.; Sedlacek, Guilherme L.

Kyle, Albert S.

PD January 3, 1986. **TI** Informed Speculation with Imperfect Competition. **AA** Economics Department and Woodrow Wilson School of Public and International Affairs, Princeton University. **SR** Princeton Financial Research Center Memorandum: 66; Financial Research Center, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 81. **PR** \$2.00. **JE** 021, 026. **KW** Speculation. Rational Expectations. Informed Trading. Noise Trading. Informational Efficiency. Nash Equilibrium. Insider Trading.

AB Competitive rational expectations models have the unsatisfactory property, dubbed the "schizophrenia" problem by Hellwig, that each trader takes the equilibrium price as given despite the fact that he influences that price. By examining information aggregation in a non-competitive rational expectations model using a Nash equilibrium in demand functions, the schizophrenia problem is avoided by having each trader take into account the effect his demand has on the equilibrium price. Given a distribution of private information across traders, prices reveal less information than in the competitive equilibrium, and prices no longer become fully informative in the limit as noise trading vanishes or as traders become risk neutral. With small traders, the model may become one of monopolistic competition, not perfect competition. In contrast to the competitive model, a reasonable model of endogenous acquisition of costly private information is obtained, even when traders are risk neutral.

Laffargue, J. P.

TI Aspects Econometriques de L'Hypothese D'Anticipation Rationnelle. **AU** Gourieroux, C.; Laffargue, J. P.

Lafontaine, Francine

PD October 1985. **TI** Obtaining Any Wald Statistic You Want. **AU** Lafontaine, Francine; White, Kenneth J. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 85-31; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C., Canada, V6T 1Y2. **PG** 7. **PR** \$.20 per page Canadian to other than educational institutions. **JE** 211. **KW** Wald Statistic. Nonlinear Wald Test. Nonlinear Hypothesis.

AB While the Wald test can be used to test a nonlinear hypothesis in a linear or nonlinear regression model it is known that a particular hypothesis can be written in many ways when nonlinear forms are permitted. This paper illustrates that it is possible to obtain virtually any value of the Wald statistic at different significance levels. It is also shown that in small samples the use of the $X(2)$ or F

approximation for the distribution of the Wald Statistic can be misleading for some forms of the nonlinear Wald test.

Lang, Kevin

TI Testing the Dual Labor Market Theory: A Reconsideration of the Evidence. AU Dickens, William T.; Lang, Kevin.

Laroque, Guy

PD January 1986. TI On the Inventory Cycle and the Instability of the Competitive Mechanism. AA Princeton University. SR Princeton Financial Research Center Memorandum: 67; Financial Research Center, Department of Economics, Princeton University, Princeton, NJ 08544. PG 43. PR \$2.00. JE 021, 023, 131. KW Business Cycle. Inventories. Economics Dynamics.

AB This paper presents a model of the business cycle with perfect foresight where the mere presence of inventories is responsible for the apparition of the cycle. The basic assumption of the model is that the price system does not adjust instantaneously to its competitive value. Then speculation (or inventory holding) destabilizes the tatonnement process and creates the cycle. Keynesian policies are shown to be particularly effective in this framework.

Layard, P. R. G.

TI The Rise in Unemployment: A Multi-country Study. AU Bean, Charles R.; Layard, P. R. G.; Nickell, S. J.

PD January 1986. TI Public Sector Pay: The British Perspective. AA Centre for Labour Economics, London School of Economics. SR London School of Economics, Centre for Labour Economics Discussion Paper: 229; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UNITED KINGDOM. PG 17. PR No Charge. JE 824. KW Public Sector Wages.

AB 1. Relative pay in the public sector has fluctuated wildly but is untrended since the early 1970s. The fluctuations have been dysfunctional. 2. In time series, public sector pay responds to private sector pay (with a lag) but there is little feedback the other way. 3. To reduce fluctuations in relativities, public sector pay should grow systematically at the same rate as comparable groups in the private sector. Relative quit rates and recruitment rates should also be monitored.

Layard, Richard

PD January 1986. TI Unemployment in Britain. AU Layard, Richard; Nickell, S. J. AA Layard: Centre for Labour Economics London School of Economics. Nickell: London School of Economics and Institute of Economics and Statistics, Oxford. SR London School of Economics, Centre for Labour Economics Discussion Paper: 240; Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, United Kingdom. PG 103. PR No Charge. JE 824. KW Unemployment. Labour Market. Real Wages. Non-Accelerating-Inflation Rate of Unemployment.

AB We estimate a 3-equation model that explains both changes in the NAIRU (non-accelerating-inflation rate of

unemployment) and deviations of unemployment from the NAIRU. The employment and price equations are based on imperfect competition, and show how employment is affected by both real wages and real aggregate demand. The wage equation is eclectic. Using this whole model we calculate how the natural rate of unemployment has been affected by changes in workers' search intensity, employment protection, mismatch, union power, taxes, relative import prices and incomes policy. The model has a 'natural' level of real demand, but in the short-run low demand can reduce inflation, as recently, at the cost of higher unemployment.

Lehmann, Bruce

PD October 1985. TI The Empirical Foundations of the Arbitrage Pricing Theory II: The Optimal Construction of Basis Portfolios. AU Lehmann, Bruce; Modest, David M. AA Graduate School of Business, Columbia University. SR National Bureau of Economic Research Working Paper: 1726; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 52. PR \$2.00. JE 313. KW Optimal Basis Portfolio. APT. Arbitrage Pricing Theory. Security Returns.

AB The Arbitrage Pricing Theory (APT) of Ross (1976) presumes that a factor model describes security returns. In this paper, we provide a comprehensive examination of the merits of various strategies for constructing basis portfolios that are, in principle, highly correlated with the common factors affecting security returns. Three main conclusions emerge from our study. First, increasing the number of securities included in the analysis dramatically improves basis portfolio performance. Our results indicate that factor models involving 750 securities provide markedly superior performance to those involving 30 or 250 securities. Second, comparatively efficient estimation procedures such as maximum likelihood and restricted maximum likelihood factor analysis (which imposes the APT mean restriction) significantly outperform the less efficient instrumental variables and principal components procedures that have been proposed in the literature. Third, a variant of the usual Fama-MacBeth portfolio formation procedure, which we call the minimum idiosyncratic risk portfolio formation procedure, outperformed the Fama-MacBeth procedure and proved equal to or better than more expensive quadratic programming procedures.

PD October 1985. TI The Empirical Foundations of the Arbitrage Pricing Theory I: The Empirical Tests. AU Lehmann, Bruce; Modest, David M. AA Graduate School of Business, Columbia University. SR National Bureau of Economic Research Working Paper: 1725; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 62. PR \$2.00. JE 313. KW Arbitrage Pricing Theory. APT. Expected Returns of Portfolios. Zero Beta Version. Riskless Rate Model.

AB This paper provides a detailed and extensive examination of the validity of the Arbitrage Pricing Theory based on maximum likelihood factor analysis of large cross-sections of securities. Our empirical implementation of the theory proved incapable of

explaining expected returns on portfolios composed of securities with different market capitalizations although it provided an adequate account of the expected returns of portfolios formed on the basis of dividend yield and own variance where risk adjustment with the CAPM employing the usual market proxies failed. In addition, it appears that the zero beta version of the APT is sharply rejected in favor of the riskless rate model and that there is little basis for discriminating among five and ten factor versions of the theory.

PD October 1985. **TI** Mutual Fund Performance Evaluation: A Comparison of Benchmarks and Benchmark Comparisons. **AU** Lehmann, Bruce; Modest, David M. **AA** Graduate School of Business, Columbia University. **SR** National Bureau of Economic Research Working Paper: 1721; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 54. **PR** \$2.00. **JE** 313. **KW** Mutual Fund Performance. **CAPM**. **APT**. **Benchmarks**.

AB Our primary goal in this paper is to ascertain whether the absolute and relative rankings of managed funds are sensitive to the benchmark chosen to measure normal performance. We employ the standard CAPM benchmarks and a variety of APT benchmarks to investigate this question. We found that there is little similarity between the absolute and relative mutual fund rankings obtained from alternative benchmarks which suggests the importance of knowing the appropriate model for risk and expected return in this context. In addition, the rankings are quite sensitive to the method used to construct the APT benchmark. One would reach very different conclusions about the funds' performance using smaller numbers of securities in the analysis or the less efficient methods for estimating the necessary factor models than one would arrive at using the maximum likelihood procedures with 750 securities. We did, however, find the rankings of the funds are not very sensitive to the exact number of common sources of systematic risk that are assumed to impinge on security returns. Finally, we found statistically significant measured abnormal performance using all the benchmarks. The economic explanation of this phenomenon appears to be an open question.

Leiderman, Leonardo

TI Interest Rates, Money Supply Announcements, and Monetary Base Announcements. **AU** Huizinga, John; Leiderman, Leonardo.

Leonard, Jonathan S.

TI Union Maids: Unions and the Female Workforce. **AU** Freeman, Richard; Leonard, Jonathan S.

PD November 1985. **TI** The Effectiveness of Equal Employment Law and Affirmative Action Regulation. **AA** School of Business, University of California Berkeley. **SR** National Bureau of Economic Research Working Paper: 1745; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 51. **PR** \$2.00. **JE** 917, 826. **KW** Affirmative Action Laws. **Anti-Discrimination Laws**. **Equal Employment Laws**.

AB This paper reviews some recent empirical analyses of the impact of affirmative action and anti-discrimination law on employment and productivity. The major findings are that: 1) Affirmative action has some success in improving employment opportunities for minorities and females, particularly for blacks. Results for white females are mixed. 2) Increases in black employment under affirmative action have taken place in both high-skilled and low-skilled occupations. 3) Compliance reviews have not been targeted against establishments with the lowest relative proportions of minority or female employment. Targetting seems more compatible with an earnings redistribution rather than an anti-discrimination program. 4) While many of the detailed enforcement steps and sanctions of the contract compliance process seem to have little effect individually, the compliance review process as a whole has been effective. 5) The system of goals and timetables have not been adhered to as rigidly as one might expect of quotas. The goals firms agree to are greatly inflated relative to their subsequent achievements, but they are not hollow promises. 6) Litigation under Title VII of the Civil Rights Act of 1964 has played a significant role in increasing black employment. In addition, as minority and female employment shares have increased, their relative productivity, while poorly measured, has not significantly declined.

PD November 1985. **TI** Labor Supply Incentives and Disincentives for the Disabled. **AA** School of Business, University of California Berkeley. **SR** National Bureau of Economic Research Working Paper: 1744; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 45. **PR** \$2.00. **JE** 813, 910. **KW** Disabled. **Social Security Disability Benefits**. **Labor Force Participation of the Disabled**.

AB The past three decades have witnessed a large and puzzling decline in labor force participation by prime-age males, and a correspondingly large increase in Social Security disability beneficiary roles. This paper reviews the analytical studies that have attempted to determine the causal links between disability, beneficiary status, and labor-force non-participation. Although disability is often thought of as a purely medically determined condition with no labor supply responsiveness to economic factors, models of Social Security disability beneficiary status as an economic decision have had some success in explaining both the growth of the program and the decline in labor force participation. These studies have, however, produced a wide range of estimates of labor supply elasticity, in part because of the difficulty of the underlying econometric problem of estimating the response to two (or more) potential income streams, only one of which is usually observed for any individual.

Levine, Paul

TI Credibility and Time Inconsistency in a Stochastic World. **AU** Currie, David; Levine, Paul.

Lewis, Tracy R.

TI Bankruptcy Costs and the Theory of Oligopoly. **AU** Brander, James A.; Lewis, Tracy R.

TI A Theory of Negotiated Equity Financing.

AU Giammarino, Ronald M.; Lewis, Tracy R.

Lichtenberg, Frank R.

TI The Comparative Advantage of Educated Workers in Implementing New Technology: Some Empirical Regularities. AU Bartel, Ann P.; Lichtenberg, Frank R.

Lindsey, Lawrence B.

PD November 1985. TI Estimating the Revenue Maximizing Top Personal Tax Rate. AA National Bureau of Economic Research, Cambridge, MA. SR National Bureau of Economic Research Working Paper: 1761; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 47. PR \$2.00. JE 322, 323. KW Income Tax Cuts. Revenue Maximizing Tax Rates. Taxpayer Behavior.

AB The idea that marginal tax rates and tax revenue may be inversely related is at least as old as Adam Smith's Wealth of Nations. The emergence of the "Laffer Curve" in the modern public debate on the subject has rekindled interest in this idea. The present paper uses data from the 1982 tax rate reductions to estimate the revenue maximizing top personal tax rate. This paper also examines the components of taxable income to consider the sources of taxpayer response to changes in marginal tax rates. The National Bureau of Economic Research TAXSIM model was used extensively in this study to estimate the magnitude of taxpayer response to tax rate changes.

PD November 1985. TI Taxpayer Behavior and the Distribution of the 1982 Tax Cut. AA National Bureau of Economic Research, Cambridge, MA. SR National Bureau of Economic Research Working Paper: 1760; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 47. PR \$2.00. JE 321, 323, 024. KW Economic Recovery Tax Act. Income Tax Cuts. Distribution of the Tax Burden. Taxpayer Behavior.

AB The Economic Recovery Tax Act of 1981 mandated the most substantial reduction in personal income tax rates since the tax cuts of 1964. The rate reductions stimulated debates about the responsiveness of taxpayers to tax rates and incentives, the magnitude of the foregone revenue, and the distribution of the tax burden. This paper provides estimates of these three parameters. A baseline income distribution was created which took the macroeconomic environment of 1982 as given. This distribution is contrasted with the actual income reported in 1982 to measure the added reporting of income as a result of the rate cuts. The National Bureau of Economic Research TAXSIM model was used to estimate the effects of taxpayer behavior on tax liabilities as well.

Lindsey, Robin

TI Economics of A Bottleneck. AU Arnott, Richard; dePalma, Andre; Lindsey, Robin.

Ling, David C.

TI The Administration Tax Reform Proposal and Housing. AU Hendershott, Patric H.; Ling, David C.

Long, Sharon K.

TI Domestic Violence: A Non-Random Affair. AU Tauchen, Helen V.; Witte, Ann D.; Long, Sharon K.

Loungani, Prakash

PD January 1986. TI Oil Price Shocks and the Dispersion Hypothesis, 1900-1980. AA Department of Economics, University of Rochester. SR University of Rochester Department of Economics Discussion Paper: 33; Department of Economics, University of Rochester, Rochester, NY 14627. PG 28. PR \$3.00. JE 023, 824, 130. KW Natural Rate of Unemployment. Sectoral Shifts.

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

Lundberg, Shelly J.

TI Hours Restrictions and Labor Supply. AU Dickens, William T.; Lundberg, Shelly J.

Macauley, Melly K.

TI Risk Aversion and the Insurance Value of Strategic Oil Stockpiling. AU Toman, Michael A.; Macauley, Melly K.

Macauley, Molly K.

PD April 1984. TI Geographic Variation in Fuel Flexibility: Implications for the Regional Incidence of Oil Supply Disruptions. AA Energy and Materials Division, Resources for the Future. SR Resources for the Future Energy and Materials Division Discussion Papers: D-82V; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. PG 56. PR \$5.00 (United States funds only), prepaid. JE 941, 723. KW Regional Energy. Fuel Flexibility. Energy Security.

AB This paper applies the concept of an oil import premium, as developed in the context of the world oil market, to the regional United States oil market. In the event of an oil import disruption, the incidence of the direct costs imposed by the existence of a monopsony wedge in the regional market, as well as the direct and the indirect macroeconomic consequences of the shock, are likely to vary across regions because of interregional variation in shockproofing activities. In addition, interregional variation in these activities is shown to be a rational response by private investors to geographic differences in (a) endowments of energy resources and (b) institutional and market-related constraints on fuel use and supply.

PD May 1984. TI The Welfare Cost of Regulatory Policy Governing the Geostationary Arc. AA Energy and Materials Division, Resources for the Future.

SR Resources for the Future Energy and Materials Division Discussion Papers: EM85-02; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. PG 121. PR \$5.00 (United States funds only), prepaid. JE 721, 613. KW Outer Space. Communications Satellites. Geostationary Arc.

AB This paper uses the theory of rationing to depict the welfare costs of regulatory policy governing the geostationary arc. Three aspects of policy: uniform intersatellite spacing, uniform spurious emissions constraints, and incorrect location assignments are evaluated. The implications for policy of the possible existence of a spatial distribution of satellites that is both "locally" and "globally" optimal are also explored. The paper concludes by identifying policy reforms, including nonuniform spacing, emissions zoning, and methods of exploiting locational preferences.

PD May 1984. **TI** Implementing an Auction: Steps Toward Improved Allocation of the Geostationary Arc. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: EM85-03; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. PG 16. PR \$5.00 (United States funds only), prepaid. JE 721, 022. KW Outer Space. Communications Satellites. Geostationary Arc. auctions.

AB This paper asserts that a carefully designed auction is likely to allocate the geostationary arc more effectively than the current regulatory regime. The paper identifies as the most effective auction one which auctions slots of different "sizes" or intersatellite spacings rather than slots with uniform spacing. Certain rules should govern the auction, however, including rules to (1) accommodate the role of the electromagnetic spectrum in reducing intersatellite interference and (2) prohibit ownership of multiple slots. The merits of the well-designed auction are also contrasted with the shortcomings of non-market oriented alternatives to allocating the arc.

PD May 1985. **TI** The Site Value of Locations in the Geostationary Arc. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: EM85-01; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. PG 43. PR \$5.00 (United States funds only), prepaid. JE 721. KW Outer Space. Communications Satellites. Geostationary Arc.

AB This paper demonstrates that site assignments for communications satellites in the geostationary orbital arc command a significant location-related scarcity value and suggests that this value may perform a useful allocative function. The paper combines a model of interurban telecommunications and a computer simulation algorithm to calculate the effects of different locations along the arc on the cost savings of communicating by satellite. Site value is shown to decline with distance from a central location as costs are incurred for using terrestrial technology to interconnect urban areas excluded from the satellite's field of view. The consequences of capacity constraints in satellite technology and of multiple solutions

to satellite location assignments are also explored.

PD January 1986. **TI** Out of Space? Regulation and Technical Change in Communications Satellites. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: EM86-01; Energy and Materials Division, Resources for the Future, 1616 P Street, NW, Washington DC 20036, USA. PG 25. PR \$5.00 (United States funds only), prepaid. JE 721, 621, 613. KW Outer Space. Communications Satellites.

AB Regulatory practices by the Federal Communication Commission have the effect of rationing the use of a particular resource required for communications satellite technology, the electromagnetic spectrum. This paper examines the effect of spectrum regulation on the pace and direction of technical change in the industry. The paper adapts a model of induced innovation designed by Smith (1974) and Okuguchi (1975) and evaluates the model using estimates of the shadow value of spectrum and parameters of an unconstrained production function fitted to engineering data which relate spectrum and other inputs. Results suggest that inefficient spectrum allocations bias both input choices and technical change and that these biases can be quite large.

MacDonald, Glenn M.

PD June 1985. **TI** An Operational Theory of Monopoly Union-Competitive Firm Interaction: New Predictions, A simple Framework for Interpreting Existing Data, and Proposed Tests. **AU** MacDonald, Glenn M.; Robinson, Chris. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Centre for Decision Sciences and Econometrics Technical Reports: 1; The Centre for Decision Sciences and Econometrics, Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. PG 43. PR No Charge. JE 831. KW Unions.

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

PD August 1985. **TI** A Positive Analysis of Multiproduct Firms in Market Equilibrium. **AU** MacDonald, Glenn M.; Slivinski, Alan D. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Centre for Decision Sciences and Econometrics Technical Reports: 5; The Centre for Decision Sciences and Econometrics,

Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. PG 42. PR No Charge. JE 022. KW Multiproduct Firms. Product Lines.

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

Mairesse, Jacques

TI R&D and Productivity Growth: Comparing Japanese and United States Manufacturing Firms. AU Griliches, Zvi; Mairesse, Jacques.

Majd, Saman

PD June 1985. TI Time to Build, Option Value, and Investment Decisions. AU Majd, Saman; Pindyck, Robert S. AA Majd: Wharton School, University of Pennsylvania. Pindyck: Sloan School of Management, MIT. SR National Bureau of Economic Research Working Paper: 1654; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 30. PR \$2.00. JE 022, 522. KW Option Pricing. Investment Outlays. Investment Decision.

AB Many investment projects have the following characteristics: (i) spending decisions and cash outlays occur sequentially over time, (ii) there is a maximum rate at which outlays and construction can proceed -- it takes "time to build," and (iii) the project yields no cash return until it is actually completed. Furthermore, the pattern of investment outlays is usually flexible, and can be adjusted as new information arrives. For such projects traditional discounted cash flow criteria, which treat the spending pattern as fixed, are inadequate as a guide for project evaluation. This paper develops an explicit model of investment projects with these characteristics, and uses option pricing methods to derive optimal decision rules for investment outlays over the entire construction program. Numerical solutions are used to demonstrate how time to build, opportunity cost, and uncertainty interact in affecting the investment decision. We show that with moderate levels of uncertainty over the future value of the completed project, a simple NPV rule could lead to gross over-investment. Also, we show how the contingent nature of the investment program magnifies the depressive effect of increased uncertainty on investment spending.

Malone, Nancy

TI A Criticism of Information Systems Research Employing "User Satisfaction." AU Chismar, William; Kriebel, Charles; Malone, Nancy.

Mankiw, Gregory

PD July 1985. TI The Changing Behavior of the Term Structure of Interest Rates. AU Mankiw, Gregory; Miron, Jeffrey A. AA Mankiw: National Bureau of Economic Research, Cambridge, MA. Miron: University of Michigan. SR National Bureau of Economic Research Working Paper: 1669; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 36. PR \$2.00. JE 311, 313. KW Term Structure of Interest Rates. Expectations Theory.

AB We reexamine the expectations theory of the term structure using data at the short end of the maturity spectrum. We find that prior to the founding of the Federal Reserve System in 1915, the spread between long rates and short rates has substantial predictive power for the path of interest rates; after 1915, however, the spread contains much less predictive power. We then show that the short rate is approximately a random walk after the founding of the Fed but not before. This latter fact, coupled with even slight variation in the term premium, can explain the observed change in 1915 in the performance of the expectations theory. We suggest that the random walk character of the short rate may be attributable to the Federal Reserve's commitment to stabilizing interest rates.

PD November 1985. TI Do We Reject Too Often? Small Sample Properties of Tests of Rational Expectations Models. AU Mankiw, Gregory; Shapiro, Matthew D. AA Mankiw: Department of Economics, Harvard University. Shapiro: Department of Economics, Yale University. SR National Bureau of Economic Research Technical Paper: 51; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 211. KW Small Sample Properties. Rational Expectations Models. Autoregressive Time Series. Detrended Data.

AB We examine the small sample properties of tests of rational expectations models. We show using Monte Carlo experiments that the asymptotic distribution of test statistics can be extremely misleading when the time series examined are highly autoregressive. In particular, a practitioner relying on the asymptotic distribution will reject true models too frequently. We also show that this problem is especially severe with detrended data. We present correct small sample critical values for our canonical problem.

PD January 1986. TI The Equity Premium and the Concentration of Aggregate Shocks. AA Harvard University. SR National Bureau of Economic Research Working Paper: 1788; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 15. PR \$2.00. JE 313, 024. KW Equity Premium. Aggregate Shocks. CAPM. Aggregation.

AB This paper examines an economy in which aggregate shocks are not dispersed equally throughout the population. Instead, while these shocks affect all individuals ex ante, they are concentrated among a few ex post. The equity premium in general depends on the concentration of these aggregate shocks; it follows that one cannot estimate the degree of risk aversion from aggregate

data alone. These findings suggest that the empirical usefulness of aggregation theorems for capital asset pricing models is limited.

PD January 1986. **TI** The Allocation of Credit and Financial Collapse. **AA** Harvard University. **SR** National Bureau of Economic Research Working Paper: 1786; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 25. **PR** \$2.00. **JE** 315. **KW** Asymmetric Information. Credit Markets. Credit Allocation.

AB This paper examines the allocation of credit in a market in which borrowers have greater information concerning their own riskiness than do lenders. It illustrates (1) the allocation of credit is inefficient and at times can be improved by government intervention, and (2) small changes in the exogenous risk-free interest rate can cause large (discontinuous) changes in the allocation of credit and the efficiency of the market equilibrium. These conclusions suggest a role for government as the lender of last resort.

Marcus, Alan J.

TI Defined Benefit Versus Defined Contribution Pension Plans: What are the Real Tradeoffs?. **AU** Bodie, Zvi; Marcus, Alan J.; Merton, Robert C.

Margo, Robert A.

PD November 1985. **TI** The Antebellum "Surge" in Skill Differentials One More Time: New Evidence. **AU** Margo, Robert A.; Villafior, Georgia G. **AA** Margo: Department of Economics, University of Pennsylvania. Villafior: Department of Economics, San Diego State University. **SR** National Bureau of Economic Research Working Paper: 1758; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 44. **PR** \$2.00. **JE** 042, 024, 823, 824. **KW** Migration. Skill Differentials. Income Inequality.

AB Changes in the skill differential are often used by economic historians to proxy changes in income inequality. According to Jeffrey Williamson and Peter Lindert, American skill differentials rose sharply between 1820 and 1860, which they interpret as increasing income inequality. Using a large, new sample of wage rates drawn from military records, we find no evidence of an aggregate "surge" in antebellum skill differentials. We do find, however, that skill differentials on the frontier rose relative to levels in settled areas. We show how a reduction in the costs of migrating from old to new regions can explain this finding.

Mayer, Colin P.

PD January 1986. **TI** How Rational Are the Expectations Made by Firms?. **AU** Mayer, Colin P.; Mors, Matthias. **AA** Mayer: St Anne's College and Institute of Economics and Statistics, Oxford. Mors: Commission des Communautés Européennes, Bruxelles and Institute of Economics and Statistics, Oxford. **SR** Oxford Applied Economics Discussion Paper: 2; Institute of Economics and Statistics, Saint Cross Building, Manor Road, Oxford OX1 3UL, ENGLAND. **PG** 37. **PR** No Charge. **JE** 132, 510.

KW Expectations.

Rationality. Survey Data. Rational Expectations.

AB Qualitative survey data in the United Kingdom are used to examine the proposition that firms form expectations rationally. Application of standard tests to the surveys firmly rejects the hypothesis of rationality. However, consideration of possible answering practices of respondents suggests that previous methods of deriving quantitative from qualitative data may have been inappropriate. An alternative technique is suggested which yields a data set that does not violate the rational expectation hypothesis so decisively.

McAfee, R. Preston

PD August 1985. **TI** The Revelation Principle with Costly Communication. **AU** McAfee, R. Preston; McMillan, John. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Centre for Decision Sciences and Econometrics Technical Reports: 4; The Centre for Decision Sciences and Econometrics, Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 34. **PR** No Charge. **JE** 026. **KW** Search. Mechanisms. Reservation Price. Revelation Principle. Auction.

AB The Revelation Principle in the principal-agent framework is extended to a case in which it is costly for the principal to communicate with any agent. It is shown that there is a direct sequential mechanism which is optimal in the class of all mechanisms. This result is then applied to the problem of a buyer procuring a good from one of a set of possible suppliers with unobservable production costs. With costly communication, the optimal mechanism is a combination of reservation-price search and auction.

PD December 1985. **TI** Auctions with a Stochastic Number of Bidders. **AU** McAfee, R. Preston; McMillan, John. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Centre for Decision Sciences and Econometrics Technical Reports: 9; The Centre for Decision Sciences and Econometrics, Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 23. **PR** No Charge. **JE** 026. **KW** Auctions. Bidding. Risk Aversion.

AB Auction theory is generalized by allowing the number of bidders to be stochastic. In a first-price sealed-bid auction with bidders having constant absolute risk aversion, the expected selling price is higher when the bidders do not know how many other bidders there are than when they do know this. Thus the seller should conceal the number of bidders if he can. Moreover, a bidder's ex ante expected utility is the same whether or not there is a policy of concealing the number of bidders: concealment therefore Pareto-dominates announcement. With risk-neutral bidders, the optimal auction is the same whether or not the bidders know who their competitors are.

McCurdy, Thomas H.

PD February 14, 1986. **TI** Testing the Martingale Hypothesis in the Deutschmark/United States Dollar

Futures and Spot Markets. AU McCurdy, Thomas H.; Morgan, Ieuan G. AA McCurdy: Department of Economics, Queen's University. Morgan: School of Business, Queen's University. SR Queen's Institute for Economic Research Discussion Paper: 639; Department of Economics, Queen's University, Kingston, Ontario, CANADA K7L 3N6. PG 36. PR \$2.50 Canada; \$3.00 United States; \$3.50 foreign. JE 211, 431. KW Exchange Rates. Futures. Spot Prices. GARCH. Martingale Hypothesis. Autoregressive Conditional Heteroskedasticity.

AB This paper tests the martingale hypothesis for daily data from the Deutschmark/United States dollar futures and spot foreign exchange markets. Time-varying volatility of daily price changes is modelled as conditional heteroskedasticity which is a function of recent news or forecast errors, as in the ARCH model of Engle (1982). Our paper evaluates the empirical performance of several specifications of this conditional heteroskedasticity. We find that the GARCH generalization of ARCH, due to Bollerslev (1985), results in a very effective and parsimonious model. In both the futures and spot markets it provides a test equation which is not rejected by any of the diagnostic tests for misspecification -- including tests against non-normality. Given a statistically adequate test equation, we are able to proceed to some hypothesis tests for regression parameters. For example, apart from the relevance of a weekend effect, our test results support the martingale hypothesis for the Deutschmark/United States dollar futures market. In the Deutschmark/United States dollar spot market, the lagged rate of change in the futures premium is a useful explanatory variable for the current rate of change in the spot price.

McElroy, Marjorie B.

PD September 1985. TI Two Estimators for the APT Model When Factors are Measured. AA Department of Economics, Duke University. SR Duke Working Papers in Economics: 85-10A; Working Papers Series, Department of Economics, Duke University, Durham, NC 27706. PG 9. PR No Charge. JE 211, 313. KW Arbitrage Pricing Theory. APT. Capital Asset Pricing Model. CAPM. Seemingly Unrelated Nonlinear Regressions.

AB Nonlinear SUR and ITSUR techniques are proposed for the estimation of the APT and the CAPM when the factors are observed. These techniques estimate all of the parameters of the model simultaneously and directly impose the model's nonlinear parameter restrictions.

McKelvey, Richard D.

PD August 1985. TI Game Forms for Nash Implementation of General Social Choice Correspondences. AA California Institute of Technology. SR Caltech Social Science Working Paper: 599; Division of Humanities and Social Sciences, 228-77, California Institute of Technology, Pasadena, CA 91125. PG 34. PR No Charge. JE 025, 026. KW Implementation. Game Theory.

AB Several game forms are given for implementing general social choice correspondences (SCC's) which satisfy Maskin's conditions of monotonicity and No Veto Power. The game forms have smaller strategy spaces than those used in previously discovered mechanisms: the strategy for

an individual consists of an alternative, two subsets (of alternatives), and a player number. For certain types of economic and political SCC's, including alpha-majority rule, Walrasian, and Lindahl correspondence, the strategy space reduces to an alternative and a vector, where the number of components of the vector is at most twice the dimension of the alternative space.

McKenzie, Ken

TI A Calculation of Marginal Effective Tax Rates for the Canadian Mining Industry. AU Boadway, Robin; Bruce, Neil; McKenzie, Ken; Mintz, Jack.

McKibbin, Warwick

TI Macroeconomic Interdependence of Japan and the United States: Some Simulation Results. AU Ishii, Naoko; McKibbin, Warwick; Sachs, Jeffrey.

McMahon, Walter W.

PD December 1985. TI The "New Competition" in Health Care: Implications for the Future. AA Department of Economics, University of Illinois at Urbana-Champaign. SR University of Illinois at Urbana-Champaign Bureau of Economic and Business Research Faculty Paper: 1209; Department of Economics, University of Illinois at Urbana-Champaign, 1206 S. 6th Street, Champaign, IL 61821. PG 30. PR No Charge. JE 913, 613. KW Prospective Reimbursement. Competition.

AB The emergence of competition as the result of deregulation coupled with a dramatic shift away from cost-based reimbursement has profound implications for the future of the health care system. This "new competition" represents a trend propelled by powerful economic forces rooted in the escalation of health care costs and in other experience with deregulation, so it is very unlikely to be reversed. This paper characterizes the nature and source of the restructuring underway and develops the rationale of how the new competition is supposed to work to increase health effectiveness while bringing down costs. It considers the needs for health vouchers as the working poor are squeezed out by increasing competition and the major implications for hospitals, and health professionals as they seek to plan ahead.

McMillan, John

TI The Revelation Principle with Costly Communication. AU McAfee, R. Preston; McMillan, John.

TI Auctions with a Stochastic Number of Bidders. AU McAfee, R. Preston; McMillan, John.

Meese, Richard

PD October 1985. TI Was It Real? The Exchange Rate -- Interest Differential Relation, 1973-1984. AU Meese, Richard; Rogoff, Kenneth. AA Meese: University of California Berkeley. Rogoff: University of Wisconsin, Madison. SR National Bureau of Economic Research Working Paper: 1732; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 38. PR \$2.00. JE 431.

KW Exchange Rates. Cointegration. Real Interest Differential.

AB The main result of Meese and Rogoff '1983 a, b is that small structural exchange rate models forecast major dollar exchange rates no better than a naive random walk model. This result obtains even when the model forecasts are based on actual realized values of the explanatory variables. Here we improve our methodology by implementing a new test of out-of-sample fit; the test is valid even for overlapping long-horizon forecasts. We find that the dollar exchange rate models perform somewhat less badly over the recent Reagan regime period than over the episodes studied previously. The methodology is also applied to the mark/yen and mark/pound exchange rates, and to real exchange rates. Finally, we test to see if real exchange rates and real interest differentials can be represented as a cointegrated process. The evidence suggests that there is no single common influence inducing nonstationarity in both real exchange rates and real interest differentials.

Melino, Angelo

TI Estimating the Continuous Time Consumption Based Asset Pricing Model. **AU** Grossman, Sanford J.; Melino, Angelo; Shiller, Robert J.

Merton, Robert C.

TI Defined Benefit Versus Defined Contribution Pension Plans: What are the Real Tradeoffs?. **AU** Bodie, Zvi; Marcus, Alan J.; Merton, Robert C.

Metcalf, Gilbert

TI The Effect of Federal Deductibility on State and Local Taxes and Spending. **AU** Feldstein, Martin; Metcalf, Gilbert.

Minford, Patrick

PD November 1985. **TI** Interest Rates and Bond-Financed Deficits in a Ricardian Two-Party Democracy. **AA** University of Liverpool. **SR** Centre for Economic Policy Research Discussion Paper: 79; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 24. **PR** 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. **JE** 134, 025, 322. **KW** Fiscal Deficits. Public Debt. Inflation. Political Parties.

AB The thesis of this paper is that political differences between parties are a major explanation of inflation and variations in it, and therefore introduce into real interest rates a risk premium which will vary with creditors' exposure to 'inflationary default', i.e., with the level of public debt. The paper tests a number of predictions of this theory. First, that political parties do differ in their policy behaviour (contrary to the median voter theorem); this is clearly supported by postwar evidence for the United Kingdom, West Germany and Sweden. Second, expected real interest rates on bonds are related to budget deficits and/or public debt, according to evidence for the United States and United Kingdom from 1920 to 1982. Third, we find some modest but (as we expected from the indirectness of the relationship) rather weak evidence of a connection between which party was in power and the level and variability of inflation in the same period for these two

countries. Fourth, the theory provides a rationale for the commonly observed relationship between inflation and its variability.

Mintz, Jack

TI A Calculation of Marginal Effective Tax Rates for the Canadian Mining Industry. **AU** Boadway, Robin; Bruce, Neil; McKenzie, Ken; Mintz, Jack.

PD January 3, 1986. **TI** An Empirical Estimate of Imperfect Loss Offsetting and Effective Tax Rates. **AA** Department of Economics, Queen's University. **SR** Queen's Institute for Economic Research Discussion Paper: 634; Department of Economics, Queen's University, Kingston, Ontario K7L 3N6. **PG** 29. **PR** \$2.50 Canada; \$3.00 United States; \$3.50 Foreign. **JE** 323. **KW** Estimate of Imperfect Loss Offsetting. Marginal Tax Rates.

AB The costs of capital and marginal tax rates are derived in a two period model with technological uncertainty for investments subject to imperfect loss offset corporate and personal taxation. Data based on the experience of Canadian corporations are used to estimate the present value of tax benefits arising from taxable loss writeoffs associated with carry-back and carry-forward provisions of Canadian law. The value of taxable losses written off or the refundability parameter is used in the cost of capital expression to estimate the effective tax rates on investments made by various Canadian industries facing different degrees of risk.

Miron, Jeffrey A.

TI The Changing Behavior of the Term Structure of Interest Rates. **AU** Mankiw, Gregory; Miron, Jeffrey A.

Mishkin, Frederic S.

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

Mizon, Grayham E.

TI Procrustean Econometrics: Or Stretching and Squeezing Data. **AU** Hendry, David F.; Mizon, Grayham E.

Modest, David M.

TI The Empirical Foundations of the Arbitrage Pricing Theory II: The Optimal Construction of Basis Portfolios. **AU** Lehmann, Bruce; Modest, David M.

TI The Empirical Foundations of the Arbitrage Pricing Theory I: The Empirical Tests. **AU** Lehmann, Bruce; Modest, David M.

TI Mutual Fund Performance Evaluation: A Comparison of Benchmarks and Benchmark Comparisons. **AU** Lehmann, Bruce; Modest, David M.

Monfort, A.

TI Residus Generalises, Residus Simules Et Leurs Utilisations Dans Les Modeles Non Lineaires (Generalized Residuals, Simulated Residuals and Their Applications in Non-Linear Models). **AU** Gourieroux, C.; Monfort, A.;

Renault, E.; Trognon, A.

Morgan, Ieuan G.

TI Testing the Martingale Hypothesis in the Deutschmark/United States Dollar Futures and Spot Markets. AU McCurdy, Thomas H.; Morgan, Ieuan G.

Morrison, Catherine J.

TI The Impact of Pollution Abatement Investment on Productivity Change: An Empirical Comparison of the United States, Germany, and Canada. AU Conrad, Klaus; Morrison, Catherine J.

Mors, Matthias

TI How Rational Are the Expectations Made by Firms?. AU Mayer, Colin P.; Mors, Matthias.

Morton, Thomas E.

TI An Investigation of Beam Search for Scheduling. AU Ow, Peng Si; Morton, Thomas E.

Murphy, Frederic H.

PD November 1984. TI A Dynamic Nash Game Model of Oil Market Disruptions and Strategic Oil Stockpiling. AU Murphy, Frederic H.; Toman, Michael A.; Weiss, Howard J. AA Murphy and Weiss: School of Business Administration, Temple University. Toman: Energy and Materials Division, Resources for the Future. SR Resources for the Future Energy and Materials Division Discussion Papers: D-82BB; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. PG 37. PR \$5.00 (United States funds only), prepaid. JE 026, 723. KW Dynamic Games. Perfect Equilibria. Strategic Stockpiling.

AB In this paper we present and analyze a Nash dynamic game model for investigating public and private-sector oil inventory policies in unstable world oil markets. Conceptual results about the model include simple, verifiable conditions for uniqueness and stability of solutions, along with characterizations of optimal policies. We also present results and discuss computational issues that arise in determining "subgame perfect" infinite-horizon equilibria, using a steady-state policy iteration approach.

PD July 1985. TI International Cooperation in Stockpiles and Tariffs for Coping With Oil Supply Disruptions. AU Murphy, Frederic H.; Toman, Michael A.; Weiss, Howard J. AA Murphy and Weiss: School of Business Administration, Temple University. Toman: Energy and Materials Division, Resources for the Future. SR Resources for the Future Energy and Materials Division Discussion Papers: D-82AA; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. PG 39. PR \$5.00 (United States funds only), prepaid. JE 723, 422. KW Strategic Stockpiling. Tariff Policy. Dynamic Games. International Cooperation.

AB This paper provides a unified treatment of oil stockpiling and demand restraint as policy responses for enhancing energy security, and examines the implications of recent changes in the structure and performance of the

international oil market for the design of policies. These issues are addressed using a dynamic programming framework in which international policy actions of key oil-importing countries are modeled as a Nash dynamic game. Significant policy implications from the analysis include: (1) with realistic assumptions about disruption risks and inventory capacities, differences between noncooperative and coordinated stockpile policies appear to be minor; and (2) significant mutual gains could be reaped from a modest degree of collective restraint on normal market oil demand. The broader role of international cooperation in enhancing energy security also is discussed.

PD November 1985. TI An Integrated Analysis of United States Oil Security Policies. AU Murphy, Frederic H.; Toman, Michael A.; Weiss, Howard J. AA Murphy and Weiss: School of Business Administration, Temple University. Toman: Energy and Materials Division, Resources for the Future. SR Resources for the Future Energy and Materials Division Discussion Papers: D-82CC; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. PG 28. PR \$5.00 (United States funds only), prepaid. JE 723, 422. KW Strategic Stockpiling. Tariff Policy. Dynamic Games. Public-Private Interactions.

AB This paper presents an integrated analysis of two broad oil security policy issues that continue to be subjects of debate: the relative roles of demand restraint and oil stockpiling in mitigating disruption costs, and the balance between public and private roles in stockpiling. Using a stochastic dynamic programming framework that synthesizes elements in Chao and Manne (1982), Wright and Williams (1982), and Hogan (1983), three main conclusions emerge: (1) continued filling of the Strategic Petroleum Reserve is needed despite the current slack condition of the oil market, along with capacity for rapid release of oil in a crisis; (2) disruption tariffs are unlikely to serve United States economic interests; but (3) there is a strong case for a tariff under normal market conditions.

Nalebuff, Barry

PD January 1986. TI The Ambiguous Antitrust Implications of Information Sharing. AU Nalebuff, Barry; Zeckhauser, Richard. AA Zeckhauser: Kennedy School of Government, Harvard University. Nalebuff: Department of Economics, Princeton University. SR Harvard Kennedy School of Government Discussion Paper: 147D; Kennedy School of Government, Harvard University, 79 John F. Kennedy Street, Cambridge, MA 02138. PG 29. PR No Charge. JE 022, 026, 916, 611. KW Antitrust. Information. Information Sharing. Oligopoly.

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.

Nash, John

PD February 1986. TI Optimal Civil Penalties. AA Federal Trade Commission. SR Federal Trade Commission Bureau of Economics Working Paper: 138; Bureau of Economics, Federal Trade Commission, 6th and Pennsylvania Avenue NW, Washington, D.C. 20580. PG 36. PR No Charge. JE 916, 211, 613. KW Civil Penalties. Regulatory Enforcement.

AB This paper examines the question of how a regulatory agency should establish civil penalties for firms that violate its regulations. It evaluates previous models and rejects them because they are without exception one-period models that assume there is a unique probability of detecting a violation. These models are not realistic for many types of regulatory violations. This paper uses a continuous time model, allowing the instantaneous probability of detection to vary, depending on the time elapsed since the violation began. After developing the appropriate statistical technique for estimating the optimal penalty, the paper applies this method to a body of data on cases at the Federal Trade Commission. It concludes by considering how alteration of some of the underlying assumptions would alter the theoretical model or its statistical application.

Nelson, Charles R.

PD August 1985. TI A Reappraisal of Recent Tests of the Permanent Income Hypothesis. AA University of Washington, Seattle. SR National Bureau of Economic Research Working Paper: 1687; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 16. PR \$2.00. JE 921, 023. KW Random Walk in Consumption. Consumption. Permanent Income Hypothesis. Detrending.

AB Hall (1978) showed that the permanent income hypothesis implies that consumption (1) follows a random walk, and (2) cannot be predicted by past income. Reexamination of Hall's data results in rejection of the random walk hypothesis in favor of the alternative hypothesis of positively autocorrelated changes. Evidently this is due to Hall's choice of a quadratic utility function. A logarithmic utility function implies a random walk in the log of consumption which is supported by the data. Hall reported that past income had a negative but insignificant relation to consumption. Changes in the log of income, however, do have a positive predictive relation to changes in the log of consumption. The adjustment of consumption to income seems to be spread over two quarters. Flavin's (1981) test of the theory is formally equivalent to Hall's except for assuming stationarity around a time trend. Mankiw and Shapiro (1984) have pointed out that the effect of detrending may be to tend to rejection of the theory when it is in fact correct. For Hall's data the effect of detrending is to reverse the sign of the coefficient on past income. Its magnitude is what the Mankiw-Shapiro analysis predicts under the permanent income hypothesis.

PD January 1986. TI Long-Term Behavior of Yield Curves. AU Nelson, Charles R.; Siegel, Andrew F. AA Nelson: Department of Economics, University of Washington. Siegel: Department of Statistics, Management Science, and Finance, University of

Washington. SR National Bureau of Economic Research Working Paper: 1789; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 8. PR \$2.00. JE 313. KW Yield Curve. Reciprocal Maturity Yield Curve.

AB The flattening of yield curves at long-term maturities is proven to be approximately proportional to the reciprocal of the time to maturity under general conditions. This is a consequence of the persistence of earlier forward rates in the averaging process which produces yields from forward rates. This relationship suggests the use of a "reciprocal maturity yield curve" which significantly facilitates the interpretation of the behavior of long-term yields by linearizing them for display over a shorter interval. This is illustrated using a yield curve for United States Treasury bills.

Nesetril, Jaroslav

TI On the maximum-weight clique problem. AU Balas, Egon; Chvatal, Vasek; Nesetril, Jaroslav.

Neuman, Shoshana

TI Testing the Dual Labour Market Hypothesis: Evidence from the Israel Labour Mobility Survey. AU Ziderman, Adrian; Neuman, Shoshana.

Newbery, David M.

PD June 1985. TI Wage Rigidity, Implicit Contracts, Unemployment and Economic Efficiency. AU Newbery, David M.; Stiglitz, Joseph E. AA Newbery: Churchill College, Cambridge. Stiglitz: Princeton University. SR CEPR Discussion Papers: 67; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 48. PR individual: 1.00 pound sterling (\$2.00); institution: 1.50 pound sterling (\$3.00). JE 022, 821. KW Unemployment. Implicit Contracts. Wage Rigidity.

AB Implicit contract theory has been successful in explaining wage rigidity but not unemployment. We argue that the theory has paid insufficient attention to (i) the general equilibrium aspects and (ii) constraints limiting the set of feasible contracts. Implicit, as opposed to explicit contracts, must specify an enforcement mechanism, can only be conditional on observable information, and must be of limited complexity. We first show that in a simple general equilibrium model without these restrictions contracts do not result in unemployment but that the market equilibrium is not constrained Pareto efficient. Our main object is to examine the consequences of these three restrictions. Natural restrictions on enforceability or complexity alone do not lead to unemployment, but limited observability may lead to unemployment. If, however, two or more restrictions apply, then unemployment may result. In particular, we show that periodic unemployment can arise if contracts are of limited complexity and cannot be enforced through third parties.

Newey, Whitney

TI Implementing Causality Tests with Panel Data, with an Example from Local Public Finance. AU Holtz, Eakin Douglas; Newey, Whitney; Rosen, Harvey S.

Nickell, S. J.

TI Unemployment in Britain. AU Layard, Richard; Nickell, S. J.

TI The Rise in Unemployment: A Multi-country Study. AU Bean, Charles R.; Layard, P. R. G.; Nickell, S. J.

PD January 1986. TI The Short Run Behaviour of Labour Supply. AA Institute of Economics and Statistics and Nuffield College, Oxford. SR Oxford Applied Economics Discussion Paper: 4; Institute of Economics and Statistics, Saint Cross Building, Manor Road, Oxford OX1 3UL, ENGLAND. PG 31. PR No Charge. JE 824, 813. KW Labour Supply. Intertemporal Substitution.

AB This paper is concerned to analyse the microeconomic evidence on short run fluctuations in labour supply. It makes use of a variety of results reported in a number of different papers, all based on a sample of male heads of household from the Michigan Panel Study of Income Dynamics. These results indicate the following facts. The average hours worked per year by members of the sample rises by one percent for every one percent rise in real wages over the business cycle. The short run labour supply elasticity for this same group is very likely to be between zero and 0.5. These two facts indicate that cyclical fluctuations in employment do not only reflect a labour supply response but indicate that some other important factors must be involved. The paper goes on to present evidence on some alternative possibilities.

Noel, James C.

TI Optimal Contracts with a Utility-Maximizing Auditor. AU Baiman, Stanley; Evans, John H.; Noel, James C.

Norotte, Michel

TI Negotiation sur le salaire et l'emploi entre syndicat et entreprise et courbe de Phillips. AU Artus, Patrick; Norotte, Michel.

Oates, Wallace E.

TI Assistance to the Poor in a Federal System. AU Brown, Charles; Oates, Wallace E.

Obstfeld, Murray

PD August 1985. TI Capital Mobility in the World Economy: Theory and Measurement. AA Columbia University. SR National Bureau of Economic Research Working Paper: 1692; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 59. PR \$2.00. JE 441. KW International Capital Mobility.

AB This paper is a critical assessment of some recent empirical evidence on the extent of international capital mobility. Its major conclusion is that while much of this evidence is difficult to interpret without ambiguity, it is consistent with a world economy in which the degree of capital mobility is high and increasing. Two main approaches to the measurement of capital mobility are discussed. The first, traditional, approach is based on comparing expected yields on assets located in different countries. The second, and more novel, approach is based

on comparing national saving rates and domestic investment rates.

OKeeffe, Mary

PD January 1986. TI Audit Strategies with Heterogeneous Agents: Is Efficient Deterrence Compatible with Efficient Detection?. AA Kennedy School of Government, Harvard University. SR Harvard Kennedy School of Government Discussion Paper: 145D; Kennedy School of Government, Harvard University, 79 John F. Kennedy Street, Cambridge, MA 02138. PG 31. PR No Charge. JE 026, 323. KW Tax Compliance. Audits. Enforcement. Heterogeneous Agents. Asymmetric Information.

AB Principals use selective auditing so as to elicit more truthful reports from agents. For example, the IRS audits selected returns to encourage tax compliance. Because the information required to design an efficient deterrence strategy is costly, the principal may instead use a simpler audit selection strategy, based on efficient detection. This paper shows that an audit strategy designed to detect and punish the worst evaders will generally not promote efficient deterrence. Efficient detection focuses audits on the less honest agents while efficient deterrence may focus audits on the more honest (and more responsive) agents.

Oswald, Andrew J.

TI A Test of A Model of Trade Union Behaviour: the Coal and Steel Industries in Britain. AU Carruth, Alan A.; Oswald, Andrew J.; Findlay, Lewis.

PD December 1985. TI Unemployment Insurance and Labor Contracts under Asymmetric Information: Theory and Facts. AA London School of Economics. SR London School of Economics, Centre for Labour Economics Discussion Paper: 237 Centre for Labour Economics, London School of Economics, Houghton Street, London WC2A 2AE, UK. PG 40. PR No Charge. JE 821, 026. KW Labor Contracts. Unemployment Insurance. Under-Employment Equilibria. Involuntary Unemployment.

AB Recent theoretical work on the economics of labour contracts under asymmetric information attempts to show why under-employment equilibria may exist. Its aim is to improve upon traditional implicit contract theory - in which wages are rigid, there is involuntary unemployment, and under-employment does not occur. The difficulty with the new models is that the unemployment they generate is all voluntary. The purpose of the paper is to show how both desirable features (under-employment and involuntary unemployment) can co-exist. The crucial assumption, for which United States empirical evidence is offered, is that there be no private unemployment insurance. This was, in fact, a conventional assumption in the early work on contract theory.

Oudiz, Gilles

PD October 1985. TI European Policy Coordination: An Evaluation. AA Compagnie Bancaire, Paris. SR Centre for Economic Policy Research Discussion Paper: 81; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 57. PR 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00)

companies, libraries, institutions. **JE** 133, 423. **KW** Macroeconomic Policy Coordination. Europe. Beggar-thy-Neighbour Policies.

AB Uncoordinated macroeconomic policies lead to 'beggar thy neighbour' strategies which are clearly suboptimal for the European Community as a whole. Given the high degree of interdependence of their economies, European governments have a clear incentive to export their inflation or their unemployment. No formal model is needed to conclude that among countries which have similar economic structures, policy objectives and policy instruments such competition is bound to be futile and costly for all concerned. In this paper we try to shed light on these aspects of European policy coordination, both through the use of a simple analytic model and through an empirical evaluation of the potential gains of superior European strategies.

Ow, Peng Si

PD August 1985. **TI** An Investigation of Beam Search for Scheduling. **AU** Ow, Peng Si; Morton, Thomas E. **AA** Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 18; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. **PR** No Charge. **JE** 511. **KW** Scheduling Methods. Beam Search Method.

AB Heuristic methods for scheduling may be viewed as having a search component and a knowledge component that includes the heuristic rules used to guide the search for a good solution. This paper explores the use of the Beam Search technique, a search technique originally developed for speech recognition, for scheduling. We also investigate the ways in which a given heuristic such as a priority rule may be used to generate information to guide the search. Our test bed includes two scheduling problems - (i) the single machine early/tardy problem, and (ii) the weighted tardiness problem in approximately proportionate flowshops. Our results show that the Beam Search technique coupled with a two-stage evaluation function is able to significantly improve the results of the simpler dispatch method and focused approach using the same heuristics at relatively low cost. Its performance far surpassed that of the popular neighborhood search technique using pairwise interchange of adjacent jobs. These experimentations demonstrate the potential of the Beam Search strategy as a very efficient search method and the importance of considering how heuristics may be used to obtain maximum "mileage" from a search technique and limited knowledge about a problem.

PD August 1985. **TI** Towards an Opportunistic Scheduling System. **AU** Ow, Peng Si; Smith, Stephen F. **AA** Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 17; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. **PR** No Charge. **JE** 511. **KW** Scheduling Problem. Hierarchical Framework.

AB In this paper, we examine the potential for opportunistic decision-making in the factory scheduling

domain by identifying three levels of decision-making during the planning of the development of a schedule. They are the scheduling perspective level, the strategy level and the tactics level. This view leads to the development of a hierarchical framework for structuring knowledge sources needed to implement the opportunistic behavior and to generate the schedule. We focus on the opportunities that exist at the scheduling perspective level and propose a strategy for applying an order-based and a resource-based perspective simultaneously for decomposing a given scheduling problem. This decomposition is driven by the existence of bottlenecks in a scheduling problem with the aim of addressing as many important constraint conflicts as possible in the problem. We describe our work to date in designing and constructing a scheduling system based on the hierarchical framework to explore the feasibility of such an approach. Finally, the limitations of our current design are discussed and our current and future research plans are described.

TI The Use of Multiple Problem Decompositions in Time Constrained Planning Tasks. **AU** Smith, Stephen F.; Ow, Peng Si.

Pakes, Ariel

TI Estimates of the Value of Patent Rights in European Countries During the Post-1950 Period. **AU** Schankerman, Mark; Pakes, Ariel.

Palfrey, Thomas R.

PD July 1985. **TI** The Relationship Between Information, Ideology and Voting Behavior. **AU** Palfrey, Thomas R.; Poole, Keith T. **AA** Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 9; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. **PR** No Charge. **JE** 025. **KW** Voting. Information. Voter's Behavior.

AB The question of voter sophistication is important for understanding voter and candidate behavior in mass elections. We develop an index of voter information -- based on perceptual data -- and find that it is significantly related to ideological extremism and voting behavior. Individuals with a high level of information tend to be more extreme than those with low levels and are much more likely to vote.

PD July 1985. **TI** Implementable Allocations with Incomplete Information. **AU** Palfrey, Thomas R.; Srivastava, Sanjay. **AA** Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 6; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. **PR** No Charge. **JE** 025, 026. **KW** Social Choice. Incomplete Information.

AB This paper identifies several social choice correspondences which are implementable in economic environments when agents are incompletely informed about the environment. We also show that, in contrast to the results for complete information, neither efficient

allocations nor core allocations define implementable social choice correspondence.

Park, Hun

TI Conditional and Unconditional Heteroscedasticity in the Market Model. AU Bera, Anil; Bubnys, Edward; Park, Hun.

Pearce, David

PD July 1985. TI World Oil Prices and Output Losses in Developing Countries. AU Pearce, David; Westoby, Richard. AA University College London. SR CEPR Discussion Paper: 69; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 20. PR individual: 1.00 pound sterling (\$2.00); institution: 1.50 pound sterling (\$3.00). JE 121, 723, 423. KW Developing Countries. Oil Prices. Output Losses.

AB The purpose of this paper is to measure the impact of the 1979 oil price "hike" on a selected group of developing countries. The model used for this exercise is an adaptation of a straightforward income-determination model in which domestic oil revenues are treated as a "tax" revenue from oil exports as an exogenous source of government revenue. The basis of the model is a standard GDP accounting identity modified such that government expenditure is disaggregated into domestic oil revenue, foreign oil revenue, non-oil taxes and net government financing. Keynesian behavioural equations relate consumption and investment to national income net of non-oil taxes and oil revenue, while the non-oil trade balance is a linear function of overall national income. Net government borrowing enters the model as an exogenous variable while domestic oil revenue is related directly to the aggregate oil ratio multiplied by national income (which equals domestic oil consumption) by making the oil price a numeraire. It follows that foreign oil revenue equals the external oil price multiplied by the shortfall between domestic oil production and domestic oil consumption. The model is used in order to derive an elasticity of national income to a change in world oil prices. This elasticity is calculated for a number of developing countries and it is employed to estimate the impact of the 1979 oil price "hike". In general we find that, dollar for dollar, a 1 per cent change in world oil prices affects developing countries considerably more than the developed countries.

Peled, Dan

TI Capital Accumulation and Annuities in an Adverse Selection Economy. AU Eichenbaum, Martin S.; Peled, Dan.

Pennacchi, George

TI Serial Correlation of Asset Returns and Optimal Portfolios for the Long and Short Term. AU Fischer, Stanley; Pennacchi, George.

Perreault, Leslie

TI The Economics of Reproduction-Related Health Care. AU Fuchs, Victor R.; Perreault, Leslie.

Pesando, James E.

PD January 1986. TI Discontinuities in Pension Benefit Formulas and the Spot Model of the Labor Market: Implications for Financial Economists. AA Institute for Policy Analysis, University of Toronto. SR National Bureau of Economic Research Working Paper: 1795; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 37. PR \$2.00. JE 821, 824. KW Spot Model of the Labor Market. Pension Benefits.

AB When analyzing tax and related issues, financial economists typically invoke the simplest and the most tractable model of the labor market. This is the spot model, in which the worker's cash wage plus accruing pension benefit must equal the value of the worker's marginal product in each and every period. This paper first identifies the discontinuities in a worker's cash wage that must occur under the spot model if the pension plan has typical "cliff" vesting and early retirement provisions. The paper then calculates the pension benefits actually accrued, at and around the dates of eligibility for these benefits, by members of five pension plans in Canada. Both exercises serve to discredit the spot model. The paper reviews the underfunding puzzle, the measurement of pension liabilities, and the recapture of surplus assets in overfunded plans in light of these findings.

Pindyck, Robert S.

TI Time to Build, Option Value, and Investment Decisions. AU Majd, Saman; Pindyck, Robert S.

PD June 1985. TI Are Imports to Blame?: Attribution of Injury under the 1974 Trade Act. AU Pindyck, Robert S.; Rotemberg, Julio J. AA Sloan School of Management, MIT. SR National Bureau of Economic Research Working Paper: 1640; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 27. PR \$2.00. JE 422, 632. KW 1974 Trade Act. Copper Industry. Effect of Imports.

AB Under Section 201 of the 1974 Trade Act, a domestic industry can obtain temporary protection against imports by demonstrating before the International Trade Commission that it has been injured, and that imports have been the "substantial cause" of injury -- i.e., "a cause which is important and not less than any other cause." To date, the ITC lacks a coherent framework for selecting a menu of other factors which might be considered as causes of injury, and for weighing the effects of these other factors against those of imports. This paper sets forth a straightforward economic and statistical framework for use in Section 201 cases. This framework is based on the fact that if the domestic industry is competitive, injury can arise from one or more of three broad sources: adverse shifts in market demand, adverse shifts in domestic supply, or increased imports. We show how these sources of injury can be distinguished in theory, and statistically evaluated in practice. As an illustrative example, we apply the framework to the case of the copper industry, which petitioned the ITC for relief in 1984. Although that industry has indeed suffered injury, we show that the "substantial cause" was not imports, but instead increasing costs and decreasing demand.

Polemarchakis, H. M.

TI Intertemporal Equilibrium and the Transfer Paradox. AU Galor, O.; Polemarchakis, H. M.

Poole, Keith T.

TI The Relationship Between Information, Ideology and Voting Behavior. AU Palfrey, Thomas R.; Poole, Keith T.

PD September 1985. TI The Regional Realignment of Congress, 1919-1984. AU Poole, Keith T.; Rosenthal, Howard. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 19; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 025, 941. KW Congressional Voting. New Deal Realignment. Black Civil Rights.

AB A simple unidimensional spatial model accounts for most of Congressional voting since the end of World War I. In terms of voting in Congress, the New Deal Realignment did not result from cross-cutting issues organizing voting along new spatial axes. Rather, the realignment consisted of a sharp shift of the existing liberal-conservative spectrum to the left. A second dimension appears during World War II which is related to civil rights for Blacks. It separates the Northern and Southern Democrats. This separation peaked in the mid-to late 1960s and is now closing. Substantial changes have occurred within various regions of the United States over the 1919-1984 period of the study. The northeastern Congressional delegation changed from being the most conservative in 1919 to being the most liberal by 1984. The southern delegation changed from being the most liberal to being substantially conservative while the delegation from the intermountain region has become the most conservative in the Congress. These changes are substantially, but not fully, consistent with the oft-cited sun-belt/frost-belt dichotomy.

PD October 1985. TI The Unidimensional Congress, 1919-84. AU Poole, Keith T.; Rosenthal, Howard. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 26; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 025. KW Congressional Voting. Roll Call Voting. Party Polarization.

AB A simple unidimensional spatial model is shown to provide a highly accurate description of roll call voting in the United States Congress. The recovered liberal-conservative dimension is temporally stable and has dominated votes since World War I. The Depression and other events did not give rise to a change in the major axis aligning the legislators. The dimension was temporarily upset by the civil rights issues of the sixties, but the dimension in place today is highly similar to that in place in the twenties. These results are established by first performing annual or biannual scalings via maximum likelihood estimation of the parameters of a

unidimensional stochastic utility model and then carrying out singular value decompositions (with missing entries) of the Senate and House matrices formed by the legislator coordinates from 90 separate scalings. Other results in the paper emphasize the rather surprising highly liberal positions of Southern Democrats prior to World War II, the long-term liberal trend in American politics from the Depression to the sixties, and the recent increasing polarization of the two parties. The movement in the conservative direction initiated with the Reagan administration is not large in magnitude by historical standards.

Portes, Richard

PD October 1985. TI Debt and Default in the 1930s: Causes and Consequences. AU Portes, Richard; Eichengreen, Barry. AA Portes: Birkbeck College. Eichengreen: Harvard University. SR Centre for Economic Policy Research Discussion Paper: 75; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 65. PR 1 pound (\$2) individuals; 1.50 pounds (\$3) companies, libraries, institutions. JE 441, 443, 041. KW Debt. Sovereign Borrowing. Default. 1930s.

AB This paper analyzes the 'debt crisis' of the 1930s to see what light this historical experience sheds on recent difficulties in international capital markets. We first consider patterns of overseas lending and borrowing in the 1920s and 1930s, comparing the performance of standard models of foreign borrowing in this period to the 1970s-80s. Next, we analyze the incidence and extent of default on sovereign debt, adapting models of debt capacity to the circumstances of the interwar years. We consider the choices available to investors in those foreign loans which lapsed into default in the 1930s, emphasizing the distinction between creditor banks and bondholders. Finally, we provide the first estimates of the realized rate of return on foreign loans floated between the wars, based on a sample of dollar and sterling bonds issued in the 1920s.

TI Debt and Default in the 1930s: Causes and Consequences. AU Eichengreen, Barry; Portes, Richard.

PD January 1986. TI The Theory and Measurement of Macroeconomic Disequilibrium in Centrally Planned Economies. AA Department of Economics, Birkbeck College. SR Centre for Economic Policy Research Discussion Paper: 91; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 43. PR 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. JE 052, 023, 027. KW Centrally Planned Economies. Disequilibrium. Rationing and Shortages. Repressed Inflation. Planners' Behavior.

AB The paper considers issues in recent research on macroeconomic equilibrium in centrally planned economies. I defend the explicit aggregative, macroeconomic approach in theory, institutional relationships and measurement. It has offered a fresh, coherent framework for the analysis of many Centrally Planned Economies phenomena, opened up a range of possibilities for empirical investigation, and generated

several important spinoffs: work on planners' behaviour; insights into CPE policy problems of the 1970s and early 1980s, which centred on macroeconomic equilibrium and threats to it; and some developments in market economy macro theory and econometrics. The quantity-rationing macro model and disequilibrium econometrics give a more useful as well as a more nuanced view of macroeconomic reality in CPEs than the conventional wisdom characterizing them as perpetual "shortage economies".

Poterba, James M.

PD June 1985. TI A Tax-Based Test for Nominal Rigidities. AU Poterba, James M.; Rotemberg, Julio J.; Summers, Lawrence H. AA Poterba: Department of Economics, MIT. Rotemberg: Sloan School, MIT. Summers: Department of Economics, Harvard University. SR National Bureau of Economic Research Working Paper: 1627; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 023, 321. KW Tax Incidence. Nominal Rigidities.

AB In classical macroeconomic models with flexible wages and prices, whether a tax is levied on producers or consumers does not affect its incidence. However, if wages or prices are rigid in the short run, as they are in Keynesian macroeconomic models, then shifting a tax from one side of the market to the other may have real effects. Tax changes therefore provide potential tests for the presence of nominal rigidities. This paper examines the price and output effects of revenue-neutral shifts between direct and indirect taxation. The results, based on post-war data from both Great Britain and the United States, reject the view that wages and prices are completely flexible in the short run.

PD January 1986. TI Money in the Utility Function: An Empirical Implementation. AU Poterba, James M.; Rotemberg, Julio J. AA Poterba: Department of Economics, M.I.T. Rotemberg: Sloan School of Management, M.I.T. SR National Bureau of Economic Research Working Paper: 1796; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 28. PR \$2.00. JE 134, 310, 023. KW Household Asset Demands. Money Demand. Welfare Cost of Inflation.

AB This paper studies household asset demands by allowing certain assets to contribute directly to utility. It estimates the parameters of an aggregate utility function which includes both consumption and liquidity services. These liquidity services depend on the level of various asset stocks. We apply these estimates to investigate the long- and short-run interest elasticities of demand for money, time deposits, and Treasury bills. We also examine the impact of open market operations on interest rates, and present new estimates of the welfare cost of inflation.

Purvis, Douglas

TI A Positive Theory of Fiscal Policy in Open Economies. AU Backus, David; Devereux, Michael; Purvis, Douglas.

Quah, Danny

PD August 1985. TI Estimation and Hypothesis

Testing with Restricted Spectral Density Matrices: An Application to Uncovered Interest Parity. AU Quah, Danny; Ito, Takatoshi. AA Quah: Department of Economics, Harvard University. Ito: National Bureau of Economic Research, Palo Alto, CA. SR National Bureau of Economic Research Technical Paper: 50; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 211, 441. KW Dynamic Linear Models. Cross-Equation Restrictions. Uncovered Interest Parity.

AB This paper explores an econometric estimation technique for dynamic linear models. The method combines the analytics of moving average solutions to dynamic models together with computational advantages of the Whittle likelihood. A hypothesis of interest to international and financial economists is represented in the form of cross-equation restrictions and tested under the technique. This paper employs data on Japanese yen- and United States dollar-denominated interest rates and yen/dollar exchange rates to examine the hypothesis of uncovered interest parity under rational expectations.

Quandt, Richard E.

PD June 1985. TI Unemployment, Disequilibrium, and the Short Run Phillips Curve: An Econometric Approach. AU Quandt, Richard E.; Rosen, Harvey S. AA Department of Economics, Princeton University. SR National Bureau of Economic Research Working Paper: 1648; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 35. PR \$2.00. JE 821, 824. KW Aggregate Labor Market Disequilibrium Model. Dynamics. Excess Demand. Natural Rate of Unemployment. Short Run Phillips Curve.

AB The paper specifies a disequilibrium model for the aggregate labor market consisting of demand and supply functions for labor, an adjustment equation for wages as well as for prices, a transactions equation and, finally, an equation that relates measured unemployment to vacancies and to excess demand. The model has a more sophisticated treatment of dynamics than earlier disequilibrium models, and uses measured unemployment as an endogenous variable. Two of the error terms are assumed to be serially correlated and the coefficients are estimated by maximum likelihood. The parameter estimates and the goodness-of-fit are satisfactory and the model's implications for the behavior of several important variables are sensible. Excess demand estimates computed in various ways are reasonable. The model is used to estimate the natural rate of unemployment as well as a short run Phillips curve. Finally, the stability properties of the model are analyzed by considering the eigenvalues of the system; they are found to have moduli less than one.

PD December 1985. TI Unemployment, Disequilibrium, and the Short Run Phillips Curve: An Econometric Approach. AU Quandt, Richard E.; Rosen, Harvey S. AA Department of Economics, Princeton University. SR Princeton Industrial Relations Section Working Paper: 202; Industrial Relations Section, Department of Economics, Princeton University, Princeton, NJ 08544. PG 20. PR \$1.00 plus postage.

JE 824. KW Labor Market. Disequilibrium. Short Run Phillips Curve. Natural Rate of Unemployment.

AB The paper specifies a disequilibrium model for the aggregate labor market consisting of demand and supply functions for labor, an adjustment equation for wages as well as for prices, a transactions equation and, finally, an equation that relates measured unemployment to vacancies and to excess demand. The model has a more sophisticated treatment of dynamics than earlier disequilibrium models, and uses measured unemployment as an endogenous variable. Two of the error terms are assumed to be serially correlated and the coefficients are estimated by maximum likelihood. The parameter estimates and the goodness-of-fit are satisfactory and the model's implications for the behavior of several important variables are sensible. Excess demand estimates computed in various ways are reasonable. The model is used to estimate the natural rate of unemployment as well as a short run Phillips curve. Finally, the stability properties of the model are analyzed by considering the eigenvalues of the system; they are found to have moduli less than one.

Rankin, Neil

PD October 1985. **TI** Taxation versus Spending as the Fiscal Instrument for Demand Management: A Disequilibrium Welfare Approach. **AA** Department of Economics, Queen Mary College, University of London. **SR** Centre for Economic Policy Research Discussion Paper: 84; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 47. **PR** 1 pound (\$2) individuals; 1.50 pounds (\$3) companies, libraries, institutions. **JE** 321, 023, 133. **KW** Fiscal Policy. Demand Management. Disequilibrium. Welfare. Taxation Versus Spending.

AB The microeconomic foundations provided by the 'disequilibrium' macro-modelling approach of Barro-Grossman-Malinvand are used to compare the performance of government spending and taxation as instruments of fiscal demand management in achieving a welfare optimum. Spending is successively treated as 'waste', 'consumption' and 'investment'. In all cases, when bond-financed deficits are permitted, spending should be set with regard only to the full employment situation, leaving taxation as the instrument for maintaining full employment. Only when a balanced-budget constraint is imposed are there grounds for spending to be set above this level. This may occur when (a) an investment 'accelerator' exists, (b) there is utility of leisure, and (c) spending provides utility.

Ravenscraft, David J.

PD January 1986. **TI** Mergers and Managerial Performance. **AU** Ravenscraft, David J.; Scherer, F. M. **AA** Ravenscraft: Federal Trade Commission. Scherer: Swarthmore College and Brookings Institution. **SR** Federal Trade Commission Bureau of Economics Working Paper: 137; Bureau of Economics, Federal Trade Commission, 6th and Pennsylvania Avenue NW, Washington, D.C. 20580. **PG** 40. **PR** No Charge. **JE** 611. **KW** Mergers. Acquisitions. Divestitures. Profitability.

AB This Columbia Law School conference paper provides a non-technical overview of early results from a research

project on the economics of corporate mergers and sell-offs. The companies acquired between 1950 and 1976 were found on average to be of above-average profitability. Fifteen case studies of mergers that culminated in sell-off revealed that problems and disappointing earnings were most commonly the cause, and that these in turn often came from control loss and incentive problems. Line of Business data on units sold off show a pattern of declining profitability prior to sell-off, with negative operating income on average in the year before sell-off. A cross-section analysis of nearly 3,000 lines of business that avoided sell-off in the 1975-77 period shows a fall in profitability following the average merger, with a more severe impact for conglomerate than for horizontal or "related business" acquisitions. Tender offer targets were found to have roughly average pre-takeover profitability and to perform worse than peer lines following takeover. By acquiring profitable firms and selling off the acquisitions that performed poorly, some leading conglomerate enterprises achieved impressive stock price gains between 1965 and 1983, although investors who bought in at the peak of the conglomerate merger boom fared less well.

Ray, Debraj

PD October 11, 1985. **TI** Nonpaternalistic Intergenerational Altruism. **AA** Stanford University. **SR** Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: 470; Fourth Floor, Encina Hall, Stanford University, Stanford, CA 94305. **PG** 39. **PR** \$3.00. **JE** 111. **KW** Intergenerational Altruism. Nonpaternalistic. Theory of Growth.

AB A model of intergenerational altruism is studied, where the utility of each generation depends on its own consumption and the utilities of any number of its descendants. The framework is nonpaternalistic, in contrast to one where utilities depend on the consumptions of descendants. First, an equilibrium is defined and its existence established. Second, some positive properties of the equilibrium paths are studied; in particular, the convergence of stocks to a steady state. And finally, sufficient conditions are given in a special case of the model under which every equilibrium path is inefficient. The inefficiency is of a strong kind: there is another feasible program with consumptions higher at every date. It is also argued that for inefficiency to exist, altruism must extend to descendants other than one's immediate successor.

Razin, Assaf

TI Exchange Rate Management: Intertemporal Tradeoffs. **AU** Helpman, Elhanan; Razin, Assaf.

Reiss, Peter

TI Alternative Nonnested Specification Tests of Time Series Investment Models. **AU** Bernanke, Ben; Bohn, Henning; Reiss, Peter.

Renault, E.

TI Residus Generalises, Residus Simules Et Leurs Utilisations Dans Les Modeles Non Lineaires (Generalized Residuals, Simulated Residuals and Their Applications in Non-Linear Models). **AU** Gourieroux, C.; Monfort, A.;

Renault, E.; Trognon, A.

Rey, Patrick

TI Contraintes Verticales: L'approche. Principal - Agent. AU Rey, Patrick; Tirole, Jean. AA Rey: ENSAE. Tirole: MIT. SR Unite de Recherche, Document de Travail ENSAE/INSEE: 8512; INSEE, Unite de Recherche, 18 Bd. Adolphe Pinard, 75675 Paris cedex 14, FRANCE. PG 62. PR No Charge. JE 611. KW Vertical Restraints. Principal - Agent Theory. Vertical Integration.

AB This paper shows how the Principal-Agent approach, applied to the study of relationships between producers and retailers, can yield new insights in the analysis of vertical restraints such as resale price maintenance, exclusive territories agreements, tie-ins. The paper surveys some already wellknown results and presents new arguments which take into account the informational context of these relationships.

Roberts, John M.

TI New Estimates of Federal Government Tangible Capital and Net Investment. AU Boskin, Michael J.; Robinson, Marc S.; Roberts, John M.

Robinson, Chris

TI An Operational Theory of Monopoly Union-Competitive Firm Interaction: New Predictions, A simple Framework for Interpreting Existing Data, and Proposed Tests. AU MacDonald, Glenn M.; Robinson, Chris.

Robinson, James C.

TI Bargaining Unit, Union, Industry, and Locational Correlates of Union Support in Certification and Decertification Elections. AU Dickens, William T.; Wholey, Douglas R.; Robinson, James C.

Robinson, Marc S.

TI New Estimates of Federal Government Tangible Capital and Net Investment. AU Boskin, Michael J.; Robinson, Marc S.; Roberts, John M.

Rodgerson, Richard

PD February 1986. TI Risk Sharing, Indivisible Labor and Aggregate Fluctuations. AA University of Rochester. SR University of Rochester Center for Economic Research Working Paper: 34; Department of Economics, University of Rochester, Rochester, NY 14627. PG 15. PR No Charge. JE 821. KW Indivisible Labor. Risk Sharing. Labor Market Fluctuations.

AB This paper compares the mechanisms through which indivisible labor and risk sharing can affect aggregate fluctuations in the labor market. Both of these features act to decrease curvature in preferences, but, whereas indivisible labor acts to alter preferences over leisure, risk sharing acts to alter preferences over consumption.

Rodrik, Dani

PD January 1986. TI Policy Targeting With Endogenous Distortions: Theory of Optimum Subsidy Revisited. AA Kennedy School of Government, Harvard University. SR Harvard John F. Kennedy School of

Government Discussion Paper: 146D; Kennedy School of Government, Harvard University, 79 John F. Kennedy Street, Cambridge, MA 02138. PG 29. PR No Charge. JE 311, 321, 133, 023. KW Policy Targeting. Optimum Subsidy. Distortions. Externalities.

AB This paper explores the consequences of relaxing the critical assumption in the theory of optimum subsidy regarding the exogenous nature of the distortion or "non-economic" objective in question. Once endogeneity is introduced, allowing the distortion an ability to react independently to the government's policy choices, the principle of policy targeting remains no longer valid. Policies which are normally thought of as being first-best might be welfare dominated by second-best ones, or even be welfare worsening, and tax/subsidy policies alone might be insufficient to decentralize a Pareto-optimal allocation. In the presence of endogenous distortions, the design of appropriate policies will necessarily require knowledge of the specific mechanisms which generate the distortions. These conclusions are illustrated using a general model and three specific examples.

PD February 1986. TI The Economics of Export-Performance Requirements. AA John F. Kennedy School of Government, Harvard University. SR Harvard John F. Kennedy School of Government Discussion Paper Series: 149D; John F. Kennedy School of Government, 79 John F. Kennedy Street, Harvard University, Cambridge, MA 02138. PG 31. PR No Charge. JE 422, 441. KW Direct Foreign Investment, Trade Policy Performance Requirements. Multinational Corporations.

AB This paper analyzes the resource-allocation and welfare effects of export-performance requirements imposed on foreign investors. It argues that a satisfactory analysis must consider the presence of tariff distortions and oligopolistic behavior in host-country markets. These create a second-best environment in which an evaluation of the welfare effects of such requirements is no longer straightforward. It is concluded that export requirements can improve home welfare by reducing payments to foreign capital, reducing the output of commodities which are being over-produced, and shifting profits towards domestically-owned firms. These results are developed using general-equilibrium and partial-equilibrium models.

Rogoff, Kenneth

TI Was It Real? The Exchange Rate -- Interest Differential Relation, 1973-1984. AU Meese, Richard; Rogoff, Kenneth.

Romer, Thomas

PD July 1985. TI Modern Political Economy and the Study of Regulation. AU Romer, Thomas; Rosenthal, Howard. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 3; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 613. KW Political Process. Regulation.

AB This paper surveys recent work that studies the interaction of political and economic considerations in the framing of regulatory policy. We focus primarily on

papers that involve theoretical modeling of the political process, and on empirical work related to these models.

Rosen, Harvey S.

TI Unemployment, Disequilibrium, and the Short Run Phillips Curve: An Econometric Approach. AU Quandt, Richard E.; Rosen, Harvey S.

TI State Personal Income and Sales Taxes: 1977-1983. AU Feenberg, Daniel R.; Rosen, Harvey S.

TI Implementing Causality Tests with Panel Data, with an Example from Local Public Finance. AU Holtz, Eakin Douglas; Newey, Whitney; Rosen, Harvey S.

TI The Deductibility of State and Local Taxes: Impact Effects by State and Income Class. AU Feenberg, Daniel R.; Rosen, Harvey S.

TI Unemployment, Disequilibrium, and the Short Run Phillips Curve: An Econometric Approach. AU Quandt, Richard E.; Rosen, Harvey S.

Rosen, Sherwin

PD June 1985. TI Implicit Contracts: A Survey. AA Department of Economics, University of Chicago. SR National Bureau of Economic Research Working Paper: 1635; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 813, 821. KW Implicit Contracts. Contract Theory. Non-Linear Two Part Pricing.

AB Implicit contracts resolve the distribution of uncertainty and utilization of specific human capital between risk averse workers and less risk averse firms. Incomplete contracts are required to yield involuntary layoffs in contract markets: otherwise, contracts are efficient and pareto optimal by construction. There is a close relation between contract theory and neoclassical labor market theory. Contracts smooth consumption, but increase the volatility of labor supply and labor utilization to demand disturbances, because contractual insurance eliminates the income effects of socially diversifiable risks. This result is similar to the intertemporal substitution hypothesis. However, the price mechanism in a contract is substantially different. Contracts embody a nonlinear two-part pricing scheme. The lump sum part allocates the income-consumption consequences of risks and the marginal pricing part allocates production and labor utilization. This implicit pricing mechanism is in all respects "flexible," though the observed average hourly wage combines both parts and may give the outward appearance of rigidity. Furthermore, the observed average wage rate in a contract does not reflect marginal conditions necessary for structural econometric estimation. Indivisibilities appear necessary to account for the split between work-sharing and layoffs. Contracts with private information are also considered in the nonlinear pricing context.

PD July 1985. TI Prizes and Incentives in Elimination Tournaments. AA Department of Economics, University of Chicago. SR National Bureau of Economic Research Working Paper: 1668; National

Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 46. PR \$2.00. JE 022, 026, 825. KW Elimination Tournaments. Performance Incentives.

AB The role of rewards for maintaining performance incentives in multistage, sequential games of survival is studied. The sequential structure is a statistical design-of-experiments for selecting and ranking contestants. It promotes survival of the fittest and saves sampling costs by early elimination of weaker contenders. Analysis begins with the case where competitors' talents are common knowledge and is extended to cases where talents are unknown. It is shown that extra weight must be placed on top ranking prizes to maintain performance incentives of survivors at all stages of the game. The extra weight at the top induces competitors to aspire to higher goals independent of past achievements. In career games workers have many rungs in the hierarchical ladder to aspire to in the early stages of their careers, and this plays an important role in maintaining their enthusiasm for continuing. But the further one has climbed, the fewer the rungs left to attain. If top prizes are not large enough, those who have succeeded in attaining higher ranks rest on their laurels and slack off in their attempts to climb higher. Elevating the top prizes makes the ladder appear longer for higher ranking contestants, and in the limit makes it appear of unbounded length: no matter how far one has climbed, it looks as if there is always the same length to go. Concentrating prize money on the top ranks eliminates the no-tomorrow aspects of competition in the final stages.

TI A Time Series Model of Housing Investment in the United States. AU Topel, Robert; Rosen, Sherwin.

Rosenthal, Howard

TI Modern Political Economy and the Study of Regulation. AU Romer, Thomas; Rosenthal, Howard.

TI The Regional Realignment of Congress, 1919-1984. AU Poole, Keith T.; Rosenthal, Howard.

TI The Unidimensional Congress, 1919-84. AU Poole, Keith T.; Rosenthal, Howard.

Rotemberg, Julio J.

TI Are Imports to Blame?: Attribution of Injury under the 1974 Trade Act. AU Pindyck, Robert S.; Rotemberg, Julio J.

TI A Tax-Based Test for Nominal Rigidities. AU Poterba, James M.; Rotemberg, Julio J.; Summers, Lawrence H.

TI Money in the Utility Function: An Empirical Implementation. AU Poterba, James M.; Rotemberg, Julio J.

Rupp, Agnes

TI Hospital Cost and Efficiency under Per Service and Per Case Payment in Maryland: A Tale of the Carrot and the Stick. AU Salkever, David; Steinwachs, Donald M.; Rupp, Agnes.

Sachs, Jeffrey

TI Macroeconomic Interdependence of Japan and the United States: Some Simulation Results. AU Ishii, Naoko; McKibbin, Warwick; Sachs, Jeffrey.

PD June 1985. TI The Dollar and the Policy Mix; 1985. AA National Bureau of Economic Research, Cambridge, MA and Department of Economics, Harvard University. SR National Bureau of Economic Research Working Paper: 1636; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 82. PR \$2.00. JE 122, 431, 311, 321. KW Policy Mix. Inflation. Currency Value.

AB In 1971, Robert Mundell proposed a stunning solution to the three problems then affecting the United States economy: high inflation and unemployment, and a weak currency. Mundell suggested that the policy mix of fiscal expansion and monetary contraction could work to raise output, reduce inflation, and strengthen the currency at the same time. This policy mix has been pursued under the Reagan administration since 1981. The paper investigates the contributions of this policy mix to disinflation and output growth. It finds that the policy mix has contributed as much as three percentage points of the reduction in inflation during 1981-84, but that the gains against inflation due to the mix will likely be lost, or more than lost, in the future.

TI Growth and External Debt under Risk of Debt Repudiation. AU Cohen, Daniel; Sachs, Jeffrey.

Safra, Zvi

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

Salkever, David

PD June 1985. TI Hospital Cost and Efficiency under Per Service and Per Case Payment in Maryland: A Tale of the Carrot and the Stick. AU Salkever, David; Steinwachs, Donald M.; Rupp, Agnes. AA School of Hygiene and Public Health, The Johns Hopkins University. SR National Bureau of Economic Research Working Paper: 1633; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 913. KW Hospital Costs. Per Case Payment System. Per Service Payment System.

AB The simultaneous operation of per case and per service payment systems in Maryland, and the varying levels of stringency used in setting per case rates allows comparison of effects of differing incentive structures on hospital costs. This paper presents such a comparison with 1977-1981 data. Cost per case and total cost regressions show evidence of lower costs only when per case payment limits are very stringent. Positive net revenue incentives appear insufficient to induce reductions in length of stay and in ancillary services use. Our results suggest these changes in medical practice patterns are more likely under the threat of financial losses.

Salmon, Mark

PD December 1985. TI On Evaluating the Importance of Non-linearity in Large Macro-econometric Models. AU Salmon, Mark; Fisher, Paul. AA Salmon:

Department of Economics, University of Warwick. Fisher: ESRC Macroeconomic Modelling Bureau, University of Warwick. SR Centre for Economic Policy Research Discussion Paper: 86; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, England. PG 30. PR 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. JE 211, 212. KW Non-Linearity. Large Macro-Econometric Models. Stochastic Simulation.

AB Most model builders continue to treat their models as deterministic when forecasting, despite the fact that these models are composed of equations which are stochastic in nature. Deterministic solution methods ignore the stochastic information on the model structure and in addition produce biased forecasts in non-linear models. It is therefore important to investigate whether a given model is significantly non-linear. After commenting on the poor simulation methodology employed in a number of earlier studies, we find significant non-linear effects in two large macro models of the United Kingdom economy. This is confirmed by two tests that we propose for assessing the importance of non-linearity in such models.

Saltzman, Matthew J.

PD November 1985. TI A Two-Process Enumeration Algorithm for the Simple Assembly Line Balancing Problem. AU Saltzman, Matthew J.; Baybars, Ilker. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 29; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 522, 213. KW Assembly Line Balancing Problem. Enumeration Algorithm.

AB We present an implicit-enumeration algorithm for the simple assembly line balancing problem, with the objective of minimizing the number of stations for a fixed cycle time. The algorithm traverses two branch-and-bound trees, one assigning tasks that appear earlier in the precedence network at lower levels. The two processes alternate expanding nodes of their respective trees, and share information about each other's progress in the form of global bounds. Computational results are reported on several well-known problems from the literature.

Schankerman, Mark

PD June 1985. TI Estimates of the Value of Patent Rights in European Countries During the Post-1950 Period. AU Schankerman, Mark; Pakes, Ariel. AA Schankerman: National Bureau of Economic Research, New York. Pakes: National Bureau of Economic Research, Cambridge, MA. SR National Bureau of Economic Research Working Paper: 1650; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 37. PR \$2.00. JE 621. KW Value of Patent Rights. Patents.

AB This paper examines the distribution of the values of patent rights in the United Kingdom, France, and Germany during the post-1950 period. These values are inferred from the behavior of patentees with respect to payment of renewal fees on their patents. A simple

economic model of renewal decisions is combined with data on the proportion of patents renewed at alternative ages and the renewal fee schedules to produce estimates of the distribution (and the total) value of patent rights in these countries. Moreover, the data indicate that there have been changes in the value distribution, and we follow these changes over the period. The empirical results of particular interest concern: the total value of patent rights and the relationship between changes in it and changes in the quantity of patents, the skew in the distribution of patent values, and the rate of obsolescence on the returns to patents.

Scherer, F. M.

TI Mergers and Managerial Performance.
AU Ravenscraft, David J.; Scherer, F. M.

Sedlacek, Guilherme L.

TI Intertemporal Preferences and Labor Supply.
AU Hotz, V. Joseph; Kydland, Finn E.; Sedlacek, Guilherme L.

Shapiro, Carl

TI Optimal Dynamic R and D Programs.
AU Grossman, Gene M.; Shapiro, Carl.

TI Dynamic R&D Competition. AU Grossman, Gene M.; Shapiro, Carl.

Shapiro, Matthew D.

TI Do We Reject Too Often? Small Sample Properties of Tests of Rational Expectations Models. AU Mankiw, Gregory; Shapiro, Matthew D.

Sherman, Daniel R.

TI Employment While in College, Academic Achievement and Post-College Outcomes: A Summary of Results. AU Ehrenberg, Ronald G.; Sherman, Daniel R.

Shetty, Sudhir

PD 1986. TI Monitoring Costs and Collateral Requirements in Loan Contracts. AA Institute of Policy Sciences, Duke University. SR Duke Working Papers in Economics: 86-05; Working Papers Series, Department of Economics, Duke University, Durham, NC 27706. PG 33. PR No Charge. JE 315. KW Collateral. Loan Contracts.

AB The role of collateral in loan contracts is studied when monitoring costs preclude lenders from controlling the borrower's use of the loan. It is shown in this context that, by influencing the borrower's investment choice, the use of collateral avoids the efficiency loss that might otherwise arise due to the divergent interests of the borrower and lender. In a competitive loan market therefore, collateral increases borrowers' returns. This result explains why borrowers without acceptable collateral receive more stringent contract terms and implies that certain bankruptcy laws might cause a welfare loss to borrowers.

PD 1986. TI Collateral Constraints and Interlinked Credit and Sharecropping Contracts. AA Institute of Policy Sciences, Duke University. SR Duke Working

Papers in Economics: 86-04; Working Papers Series, Department of Economics, Duke University, Durham, NC 27706. PG 33. PR No Charge. JE 315, 718. KW Agrarian Economies. Share-Tenancy Contracts. Agrarian Credit Market.

AB This paper suggests an explanation for the interlinking of credit and share-tenancy contracts in agrarian economies. The rationale provided here differs from those in the literature in that it derives from features of the agrarian credit market such as tenants' needs for production loans, their lack of collateral and the high costs to lenders of monitoring the tenants' use of loans. With these so-called credit market "imperfections" it is shown that an efficiency gain may accrue when landlords transact with tenants not only in the land market but also in providing production loans. Landlords have an advantage over other lenders in making loans to their tenants because the share contract provides them an additional instrument with which to circumvent the incentive problem that arises due to the combination of high monitoring costs and tenants' lack of collateral. In this context therefore, interlinked sharecropping and credit contracts dominate the separation of land and credit transactions. This conclusion suggests that a welfare increase may result if government banks in such economies use landlords as intermediaries rather than lending directly to tenants.

Shiller, Robert J.

TI Estimating the Continuous Time Consumption Based Asset Pricing Model. AU Grossman, Sanford J.; Melino, Angelo; Shiller, Robert J.

Shitovitz, Benyamin

TI Consistent Voting Rules for Competitive Local Public Good Economies. AU Greenberg, J.; Shitovitz, Benyamin.

Siegel, Andrew F.

TI Long-Term Behavior of Yield Curves. AU Nelson, Charles R.; Siegel, Andrew F.

Singh, Radhey S.

TI The Estimation of Probability Density Functions and its Applications in Econometrics. AU Ullah, Aman; Singh, Radhey S.

PD November 1985. TI Nonparametric Inference in Econometrics. AU Singh, Radhey S.; Ullah, Aman; Carter, R. A. L. AA Singh: Department of Mathematics and Statistics, University of Guelph. Ullah and Carter: Department of Economics, University of Western Ontario. SR University of Western Ontario Centre for Decision Sciences and Econometrics Technical Reports: 7; The Centre for Decision Sciences and Econometrics, Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. PG 34. PR No Charge. JE 211. KW Inference. Nonparametric Density Estimators.

AB In this paper, nonparametric estimators of a multivariate density, of conditional mean (regression functions) and of conditional variances (heteroskedasticity) are presented. Among other results, we establish central

limit theorems for the estimators and build up confidence intervals based on these estimators. Further, some applications of these estimators are explored in econometrics.

Slade, Margaret E.

PD July 1985. **TI** Value-Added Total-Factor-Productivity Measurement: A Monte-Carlo Assessment. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 85-36; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C., CANADA, V6T 1Y2. **PG** 30. **PR** \$.20 per page Canadian to other than educational institutions. **JE** 621, 226. **KW** Technical Change. Value-Added Total-Factor Productivity Index.

AB Necessary and sufficient conditions for changes in value-added total-factor-productivity indices to capture shifts in the production possibilities open to society (the true rate of technical change) are derived. Monte-Carlo techniques are then used to assess the magnitudes and signs of the errors that are made when these conditions are wrongly maintained. The factors that are varied in the assessment include the elasticities of substitution between factors, the Hicks-neutral rate of technical change, the biased (materials saving or using) rate of technical change, and the trend in the price of the omitted factor.

PD November 1985. **TI** Interfirm Rivalry in a Repeated Game: An Empirical Test of Tacit Collusion. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 85-37; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C., CANADA, V6T 1Y2. **PG** 32. **PR** \$.20 per page Canadian to other than educational institutions. **JE** 611, 635, 022. **KW** Retail Gasoline Market. Price War. Supergame Strategies.

AB Rivalry in the Vancouver retail gasoline market is modeled as a repeated game. Service-station demand, cost, and reaction functions are estimated from daily data on individual-station prices, costs, and sales. These functions are then used to calculate noncooperative and cooperative solutions to the constituent game and the actual outcome of the repeated game. The actual outcome is found to be less lucrative than the cooperative solution. Nevertheless, all stations are better off than if they played their noncooperative strategies in every period. In addition, the continuous supergame strategies associated with reaction functions are found to provide a better model of the price-war dynamics than alternative discontinuous strategies, where price wars are reversions to Nash behavior.

PD November 1985. **TI** Price Wars in Price-Setting Supergames. **AA** Department of Economics, University of British Columbia. **SR** University of British Columbia Department of Economics Discussion Paper: 85-35; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C., CANADA, V6T 1Y2. **PG** 31. **PR** \$.20 per page Canadian to other than educational institutions. **JE** 022, 611. **KW** Price

Wars. Price Cutting. Price-Setting Supergames.

AB This paper presents a method of producing price wars in price-setting supergames. The market is one where symmetric oligopolists produce a differentiated product and use price as a strategic variable. Prices are posted and can be observed by all. There is thus little uncertainty or scope for secret price cutting. Demand is subject to infrequent but periodic random shocks that generate the wars. After a shock, the dynamics inherent in the model determine behavior until the new equilibrium is reached. The method is illustrated with two examples. The first involves discontinuous strategies in the spirit of Friedman and the second uses continuous strategies as in Kalai and Stanford.

Slemrod, Joel

PD November 1985. **TI** The Impact of Tax Reform on Households. **AA** Department of Economics, University of Minnesota. **SR** National Bureau of Economic Research Working Paper: 1765; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 41. **PR** \$2.00. **JE** 323, 921. **KW** Tax Reform. Public Finance Theory.

AB This paper analyzes the Reagan Administration's tax reform proposal in terms of its three stated objectives--fairness, simplicity, and economic growth--and considers its likely effect on labor supply, saving and investment, and housing. The paper also attempts to place the tax reform debate in the context of modern public finance theory, in order to provide some rigorous framework for discussion of the important issues.

PD November 1985. **TI** The Optimal Size of a Tax Collection Agency. **AU** Slemrod, Joel; Yitzhaki, Shlomo. **AA** Slemrod: Department of Economics, University of Minnesota. Yitzhaki: Maurice Falk Institute, Hebrew University, Jerusalem. **SR** National Bureau of Economic Research Working Paper: 1759; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 22. **PR** \$2.00. **JE** 323, 916. **KW** Tax Compliance. Tax Evasion. Tax Collection Agency.

AB This paper addresses the optimal degree of law enforcement regarding tax evasion. It derives the conditions that characterize the optimal size of a tax collection agency, and then provides a simple interpretation of the conditions in terms of excess burden. The paper clarified earlier findings that suggest that the optimal size should be set higher than a simple cost-benefit calculation would indicate. It concludes with a numerical example that illustrates the optimality condition and demonstrates that a policy based on a naive cost-benefit analysis of the tax collection agency could result in a substantial overcommitment of resources.

PD November 1985. **TI** The Return to Tax Simplification: An Econometric Analysis. **AA** Department of Economics, University of Minnesota. **SR** National Bureau of Economic Research Working Paper: 1756; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 45. **PR** \$2.00. **JE** 323. **KW** Tax Compliance. Tax Simplification.

AB The purpose of this paper is to provide estimates of the probable saving in the resource cost of complying with the tax law that would result from simplifying the individual income tax law. These estimates are based on an econometric analysis of the tax filing behavior in 1982 of a sample of Minnesota taxpayers. A simple model of tax compliance behavior based on utility maximization is first presented in order to suggest the important determinants of compliance behavior. The empirical model treats the discrete choices of whether to itemize deductions and whether to hire professional tax advice, and the choice of how much time and money to spend, conditional on the discrete choices made. Simulations based on the econometric results suggest that significant resource saving could be expected from eliminating the system of itemized deductions, although no significant saving from changing to a single-rate tax structure can be confidently predicted.

Slivinski, Alan D.

TI A Positive Analysis of Multiproduct Firms in Market Equilibrium. **AU** MacDonald, Glenn M.; Slivinski, Alan D.

Smith, Murray D.

TI Joint One-Sided Tests of Linear Regression Coefficients. **AU** King, Maxwell L.; Smith, Murray D.

Smith, Stephen F.

TI Towards an Opportunistic Scheduling System. **AU** Ow, Peng Si; Smith, Stephen F.

PD August 1985. **TI** The Use of Multiple Problem Decompositions in Time Constrained Planning Tasks. **AU** Smith, Stephen F.; Ow, Peng Si. **AA** Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 16; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. **PR** No Charge. **JE** 511. **KW** Job Shop Scheduling. Problem Decompositions. Multi-Agent Planning Problems.

AB Problems requiring the synthesis of a collection of plans accomplishing distinct (but possibly related) goals has received increasing attention within AI. Such problems are typically formulated as multi-agent planning problems, emphasizing a problem decomposition wherein individual agents assume responsibility for the generation of individual plans while taking into account the goals and beliefs of other agents in the system. One consequence of such a problem decomposition is a simplified view of resource allocation that assumes avoidance of conflicts to be the sole concern. The validity of this assumption comes into question in time constrained problem domains requiring the allocation of multiple, shared resources. In job shop scheduling, for example, where sequences of manufacturing operations must be determined and scheduled for multiple orders, it is necessary to consider much more than availability to efficiently allocate resources over time. We argue that in such domains, an ability to reason from both resource-based and agent-based perspectives is essential to appropriate consideration of all

domain constraints.

Sokoloff, Kenneth L.

PD August 1985. **TI** Productivity Growth in Manufacturing During Early Industrialization: Evidence from the American Northeast, 1820 to 1860. **AA** University of California Los Angeles. **SR** National Bureau of Economic Research Working Paper: 1685; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 100. **PR** \$2.00. **JE** 042, 631, 825. **KW** Labor Factor Productivity. Industrialization.

AB This paper reports estimates of labor and total factor productivity, for thirteen manufacturing industries in the Northeast over the period from 1820 to 1860. It finds that although the highly mechanized and capital-intensive industries, such as cotton and wool textiles, realized somewhat more rapid progress than the others did, even the latter managed major advances. The evidence appears to support the conclusion that the manufacturing sector in the Northeast was quite dynamic during this stage of industrialization, and that much of its early productivity growth can be explained by changes in production processes that did not require mechanization or substantial increases in capital intensity. This suggests, as has been argued by a number of recent studies building on an old tradition, that developments such as increases in the division and intensity of labor within firms and other relatively subtle alterations in technique, perhaps stimulated by the expansion of markets, may have played important roles in accounting for the progress achieved.

Spiegel, Matthew

PD December 1985. **TI** A Theory of the Corporation: the Divident Paradox. **AA** Economics Department, Princeton University. **SR** Princeton Financial Research Center Memorandum: 64; Financial Research Center, Department of Economics, Princeton University, Princeton, NJ 08544. **PG** 57. **PR** \$2.00. **JE** 514, 521, 611. **KW** Corporate Control. Dividends.

AB The dividend paradox is based upon the idea that shareholders can trade their stock without affecting the performance of the underlying companies. However, this neutrality assumption ignores the importance of maintaining a large shareholder to control management. This paper develops a model in which management and equityholders are separate agents. The result is that management's behavior is a function of the largest shareholder's percentage ownership. Dividends function as a mechanism which allows the largest shareholder to both consume and purchase additional shares, thereby tightening his control over management. Thus, if the managerial team fails to pay a dividend the largest shareholder will engage in a control contest and force the issuance of one.

Srivastava, Sanjay

TI Implementable Allocations with Incomplete Information. **AU** Palfrey, Thomas R.; Srivastava, Sanjay.

TI The Covariation of Risk Premiums and Expected

Future Spot Exchange Rates. AU Hodrick, Robert; Srivastava, Sanjay.

TI Foreign Currency Futures. AU Hodrick, Robert J.; Srivastava, Sanjay.

Steckel, Richard H.

PD June 1985. TI Estimating Neonatal Mortality Rates from the Heights of Children: The Case of American Slaves. AA Ohio State University. SR National Bureau of Economic Research Working Paper: 1628; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 841, 042. KW Neonatal Mortality. Slave Infant Mortality Rates.

AB Underenumeration of vital events is a problem familiar to people who work with historical demographic records. This paper proposes a method for recovering information about neonatal mortality. The approach utilizes average heights of young children to predict the birth weight of American slaves. The results suggest that slave newborns weighed on average about 5.1 pounds, which places them among the poorest populations of developing countries in the mid-twentieth century. The birth weight distribution and a schedule of mortality by birth weight suggest that previous estimates of slave infant mortality are too low. The poor health and stature of children and the relatively large size of slave adults is a pattern of growth and development that is unobserved among poor populations of the twentieth century. Thus slavery may have created an unusual pattern of nutritional resource allocation across ages.

PD July 1985. TI Dimensions and Determinants of Early Childhood Health and Mortality Among American Slaves. AA Economics Department, Ohio State University. SR National Bureau of Economic Research Working Paper: 1662; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 44. PR \$2.00. JE 042, 913. KW Slave Children. Health. American Slaves.

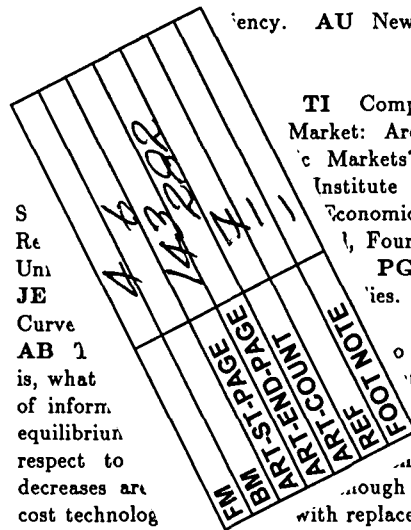
AB This paper relies on birth and death lists from plantation records to investigate the causes of low birth weight and poor health of young slave children. The sources of deprivation can be traced to the fetal period. The slave work routine was arduous overall and particularly intense during planting, hoeing, and harvesting. These demands combined with seasonal fluctuations in disease and in the quality of the diet implied that few newborns had escaped stress on intrauterine growth. Starchy food supplements given soon after birth and poor sanitation surrounding feeding provided a poor environment for growth during the first year of life.

Steinwachs, Donald M.

TI Hospital Cost and Efficiency under Per Service and Per Case Payment in Maryland: A Tale of the Carrot and the Stick. AU Salkever, David; Steinwachs, Donald M.; Rupp, Agnes.

Stiglitz, Joseph E.

TI Wage Rigidity, Implicit Contracts, Unemployment



ency. AU Newbery, David M.;

TI Competitivy and the Market: Are Duopolies more c Markets?. AA Princeton (Institute for Mathematical Economics Series) Technical , Fourth Floor, Stanford PG 29. PR \$3.00. ies. Kinked Demand

Two questions: The first is, what are the intrinsic asymmetries of demand with respect to price decreases are through with linear search with replacement, they are. In the case of sea about replacement and a linear search cost technology, it is shown that there cannot be a single price equilibrium. In other cases, the demand curves facing firms will be kinked, with firms showing a lack of responsiveness to changes in marginal costs. The second question addressed is, what are the consequences of an increase in the number of firms for market equilibrium? Since the fewer the number of firms, the more the search that can be induced by a firm's lowering its price, one might have thought that the fewer the number of firms, the greater the price elasticity. But there is a countervailing effect: in markets with a larger number of firms, there are more firms from which any given firm can recruit customers. In the case of linear search technologies, this second effect is shown to dominate, so that (in the case of search with replacement) the market equilibrium price decreases as the number of firms increases. With other search technologies, however, an increase in the number of firms may well lead to a decrease in price elasticity and an increase in the equilibrium price.

TI Learning-by-Doing, Market Structure and Industrial and Trade Policies. AU Dasgupta, Partha; Stiglitz, Joseph E.

Stock, James H.

PD February 1986. TI A Reexamination of Friedman's Consumption Puzzle. AA John F. Kennedy School of Government, Harvard University. SR Harvard John F. Kennedy School of Government Discussion Paper Series; 150D; John F. Kennedy School of Government, 79 John F. Kennedy Street, Harvard University, Cambridge, MA 02138. PG 18. PR No Charge. JE 023. KW Consumption Function. Marginal Propensity to Consume. Cointegration.

AB The different average and marginal consumption propensities estimated from time series data constitute a classic puzzle of the theory of consumption. If consumption and income possess a common (stochastic) trend (and thus are cointegrated), both the Average Propensity to Consume and the Marginal Propensity to Consume will be consistent, although they will be biased in small samples. Upon correcting for this small sample bias, the puzzling discrepancies between the APC and MPC

estimates obtained using United States annual data from 1897 to 1949 become substantially smaller, providing empirical support for an alternative explanation of the puzzle based on the theory of cointegration.

Stockman, Alan C.

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

Streufert, Peter A.

PD August 21, 1985. TI Dynamic Allocation with Consistent Intergenerational Benevolence. AA University of Wisconsin, Madison. SR Stanford Institute for Mathematical Studies in the Social Sciences (Economics Series) Technical Report: 471; Fourth Floor, Encina Hall, Stanford University, Stanford, CA 94305. PG 92. PR \$3.00. JE 022, 026. KW Altruism. Benevolence. Consistency. Intergenerational. Myopia. Preferences. Recursion. Representation. Separability. Subgame-Perfection. Markov.

AB I investigate the relationship between two alternative specifications of intergenerational benevolence. In one case, the preferences of an infinite sequence of generations are specified by a sequence of "conventional utility functions", each defined over a generation's own consumption and the consumptions of all future generations. In the other case, preferences are specified by "recursive utility functions", each defined over a generation's own consumption and the utility of the next generation. A conventional sequence can be recursively expressed if it is "consistent". On the other hand, a recursive sequence expresses at least one conventional sequence if it is "nondeficient", and it expresses exactly one conventional sequence if it is "definitive". Moreover, definitiveness is shown to be a generalized concept of summability in the absence of additive separability. I also study this relationship in terms of preference relations. First, I define and develop a new notion of representation termed "myopic representation", whereby recursive utility functions are seen to represent quasi-orderings. I then relate these quasi-orderings to the orderings which conventional utility functions represent and draw a deep parallel between this ordinal relationship and the functional relationship discussed earlier. I examine the relationship between two equilibrium concepts (subgame perfect Markov equilibria with conventional preferences and game-like structures with recursive preferences) and thereby combine the well-established conceptual framework of subgame-perfect Markov equilibria with the tractability of recursive solutions. Every subgame-perfect Markov equilibrium in a consistent game is a solution to any of the game's recursive expressions. On the other hand, every solution to a nondeficient structure is a subgame-perfect Markov equilibrium in at least one of the games which the structure recursively expresses. Moreover, the set of all such games can be readily described. I conclude by proving the existence of a solution to every recursive structure which satisfies ordinary topological assumptions.

Summers, Lawrence H.

TI A Tax-Based Test for Nominal Rigidities.

AU Poterba, James M.; Rotemberg, Julio J.; Summers, Lawrence H.

TI A Theory of Dual Labor Markets with Application to Industrial Policy, Discrimination and Keynesian Unemployment. AU Bulow, Jeremy I.; Summers, Lawrence H.

TI Is Price Flexibility Stabilizing?. AU DeLong, J. Bradford; Summers, Lawrence H.

TI Gibson's Paradox and the Gold Standard. AU Barsky, Robert B.; Summers, Lawrence H.

PD September 1985. TI Issues in National Savings Policy. AA Harvard University. SR National Bureau of Economic Research Working Paper: 1710; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 33. PR \$2.00. JE 023. KW Savings Rate. Savings Policy. National Savings.

AB This paper reviews a number of issues relating to the policy goal of increasing national savings. The first section considers the measurement and definition of national savings. Comparisons of current United States savings rates with those of other countries and with the past United States experience are presented. The second section considers possible avenues through which public policy can increase national savings. While most discussion has centered on the effects of changes in the rate of return received by savers, this is far from the only channel through which policy can affect savings. I conclude that changes in public savings or dissaving through budget surpluses or deficits are the most potent and reliable policy tool for altering the savings rate. The third section of the paper examines a crucial savings policy question. Where will extra savings go? Both empirical estimates and econometric model simulations suggest that a surprisingly small share of induced extra savings will find their way into increased plant and equipment investment. A major effect of increased savings would be to reduce capital inflows and improve American competitiveness.

PD September 1985. TI Taxation and the Size and Composition of the Capital Stock: An Asset Price Approach. AA Harvard University. SR National Bureau of Economic Research Working Paper: 1709; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 58. PR \$2.00. JE 313. KW Asset Price Approach. Tax Reform. Capital Taxation.

AB This paper develops an asset price approach to the analysis of capital taxation. The costs of adjusting capital stocks cause tax changes to have important impacts on the valuation of existing capital. The recapitalizations associated with tax reforms represent an important aspect of their incidence. These effects are studied within the context of an empirically calibrated general equilibrium model. The model extends previous work by explicitly treating the process of adjustment following tax reforms, treating in detail the relationship between tax rules and interest rates and examining the differential incidence effects of corporate tax reductions and investment incentives.

TI Poverty in America: Is Welfare the Answer or the Problem?. AU Ellwood, David T.; Summers, Lawrence H.

Synder, Ralph David

PD December 1985. **TI** Estimation of a Dynamic Linear Model -- Another Approach. AA Department of Econometrics and Operations Research, Monash University. **SR** Monash Department of Econometrics and Operations Research Working Paper: 15/85; Department of Econometrics and Operations Research, Monash University, Clayton, Victoria 3168, AUSTRALIA. **PG** 17. **PR** No Charge. **JE** 211. **KW** Kalman Filtering. Autoregressive-Moving Average Processes. Exponential Smoothing. Forecasting.

AB The paper considers a class of dynamic linear models which include most of those commonly used in statistical forecasting. Instead of the Kalman filter, an equivalent two stage estimation procedure relying on "classical least squares" is proposed. Applications to exponential smoothing and mixed autoregressive-moving average processes are examined.

Taira, Koji

PD October 1985. **TI** Education and the Labor Force in Japan. AA Department of Economics, University of Illinois at Urbana-Champaign. **SR** University of Illinois at Urbana-Champaign Bureau of Economic and Business Research Faculty Working Paper: 1197; Department of Economics, University of Illinois at Urbana-Champaign, 1208 S. 6 Street, Champaign, IL 61821. **PG** 42. **PR** No Charge. **JE** 851, 912. **KW** Education. Labor Force. Employment. Curriculum. Credentialism. Japan. **AB** Today the percentage of Japan's labor force with 14 or more years of education (junior college, university, and graduate school) is close to 20 per cent. This is lower than the college enrollment rate of the 18-year old Japanese, which is more than 35 per cent. The human capital content of the labor force will increase in the next generation to match the college enrollment rate. The enrollment rate increased rapidly in the 1950s and 1960s, stabilizing since 1976 after peaking at 39 per cent. The estimated rate of return on college education has been decreasing all along. The curriculum structure, sex composition of enrollment, and occupational choice are inter-related in a predictable fashion: males get more education in fields more relevant to future careers than females.

Tauchen, Helen V.

PD July 1985. **TI** Domestic Violence: A Non-Random Affair. AU Tauchen, Helen V.; Witte, Ann D.; Long, Sharon K. AA Tauchen: University of North Carolina at Chapel Hill. Witte: Wellesley College. Long: Mathematica Policy Research, Incorporated. **SR** National Bureau of Economic Research Working Paper: 1665; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 37. **PR** \$2.00. **JE** 011, 921. **KW** Domestic Violence. Income Effect. Employment Effect.

AB In this paper, we develop and estimate a model of violence between romantically linked men and women. Physical violence is viewed as both a source of direct

gratification and as an instrument for controlling the victim's behavior. Our model is a Stackleberg type model in which the assailant maximizes expected utility subject to the stochastic reaction function of the victim. Our model is estimated by a bounded-influence regression technique because the process generating violence appears to lead to a heavy-tailed error distribution. Our empirical results suggest that increases in the assailant's (i.e. the male's) income serve to increase violence, while increases in the proportion of the year that he is employed serve to decrease violence. Further, the employment effect is larger than the income effect. By way of contrast, our results suggest that the effect of a change in the female's employment or income depends heavily on her economic status relative to the male's. Finally, we find that improvements in the female's opportunities outside the relationship significantly reduce the level of violence.

Thomas, Lacy Glenn

TI Predation through Regulation: The Wage and Profit Impacts of OSHA and EPA. AU Bartel, Ann P.; Thomas, Lacy Glenn.

Thomas, Mike

TI Comparative Advantage in UK Manufacturing Trade 1910-1935. AU Crafts, N. F. R.; Thomas, Mike.

Thompson, G. L.

PD August 1985. **TI** A Heuristic Method for the Multi-Story Facilities Layout Problem. AU Thompson, G. L.; Kaku, B. AA Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 15; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. **PR** No Charge. **JE** 213, 522. **KW** Facilities Layout Problem. Multi-Story.

AB In this paper we present a heuristic procedure designed expressly for solving a large facilities layout problem in a multi-story setting, where the objective is to minimize the sum of the fixed and the interaction costs. This is achieved by decomposing the original facilities layout problem into several similar but smaller problems, one for each floor, thus permitting the solution of problems having as many as 100 or more facilities in reasonable times. Some of the novel features of the procedure described are the use of a heuristic K-median subroutine to obtain the initial groupings of facilities on separate floors, the inclusion of elevators to handle all movement between floors, a simple and fast exchange-improvement method, local suboptimization on each floor, and suboptimization of floor assignments based on inter-group movement.

Tind, Jorgen

TI Decomposition in Integer Programming by Superadditive Functions. AU Holm, Soren; Tind, Jorgen.

Tirole, Jean

TI Contraintes Verticales: L'approche. Principal - Agent. AU Rey, Patrick; Tirole, Jean.

Toman, Michael A.

PD August 1984. **TI** Policy Responses to Oil Disruption Risks: An Analytical Overview. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-82Z; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington, DC 20036, USA. **PG** 77. **PR** \$8.00 (United States funds only). **JE** 723. **KW** Oil Security. Strategic Stockpiling. Market Failures. Public-Private Interactions. International Cooperation.

AB This paper examines the state of the art in policy analysis of oil security issues. Throughout the paper, emphasis is placed on private sector responses to oil disruption risks, the implications of these responses for effective public policy, and the distinction between market failures which give rise to a role for government intervention and unavoidable disruption costs. Specific topics addressed in the paper include recent developments in the analysis of United States stockpile policy, the implications of macroeconomic disruptions costs for stockpile and tariff policy, and the international dimensions of oil security issues.

TI A Dynamic Nash Game Model of Oil Market Disruptions and Strategic Oil Stockpiling. **AU** Murphy, Frederic H.; Toman, Michael A.; Weiss, Howard J.

PD February 1985. **TI** Theory and Practice in the Economics of Nonrenewable Resource Supply. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-110; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 56. **PR** \$5.00 (United States Funds only), prepaid. **JE** 022, 721. **KW** Nonrenewable Resources. Dynamic Economics.

AB The literature on nonrenewable resource supply contains a large gap between conceptual models, which have advanced significantly in recent years toward a more realistic description of supply behavior, and empirical efforts to explain observed supply responses, which have been only modestly successful. This paper examines the gap between theory and practice in nonrenewable resource supply analysis by reviewing recent developments in the theory, many of which may be unfamiliar to nonspecialists; by summarizing the holes that remain in the theory; and by highlighting the problems to be overcome in translating knowledge about market behavior. The paper concludes with numerous suggestions for further research that would enhance practical understanding of observed supply behavior.

TI Futures Trading and Oil Market Conditions. **AU** Bohi, Douglas R.; Toman, Michael A.

PD April 1985. **TI** Existence and Transversality Conditions for a General Infinite-Horizon Model of the Mining Firm. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-98; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 31.

PR \$5.00 (United States Funds only), prepaid. **JE** 022, 111, 711. **KW** Nonrenewable Resources. Hotelling Theory. Dynamic Economics.

AB Existence of a solution is established for a general (competitive or monopolistic) model of the mining firm, along with the necessity of the infinite-horizon transversality conditions. The model includes both resource extraction and discoveries of new reserves, with stock-dependent resource exploitation costs; endogenous technical innovation; and state-dependent resource demand. In addition, the model incorporates the possibility of either a finite or infinite terminal time T , with a nonzero terminal valuation of T less than infinity. The proofs are strongly intuitive and use weaker concavity and interiority assumptions than are often encountered in the control literature.

PD April 1985. **TI** Existence and Optimality of Dynamic Competitive Equilibria With a Nonrenewable Resource. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-99; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 30. **PR** \$5.00 (United States Funds only), prepaid. **JE** 021, 022, 721. **KW** Competitive Equilibrium. Social Optimum. Duality. Nonrenewable Resources. Dynamic Economics.

AB This paper is an effort to bring together the study of existence and optimality of competitive equilibria over time with recent developments in the theory of nonrenewable resource supply. The model used here is aggregative, in the capital-theoretic tradition, but incorporates substitution between two consumption goods along with a general technology for resource extraction, development of new reserves, and endogenous technical change. Existence of a social optimum is shown under significantly weaker concavity assumptions than are typically encountered in the literature. Under stronger concavity assumptions the two fundamental welfare theorems are established. The necessity of the infinite-horizon transversality conditions also is shown under weaker assumptions than are commonly employed.

TI Oil Supply Disruptions and the Role of the International Energy Agency. **AU** Bohi, Douglas R.; Toman, Michael A.

TI International Cooperation in Stockpiles and Tariffs for Coping With Oil Supply Disruptions. **AU** Murphy, Frederic H.; Toman, Michael A.; Weiss, Howard J.

PD July 1985. **TI** Risk Aversion and the Insurance Value of Strategic Oil Stockpiling. **AU** Toman, Michael A.; Macauley, Melly K. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-82W; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 27. **PR** \$5.00 (United States funds only), prepaid. **JE** 026, 022, 723. **KW** Risk Premium. Strategic Stockpiling. Insurance.

AB In addition to arbitrage returns, price stabilization from strategic oil stockpiling may provide benefits to risk-averse agents by reducing income risks induced by

fluctuating oil prices. In this paper we develop a simple conceptual model of the "stockpile risk-reduction premia" associated with public and private oil inventories. These premia are shown to depend on private agents' degree of risk aversion, elasticities of oil import demand and supply, and certain covariances involving oil prices. Calculations based on the model suggest that private stockpiling has little risk-reduction value, while the public premium is quite sensitive to the assumptions made about risk preferences and other influences. However, under reasonable assumptions a value of \$2-4/bbl appears to be appropriate. These calculations suggest that there is little need for large adjustments to benefit-cost analyses of government oil stockpiling to reflect average social attitudes toward risk.

PD July 1985. **TI** Optimal Control With an Unbounded Horizon. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-97; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 45. **PR** \$5.00 (United States Funds only), prepaid. **JE** 022, 111. **KW** Optimal Control. Dynamic Economics. Existence Theory.

AB This paper extends existence results for finite and infinite horizon control problems to "unbounded horizon" problems where both finite and infinite terminal times are feasible and there are nontrivial payoff implications (in particular, because of a nonzero terminal valuation) in making this choice. The classical approach used in the paper leads to simple and fairly intuitive conditions for existence involving direct assumptions about the objective function, state dynamics, and control constraints which are accessible to applied users of control techniques. In addition, the results are proved under fairly weak concavity assumptions and thus have potential applicability to "increasing returns" problems.

TI Non-Price Provisions in Long-Term Natural Gas Contracts. **AU** Broadman, Harry G.; Toman, Michael A.

PD August 1985. **TI** A Note on Existence of Precommitment Equilibria for State Dependent Supergames. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-82I; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 10. **PR** \$5.00 (United States funds only), prepaid. **JE** 026. **KW** Dynamic Games. Existence Theorems.

AB This note provides a fairly general statement of conditions under which noncooperative precommitment equilibria exist for supergames where payoffs depend on state variables as well as decision variables. Both "full information" and "low information" (Friedman, 1983) cases are treated. The results are circumscribed by the apparent need for various separability, linearity, and monotonicity conditions, thus illustrating difficulties that are likely to be encountered in obtaining more general existence results for feedback or other subgame perfect equilibria.

PD August 1985. **TI** Common Property Resource

Externalities and Free Entry. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-112; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 13. **PR** \$5.00 (United States funds only), prepaid. **JE** 022, 026, 721. **KW** Common Property Externalities. Nonrenewable Resources.

AB This paper examines how individual and aggregate outputs of a nonrenewable resource respond to entry in an open-access regime. Using a dynamic Nash model with "feedback" strategies, we show that the output path of each firm is shifted downward by entry. In contrast, the aggregate output path exhibits a more complex "boom and bust" response. The problems this difference in responses poses for empirical analysis of common property resource supply, and directions for extending the standard common property model, also are discussed.

TI Restructuring the IEA Crisis-Management Program to Better Serve Member Country Interests. **AU** Bohi, Douglas R.; Toman, Michael A.

PD September 1985. **TI** "Spot" Trade in Natural Gas: Economic Analysis and Outlook. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: EM85-04; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 17. **PR** \$5.00 (United States Funds only), prepaid. **JE** 611, 723. **KW** Spot Markets. Natural Gas. Transaction Costs.

AB This paper assesses the longer-term outlook for "spot" trading of natural gas. Using a mixture of stylized facts about the gas industry and arguments from the theory of industrial organization, we conclude that overall spot trading volumes are likely to be fairly limited and concentrated in the intrastate market once current "glut" conditions subside. This finding suggests that vertical coordination problems associated with short-term transacting are not likely to be a major impediment to reform of the "carriage" regime under which gas pipelines operate. However, it also raises questions about the long-term viability of a natural gas futures market.

PD October 1985. **TI** Depletion Effects and Nonrenewable Resource Supply: A Diagrammatic Exposition. **AA** Energy and Materials Division, Resources for the Future. **SR** Resources for the Future Energy and Materials Division Discussion Papers: D-111; Energy and Materials Division, Resources for the Future, 1616 P Street NW, Washington DC 20036, USA. **PG** 24. **PR** \$5.00 (United States funds only), prepaid. **JE** 022, 012, 721. **KW** Depletion Effects. Nonrenewable Resources. Hotelling Theory. R Percent Rule.

AB Answers to research and policy questions concerning nonrenewable resources require a solid conceptual foundation. While the theory of nonrenewable resource supply has advanced significantly in the past few years, studies based on an inadequate model -- the "r percent rule" -- continue to appear. This paper presents a simple diagrammatic exposition of nonrenewable resource supply theory that goes beyond this excessively narrow description of supply behavior. The diagrammatic framework

emphasizes economic resource scarcity (versus physical scarcity per se) stemming from the influence of depletion on costs; the influence of dynamic "user costs" that reflect this scarcity on supply decisions; and interactions between decisions to extract from and add to reserves. The framework is intended to provide fresh insights to those conversant with mathematical versions of the theory, to highlight the pitfalls of the r percent rule approach, and to make the broader theory more accessible to nonexperts.

TI An Integrated Analysis of United States Oil Security Policies. **AU** Murphy, Frederic H.; Toman, Michael A.; Weiss, Howard J.

Topel, Robert

PD December 1985. **TI** A Time Series Model of Housing Investment in the United States. **AU** Topel, Robert; Rosen, Sherwin. **AA** Topel: UC Los Angeles. Rosen: University of Chicago. **SR** Economics Research Center/NORC Discussion Paper: 85-17; Economics Research Center/NORC, 6030 S. Ellis, Chicago, IL 60637. **PG** 69. **PR** \$2.00; send requests to Librarian, NORC. **JE** 932. **KW** Housing Investment. Housing Construction. Asset Prices.

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 accommodate 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.

Trajtenberg, Manuel

PD October 1985. **TI** The Welfare Analysis of Product Innovations with an Application to Computed Tomography Scanners. **AA** Department of Economics, Tel Aviv University. **SR** National Bureau of Economic Research Working Paper: 1724; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 85. **PR** \$2.00. **JE** 024,

621, 631. **KW** Product Innovations. Social Rate of Return to R and D . Computed Tomography Scanners.

AB The main goal of this paper is to put forward a methodology for the measurement of product innovations using a value metric, i.e., equating the 'magnitude' of innovations with the welfare gains that they generate. This research design is applied to the case of Computed Tomography (CT) Scanners, a revolutionary innovation in medical technology. The econometric procedure centers on the estimation of a discrete choice model (the nested multinomial logit), that yields the parameters of a utility function defined over the changing - quality dimensions of the innovative product. The estimated flow of social gains from innovation is used primarily to compute a social rate of return to R and D , to explore the interrelation between innovation and diffusion, and to trace the time profile of benefits and costs, the latter suggesting the possible occurrence of 'technological cycles.'

Treverton, Gregory

PD January 1986. **TI** "Foreign" Assessment. **AA** John F. Kennedy School of Government, Harvard University. **SR** Harvard John F. Kennedy School of Government Discussion Paper: 148D; Kennedy School of Government, Harvard University, 79 John F. Kennedy Street, Cambridge, MA 02138. **PG** 57. **PR** No Charge. **KW** Assessment. Intelligence. Foreign Policy. Policy Planning. Strategic Planning.

AB American foreign policy managers frequently confront the challenge of assessing Bonn or Moscow or Teheran. They know that how those foreign sets of institutions and politics act will affect American interests; they also know that they do not control those foreign actions, though they may have influence. The task of foreign assessment thus has two parts: understanding "them" over there, and understanding one's own governmental machine well enough to adjust its actions accordingly. After capsule summaries of the cases, the paper looks at a variety of assessment techniques and develops a check list for assessors. It then offers a dozen rules of thumb underscored by the cases. Some of those rules of thumb are for all assessment contexts, some have specific force if "they" are friends or enemies, familiar or strange. The rules of thumb are easy to state but hard to apply. Consider three for all contexts: what is "their" problem, not the one you perceive? Or, what is the most inconvenient thing "they" could do to you? Or, the less you understand about "them," the more you need to know about "you," your own institutions and politics.

Trognon, A.

TI Residus Generalises, Residus Simules Et Leurs Utilisations Dans Les Modeles Non Lineaires (Generalized Residuals, Simulated Residuals and Their Applications in Non-Linear Models). **AU** Gourieroux, C.; Monfort, A.; Renault, E.; Trognon, A.

Turnovsky, Stephen J.

PD September 1985. **TI** Monetary and Fiscal Policy under Perfect Foresight: A Symmetric Two Country Analysis. **AA** University of Illinois at Urbana-Champaign. **SR** National Bureau of Economic Research Working Paper: 1699; National Bureau of Economic

Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 37. PR \$2.00. JE 023, 311, 321. KW Effects of Domestic Macroeconomic Policy. Domestic Fiscal Expansion. Domestic Monetary Expansion.

AB This paper analyzes the effects of anticipated and unanticipated domestic monetary and fiscal expansions on both the domestic and foreign economies. The analysis is based on symmetric behavior, which is not only not an unreasonable first approximation, but also offers significant analytical advantages. Specifically, it enables the dynamics of the system to be decoupled into (a) averages and (b) differences of relevant variables. Not only does this render the analysis tractable, but it also helps provide economic insight. One striking aspect is that the differences, but not the averages, respond to announcements. The consequences of this for the dynamic adjustments of the two economies to the various disturbances are discussed at length.

TI An Analysis of the Stabilizing and Welfare Effects of Intervention in Spot and Futures Markets. AU Campbell, Robert B.; Turnovsky, Stephen J.

PD October 1985. TI Short-Term and Long-Term Interest Rates in a Monetary Model of a Small Open Economy. AA University of Illinois at Urbana-Champaign. SR National Bureau of Economic Research Working Paper: 1716; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 31. PR \$2.00. JE 311, 321, 023. KW Anticipated Policy Change. Interest Rates. Term Structure.

AB This paper analyzes the effects of both anticipated and unanticipated monetary and fiscal disturbances, on the dynamic behavior of a monetary model of a small open economy. It focuses on the adjustment of the short-term and long-term interest rates and the divergence of their transitional paths, particularly in anticipation of these disturbances. The analysis demonstrates how anticipation of a future policy change can generate perverse short-run behavior. The essential reason for the divergence between the short and long rates is that the latter is dominated by long-term expectations, while the former is primarily determined by current influences.

Ullah, Aman

PD August 1985. TI The Estimation of Probability Density Functions and its Applications in Econometrics. AU Ullah, Aman; Singh, Radhey S. AA Ullah: Department of Economics, University of Western Ontario. Singh: Department of Mathematics/Statistics, University of Guelph. SR University of Western Ontario Centre for Decision Sciences and Econometrics Technical Reports: 6; The Centre for Decision Sciences and Econometrics, Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. PG 32. PR No Charge. KW Nonparametric Density Estimates. Applications.

AB In this paper we present a class of nonparametric estimates of densities which are asymptotically unbiased and consistent. We point out various applications of these density estimates in econometrics. Some illustrative

examples, using economic data, are also given.

TI On Robustness of Tests of Linear Restrictions in Regression Models with Elliptical Error Distribution. AU Zinde, Walsh Victoria; Ullah, Aman.

TI Nonparametric Inference in Econometrics. AU Singh, Radhey S.; Ullah, Aman; Carter, R. A. L.

Ulrich, Dave

PD November 1985. TI Environmental Selection Versus Organizational Adaptation: Toward a Middle Ground. AU Ulrich, Dave; Kurke, Lance B. AA Graduate School of Industrial Administration, Carnegie-Mellon University. SR Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 27; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. PR No Charge. JE 511. KW Organizational Change. Environmental Selection. Organizational Adaptation.

AB Historically, organization theorists have advocated an adaptation perspective, with a focus on how organizations purposely adapt to change. More recently, some theorists have suggested a selection perspective with a focus on how environmental conditions constrain organizational choice and over time determine organizational changes. Unlike this polarization, this article suggests a middle ground between the two perspectives. We suggest that under some conditions, adaptation and selection forces both affect organizational change and survival, while under other conditions either selection or adaptation forces most affect organizational change. Specifying these conditions and related research provides further insights into organizations.

Usher, Dan

PD January 20, 1986. TI Tax Evasion and the Marginal Cost of Public Funds. AA Department of Economics, Queen's University. SR Queen's Institute for Economic Research Discussion Paper: 637; 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 323. KW Tax Evasion. Public Projects. Optimal Taxation.

AB Tax evasion is analogous to deadweight loss in its effect upon the rules for cost-benefit analysis of public sector projects. Deadweight loss and tax evasion both cause the marginal cost of public funds to increase as taxpayers attempt to reduce the tax base in response to increases in tax rates. In one case, the social cost is from the diversion of resources from highly taxed to less taxed activities. In the other, the social cost includes the expense of concealment of income from the tax collector, the cost to the public sector of detecting and punishing tax evasion, and the cost of punishment to the convicted tax evader. It follows from this line of reasoning that a complete theory of optimal taxation can be derived from the susceptibilities to evasion of the different means of taxation.

van Huyck, John

TI Sovereign Debt as a Contingent Claim: Excusable Default, Repudiation, and Reputation. AU Grossman,

Herschel; van Huyck, John.

van Wijnbergen, Sweder

TI Primary Commodity Prices, the Business Cycle and the Real Exchange Rate of the Dollar. **AU** Fleisig, Heywood; van Wijnbergen, Sweder.

PD December 1985. **TI** Capital Controls and the Real Exchange Rate. **AA** World Bank, Washington D.C. **SR** Centre for Economic Policy Research Discussion Paper: 89; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 21. **PR** 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. **JE** 431, 441, 422. **KW** Capital Controls. Real Exchange Rates. Expenditure Patterns.

AB Using an intertemporal, two-country general equilibrium model, I demonstrate that international asymmetries in expenditure patterns determine the real exchange rate effects of capital controls. Capital import taxes lower world interest rates but raise home interest rates. These changes in interest rates bring about a change in the composition of world expenditure, with a shift of home expenditure from the present ("today") to the future ("tomorrow") and a shift of foreign aggregate expenditure from tomorrow to today. If the pattern of expenditure across commodities is the same at home and abroad, the change in the composition of world expenditure has no effects on the (excess) demand for any particular commodity. Therefore, with identical expenditure patterns at home and abroad, the imposition of capital controls has no effect on the real exchange rate. However, when consumers have a preference for domestically produced goods, the shift in composition of world expenditure caused by interest rate changes implies a decline in demand today for home goods. In that case, capital controls lower the real exchange rate. Of course in period two the reverse happens. This result is mitigated when the country imposing capital controls is a large debtor.

PD December 1985. **TI** Aid, Export Promotion and the Real Exchange Rate: An African Dilemma? **AA** World Bank, Washington D.C. **SR** Centre for Economic Policy Research Discussion Paper: 88; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, England. **PG** 29. **PR** 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. **JE** 121, 431, 443. **KW** Development Aid. Real Exchange Rate Appreciation. Export Performance. Traded Versus Non-Traded Goods. Africa.

AB Africa, while a major aid recipient, has had disappointing export performance. This paper argues for a causal link: aid, by being partially spent on non-traded goods, leads to real appreciation and reduced export competitiveness. I demonstrate the importance of this effect by presenting econometric evidence on the positive relation between aid flows and real exchange rate appreciation and increases in the real wage in the traded-goods sector. Policy implications are discussed.

PD December 1985. **TI** Fiscal Deficits, Exchange Rate Crises and Inflation. **AA** World Bank, Washington D.C. **SR** Centre for Economic Policy Research Discussion

Paper: 87; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, England. **PG** 45. **PR** 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. **JE** 134, 322, 023, 431. **KW** Government Budget Constraint. Exchange Rate Freeze. Crawling Peg. Inflation.

AB The analysis focuses on the government budget constraint and the resolution of inconsistent implications of different policy instruments under that constraint. We show how, under floating exchange rates, external shocks or internal structural reforms may cause jumps in inflation and the exchange rate through their impact on the government budget. In order to achieve a sustainable reduction in inflation an exchange rate freeze or crawling peg is shown to require restrictions not only on domestic credit, but also on the rate of increase in interest-bearing public debt. We endogenize regime collapse by introducing rational speculation against the central bank, and show that if an exchange rate freeze collapses, post-collapse inflation will exceed the rate prevailing before the freeze started.

Varian, Hal R.

TI Intergenerational Risk Sharing. **AU** Gordon, Roger H.; Varian, Hal R.

Veall, Michael R.

TI On Formulating Wald Tests of Nonlinear Restrictions. **AU** Gregory, Allan W.; Veall, Michael R.

Venables, Anthony

PD October 1985. **TI** International Trade, Trade and Industrial Policy, and Imperfect Competition: A Survey. **AA** University of Sussex. **SR** Centre for Economic Policy Research Discussion Paper: 74; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 62. **PR** 1 pound (\$2) individuals; 1.50 pounds (\$3) companies, libraries, institutions. **JE** 411, 616, 422. **KW** Imperfect Competition. International Trade. Commercial Policy. Industrial Policy. Gains from Trade.

AB The incorporation of details of industrial organisation into the study of international trade has been the subject of a fast growing recent literature which is surveyed in this paper. Whereas the conventional theory of trade deals almost exclusively with perfect competition and non-increasing returns to scale, the new literature models imperfect competition, increasing returns to scale and product differentiation. In Section 2, I discuss how adding imperfect competition to trade theory generates new insights for our understanding of such phenomena as intra-industry trade. With imperfect competition and increasing returns to scale, trade may affect welfare by changing the degree of competition, firm scale, and the number of product varieties available in an economy. Section 3 of the paper examines the extent to which free trade achieves these potential gains from trade under a variety of different types of competition and market structure. In the presence of imperfect competition there is generally scope for the active use of policy to raise welfare through changes in the terms of trade or by correcting distortions in the domestic economy. Sections 4 and 5 discuss the roles of both commercial and industrial policy,

and show that the effects of policy are quite sensitive to the type of competition and market structure in the industry under study. Section 6 discusses the effects of one country's policy on other countries, and the role of coordinated commercial and industrial policy.

Venti, Steven F.

PD June 1985. TI Wages in the Federal and Private Sectors. AA Department of Economics, Dartmouth College. SR National Bureau of Economic Research Working Paper: 1641; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 47. PR \$2.00. JE 824. KW Comparability. Federal Sector Wages. Private Sector Wages.

AB This study addresses the legal principle of "comparability" that ties federal sector wages to wages in the private sector. We first examine comparability by determining if workers with similar observed and unobserved characteristics receive the same wages in each sector. Estimates based on data from the 1982 CPS indicate males may have a slight wage advantage in the federal sector. Female workers earn substantially more in the federal sector than in the private sector. We then develop a choice-theoretic approach to the issue of comparability by applying a simple supply argument: a cost-minimizing federal employer would pay wages no higher than necessary to attract employees and eliminate queues for federal jobs. If the market pays equalizing differences for unique attributes of each sector, then this approach is not consistent with wage equality between the sectors. A model jointly determining sectoral attachment and wage offers is estimated by maximum likelihood. Results suggest the elimination of queues will require substantial wage reductions for both male and female federal employees.

PD October 1985. TI The Determinants of Individual Retirement Accounts Contributions and the Effect of Limit Changes. AU Venti, Steven F.; Wise, David A. AA Venti: Dartmouth College. Wise: John Fitzgerald Kennedy School of Government, Harvard University. SR National Bureau of Economic Research Working Paper: 1731; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 51. PR \$2.00. JE 918, 915. KW IRA. Individual Retirement Accounts. IRA Limits.

AB Tax-deferred savings are potentially an important component of savings for retirement and could represent a very substantial increase in tax-free savings for many employees. IRAs may also have a substantial effect on national savings. Total IRA contributions in 1982 were over 29 billion dollars. Despite the program's size and potential significance, little is known about the determinants of IRA contributions. This paper presents: (1) analysis of the effect of individual attributes on whether a person contributes, (2) analysis of the effect of individual attributes on how much is contributed, and (3) simulations of the effect of potential changes in contribution limits on the amount that is contributed to IRA accounts. Results of a similar analysis based on Canadian data are compared with results for the United States. Persons with low incomes are unlikely to have IRA

accounts. In addition, after controlling for income, age, and other variables, persons without private pension plans are no more likely than those with them to contribute to an IRA. The analysis of Canadian data yields similar findings, and indeed specific parameter estimates for the two countries are very similar. Simulations based on the estimates suggest that the current Treasury Department proposal would lead to about a 30 percent increase in IRA contributions.

Vernon, John

TI Pioneers, Imitators and Generics -- A Model of Schumpeterian Competition in the Pharmaceutical Industry. AU Grabowski, Henry; Vernon, John.

TI Longer Patents for Lower Imitation Barriers: The 1984 Drug Act. AU Grabowski, Henry; Vernon, John.

Villa, Pierre

PD September 1985. TI Inflation, Contrainte Budgetaire et Contrainte Exterieur (Inflation, Budget Constraint and Balance of Payment). AA CEPREMAP. SR CEPREMAP Discussion Papers: 8527; CEPREMAP, 142, rue du Chevaleret, 75013 PARIS, FRANCE. PG 41. PR 10 FF. JE 321, 322, 423, 134. KW Exchange Rates. Balanced Budget Policy. Coordination of Economic Politics. Unemployment/Inflation Tradeoff.

AB The efficiency of balanced budget policies with a current account constraint is discussed. Results depend on the degree of inflationist illusion of agents and on the "degree of openness" of the economy. Expansionary policies export unemployment and inflation. The cooperation between countries is always more efficient in the long run than either non-cooperative strategies or the leadership of one country when the unemployment-inflation trade-off is concerned.

Villafior, Georgia G.

TI The Antebullum "Surge" in Skill Differentials One More Time: New Evidence. AU Margo, Robert A.; Villafior, Georgia G.

Viscio, Albert

TI A Vintage Model of Supply Applied to French Manufacturing. AU Kouri, Pentti; Viscio, Albert; de Macedo, Jorge Braga.

Wachter, Kenneth W.

TI The Physical State of the British Working Class, 1870-1914: Evidence from Army Recruits. AU Floud, Roderick; Gregory, Annabel; Wachter, Kenneth W.

Wales, T. J.

TI Flexible Functional Forms and Global Curvature Conditions. AU Diewert, W. E.; Wales, T. J.

Walsh, Carl E.

PD June 1985. TI Borrowing Restrictions and Wealth Constraints: Implications for Aggregate Consumption. AA Department of Economics, Princeton University. SR National Bureau of Economic Research Working

Paper: 1629; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 023. KW Marginal Propensity to Consume. Consumption.

AB Recent empirical studies have found that consumption is more sensitive to current income than the life-cycle, permanent income hypothesis would predict. The present paper studies a model in which the fraction of consumers exhibiting excess sensitivity is endogenously determined. The presence of income uncertainty and restrictions on borrowing are shown to generate a distribution of consumption across individuals which is consistent with the recent empirical evidence. The aggregate marginal propensity to consume out of transitory income is directly related to the fraction of constrained consumers and exhibits positive serial correlation in the face of serially uncorrelated income shocks.

Warshawsky, Mark

TI Annuity Prices and Saving Behavior in the United States. AU Friedman, Benjamin M.; Warshawsky, Mark.

TI The Cost of Annuities: Implications for Saving Behavior and Bequests. AU Friedman, Benjamin M.; Warshawsky, Mark.

Waverman, Leonard

TI Productivity Growth in the Automobile Industry, 1970-1980: A Comparison of Canada, Japan and the United States. AU Fuss, Melvin A.; Waverman, Leonard.

Weiner, Robert J.

TI Nominal Contracting and Price Flexibility in Product Markets. AU Hubbard, R. Glenn; Weiner, Robert J.

Weiss, Howard J.

TI A Dynamic Nash Game Model of Oil Market Disruptions and Strategic Oil Stockpiling. AU Murphy, Frederic H.; Toman, Michael A.; Weiss, Howard J.

TI International Cooperation in Stockpiles and Tariffs for Coping With Oil Supply Disruptions. AU Murphy, Frederic H.; Toman, Michael A.; Weiss, Howard J.

TI An Integrated Analysis of United States Oil Security Policies. AU Murphy, Frederic H.; Toman, Michael A.; Weiss, Howard J.

West, Kenneth D.

PD February 1986. TI Full Versus Limited Information Estimation of a Rational Expectations Model: Some Numerical Comparisons. AA Woodrow Wilson School, Princeton University. SR National Bureau of Economic Research Technical Paper: 54; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 211. KW Full Information Estimation. Limited Information Estimation. Rational Expectations. Asymptotic Distribution. Efficiency. Bias. Power.

AB This paper compares numerically the asymptotic distributions of parameter estimates and test statistics associated with two estimation techniques: (a) a limited information one, which uses instrumental variables to estimate a single equation (Hansen and Singleton (1982)), and (b) a full information one, which uses a procedure asymptotically equivalent to maximum likelihood to simultaneously estimate multiple equations (Hansen and Sargent (1980)). The paper compares the two with respect to both (1) asymptotic efficiency under the null hypothesis of no misspecification, and (2) asymptotic bias and power in the presence of certain local alternatives. It is found that: (1) Full information standard errors are only moderately smaller than limited information standard errors; (2) When the model is misspecified, full information tests tend to be more powerful, and its parameter estimates tend to be more biased. This suggests that at least in the model considered here, the gains from the use of the less robust and computationally more complex full information techniques are not particularly large.

Westoby, Richard

TI World Oil Prices and Output Losses in Developing Countries. AU Pearce, David; Westoby, Richard.

White, Halbert

TI Consistency of Optimization Estimators. AU Wooldridge, Jeffrey; White, Halbert.

TI Efficient Estimation of Parametric Models. AU Bates, Charles E.; White, Halbert.

PD January 1986. TI Least Squares. AA UCSD. SR UCSD Department of Economics Discussion Paper: 86-1; Department of Economics, D-008, UCSD, La Jolla, CA 92093. PG 19. PR \$2.00; checks payable to UC Regents. JE 211. KW Estimation. Least Squares. Approximation of Regression Functions. Asymptotic Theory.

AB This brief note sets out the properties of the least squares estimator and associated test statistics for a variety of situations relevant to economic and econometric practice.

TI Efficient Estimation of Parametric Models. AU Bates, Charles E.; White, Halbert.

White, Kenneth J.

TI Obtaining Any Wald Statistic You Want. AU Lafontaine, Francine; White, Kenneth J.

Whittaker, Rod

PD October 1985. TI Alternative Financial Policy Rules in an Open Economy under Rational and Adaptive Expectations. AU Whittaker, Rod; Wren, Lewis Simon; Blackburn, Keith; Currie, David. AA Whittaker: HM Treasury. Wren-Lewis: NIESR. Blackburn: Southampton University. Currie: Queen Mary College. SR Centre for Economic Policy Research Discussion Paper: 78; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. PG 25. PR 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. JE 311, 023. KW Monetary Policy.

Open Economy Macro. Rational Expectations. Adaptive Expectations.

AB The potential instability of a fixed monetary rule combined with automatic fixed stabilisers is a well-established feature of closed economy IS/LM models with wealth effects and asset accumulation. This paper examines the stability issue in a general open economy macromodel with alternative expectations mechanisms (rational or adaptive) in both the labour market and the foreign exchange market. The fixed monetary rule is found to be stabilising only in special cases, notably when post-tax real interest rates are negative and the foreign exchange market is characterised by high capital mobility and rational expectations. By contrast, the alternative rule of fixing the rate of growth of nominal government debt is stable for a wide range of parameter values and alternative expectations schemes.

Wholey, Douglas R.

TI Bargaining Unit, Union, Industry, and Locational Correlates of Union Support in Certification and Decertification Elections. **AU** Dickens, William T.; Wholey, Douglas R.; Robinson, James C.

Williams, Jeffrey R.

PD July 1985. **TI** Effects of Divergent Rates of Learning on Competitive Strategy and Industry Structure. **AA** Graduate School of Industrial Administration, Carnegie-Mellon University. **SR** Carnegie-Mellon Graduate School of Industrial Administration Working Paper: 4; Graduate School of Industrial Administration, Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213. **PR** No Charge. **JE** 611. **KW** Oligopoly Models. C-D-F Oligopoly. Learning.

AB This paper argues that the "low cost/differentiated/focus" (c-d-f) oligopoly model is not well specified for policy purposes and is implicitly static. An alternative model is proposed which preserves the c-d-f oligopoly as a subset of a broader model which characterizes business environments in terms of low, medium, and high rates of learning. It is argued that this broader model is better specified for policy making, encompasses a wider range of markets than the traditional approach, is more sympathetic to structural change, and permits a new approach to teaching and research in business strategy.

Winter, J. M.

PD October 1985. **TI** Demographic Change and Medical Care. **AA** University of Cambridge. **SR** Centre for Economic Policy Research Discussion Paper: 82; Centre for Economic Policy Research, 6 Duke of York Street, London SW1Y 6LA, ENGLAND. **PG** 25. **PR** 1 pound (\$2.00) individuals; 1.50 pounds (\$3.00) companies, libraries, institutions. **JE** 826, 913, 841. **KW** Demographic Change. Health Policy. Baby Boom. Fertility Decline. Funding of Welfare Services.

AB This paper examines the implications for health policy of recent demographic trends. It examines the remarkable succession of a Western countries. After reviewing the explanatory literature, and rejecting the likelihood of any major reversal in the process of fertility decline, it offers a series of options relevant to the question

of whether replacement fertility now may be an essential prerequisite of the funding of welfare services, including medical care, when the 'baby boom' generation comes to retire around the year 2015. Because of the glacial nature of demographic change, policy options in this field must be considered now. Otherwise it will be too late to affect the trends which arise out of current demographic behaviour.

Wise, David A.

TI The Determinants of Individual Retirement Accounts Contributions and the Effect of Limit Changes. **AU** Venti, Steven F.; Wise, David A.

Witte, Ann D.

TI Domestic Violence: A Non-Random Affair. **AU** Tauchen, Helen V.; Witte, Ann D.; Long, Sharon K.

Wong, Yue Chim

PD June 1985. **TI** The Role of Husband's and Wife's Economic Activity Status in the Demand for Children. **AA** Chinese University of Hong Kong. **SR** Economics Research Center/NORC Discussion Paper: 85-20; Economics Research Center/NORC, 6030 S. Ellis, Chicago, IL 60637. **PG** 37. **PR** \$2.00; send requests to Librarian, NORC. **JE** 812, 841, 851. **KW** Fertility Demand. Occupational Choice. Hong Kong. Child Labor.

AB The existing literature on household demand for children in developing countries emphasizes the importance of women's choice of different types of market activity. Certain types of activity in the "informal sector" are considered to be more compatible with child care because they put less demands on women's time. The absence of high fixed entry costs into such types of market activity is usually the key factor in explaining why women's wage rates or labor force participation rates are not always negatively related to fertility. The demand for children in households who operate a small family business in the "informal sector" may be greater because child labor can be employed in the firm. This alternative view puts emphasis on husband's choice of market activity type and gives it a more important role in determining fertility. Micro data from the urban sector of Hong Kong are used to test for the presence of both the fixed cost and child labor effects on fertility demand with positive results. Our work shows that distinguishing between husband's and wife's choice of market activity type can be important in the analysis of fertility demand in developing countries.

Wooldridge, Jeffrey

PD September 1985. **TI** Consistency of Optimization Estimators. **AU** Wooldridge, Jeffrey; White, Halbert. **AA** UC San Diego. **SR** UC San Diego Department of Economics Discussion Papers: 85-29; Department of Economics, D-008, UCSD, La Jolla, CA 92093. **PG** 70. **PR** \$2.00; checks payable to UC Regents. **JE** 211. **KW** Consistency. Almost Sure Convergence. Extremum Estimators. Quasi Maximum Likelihood.

AB In this paper we provide general conditions which ensure the consistency of an estimator obtained as the solution to an optimization problem. The conditions given are quite general. The data may be dependent and/or heterogeneous, the objective function need not be

continuous in the parameters, and the parameter space need not be compact or finite dimensional. Also, the domination conditions often imposed are not needed here, allowing for trending or explosive data. The applicability of the results is illustrated by a series of examples including regression with a trend and with co-integrated variables, Manski's closest empirical distribution estimator, Manski's maximum score estimator, and a nonparametric density estimator.

Wooton, Ian

TI A North-south Model of International Justice.
AU Dinopoulos, Elias; Wooton, Ian.

Wren, Lewis Simon

TI Alternative Financial Policy Rules in an Open Economy under Rational and Adaptive Expectations.
AU Whittaker, Rod; Wren, Lewis Simon; Blackburn, Keith; Currie, David.

Yamada, Tadashi

PD December 1985. TI A Multinomial Logistic Approach to the Labor Force Behavior of Japanese Married Women. AU Yamada, Tadashi; Yamada, Tetsuji; Chaloupka, Frank. AA Yamada, Tadashi and Chaloupka: National Bureau of Economic Research, New York. Tamada, Tetsuji: Department of Economics, University Center of CUNY. SR National Bureau of Economic Research Working Paper: 1783; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 14. PR \$2.00. JE 813. KW Labor Force Participation. Japanese Married Women.

AB Using a multinomial logistic approach, we analyze the interdependencies among the labor force participation decisions of married women in Japan. These decisions are working part-time, working full-time, being unemployed (in the labor market but unable to find work), and not participating. Our focus is on the interdependency between the decision to work part-time and the decision to work full-time. Our results indicate that married women working full-time view part-time work as a good substitute, but the reverse is not observed. We also obtain estimates of the own-wage elasticity for both forms of participation and find that part-time labor force participation of Japanese married women is substantially more elastic than that of their full-time counterparts. These findings reinforce the view that married women in Japan with loose ties to the labor market are quite responsive to changes in the returns to work.

PD December 1985. TI The Crime Rate and the Condition of the Labor Market: A Vector Autoregressive Model. AA National Bureau of Economic Research, New York. SR National Bureau of Economic Research Working Paper: 1782; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PG 27. PR \$2.00. JE 916, 813. KW Labor Market Conditions. Crime Rate.

AB Few empirical studies of the economics of crime have doubted the deterrent effects of the legal sanctions on crime. Those studies, however, have not established a definitive understanding of the effects of labor market

conditions on crime. In this paper, we examine the impact of labor market conditions, represented by either male civilian unemployment or labor force participation rates, on seven major categories of crime, using the quarterly crime-rate data for the United States. Based on an analysis of the reported crime rates for murder, forcible rape, robbery, aggravated assault, burglary, larceny-theft, and motor vehicle theft during the period from the first quarter of 1970 through the fourth quarter of 1983, we reject the null hypothesis that labor market conditions have no effects on the crime rate. Rather, we find that the male civilian unemployment rates, especially the rate for those twenty-five years old and over, are strongly and positively associated with most of the crime rates studied. The male civilian labor force participation rates are also found to be related to the crime rates considered here. Youth labor force participation rates for both whites and non-whites, sixteen to nineteen years old, are more strongly associated with the examined crime rates than are the labor force participation rates for males, twenty years old and over.

Yamada, Tetsuji

TI A Multinomial Logistic Approach to the Labor Force Behavior of Japanese Married Women.
AU Yamada, Tadashi; Yamada, Tetsuji; Chaloupka, Frank.

Yitzhaki, Shlomo

TI The Optimal Size of a Tax Collection Agency.
AU Slemrod, Joel; Yitzhaki, Shlomo.

Zax, Jeffrey S.

PD June 1985. TI Pure Price Effects of Nonwage Compensation. AA Queen's College, New York. SR National Bureau of Economic Research Working Paper: 1830; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. PR \$2.00. JE 821. KW Nonwage Compensation.
AB This paper discusses the pure static price effects which are engendered by tax preferences for nonwage compensation. Section II demonstrates that, because of these price effects, optimal consumption bundles will contain larger quantities of the goods included in nonwage compensation, and smaller quantities of other goods, than they would in the absence of tax preferences. In the presence of preferences, the cost of a compensation package to an employer usually differs from its value to an employee. Under proportional taxation, compensation packages which contain optimal quantities of nonwage compensation may be between 4 per cent and 13 per cent less expensive than cash compensation sufficient to purchase, at retail, consumption bundles providing similar utility. This difference represents a substantial savings to employers. It is largely attributable to reductions in tax payments, and may represent substantial foregone tax revenues. Optimal provision of nonwage compensation confers greater advantages under progressive taxation, advantages which increase with the degree of progressivity. These considerations are important in the analysis of any issue to which employee 'income' or employer costs are relevant. As examples, Section III demonstrates that conventional definitions of income unavoidably generate

incorrect conclusions with regard to evaluations of welfare distribution, tax progressivity, and returns to human capital.

PD July 1985. **TI** Economic Effects of Municipal Government Institutions. **AA** National Bureau of Economic Research, New York. **SR** National Bureau of Economic Research Working Paper: 1657; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 39. **PR** \$2.00. **JE** 824, 822. **KW** Municipal Government. Municipal Labor Markets. Municipal Institutions.

AB This paper presents an analysis of employment and compensation practices under alternative institutions of municipal government which demonstrates that institutional variations have significant, important, and predictable effects upon outcomes in municipal labor markets. Municipal institutions in which a single official is responsible for office performance provide that official with incentives to emphasize efficiency in the production of municipal services. Institutions in which responsibility is shared provide individual officials with incentives to emphasize the allocation of municipal resources to their particular constituencies, among whom municipal employees may be prominent. Independently, city managers and mayors chosen through direct election reduce levels of employment and increase employee compensation. Managers offer compensation packages which emphasize nonwage components. In cities which have both institutions, competition between the two nullifies employment reductions and exacerbates compensation increases. Employment increases with the age of the manager's office. City councilmembers chosen through at-large or nonpartisan elections increase levels of both employment and compensation. Compensation packages under both emphasize current components. With both reforms, employment and compensation increases are compounded.

PD October 1985. **TI** Municipal Employment, Municipal Unions, and Demand for Municipal Services. **AA** Department of Economics, Queen's College. **SR** National Bureau of Economic Research Working Paper: 1728; National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge MA 02138. **PG** 30. **PR** \$2.00. **JE** 831. **KW** Municipal Unions. Municipal Employment.

AB Municipal unions may often use their own votes and those of sympathetic fellow citizens to promote increases in demand for municipal services. If successful, this strategy can increase member employment levels without sacrificing compensation. Municipal employee unionization significantly increases levels of annual manhours and employment per capita, and reduces annual hours of work per employee. The net effect of average unionization levels is to increase employees per capita by at least 4.7 per cent, and manhours per capita by at least 3.3 per cent, over levels that would prevail in the absence of municipal unions. These effects occur almost entirely in functions with recognized bargaining units. In these functions, employment levels are at least 9.9 per cent higher than they would be in the absence of unionization.

Zeckhauser, Richard

TI The Ambiguous Antitrust Implications of Information Sharing. **AU** Nalebuff, Barry; Zeckhauser, Richard.

Ziderman, Adrian

PD November 1985. **TI** Testing the Dual Labour Market Hypothesis: Evidence from the Israel Labour Mobility Survey. **AU** Ziderman, Adrian; Neuman, Shoshana. **AA** Ziderman: Bar-Ilan University, Israel and University of British Columbia. Neuman: Bar-Ilan University. **SR** University of British Columbia Department of Economics Discussion Paper: 85-32; Department of Economics, University of British Columbia, 997 - 1873 East Mall, Vancouver, B.C., Canada, V6T 1Y2. **PG** 14. **PR** \$.20 per page Canadian to other than educational institutions. **JE** 824, 122. **KW** Israel. Dual Labor Market.

AB The theory of dual labor markets in advanced economies has been developed almost entirely in the United States context. Little research seems to have been addressed to the testing of the model for other non-developing economies outside the United States and the United Kingdom. This paper broadens the field in examining the hypothesis for the case of Israel. Utilizing individual data drawn from the Israel labor mobility survey and assigning workers to primary and secondary sectors on the basis of occupational prestige scores, earnings functions were estimated and compared for the two sectors. The results were found to be very closely in line with the predictions of the dual labor market model, thus strongly suggesting that the dual labor market hypothesis may have some considerable relevance in the Israeli context.

Zilcha, Itzhak

TI A Welfare Analysis of Steady States in an Overlapping Generations Model with Uncertain Lifetime. **AU** Karni, Edi; Zilcha, Itzhak.

Zinde, Walsh Victoria

PD November 1985. **TI** On Robustness of Tests of Linear Restrictions in Regression Models with Elliptical Error Distribution. **AU** Zinde, Walsh Victoria; Ullah, Aman. **AA** Department of Economics, University of Western Ontario. **SR** University of Western Ontario Centre for Decision Sciences and Econometrics Technical Reports: 8; The Centre for Decision Sciences and Econometrics, Department of Economics, Social Sciences Center, University of Western Ontario, London, Ontario, CANADA N6A 5C2. **PG** 23. **PR** No Charge. **JE** 211. **KW** Robustness. Linear Restrictions. Non-Spherical Errors.

AB In this paper we consider the issues of numerical and inferential robustness of F, LR, RS and W tests, based on the assumption of spherical normality, against the general class of elliptical error distributions (errors with the nonscalar covariance matrix Sigma). We provide the necessary and sufficient conditions of numerical robustness for the class of covariance matrices often used in econometrics, for example, autoregressive (AR), moving average (MA) and heteroscedasticity. Our investigation shows that for these covariance matrices the numerical robustness of test statistics under consideration is rare.